

Artificial Intelligence and Advertising: A Systematic Literature Review and Future Research Direction in India

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Orcid id: 0009-0008-0499-7780

DOI: 10.46609/IJSSER.2025.v10i05.001 URL: <https://doi.org/10.46609/IJSSER.2025.v10i05.001>

Received: 28 April 2025 / Accepted: 20 May 2025 / Published: 27 May 2025

ABSTRACT

This paper presents a systematic review on Artificial Intelligence and Advertising using the Google Scholar and Scopus dataset spanning from 2015 to 2024 December. The paper investigates the trends in publications year-wise, country-wise, publishers/journals analysis and finally an elaborative analysis of the Indian research works. Results indicate that from 2019 onwards the surge of writing paper on AI-enabled advertising has started with 2024 having the highest number of articles. USA has the highest number of publications followed by China and India. Co-authorship research works of USA are also highest. Keyword occurrence highlights central themes as advertising, AI and marketing. Secondly, the paper investigates the six Indian authors published articles on the topics and reveals that 4 are from Google Scholar database and 2 from Scopus. The focus area of studies includes marketing, advertising and IT, with three review papers and three quantitative approach research papers. Overall, this paper analyses the AI-enabled advertising research works and aids future research works in India.

Keywords: Artificial Intelligence, Advertising

Introduction:

Businesses use advertising as a promotional tool to communicate their product/services with customers. Advertising is regarded as the most acknowledged marketing tool in nature. Given the advent of internet, advertising pattern is changing and getting more personalised. Social media is the essential and well-organised platform for advertising among millennials. According to Li (2019) the evolution of digital advertising is been studied in three phases: Interactive advertising, programmatic advertising and AI advertising (Kumar et al., 2024). AI-driven content generation

is revolutionizing numerous industries by simplifying various tasks and enhancing decision-making processes effortlessly (Ameen et al., 2021). Artificial intelligence (AI), which is a branch of information technology innovation, is a key factor for business and academics. Robotics and artificial intelligence (AI) have been among the main drivers of almost every field in the last decade ([Argan et al., 2022, p. 332](#)). Artificial Intelligence (AI) has emerged as a transformative force impacting various aspects of human life, including media and communication. ([Ratta et al., 2024, p. 1152](#)). John McCarthy, one of the inventors of the AI term and the Lisp programming language, defined AI in 2004 as “the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable.” (Başev, 2024, p. 170)

The web-based online advertising industry has experienced significant growth, creating numerous opportunities for advertisers to generate leads, raise brand awareness, and engage in electronic commerce ([Agrawal & Nadakuditi, 2023, p. 2](#)). This includes utilization of procedures and specific algorithms to produce such content for advertising like texts, images, and videos as well for diverse purposes. Many sectors extensively adopt AI generated advertising content creation technology, especially for marketing needs and customer satisfaction service areas. ([Ratta et al., 2024, p. 1152](#)).

AI has revolutionized the advertising industry, creating possibilities that would have been unimaginable only a few years ago. ([Eriksson, n.d., p. 1](#)). Artificial intelligence can identify suitable contexts and distribute ads efficiently.(Häglund & Björklund, 2022, p. 10). Using AI algorithms and data analysis, advertising can accurately reach the target audience, improving the click-through rate and conversion rate of advertisements. Intelligent AI technology analyses user behaviour through big data and adjusts the content and delivery strategy of advertisements in real-time, achieving personalized and dynamic advertising display. ([Cai & Liu, 2024, p. 21](#)). AI-driven optimization can analyse vast data sets to uncover hidden patterns and preferences, facilitating the creation of more targeted and relevant advertising content. These techniques also support the scalability required to manage large-scale campaigns across multiple platforms and demographics, offering advertisers the ability to efficiently allocate resources and maximize return on investment. ([Sharma et al., 2022, p. 4](#))

AI driven advertising is driving the marketers and communication experts to accelerate the target audience in a convenient and dynamic way. Research on Artificial Intelligence Advertising attracted relatively less attention from academic researchers. This study attempts to address the emerging trends in Artificial Intelligence (AI) advertising and the author of this paper believe that future research on AI advertising would benefits marketers and academic researchers. With the above related background, the objective of this study is threefold. First to conduct a

comprehensive systematic literature of selected papers on AI Advertising to bring out various perspectives, trends and emerging research themes. Secondly, to identify the studies done in India, which will be relevant for both academicians and practitioners in. Thirdly, to propose a future direction for the marketing goals of the AI advertising to help marketers on the design of future strategies to address practitioner challenges.

The study is presented in five sections. The first section defines AI advertising and provides marketers' perspectives. The second section explains the methodology of the systematic literature review (SLR). The third section discusses the results of the SLR and the discussion of the Indian research papers and the fifth section presents the future research directions in India and conclusion.

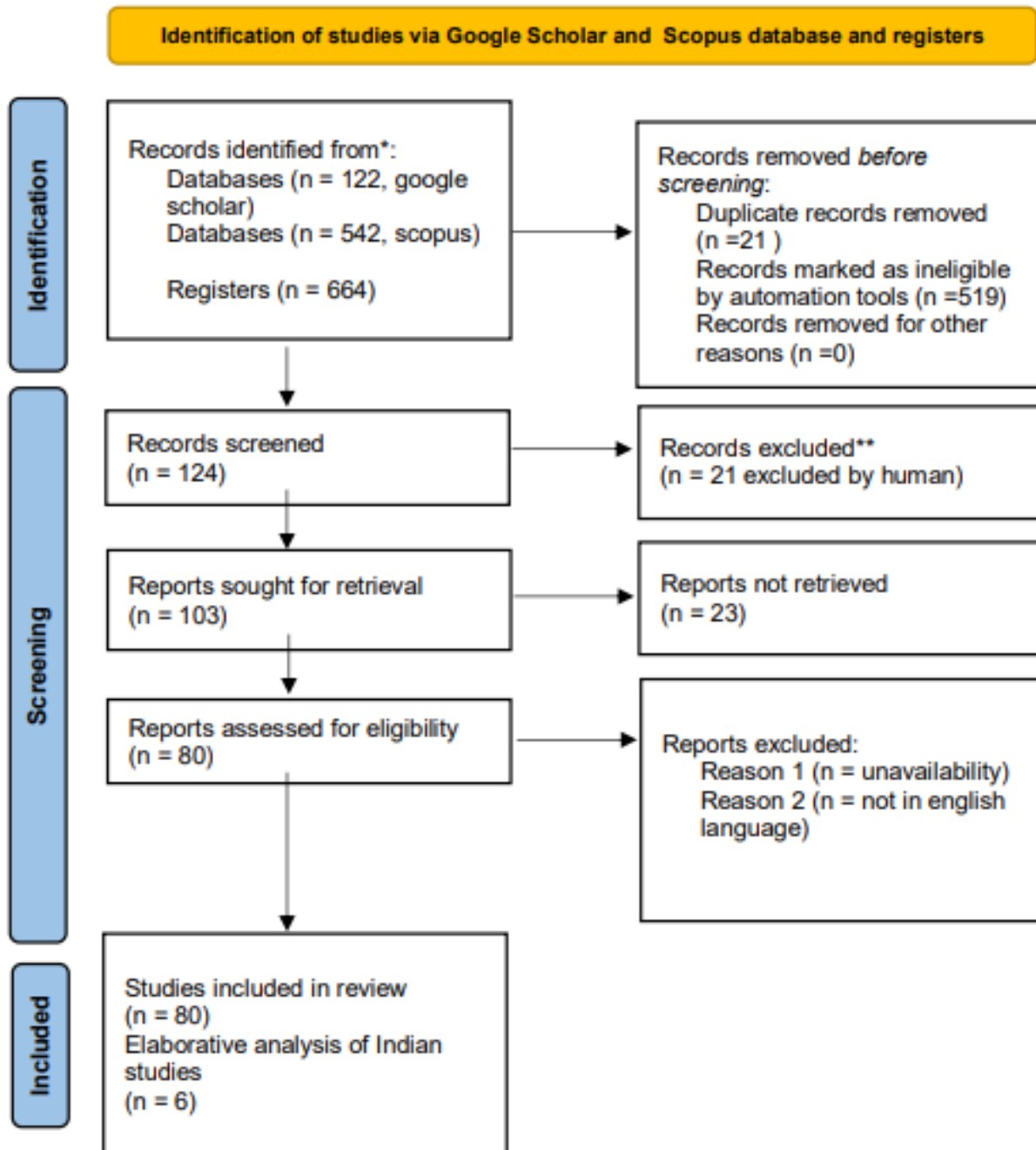
Methodology:

The study adopts the SLR methodology for this study, which is an efficient and reliable tool compared to the traditional narrative review (Denyer and Trandfield, 2006). The methodology is adopted to systematically highlight status of research work done in India and the scope for the future research in the topics of Artificial Intelligence and Advertising. The papers were searched systematically to sort, and include pertinent studies only and eliminate studies that do not fall under the purview. In doing so PRISMA framework is used to perform the process in a structured manner.

To conduct the study, literature was searched on December 2024 exclusively on academic search engine Google Scholar and Scopus. The search was done using boolean operator "AND" as "Artificial Intelligence" AND "Advertising", only in English language which yielded 133 results from Google Scholar and 574 results from Scopus. The search was narrowed down to consider results of 10 years from 2015 to 2024 and yielded 122 results from Google scholar and 542 from Scopus database. The search was again narrowed to the keywords only in the title and yielded 63 academic journals, 18 conference paper, 15 citations, 8 Master's Thesis, 3 Book Chapter, 2 Book, 2 duplicate entries, 1 handbook. 1 PhD thesis and 1 dissertation. Out of 63 academic journals, only 57 were in English language, 1 in Spanish, 1 in Ukranian and 4 in Korean language from Google Scholar and 237 academic articles, 172 conference paper, 65 Book Chapter, 22 Conference review, 20 books, 16 review, 8 editorial and 2 Note from Scopus database. The search was again narrowed down to only in the title of the research article yielded 67 academic articles from Scopus database and 124 academic journals from google scholar database. The records were exported to excel sheet and examined by going through the title one by one. It was found that 103 academic journals were found pertinent to the study and 21 duplicate entries were found in the excel. From the 103 articles 23 articles were rejected for the study due to unavailability of the article to read and not in english language after going through the database

once gain. After the elimination only 80 articles were taken for the systematic review. Below is the PRISMA flow chart of the exclusion and inclusion pattern.

PRISMA FLOW CHART, 2020



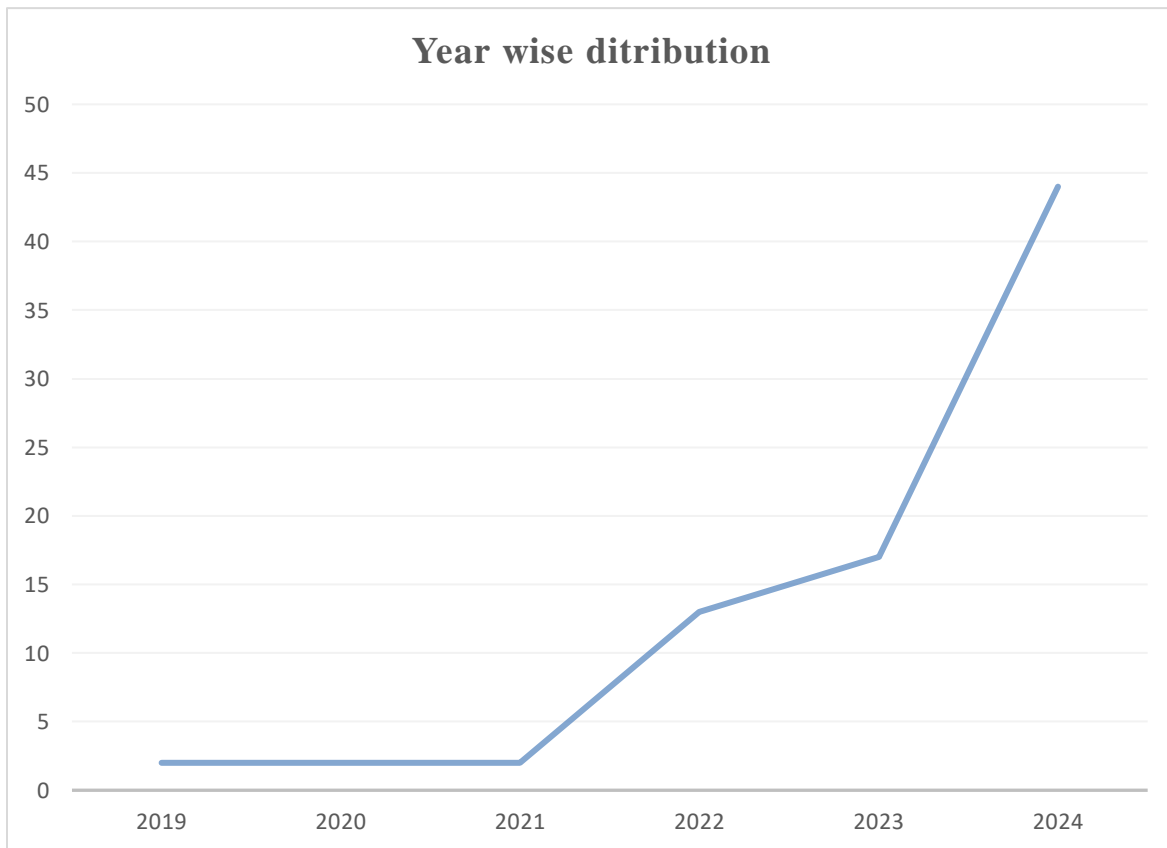
Result of the Systematic Literature review

In this section, the author presents a descriptive analysis of various distribution trends of the research and furnish insight into Artificial Intelligence and Advertising researches.

Distribution of publication, Quality of Journal, Year, Keyword and Country:

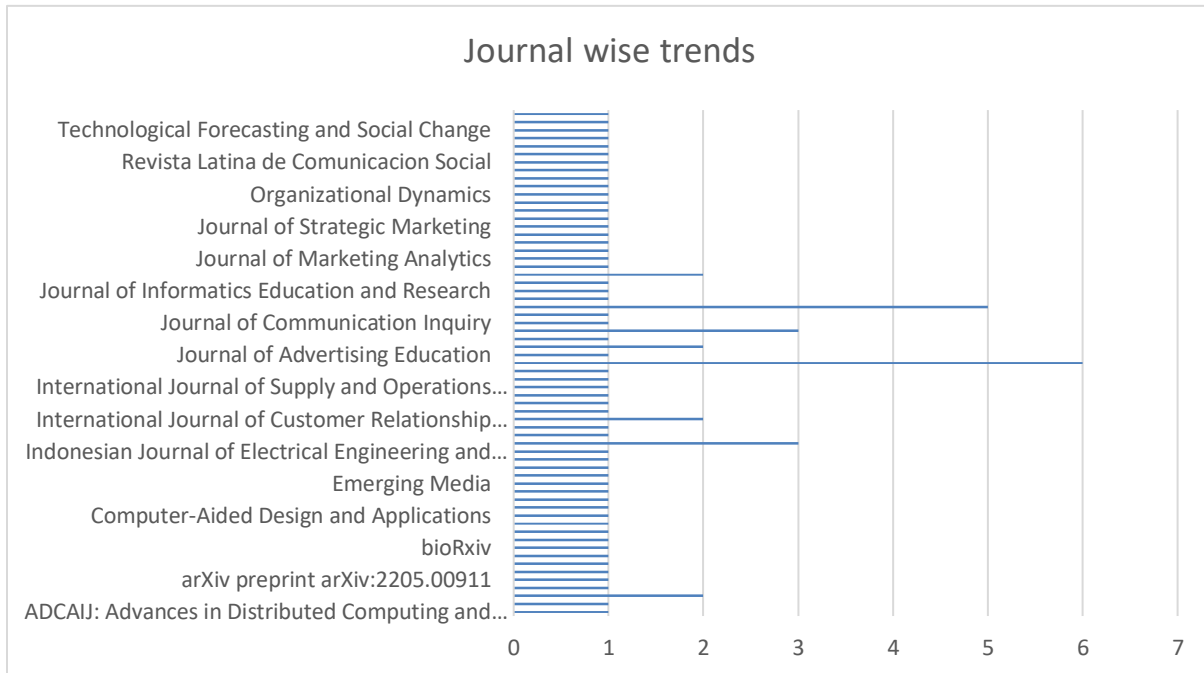
The year wise trend shows that from 2015-2024 the surge of research articles roused from 2015 to the highest on 2024. The figure below plots 2024 to be the highest and 2019 to be the lowest.

Fig: 1



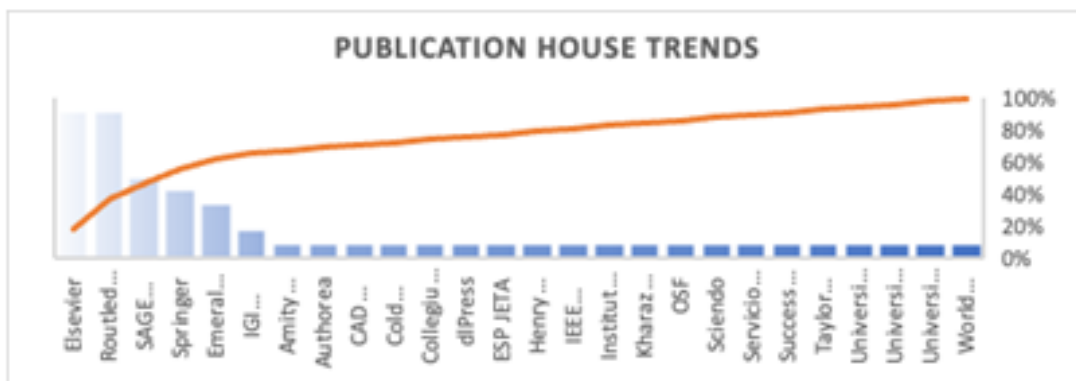
The Journal distribution of the 80 articles reveals that six articles are published in Journal of Advertising followed by Journal of Current Issues & Research in Advertising (5 articles), Journal of Business Research (3 articles), International Journal of Advertising Research (3 articles), International Journal of Advertising (3 articles), Journal of Interactive Advertising (2 articles), Applied Marketing Analytics (2) and International Journal of Customer Relationship Marketing & Management (2 articles). The remaining journals have one articles each as seen in Fig: 2.

Fig: 2



Eleven articles were published from Elsevier and Routledge respectively, followed by Taylor & Francis (9), Sage Publication (6), Springer (5), Emerald (4), IGI Global (2) and Henry Stewart (2). The remaining journals are published from individual Publication house as seen in fig 3.

Fig: 3



A keyword analysis was performed for the 80 articles to understand the occurrence of words across articles and the extant of scope of the articles as shown in Fig. 4 below.

Table: 1

Sl. No.	Name of the Author	Title of the Paper	Name of the Journal	Method	Focus Area
1	Kumar, Abhishek; Pandey, Mrinalini; Shreyaskar, Pankaj KP;	Three Decades of Digital Advertising: What the Bibliometrics Say and How AI Came into Play	Vision (SAGE), 2024	Review	Management studies/Marketing
2.	Routray, Bibhuti Bhusan;	The Spectre of Generative AI Over Advertising, Marketing, and Branding	Authorea Preprints (2024)	Review	IT
3	Iyer, Rohit; Patel, Neha; Bose, Deepa; Gupta, Rajesh;	Enhancing Advertising Creative Optimization through AI: A Comparative Analysis of Genetic Algorithms and Reinforcement Learning Techniques	International Journal of AI ML Innovations (2022)	Quantitative research design	IT
4	Kumar, Arun; Pandey, Mrinalini; Kumar, Abhishek;	Determinants of Consumers' Attitudes Towards AI-Enabled Advertising over social media in Indian Context: Applying and Extending the Technology Acceptance Model	Journal of Informatics Education and Research (2024)	Quantitative research approach	Marketing
5	Saifee M.; Khadse A.; Naidu G.; Graham D.; Sahu A.; Mashirkar S.	Impact of Artificial Intelligence on Advertising: A Bibliometric Analysis	Nanotechnology Perceptions (2024) Collegium Basilea	Bibliometric Review	Marketing
6	Sivathanu	Customers' online	International	Quantitative	Marketing

	B.; Pillai R.; Metri B.	shopping intention by watching AI-based deepfake advertisements	Journal of Retail and Distribution Management (Emerald), 2023	Approach	
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The articles under consideration are sorted upon examination of the full article. Studies in the above table:1 have been found to have been conducted on utilization of AI in advertising in two areas Marketing and IT. The first paper by Kumar et. al. (2024) emphasized on the considerable growth in digital advertising over the last 3 decades from 1993 to 2023 and offered insight into AI's revolutionary impact on advertising by conducting a bibliometric review. The study systematically traces the three phases: 1993 to 2013 saw significant growth in digital advertising and the last decade focused on using ICT and incorporating AI tools in advertising. They also emphasized the current surge in papers exploring the use of AI in advertising and forecast potential research in AI-enabled digital advertising. Iyer et. al. (2022) explores two prominent AI methodologies Genetic Algorithms (GAs) and Reinforcement Learning (RL) and their application to advertising creative optimization. The study employs a quantitative research design with an experimental approach in a controlled environment to assess their performance in optimizing advertising creatives. The comparative analysis reveals distinct strengths and weaknesses for both GA and RL and have a capability for enhancing advertising creative. The choice between the two methods should be guided by the specific requirements of the advertising campaign, target audience and the operational constraints of the marketing team. It also revealed that GA could provide initial exploration and population generation which can then be fine-tuned and continuously optimized using RL. Routray (2024) provides an in-depth review of the academic literature and industry commentary on the capabilities and limitations of current generative AI systems. The study further provides the capabilities of Generative AI, limitations, impacts on advertising & branding and the path forward. It unveils technologies like DALL-E, GPT-3 and Claude, displaying unprecedented abilities to autonomously synthesize novel text, images, music and more. And put forward that Generative AI can propel creativity to new heights by leveraging the complementary strengths of human & machine intelligence. Saifee et.al. (2024) presents a bibliometric analysis examining the impact of AI on advertising using the database from Web of Science from 2004 to 2024. The findings reveal the top-contributing country includes USA and the surge of research articles publication increases from 2020. The authors make the study an informationally valuable for the advancement of research in AI & advertising. Kumar et.al. (2024) in their study investigates the attitudes of social media users in India towards AI-enabled advertising focusing Technology Acceptance Model (TAM) and introducing 'perceived trustworthiness'. The study significantly contributes to the understanding of social

media users' attitude towards AI enabled advertisements on social media platforms. The results of the study unveils that the TAM framework supports the relationship between attitude towards social media advertising and impact on purchase intention. Furthermore, the incorporation of 'Perceived Trustworthiness' positively influences attitude towards AI enabled advertising. It also reveals a symbiotic relationship between marketers and consumers within social networks highlighting the bi-directional flow of information and real-time engagement. It uses convenience sampling technique and collect data with a sample of 258 participants. The collected data were analyzed using Structural Equation Modelling (SEM). Sivathanu et.al. (2023) in their study develops a conceptual model to understand customers online shopping intention by watching deepfakes videos using media richness theory and Manipulation Theory 2. It uses quantitative research design and collected data among 1,180 customers using structured questionnaire. The data analysed using PLS-SEM and unveils the antecedents as MR, IMT, personalization and perceived trust. The antecedents are helpful for designers, marketing managers and developers.

Discussion and Conclusion:

The review on the topic "Artificial intelligence and Advertising" systematically unveils the extant of studies from the 80 pertinent articles taken form Google Scholar and Scopus database from 2015 to 2024 December. The above review investigated the year wise trends, country wise trends, publisher/journal trends and elaborative review of the Indian research articles. Of the 80 articles USA is the highest contributing countries in research publication, in 2024 the highest number articles publishes, which peaked slightly from 2021. Elseveir and Routledge has highest number of publications, Journal of Advertising has highest article on the aforesaid topic. The keyword clouds reveal advertising, artificial, intelligence, AI and marketing finds the highest occurrence. The area of studies mainly includes marketing, advertising, computer science, IT and mass communication.

The elaborative review of the six articles from India gives an insight on how the growth of research on AI and Advertising has taken shape with few studies, which requires an extant exploration in Indian context as compared to other countries. From the six articles, 4 are from Google Scholar database and 2 from Scopus database. The area of studies focuses on marketing & Advertising (4) and IT (2). The studies include 3 review article and 3 quantitative research paper. It suggests that the studies within the three quantitative approach articles focus on online purchase intention by watching deepfake advertisement based a conceptual framework (Sivathanu et.al., 2023), comparative analysis of Generative Algorithm and Reinforcement Learning (Iyer et. al., 2022) and attitude of social media users towards AI-enabled advertising (Kumar et. al., 2024). Of the three review papers one is a bibliometric review on the impact of AI and advertising (Saifee et. al., 2024), one in-depth review of the academic work and industry

commentary (Routray, 2024) and one bibliometric review on the growth of digital advertising from traditional to Artificial Intelligence in advertising (Kumar et.al., 2024). Subsequently, the bibliometric review of the Web of Science database on the topic has been done by Saifee et. al. (2024) from 2004 to 2024.

Future research direction:

Artificial Intelligence and its contribution in advertising has been a new area of research for academicians and professionals. The future research direction may include various area under marketing, branding, advertising, mass communication and business management apart from the information technology. It may include brand attitude formation via AI-enabled advertising of a brand, comparative analysis of a social media advertising and AI-enabled advertising, may also include a case study research approach on its challenges, benefits and impact on consumers purchase intention. The focus area of mass communication is untouched which needs in-depth study by Indian authors whereas, Sabharwal et.al., (2022) has done some work in collaboration with Bahrain in mass communication. Baek (2023), Wu (2022) and Diwanji et.al, (2023) research works can be done in Indian context. Moreover, as IT/computer science is the backbone of the study so co-authorship works with advertising & marketing academician to unveil some untouched topic of research is much needed. The constraint of the study is that only Google scholar and Scopus database have been used for the review, whereas ebsco, proquest and more database can be used for further review. This study makes it possible to comprehend the application of AI in Advertising. Academician and Advertising professional will find it valuable for extending research in Artificial Intelligence and advertising in India in designing and approaching for new advertising campaign.

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