

## Exploring the Role of Artificial Intelligence in Digital Marketing Strategies

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**Abstract** In the globalised world, artificial intelligence (AI) has proved to have a significant impact on digital marketing. AI has transformed digital marketing campaigns with effective planning and companies have started to adopt AI for successful digital marketing. To enrich this literature, this study explored the role of AI in digital marketing strategies. In this study, a quantitative survey was conducted in which 115 participants were recruited through a random stratified sampling technique. Pearson product moment correlation and multiple regression analysis were used for data analysis. The results showed a strong positive relationship between AI and digital marketing strategies. AI could also account for 82.4% of the variance in digital marketing strategies. A comparison with previous literature reinforced the transformative impact of AI on digital marketing. The findings contributed to a nuanced understanding of the role of AI in shaping modern marketing strategies.

**Keywords:** *Artificial intelligence, Digital marketing, Digital marketing campaign, Effective marketing, Data-driven marketing*

### 1. Introduction

In the modern era, artificial intelligence (AI) has changed the dynamics of the world through different means, such as data collection and content generation. AI has made changes in the digital environment as well. These changes produce long-lasting effects on different aspects of human lives (Goralski & Tan, 2020). One of the aspects of AI has been reflected in digital marketing. In particular, AI has emerged as a transformative force in the world of digital marketing (Murgai, 2018).

“Artificial Intelligence” was first introduced by Stanford Professor John McCarthy in 1956 (Mitchell, 2021). In the beginning, AI was used to allow the computer to solve complex questions (Copeland, 2023). This project was extended to check whether human thinking aligns with computer processing. According to futurist Ray Kurzweil, the full potential of AI is dependent on our knowledge of the human brain (Fujita, 2018).

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In 2017, only 17% of marketing professionals in the United States were informed of the idea of AI (Alkhayyat & Ahmed, 2022; Davenport, 2018). Yet, the marketing landscape has shifted significantly in the past six years. In 2023, a survey of 3,812 digital marketers by Mark Webster showed that 75.7% of marketers now employ AI in their work, which is a 58.7% increase. Moreover, 68.5% of participants believed that AI-generated content is better than human-generated content. The fact that 85% of marketers use AI for content authoring exemplifies this development (Rahman & Watanobe, 2023). Recognising AI and exploiting its strengths has become critical for experts in the industry (Makridakis, 2017). AI programs have invaded numerous aspects of marketing, with article creation, copyrighting, and keyword research among the most common applications (Forrest & Hoanca, 2015). Whereas the incorporation of AI into digital marketing is apparent, there is a gap in knowing the amount of its effect and its potential implications. The ethical and social effects of AI's development in marketing are also unexplored. It is critical to consider how AI might completely replace marketing firms and whether jobs are at risk of automation shortly. Therefore, understanding how AI has transformed the field of digital advertising and the techniques that have propelled this shift is critical for remaining effective in the business.

Altogether, the purpose of this investigation is to fill gaps in understanding about AI's role in automating marketing operations. There is a lack of comprehensive research assessing the potential of AI to fully replace marketing agency services, particularly in the strategic and creative elements of marketing. The goals include identifying the benefits and hazards of AI in marketing. The following research objectives guide this research:

- Explore how AI has affected digital marketing tactics, focusing on the connections between successful consumer experiences and marketing campaigns.
- Examine how AI can predict digital marketing strategies and shift the marketing environment.
- Discuss the role of AI-powered tools and technologies used by digital marketers to improve campaigns, planning, targeting, and optimization in digital marketing fields.

## 2. Theoretical Framework

### 2.1. Artificial Intelligence

AI is a revolutionary technology in the world of digital marketing. AI has become a transformative force in the world of digital marketing, influencing marketing campaigns and their efficiency. As its foundation, AI is the embodiment of computer systems' ability to replicate human-like intellect and decision in the performance of activities that have historically relied on human cognition (Copeland, 2023). Organisations use AI techniques to build forecasting systems based on consumer actions (Wichert, 2020). The increasing volume and complexity of data, which exceeds the human capacity for efficient handling, is driving this paradigm change. Quantum computing, with its quick problem-solving capabilities, speeds up this process even more (Giani, 2022). Although the adoption of AI is not limited to giant firms, the incorporation of smaller companies is dependent on their desire to invest in this technology. Adarbah and Al-Badi (2023) outlined fifteen methods for AI that are useful to organisations of all sizes and are classified as machine learning techniques, applied propensity models, and AI applications. Based on previous data, these strategies build probability models and react to customer inquiries, changing consumer behaviour at various stages of the consumer lifecycle (Haleem et al., 2022). These phases include recruiting potential customers to the website (reach phase), raising awareness (act phase), converting interest into sales (convert phase), and maintaining existing purchasers (engage phase; Kumar & Gupta, 2016).

Machine Learning (ML) is a core component of AI that entails the investigation of techniques and statistical models that enable computer systems to complete tasks without explicit programming (Mahesh, 2019). In marketing, ML is the foundation for data interpretation and plan formulation. ML algorithms, such as Google's search engine ranking algorithm, learn to optimise performance autonomously over time (Mahesh, 2019). ML is divided into two categories: strong AI, which is capable of complicated learning processes comparable to or exceeding human skills, and weak AI, which

focuses on specialised tasks within defined domains (Khanam et al., 2021). The amount of data, while beneficial, offers obstacles for ML (Sterne, 2017).

ML is divided into a subclass called Deep Learning (DL). DL's main objective is to provide machines with the capacity for reasoning comparable to humans. There are several artificial networks with multiple decision-making process tiers being utilized in DL (Copeland, 2023). Some examples of DL applications are chatbots, audio recognition, virtual assistants, and Natural Language Processing (Copeland, 2023). DL can manage organised and unorganized data and information. It plays an influential role in the security of digital marketing and several industries. There are different models of DL that help to develop presumptions, and then they independently test them and improve their comprehension to produce applications like virtual assistants and picture recognition. (Lin, 2022). This model preserves the consumer and makes it profitable for a large-scale segment. DL increases hyper-personalization, which improves production and scales up engagement, efficiency, and the ability to forecast consumer behavior and production (Arora et al., 2021; Lin, 2022).

The use of AI technologies increases the productivity and efficiency of the company in terms of digital marketing experience. It also modifies the digital market by using different techniques of AI models. AI has transformed the business strategies for marketing and consumer interaction (Bag et al., 2022). The role of AI in digital marketing strategies explains the five-step roadmap. The first stage is the foundation, which highlights the need to collect first-party data, which is the foundation of the AI system (Huang & Rust, 2022). The second stage is the testing stage, which is built upon individual interactions and the change from generic marketing toward tailored strategies. There are various features of the client connection, which can be customized as the expansion phase progresses, resulting in a more comprehensive and reactive company experience (Matthyssens & Vandenbempt, 2010). Another transformative strategy extends customization and allows businesses to change the plan if needed. The last phase is the monetization phase, which allows the company to use AI skills to build software that will create a new income stream (Huang & Rust, 2022). This method will identify the role of digital marketing and improve customer acquisition, preservation, expansion, and support (Puntoni et al., 2021).

AI has a great influence on digital marketing. The main benefit of AI use in digital marketing is that it allows the advertisement to connect to the targeted audience (Venkatesan & Lecinski, 2021). As highlighted by Adarbah and Al-Badi (2023), this potential corresponds with the advantages of digital marketing, such as the worldwide and local reach of affordability and customization. However, addressing the rivalry dilemma is critical, as the increasing number of advertisements may overwhelm customers, which results in advertisement fatigue. Furthermore, worries about the confidentiality of information underscore the importance of moral AI techniques in digital marketing (Rodgers & Nguyen, 2022). Looking into the future, Hazan et al.'s (2022) depiction of the intersection of digital marketing and the metaverse gives an exciting area for investigation. Marketers will have the potential to interact with consumers in creative ways as the metaverse develops traction and becomes a vital component of customer interaction. According to Adarbah and Al-Badi (2023), businesses seamlessly transit to the cloud; it becomes imperative for financial institution employees to possess a comprehensive understanding of its features. The current state represents a change in perspective in the digital marketing world, which needs adaptability and new techniques.

## **2.2. Artificial Intelligence in Digital Marketing Strategies**

AI is evolving as a disrupting force in the world of digital advertising, offering new opportunities and challenges to firms looking to enhance their campaigns (Kopalle et al., 2022). This section investigates the influence of AI on several facets of digital advertising, offering insight into how AI technologies are transforming digital marketing strategies.

AI is playing a critical role in transforming the analysis of data in digital marketing. Marketers can use algorithm-based machine learning to evaluate massive data sets without unparalleled speed and

accuracy (Lee & Shin, 2020). This ability enables firms to obtain greater insights into consumer behaviour, preferences, and trends, allowing for improved promotional targets and customisation. AI-powered statistical analysis can recognise future patterns, helping businesses arrive at data-driven choices in addition to economically deploying resources (Aravindhana et al., 2023). AI provides hyper-individualisation of marketing information and suggestions (Aravindhana et al., 2023). Marketing information and recommendations based on hyper-individualization-like services are provided by AI (Aravindhana et al., 2023). AI is a smart technology that helps find customer tastes and develop a unique algorithm according to customer requirements, such as advertising product suggestions for customers according to the algorithm (Rodgers & Nguyen, 2022). Ultimately, it helps improve the customer experience and satisfaction on a personalization basis (Roy et al., 2017). AI systems also help the customer assist and use chatbots for customization, which leads to customer satisfaction and happiness.

Furthermore, AI-powered content-generating systems are becoming more advanced and delivering high-quality written and visual content. It helps the user create their blogs and produce descriptions or video scripts with the help of the latest trends (Paschen et al., 2019). AI generates data according to a strategy that is more effective and attractive based on themes and formats, which ultimately increases marketing efforts (Davenport, 2018).

AI also plays an important role in search engine optimization (SEO), which helps businesses become competitive (Rathore, 2016). It helps to increase the rank in search engines by using different keywords, methods, and website content. AI is also used in different voice search and natural language processing (NLP), which is effective for customer experience and communication in online space (Shaji George et al., 2023).

AI has changed the world of digital marketing dynamics. AI algorithms are used in advertisement programming networks to identify the customer and optimize the placement of ads (Choi & Lim, 2020). It also maintains the advertisement effectiveness and campaign on the rate of clicks. Moreover, it also opens a new market of influencers for the business and partnerships (Lou et al., 2023). This exponential growth of AI in digital marketing also creates ethical and legal challenges (Mogaji et al., 2020). Companies want to protect their data and algorithms, but AI uses an openness strategy. Compatibility with growing privacy regulations and responsible advertising methods is essential in AI advertising (Sterne, 2017). Carter (2018) found the crucial relevance of remaining current on developments in technology for individuals and enterprises. The combination of Information Technology (IT) and AI is increasingly pervasive in the field of digital marketing, significantly altering the relationships between organisations and their consumers. The evolution is being pushed by the requirement to create responsiveness, adaptability, inventiveness, and sustainability in the contemporary business environment.

According to Framingham (2020), International Data Corporation 2020 claimed that more than a third of AI initiatives are in advanced research phases, with over a quarter now in manufacturing and demonstrating the global rise of AI usage in organisations. In addition, as Framingham (2020) points out, firms are expanding their money into AI. In the domain of digital advertising, artificial intelligence plays a vital role in the automation of numerous processes such as program logging in, content copying, automated email interactions, and questionnaire filling, all of which are carried out with cost-effectiveness and quickness (Hassan, 2021).

Chatbot, as demonstrated by Zecevic et al. (2020), is an important application of AI in digital marketing. Chatbot improves comprehensive customer service by offering 24/7 help, communicating a sense of ongoing accessibility, and speeding up responses by utilising NLP. Technology not only lowers operational expenses for organisations, but it also allows customers to have individualised one-on-one interactions from the comfort of their own devices, saving both effort and time (Zecevic et al., 2020). Applications for AI include picture and speech detection, with the most common getting Siri, Alexa, and Google Home. Voice commands enable consumers to engage with a wide range of products, from cars to appliances, using these advances in technology. Furthermore, recognition of faces on devices and image identification on engines for searching demonstrate AI's involvement in gathering and using data about human beings to improve user experiences and refine targeting capabilities. AI-generated content, such as photographs and writing, as well as emulating human language and displays, has begun to blur the distinction between artificial and human-generated content (Tobaccowala, 2023).

AI also has a role in the production of content and efficiency due to NLP algorithms that evaluate information about customers to create customised papers, adverts, posts on blogs, and promotions. This customised content guarantees that advertising campaigns reach certain consumer categories efficiently. According to Kenton (2023), augmented and virtual reality (VR) technologies are at the cutting edge of digital marketing, providing fully immersive experiences that transcend above basic goods or services on displays. These developments allow customers to get an idea of what they might expect, considering VR as the sector's next important development (Marr, 2020). The marketplace's parabolic expansion, between \$829 million in 2018 to a projected \$31 billion in 2023 (statistics, 2023), demonstrates its growing importance.

Clustering, powered by unstructured algorithms, is used for advertising purposes to divide customers based on factors such as income, household size, and employment. This categorisation allows for enhanced advertising activities, which eventually conserves time and resources (Tu, 2011).

Chat-GPT is an advancement in intelligence, released by OpenAI at the end of 2022. Chat-GPT uses the next generation preprocessing technology (GPT) to make the conversation more human and has a great impact in every field. As Arora et al. (2021) show, special skills will expand to cover many different topics, increasing access to information and facilitating matches between skilled and unskilled workers (Rotman, 2023). It also covers the art sector, such as audiobook AI narration and script writing (Tobaccowala, 2023).

This review lays the theoretical foundation for exploring the role of AI in digital marketing and its practical impact within the organization. Research has shown that AI plays an important role in improving marketing campaigns. It helps in personalized and effective selling. Studies also highlight the impact of AI on the overall market and examine the role of experience management and the relationship between AI and digital marketing. It is revealed that advanced campaigns can be implemented more effectively. In addition, knowledge of AI technology is considered a factor in improving sales effectiveness. The relationship between AI and digital marketing suggests that a better understanding of AI technology can lead to better marketing results (Nair & Gupta, 2020).

### **3. Methodology**

#### **3.1. Participants**

In this study, a meticulous approach was taken to ensure the selection of a representative sample, with a total of 115 participants chosen through a straightforward random stratified sampling technique. The objective was to create a statistically valid sample that accurately reflected the diversity of urban areas and cities. The determined sample size was deemed sufficient for the investigation's scope. To offer a comprehensive understanding of the participants, demographic information was collected, revealing that 76% of the participants were identified as male, while 24% were identified as female. Furthermore, a significant majority (84%) fell within the age range of 21 to 25 years, with the remaining 16% falling between 15 and 20 years.

#### **3.2. Instrument**

Statistical research was conducted to analyze the complex relationship between AI and digital marketing systems (see appendix). The development of the research tool (online research report) was a careful process aimed at ensuring reliability and accuracy. A total of 13 research questions served as the basis for quantitative analysis and thematic analysis. The items went through a complex development process that started with defining strategies related to AI and digital marketing. An extensive review of current literature and expert advice formed the basis for the selection of the items. For each method, the research team carefully identified specific themes. Considering the importance and application of various aspects of AI in digital marketing.

Variables related to AI and digital marketing were thus divided into three substructures. Each substructure was represented by a specific query in which various aspects were evaluated. At the same time as the domain description, independent variables, and marketing campaigns were carefully developed. In addition, the level of experience was measured. This was a moderator variable with two

specific questions, allowing us to examine how experience affects the relationship between AI and digital marketing. Recognizing the potential influence of personal demographic characteristics on educational outcomes, four questions were therefore assigned to collect demographic information as intervening variables. This holistic approach aimed to capture the holistic perspective of the participants. Changes were made to improve the effectiveness of the tool, such as the introduction of a 5-point Likert scale. The process of questionnaire development was strictly evaluated for technical feasibility, reliability, and validity. The validity included testing the device in a pilot phase and adjusted based on the feedback. This iterative process confirmed that the updated questionnaire was suitable for capturing the complex relationship and nuances of AI and digital marketing.

### 3.3. Procedure

The data collection method involved administering an online survey questionnaire to 115 participants. The validation process was used, and missing values were obtained. The IBM Statistical Package for Social Sciences 21 (SPSS 21) was used for statistical analysis. As recommended by Gaskin et al. (2018), respondents with similar answers were considered to be 0 or a standard deviation close to zero. Data validation techniques were used to eliminate values and ensure participant integrity. The standard deviation was calculated for each case according to the approved protocol. The absence of significant errors in the database confirmed its reliability for further analysis.

## 4. Results

The research aimed to explore the role of artificial intelligence in digital marketing strategies.

### 4.1. Reliability Model

Table 1 provides a summary of the reliability estimates. SPSS was used to assess the instrument's reliability. Based on Cronbach's Alpha, the constructs were trustworthy, and the reliability value was above 0.70, as advised by Nawi et al. (2020). Construct validity was also verified by thoroughly analyzing the items in the questionnaire.

**Table 1**  
*Reliability Model*

	Cronbach's Alpha	N of Items
AI and Experience	.797	2
AI and Campaign	.936	2
AI and Effective Marketing	.818	2
Overall Model	.902	4

### 4.2. Descriptive Analysis of the Variables

Table 2 represents the descriptive statistics. It summarizes the mean and Std. Deviation of AI and digital marketing, experience, marketing campaign, and effective marketing.

**Table 2**  
*Descriptive Statistics*

	Mean	Std. Deviation	N
AI	3.0957	.70055	115
Experience	1.6696	.54163	115
Campaign	2.1217	.54849	115
Effective marketing	1.9478	.45583	115

### 4.3. Correlations between the Variables

To examine the correlation between AI and successful marketing, consumer experience, and marketing campaigns Pearson moment correlation was used. The results in Table 3 show that AI is correlated with experience ( $r = .685$ ,  $p < 0.01$ ), campaign ( $r = .905$ ,  $p < 0.01$ ), and effective marketing ( $r = .757$ ,  $p < 0.01$ ). Moreover, effective marketing is associated with experience ( $r = .605$ ,  $p < 0.01$ ) and campaign ( $r = .727$ ,  $p < 0.01$ ). Campaign is also correlated with experience ( $r = .580$ ,  $p < 0.01$ ).

**Table 3**  
*Correlation Results*

		Correlations			
		AI	Experience	Campaign	Marketing Campaign
<b>Pearson Correlation</b>	AI	1.000			
	Experience	.685**	1.000		
	Campaign	.905**	.580**	1.000	
	Effective marketing	.757**	.605**	.727**	1.000

\*\* Correlations significant at the 0.01 level

### 4.4. Multiple Regression Analysis

To analyse the possible effect of AI on established digital marketing companies and devise plans for their adjustment to a shifting marketing environment, multiple regression analysis was used. In the multiple regression analysis, two tests were utilised: the Analysis of Variance (ANOVA) for the regression model and the model summary measure.

**Table 4**  
*Analysis of Variance (ANOVA)*

ANOVA <sup>b</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.421	3	16.144	226.492	.000 <sup>a</sup>
	Residual	7.121	111	.068		
	Total	55.948	114			

a. Predictor: (Constant), AI

b. Dependent Variable: Digital Marketing Strategies

The ANOVA test results (Table 4) showed that the model is significant ( $F = 226.492$ ,  $p = 0.000$ ). The results indicated that the multiple regression is significant in the prediction of the role of AI in digital marketing strategies.

**Table 5**  
*Model Summary Table*

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.910 <sup>a</sup>	.824	.862	.250	.862	221.373	3	111	.000	1.619

a. Predictor: (Constant): AI

b. Dependent Variable: Digital Marketing Strategies

According to Table 5, the R-square is .824. As a result, according to the R-square value, our model's explanation for the dependent variable's variation is .824. Thus, the role of AI in digital marketing strategies can be explained and predicted by approximately 82.4%.

## 5. Discussion

The purpose of this study was to comprehensively explore the radical transformation of AI in digital marketing strategies and the relationship between successful marketing, user experience, and marketing operations. Results showed a strong relationship between these factors. To be specific, there was a strong correlation between AI and effective marketing and campaigning. That is, AI has a role in marketing and campaigning, which proves that the AI-powered tools and technologies used by digital marketers can improve campaign planning, targeting, and optimization in the field of digital marketing, leading to customer satisfaction and business growth. In essence, AI-powered tools and technologies create a great impact on business by increasing the effectiveness of marketing campaigns.

Regression analysis showed how effective the multiple regression model was in predicting the effect of AI. The study extends its research into the role of AI in making digital marketing decisions. While considering the global importance of AI and digital marketing, the discussion emphasizes the nature of the connection between these areas, highlighting the general scope of the research findings across different fields. Digital marketing shows that companies need to adapt to the dynamic nature of AI services and factors such as technological progress, ethics, and the growing new applications of AI in digital marketing.

The study aligns with the previous research findings that highlight the importance of marketing capabilities, customer value co-creation, and market orientation influenced by the development of AI digital marketing strategies (Wu & Monfort, 2023). The research results of Fuzzy-set Qualitative Comparative Analysis (FsQCA) show that these measures are necessary to improve the company's performance, including product features, functionality, service, shipping, and many more. This shows the importance of implementing AI strategies to effectively reach customers by understanding their behavior and service expectations (Ravi Kiran Varma et al., 2021). This aligns with the implications of AI marketing technology throughout the customer life cycle, providing a comprehensive sector-wise and region-wise analysis (Murgai, 2018).

Overall, this research study reported that AI has a potential impact on marketing. Recognizing the limitations of the small sample size, the discussion provides scope for future research and suggests new areas of study, such as technological development, ethics, and new applications. The article provides a promising research strategy in this area, not only contributing to contemporary knowledge but also stimulating further research into the role of AI in digital marketing. The comparisons showed that a global perspective that only moves away from the limitations in certain areas is needed to leverage the full role of AI in digital marketing practices (Dwivedi et al., 2021).

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## Appendix

### Survey Questions

No.	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	AI technology has the potential to significantly improve productivity and efficiency in the workplace.	1	2	3	4	5
2.	I believe AI technologies will continue to play a significant role in shaping the future market.	1	2	3	4	5
3.	AI has the potential to impact the digital marketing industry significantly.	1	2	3	4	5
4.	I believe AI can replace traditional digital marketing firms in the design and execution of marketing campaigns.	1	2	3	4	5
5.	If AI replaces traditional digital marketing firms, it will lead to business cost savings.	1	2	3	4	5
6.	AI-powered marketing campaigns are likely to be more effective than campaigns designed by traditional firms	1	2	3	4	5
7.	Digital Marketing Strategists have a deep understanding of consumer behaviour and market trends.	1	2	3	4	5
8.	The role of Digital Marketing Strategists requires creative thinking and strategic planning.	1	2	3	4	5
9.	AI technology can easily replace the tasks performed by Digital Marketing Strategists.	1	2	3	4	5
10.	AI can replace Data Analysts in Marketing by analysing and deriving insights from marketing data.	1	2	3	4	5

11.	AI can replace Social Media Managers in effectively handling social media accounts and engagement.	1	2	3	4	5
12.	AI-powered tools and technology have improved the efficiency of digital marketing campaigns.	1	2	3	4	5
13.	AI has helped digital marketers better understand consumer behaviour and preferences.	1	2	3	4	5