An Exploration of Key Factors Influencing Artificial Intelligence Integration in Digital Marketing

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Abstract

Artificial Intelligence (AI) is used in digital marketing, integrating machine learning, data analytics, and natural language processing technologies that allow for real-time, personalized customer engagements. Artificial Intelligence (AI) facilitates more specific advertising and effective resource allocation as businesses experience mounting competitive pressure. Nevertheless, challenges like the absence of competence, legacy infrastructure compatibility, and ethical challenges regarding bias and data safety must be addressed. Additionally, implementation relies upon con-

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sumer acceptance, training in Artificial Intelligence (AI) technology, and innovative human-AI collaboration. Organizations need to balance technology innovation and ethics in order to integrate AI in digital marketing most effectively and adapt to evolving market forces. Key findings regarding the main drivers of AI integration in digital marketing are presented in the study's conclusions. Based on the EFA and regression analysis results, marketers need to concentrate on six drivers to enhance purchase intent using AI in digital marketing. These drivers together propel the integration of AI into digital marketing, with firms implementing its potential to enhance consumer engagement, operational effectiveness, and growth while addressing challenges and ethical concerns regarding its application. The drivers of AI integration into digital marketing and its role in the current situation will be discussed in the current study.

Keywords: Artificial Intelligence, Customer satisfaction, Personalisation, Digital Marketing, Machine Learning, etc.

1. Introduction

"AI technologies such as ML and natural language processing (NLP) are employed in business automation to increase efficiency and simplify organisational processes (Li and Calantone, 1998; Deursen and Dijk, 2011; Brinjolfsson et al,2017). Different applications of artificial intelligence (AI) in business automation are categorised as predictive analytics, robotic process automation, customer service chatbots, and smart document processing etc. The

usage mirrors the adaptability of AI in fulfilling different business requirements (Davenport et al, 2018). AI business processes have a lot of advantages when used, ranging from minimized cost of operation, greater scalability, and a capability to automate mundane tasks (Alalwan, 2018; Dwivedi et al., 2019). This contributes to enhanced productivity and enables employees to dedicate their working hours to more value-generating tasks. The potential of AI to transform workflows and provide a competitive edge in the digital era is underscored, with a prediction that companies that leverage AI effectively will stand a better chance of success. (Lee et al, 2019; Davenport et al., 2020).AI becomes pivotal in propelling business operations and productivity, especially within the backdrop of the fourth industrial revolution that is all about digital competitiveness." It describes a rise in interest of business and small and medium-sized enterprises in the exploitation of AI tools for competitive purposes. The shift is brought about by "smart" automation, which cuts down on the effort required by humans in processes (Agnihotri, 2021). It talks about the role and value of AI in business management with a focus on how such technologies have the potential to affect management practice in the future. There is one survey providing a reference point when studying the revolutionary effect of AI on business practice management (Van Esch et.al, 2021). AI builds Management Information Systems (MIS) to optimise organisational performance (Chintalapati and Pandey, 2022). AI is playing a wonderful role in making routine activities and prediction analysis from past data, which can be a wonderful

support system for decision-making (Nair and Gupta 2021; Alkhayyat and Ahmed, 2022; Pendharkar, 2022)."

AI is having a great role in automating activities and predictive analysis from historical data, which can be an excellent aid to decision-making (Nair and Gupta 2021; Alkhayyat and Ahmed, 2022; Pendharkar, 2022). There are several cross-industry case studies that highlight potential benefits and drawbacks in AI implementation in digital marketing. These real-life case studies show how organizations are utilizing AI for business efficiency and competitiveness (Boddu et al., 2022). There are several technical and ethical challenges with AI implementation in Management Information Systems (Alkhayyat et.al, 2022; Amit et al., 2023). The integration of ethical considerations along the way of AI integration and implementation is a major concern for future research. It provides a three-pronged strategy for successful AI integration: prioritizing employee training, setting up cross-functional teams to resolve technical problems, and imparting ethics to AI practices to achieve trust (Ayer and Bright, 2024; Dong et al., 2024; Prabha et al. 2024).

Technical skills are also an important factor in deploying AI in digital marketing. Dynamic capabilities are a "term" employed to explain an organization's ability to integrate, build, and reconfigure internal and external employees' capabilities to deal with dynamic environments (Parekh and Mitchell, 2024; Armana, 2024). It is important to know how organizations can lever-

age machine learning (ML) and artificial intelligence (AI) technologies for competitive and social benefit (Shanmugam et.al, 2023; Gooljar et al., 2024). There is also a lot of research that explains the social implications of ML and AI technologies (Chowdhary and Soumya, 2024; Potwora et al., 2024), and it is suggested that their use can have positive impacts like the creation of jobs, increased incentives for trained employees, and improved gender parity in the workforce (Kedi et.al 2024; Vij et al., 2024). “The process of intelligent automation is software that utilises artificial intelligence and robotic engineering abilities to run automatic repeated steps or processes within an organisation or business (Vashishth et al., 2024; Raji et al., 2024; Rachmad, 2024). The application of artificial intelligence in digital marketing has changed how businesses engage with their clients, optimise advertisements, and enhance growth (Rahman et al., 2024; Kolar and Pisnik, 2024).

The integration of AI is also significantly driven by issues such as data privacy concerns, technology uptake, and “the requirement for specialised personnel (Odeyemi et al., 2024). AI possesses tremendous potential to revolutionise digital marketing strategies as it keeps developing, creating challenges as well as opportunities for companies (Raji et al., 2024; Sharabati et al., 2024; Jin and Viswanathan, 2025; Gude, 2025).The leading forces behind challenges in using AI in digital marketing are addressed, along with its existing uses and potential (Sipos, 2025; Kalaivani

et al., 2025; Swadhi et al., 2025; Larbi and Larbi, 2024). The research illustrates the main determinants of artificial intelligence adoption in digital marketing.

2. Objectives of the study

1. To study various concepts related to integrating artificial intelligence in digital marketing.
2. To explore the influencing factors affecting in integration of artificial intelligence in the area of digital marketing.
3. To analyze the impact of identified factors on the integration of artificial intelligence in digital marketing.

3. Review of Literature

Artificial intelligence incorporation in companies is the latest trend in research these days. It is seen that AI is helping businesses in multiple ways to enhance operational effectiveness (Dieursen and Dijk, 2011; Miklosik et al, 2019). For instance, it is helping them optimize their content for speech queries as voice search is becoming increasingly popular (via tools such as Google Assistant, Alexa, and Siri). One of the most essential elements of modern digital marketing is understanding voice search behavior and conversational keyword optimization (Alalwan, 2018). Customer engagement, process acceleration, and data-driven decisions that lead to overall success are the hallmarks of today's digital marketer. Those who fancy themselves futurists among the ranks of marketers have begun adopting artificial intelligence technologies

as a means toward even greater effectiveness. From the marketer's perspective, artificial intelligence and machine learning offer huge potential for more effective and even personalized methods. Data analytics allow for an even deeper dive than was possible back in the old days with just a spreadsheet. Together, these technologies are applied to enhance digital marketing effectiveness and organizational effectiveness (Lee et al., 2019).

Some of the most significant domains are impacted by intelligent automation, as several authors have noted (Miklosik et al., 2019; Mogaji et al., 2020)). This includes, for instance, the work done in customer segmentation and targeting, necessitating artificial intelligence for coherent and efficient execution; the intelligent targeting of content to the right audiences; and the optimally-performing, even over-performing, campaigns that it generates (Ribeiro et al., 2020; Davenport et al., 2020; Rebeiro and Reis, 2020). Still, segmenting isn't always a straight-line process. And the big ethical implications at stake, even before reaching algorithmic biases and privacy concerns, make these issues especially contentious for marketers (Thilagavathy and Kumar, 2021). Companies in the commercial world are being transformed by AI, and it's easy to see why: These technologies, such as machine learning and natural language processing, are very good at understanding and satisfying human needs. They can make sense of the historically unprecedented amounts of data we generate every day. And they can do this in real time, which is crucial for making decisions in an increasingly competitive world.

Some of the most evident and significant uses of AI for business are customer experience and marketing (Khatri, 2021). Social media management is also enhanced, with AI posting, scheduling, and even responding to customer questions via chatbots. In advertising, AI delivers personalized programmatic advertising by dynamically modifying bids and targeting in real-time for maximum ROI. AI-powered content generation tools assist in creating blog posts, product descriptions, and social media content quickly, while customer service is automated through chatbots, offering round-the-clock support. Moreover, AI charts customer journeys, measuring behavior at every touchpoint to provide context-specific, relevant content at every step. In sum, AI automation removes marketers from routine tasks to concentrate on strategy while enhancing efficiency and customer interaction. Businesses are able to use AI for automating routine tasks to free up valuable human resources for more complex and strategic ventures. AI-powered chatbots, for example, respond to customer inquiries, while predictive analytics aid in sales predictions, inventory control, as well as identifying trends. Chatbots use natural language processing and AI to improve customer interactions within organizations. These chatbots can immediately and precisely respond to client queries, enhancing service quality and customer satisfaction (Khatri et al, 2021; Thilagavathy and Kumar, 2021). There are many studies that explain how AI chatbots can learn from past interactions and foretell consumer requirements without direct human input (Pendhorkar,2022).

AI facilitates personalised experiences based on customer profiles and interests (Agnihotri et al, 2021). AI chatbots conserve business money and time by eliminating transitional behaviours and user experience thereby reducing live operators and support personnel necessary among the uses AI in marketing are customer service, sales, shopping and overall marketing strategies in general, which illustrate the broad reach of AI technologies in such functions (Boddu et al 2022; Shaik, 2023). A study brings together different findings to show how AI is changing traditional marketing into data-driven methods, making the process more efficient and improving customer engagement (Chintalapati et al, 2022; Nalbant and Aydin, 2023). AI plays a key role in strategic marketing decisions, highlighting its importance in modern marketing (Amit et al.,2023; Gao and Liu,2023). There are an analysis shows that AI helps simplify marketing tasks, enabling more personalized strategies and better predictions of market trends and customer behaviour (Shaik et al.,2023; Shanmugam et al., 2023). The study indicates a significant change in marketing, initiated by AI, that increases efficiency and customer engagement alongside promoting a cautious approach that maintains ethics in mind. The review provides an unmistakable picture of how AI aligns with marketing and can be used to guide future research and practical application (Nalbant et al, 2023).

When companies employ AI appropriately, they are better placed to thrive in a more digital and data-driven era(Gao and Liu, 2023). Predictive analytics is one of the other AI applications that enables

marketers to predict the needs and behavior of consumers, resulting in proactive responses and informed decisions. For instance, AI assists businesses to concentrate on the most potential leads and optimize the usage of resources by forecasting which consumers are more probable to make a purchase (Armana et al, 2023; Pranali et al., 2024). AI is transforming data-driven decision-making, automation, and personalisation in digital marketing. It allows businesses to produce very tailored offers and content based on customer data (Kedi et al., 2024; Mirjana et al., 2024). Conversational devices and AI-powered chatbots automate customer interactions to enhance customer satisfaction and service. Marketers can enhance their strategies using predictive analytics to predict campaign outcomes and consumer behaviours (Prabha et al.,2024; Maciej et al., 2024). AI facilitates programmatic and advertising SEO optimisation as well as content creation, enhancing productivity and return on investment (Tariq 2024). Although voice search optimisation and visual recognition create new channels for customers to interact with brands, sentiment analysis helps businesses monitor public opinion (Zhang,2024; Ritesh et al., 2024). Overall, AI is revolutionising digital marketing through its enhancement, targeting, and responsiveness to consumers' needs (Dada and Adekola, 2024). Recent literature on the role of AI in digital marketing reveals its revolutionary influence during the last decade. It considers AI to be a disruptive technology that can automate customer service, create content, and facilitate targeted advertising, which are key to improving digital marketing efforts

(Pranali et al,.2024).” Smaller organizations often lack the knowledge and understanding necessary to implement AI techniques effectively, which limits their digital marketing capabilities. (Maciej et al, 2024). A survey shows that clustering, classification, regression, and natural language processing are essential for user profiling and predictive analytics in marketing. The successful application of AI in major companies like Coca-Cola, Starbucks, and Nike illustrates how these organisations have leveraged AI to improve their marketing strategies. It provides a comprehensive overview of the current state of AI in digital marketing and highlights the challenges and opportunities for different types of companies (Mirjana et al, 2024).

Talent and skill development are crucial in the successful AI adoption heavily depends on internal talent, including marketers’ digital fluency and data science capabilities (Sharabati et al., 2024). Yet, many firms underestimate the learning curve and the human capital needed to interpret and implement AI insights effectively. The use of social media is important for digital marketing as AI is increasingly applied to social media analytics, targeting, and sentiment monitoring to improve engagement and content delivery. While brands benefit from algorithm-driven visibility (Vij et al., 2024), they risk losing control over their narrative due to algorithmic unpredictability and ethical concerns (Senyapar, 2024). Data availability is the backbone of AI success in marketing lies in data ranging from clickstreams to purchase history, enabling

deep personalisation. However, concerns over data privacy, ownership, and security remain obstacles, especially in highly regulated regions (Rolando 2024; Rahman et al., 2024)."

"Consumer expectations and personalisation explore how modern consumers expect hyper-personalised experiences (Chowdhary and Soumya, 2024; Vij et al., 2024; Rahman et al., 2024). AI enables dynamic and predictive personalisation to meet these demands. Nevertheless, over-personalisation can be seen as invasive or manipulative, leading to consumer discomfort or opt-outs. AI reduces human workload through process automation (Raji et al., 2024), improving efficiency in tasks such as lead scoring, ad bidding, and email targeting. Yet, some scholars argue that full automation may alienate consumers who prefer human contact in high-involvement decisions (Mouloudj et al., 2024Larbi and Larbi, 2024; Sipos, 2025). Technological infrastructure has given robust infrastructure, including cloud computing (Senyapar, 2024; Jin and Viswanathan, 2025), CRM integration, and API connectivity (Gude, 2025), enabling smoother AI deployment in marketing. Organisations with outdated legacy systems or weak data pipelines struggle with implementation, widening the digital divide (Hwang et al., 2024; Kalaivani et al., 2025; Swadhi et al, 2025). "

(Conceptual framework of factors influencing AI integration in digital marketing Source: author)

4. Research Gap

"The integration of AI in digital marketing is well-theorized in terms of capabilities but underexplored in terms of internal readiness, ethical constraints, and consumer perceptions (Alalwan, 2018; Amit et al., 2023; Prabha et al., 2024; Ritesh et al., 2024; Vashisht et al., 2024; Potwara et al., 2024). Specifically, there's limited multi-factorial research examining how technical, human, and consumer-centric variables collectively influence AI adoption success (Rachmad, 2024; Dong et al., 2024). Limited research exists on how different degrees of AI maturity across organizations influence the speed and success of marketing integration. There is little empirical research quantifying the impact of skill gaps on AI adoption in marketing teams, especially in developing

economies. Studies are sparse on how AI-mediated content personalisation affects consumer trust and long-term brand relationships in social channels (Zhang et al., 2024; Ritesh et al., 2024; Larbi and Larbi, 2024). Research rarely addresses the trade-off between data richness and ethical marketing practices from the consumer's perspective. More nuanced studies are needed to explore the boundary between effective personalisation and perceived creepiness in AI-led campaigns. There's a lack of contextual research into which areas of marketing automation benefit most from AI without compromising customer satisfaction (Kolar and Pisnik, 2024; Parekh and Mitchell, 2024; Iyer and Bright, 2024; Swadhi et al., 2025; Kalaivani et al., 2025). Few studies consider infrastructure readiness as a moderating factor in the relationship between AI capabilities and marketing performance."

5. Research Methodology

"This study employs a quantitative research method. This design makes it possible to assess the factors affecting AI integration with digital marketing fully. To identify the factors affecting AI integration, initially, Exploratory Factor Analysis (EFA) is used. The study analyses the descriptive statistics of demographic variables where the populations are the online buyers and their impact on the identified factors such as Advancement in AI (Artificial Intelligence) and ML (Machine Learning), Data Availability, Consumer expectations and Personalization, Automation and Efficiency, Technological Infrastructure, and Talent and Skill Development. Later on,

multiple regression analysis is done to analyze the impact of the identified variables on the AI integration in digital marketing. A total of 21 items are selected for the data collection instrument. In a pilot study, 25 questionnaires were given to a population of 100 with a validity check, and it had a reliability of Cronbach's Alpha 0.867. After that, the items in the data collection instrument are reduced to 21 as per the requirement and distributed to 256 samples. After collection, a total of 200 feedbacks are considered for further research."

5.1 Data Collection Instrument

"A carefully crafted questionnaire has been created for this research to gather primary data. The questionnaire includes a mix of closed-ended and Likert-scale questions designed to correspond with the variables and goals of the study. The collected sample size is 200. Questionnaires are referred from various literature (Li and Calantone, 1998; Deursen and Van Dijk, J., 2011; Alalwan, 2018; Miklosik et al., 2019; Davenport et al., 2020; Dwivedi et al., 2021; Chawla et al., 2023; Gao and Liu, 2023)."

5.2 Sources of variables

Sl No	Theme	Sources
1	Advances in AI and ML	McKinsey Global Institute (2021); PwC AI Predictions Report

2	Data Availability	World Economic Forum – Data Access and AI (2022); OECD Data Governance Report
3	Consumer Expectations and Personalization	Accenture Technology Vision (2023); Salesforce State of the Connected Customer
4	Automation and Efficiency	Deloitte State of AI in the Enterprise; IBM Automation Survey Report
5	Technological Infrastructure	Gartner IT Infrastructure Readiness Report; Microsoft Azure AI Infrastructure Guide
6	Talent and Skill Development	LinkedIn AI Talent Trends Report; Coursera Global Skills Index
7	AI Integration in Digital Marketing	Statista AI in Social Media Report; HubSpot State of Social Media

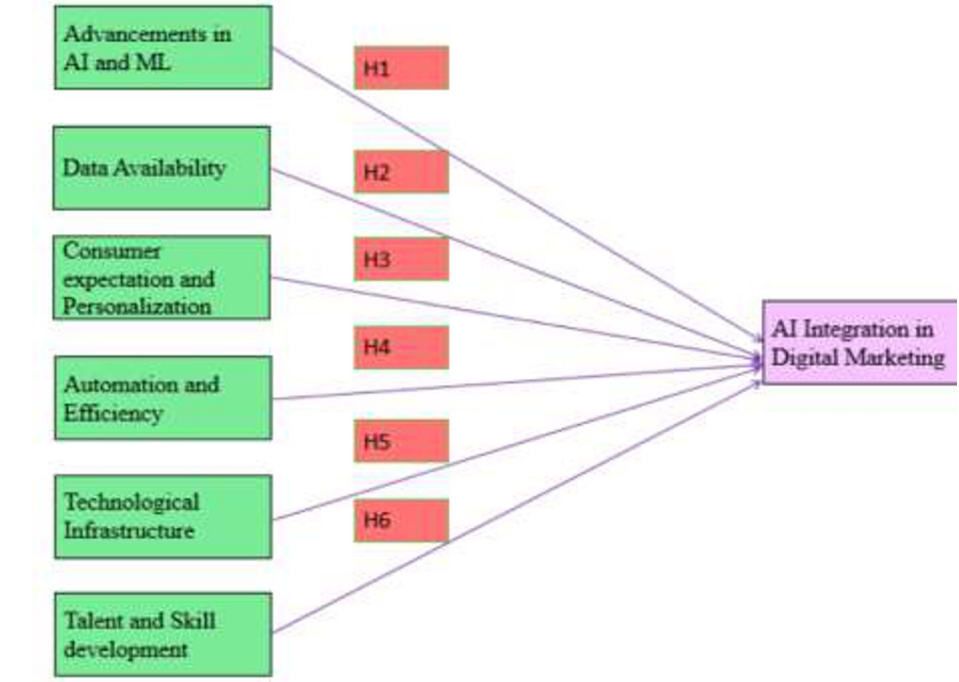
5.3 Data Collection Instrument with Likert scale (1-7)

Sl No	Items	1	2	3	4	5	6	7
X1	AI integration in digital marketing needs technical expertise.							

X2	AI integration needs proper skills and training.							
X3	AI integration in digital marketing enhances decision-making in every field.							
X4	AI integration in digital marketing helps in operational efficiency							
X5	Integration of AI in digital marketing helps in the prediction of customer behaviour.							
X6	Machine learning helps in the integration of AI in digital marketing							
X7	Integration of AI in digital marketing helps in increasing accuracy.							
X8	Technical infrastructure is needed for the integration of artificial intelligence in digital marketing.							
X9	Technical infrastructure is an important key factor for integrating AI in any type of business process.							
X10	AI and ML help in automation in business organizations.							
X11	AI and ML increase efficiency in business organizations.							
X12	AI helps in predicting consumer behaviour.							
X13	AI helps in operational efficiency.							
X14	AI helps in the personalization of the demands of consumers on websites.							
X15	AL, ML, and NPP help in the AI integration in digital marketing							

X16	The usage of AI depends on the quality of data.							
X17	AI helps in automation and efficiency in the marketing of products.							
X18	Data availability is an important factor in AI integration in business processes.							
X19	AI integration depends on the quantity of data.							
X20	Advanced technology is required for AI integration in different fields.							
X21	Availability of data is an important factor influencing the AI integration in digital marketing							

5.4 Hypothesis Formulation and Structural Framework



(Figure No. 1: Structural Framework and Hypotheses Formulations)

(Source: Author)

Ha1 = Advancement in AI and ML is having an impact on AI integration in digital marketing.

Ha2 = Data availability is also having an impact on AI integration in digital marketing.

Ha3 = Consumer expectations and personalization are having an impact on AI integration in digital marketing.

Ha4 = Automation and efficiency are having an impact on AI integration in digital marketing.

Ha5 = Technological infrastructure is having an impact on AI integration in digital marketing.

Ha6 = Talent and skill development are having an impact on AI integration in digital marketing.

6. Data Analysis

The reliability statistics details are provided in Table 1.

Table 1: Reliability and Validity Test

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
.868	.860	21

The details of KMO & Barlett's test of sphericity is provided in Table 2

Table 2: KMO and Bartlett's Test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.728
Bartlett's Test of Sphericity	Approx. Chi-Square	6143.777
	df	210
	Sig.	.000

From Table No. 2, it is observed that the KMO value is 0.728, and from Table No. 1, it can be concluded that Cronbach's Alpha is 0.860, and p is smaller than 0.05. So, the data is reliable, significant, and adequate for further studies.

The details of sample demographics are provided in Table 3

Table 3: Descriptive Analysis of Demographic Characteristics

Factors	**Items**	**Frequency**	**Percent-age**	**Cumula-tive %**
Gender	Male	105	55.85	55.85
	Female	95	47.5	100.0
Age	18-30	66	33.00	33.11
	31-50	99	49.50	49.50
	51 Above	35	17.50	100.0
Marita Status	Married	104	55.66	55.66
	Unmarried	96	48.00	100.0
Occupa-tion	Student	69	34.50	34.50
	Service	86	43.00	43.00
	Homemaker	45	22.5	100.0
Qualifica-tion	12^{th}	51	25.5	25.5
	Graduate	67	33.5	33.5
	Post Gradu-ate & Abov e	82	41.00	100.0
Income	10000-25000	35	17.5	17.5

	25001-40000	50	25.00	25.00
	40001-50000	69	34.50	34.50
	50001 Above	46	23.00	100.0

Table 3 presents a detailed demographic and socioeconomic breakdown of respondents from a survey, highlighting the frequency and percentage distributions across six key factors: Gender, Age, Marital Status, Family Type, Qualification, and Income. Here is an in-depth description of each factor: Male. Out of the total respondents, 105 are male, accounting for 55.85% of the survey population. This majority indicates a slightly higher male participation in the survey. There are 95 female respondents, making up 47.5% of the total. This shows a significant representation of females, though less than males. Between 18-30 years of age group consists of 66 respondents, representing 33.00% of the total respondents. It suggests considerable participation from younger adults. 49.50% of the total respondents belong to the 31-50 years of age group. This indicates a significant middle-aged demographic presence. 17.5% of the total respondents belong to the group having an age of more than 50 years. It reflects a smaller but notable representation of older adults. 55.66% of the survey population is married. This majority indicates a higher number of married individuals.

48% of the population is unmarried. 34.5%, 43%, and 22.5% of the total respondents belong to student, service, and homemaker categories. 25.5%, 33.5% and 41% of the total respondents belong to the 12th, graduate, and postgraduate categories, respectively 17.5 17.5%, 25%, 34.5% and 23% of the population belong to the income level from 10000-25000, 25001-40000,40001-50000 and more than 50001 subcategories.

To comprehend the cumulative distribution of responders across each component, the table additionally presents cumulative percentages. Insights into the distribution and prevalence of various categories within the sample can be gained by studying the demographic and socioeconomic features of the survey population using this thorough breakdown.

Table 4 shows total variance explained by the model.

Table 4: Total variance explained

Total Variance Explained									
Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**

1	9.046	43.077	43.077	9.046	43.077	43.077	4.922	23.437	23.437
2	3.542	16.864	59.942	3.542	16.864	59.942	4.911	23.386	46.822
3	3.140	14.952	74.893	3.140	14.952	74.893	4.158	19.800	66.622
4	1.404	6.684	81.577	1.404	6.684	81.577	1.646	7.837	74.459
5	1.162	5.535	87.112	1.162	5.535	87.112	1.595	7.593	82.052
6	1.101	3.336	90.448	.701	3.336	90.448	1.291	6.149	88.201
7	1.060	2.666	93.114	.560	2.666	93.114	1.032	4.913	93.114
Extraction Method: Principal Component Analysis.									

The Table 5 shows rotated matrix for factor components

Table 5: Rotated Matrix Component Matrix

Rotated Component Matrix[a]							
	Component						
	1	2	3	4	5	6	7
X4	.932						
X7	.897						
X5	.854						
X3	.838						
X6		.871					
X20		.764					
X15		.922					
X21			.969				
X19			.934				

X16			.685				
X18			.510				
X11				.785			
X12				.843			
X14				.871			
X10					.641		
X13					763		
X17					.642		
X9						.573	
X8						.843	
X1							.654
X2							.714
Extraction Method: Principal Component Analysis.							
Rotation Method: Varimax with Kaiser Normalisation.							
a. Rotation converged in 8 iterations.							

It can be concluded that from Table 4 that seven constructs are derived from the exploratory factor analysis. Here, 21 items are dimensionally reduced to seven variables or factors, and it is selected as the eigenvalues are greater than 1>1), having the cumulative variances after the principal component analysis (PCA) described as 23.43%, 46.82%, 66.62%, 74.45%, 82.05%, 88.20%, 93.11% respectively. A total of 21 items are reduced to seven key factors.

The details of multiple regression model is shown in Table 6

Table 6: Multiple Regression

Coefficients[a]

Model		Unstandardized Coeffcients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.089	.344		3.104	.003	.303	1.782
	Advances in AI and ML	.048	.038	.061	1.482	.001	-.017	.125
	Data Availability	.050	.023	.061	5.743	.002	-.003	.104
	Consumer Expectations and personaliza-tion	.058	.033	.057	4.586	.002	-.015	.141
	Automation and Efficiency	.236	.038	.178	4.945	.000	.133	.231
	Technologi-cal Infrastructure	.267	.043	.238	6.000	.000	.171	.344
	Talent an skill development	.137	.041	.111	2.706	.002	.037	.227

a. Dependent Variable: AI integration in digital marketing

7. Findings and Discussion

"The study's conclusions include insightful information about Key factors influencing AI integration in digital marketing. Analyzed from the Exploratory Factor Analysis (EFA); Table No 5; it can be concluded that there are six main factors where marketers should concentrate to increase the buying intention through AI integration in digital marketing such as advancement in artificial intelligence and machine learning (23.43%), data availability (46.82%), consumer expectations and personalization (66.62%), automation and efficiency (74.45%), technological infrastructure (82.05%), talent and skill development (88.20%). The dependable factor of AI integration in digital marketing is having a variance of 93.11%. Together, these elements influence how AI is incorporated into digital marketing, with companies using its potential to boost customer engagement, increase operational effectiveness, and spur expansion while negotiating the difficulties and moral dilemmas associated with its application."

Digital marketing's incorporation of AI and ML has completely changed how companies interact with their clientele and maximise their advertising efforts. By evaluating large amounts of client data, enhancing targeting and segmentation, and producing customised content instantly, AI and ML make highly personalised marketing possible. These technologies automate operations to increase productivity and cut expenses, improve customer experiences with tools like chatbots, and offer predictive analytics for better decision-making. Furthermore, by optimising ad

spend, AI and ML enhance ad targeting, increase ROI, and enable quick, real-time marketing reactions. All things considered, the application of AI and ML to digital marketing improves client engagement, personalisation, and operational effectiveness, setting up companies for more success in a cutthroat industry. From Table No. 6, it is observed that the p-value is 0.001 (<0.05); so, it is statistically proven that there is an impact of advancement in Artificial Intelligence and machine learning on the Artificial integration in digital marketing.

Since the quality, quantity, and diversity of data accessible greatly influence the efficacy of AI-driven tactics, data availability is essential to the integration of artificial intelligence (AI) in digital marketing. Large datasets are necessary for AI and machine learning algorithms to learn and produce insights, which help companies anticipate customer behaviour, optimise marketing efforts, and provide individualised experiences. AI systems may improve decision-making, target particular audiences more effectively, and hone content plans with more thorough and precise data. However, little or subpar data might make it more difficult for AI to produce insightful analysis, lower forecast accuracy, and ultimately lessen the impact of digital marketing initiatives. Thus, to fully utilise AI in achieving good marketing outcomes, strong data gathering and administration are necessary. As p value is 0.001 ($p<0.05$), it is observed from Table No. 6 that the data availability is an important factor influencing all the operations in artificial integration in digital marketing.

Artificial intelligence (AI) use in digital marketing is heavily influenced by consumer demands and the increasing demand for personalization. “Analysing vast amounts of customer information, artificial intelligence (AI) allows businesses to deliver targeted advertising, product recommendations, and customized content based on the increasing demand for customized experiences by consumers. Solutions that are artificial intelligence (AI) powered can forecast user behavior and preferences, making it possible for relevant, real-time interactions that drive customer engagement and satisfaction.” In addition to satisfying customer expectations, the ability to tailor marketing messages and experiences according to personal preferences increases conversion rates and cultivates brand loyalty. However, the quality of the data and the complexity of the algorithms used to generate these customized experiences determine whether AI can live up to these expectations. From Table 6, it is statistically proven that there is an impact of consumer personalisation and expectation on the artificial integration in digital marketing, as the p-value is 0.002 ($P<0.05$).

It is clearly shown in Table No. 6 that there is an impact of automation in the artificial integration in the Digital marketing as p is smaller than 0.05. AI makes it possible to automate processes like ad targeting, email marketing, social media management, and content production, greatly cutting down on the time and effort needed for manual completion. Through the analysis of real-time data, machine learning algorithms optimize campaigns, increasing targeting accuracy and guaranteeing that advertisements are seen

by the appropriate audience at the appropriate moment. By removing tedious processes, reducing human error, and freeing up marketing teams to concentrate on more strategic decision-making, this automation not only conserves resources but also improves operational efficiency.

Since strong infrastructure is required to support AI-driven products and platforms efficiently, the influence of technological infrastructure on the integration of artificial intelligence (AI) in digital marketing is critical. To store and process the massive volumes of data AI needs for machine learning algorithms and real-time analytics, businesses demand sophisticated data storage systems, high-performance computing capabilities, and secure cloud services. AI tools may perform poorly or not produce the intended insights and outcomes if the proper technological base is not in place. AI applications can grow, adjust to growing data quantities, and easily interface with current marketing systems like CRM platforms, analytics dashboards, and customer engagement tools when they have a solid infrastructure. So statistically also it is proven that there is an impact of infrastructure on AI integration in digital marketing from Table 6 as $P<0.05$.

The successful use of AI in online advertising relies significantly on the growth of abilities and expertise. Companies need skilled professionals who can design, apply, and enhance AI-powered marketing plans as AI progresses. Marketers must be skilled in data examination, understanding insights, and making choices based on data, as well as being adept at using AI tools. Companies can completely

employ AI by funding skill growth, which entails teaching employees about AI uses and promoting cross-disciplinary expertise in tech and advertising. Companies may waste AI potential if they don't have enough knowledge, leading to wasted efforts or missed chances. Therefore, to enhance the impact of AI on online advertising, it's crucial to focus on continuous education and skill improvement. From Table No. 6, it is shown that special knowledge is required for the combination of AI with digital marketing, since the p-value is below 0.05.

7.1 Originality/Value

"The study's creative element lies in its detailed analysis of the elements that encourage and obstruct the application of AI in the marketing sector. Despite numerous talks on AI in marketing, this research offers a fresh perspective by merging the different, linked factors that together shape how businesses employ AI in their marketing plans, such as data access, shifts The research further points out the disadvantages of AI, which are often ignored in the literature, along with its advantages, such as better efficiency and customization, and issues like privacy and the need for ongoing skill development. This balanced evaluation of pros and cons provides a deeper and distinct understanding of AI's role in online advertising. A deeper and distinct understanding of AI's role in online advertising is provided by this balanced evaluation of its pros and cons."

7.2 Limitations of the study

"Since AI systems primarily require the right, complete, and timely data to deliver output, data availability and quality issues are among the limitations of the study in answering the integration of artificial intelligence (AI) in digital marketing. Unreliable or insufficient data will break the core of AI in optimizing marketing strategies or forecasting correctly. “A further constraint which potentially exists is the expense and difficulty of implementing AI solutions: small companies, having fewer resources and technological infrastructure, might be unable to utilize AI solutions. With the fast pace of technological progress, the AI technologies and methods can become outdated quite quickly, and keeping track of changing industry needs may be an issue. Privacy issues and ethical considerations regarding the use of data may restrict the widespread use of AI in internet marketing.”

7.3 Future scope of the study

Since AI is constantly evolving and impacting most areas of advertising, research on AI usage in online marketing has numerous potential applications. Future research may involve AI becoming more effective at predicting what customers are going to do so that marketing and advertising become more personalized and targeted.” Additionally, it could be examined how AI can be integrated with advanced technologies such as virtual reality (VR) and augmented reality (AR) to create captivating consumer experiences. The re-

search could also investigate the ethical consequences of AI in advertising, particularly regarding privacy, transparency, and the careful management of client information.

7.4 Implications

7.4.1 Practical Implications

The practical consequences of the study provide useful information for companies looking to boost customer experience, increase operational efficiency, use AI in marketing campaigns, and maintain their competitiveness in a quickly changing digital market. Businesses can use AI to develop highly individualized and targeted marketing efforts. Companies may determine individual preferences, behaviours, and needs by analyzing client data using machine learning. As a result, each customer's journey is catered for in the delivery of personalized content (e.g., email campaigns, product suggestions, and social media adverts), increasing customer engagement and conversion rates.

7.4.2 Managerial Implications

Regarding the managerial outcomes specified by the study, company executives must prioritize AI integration when doing marketing planning for efficiency, client engagement, and personalization. Therefore, managers should direct their focus on the deployment of AI technologies and decision-making processes that rely on data so that campaign performance is optimally realized and operations are smooth. Investments to successfully implement AI include hiring AI experts and providing training to staff. If AI is to be utilized,

associated ethical issues concerning data privacy, confidentiality, and transparency must be acknowledged. Hence, for adjustments to ever-changing trends and technologies, managers must give themselves freedom.

7.4.3 Social Implications

Societal consequences discussed in the study show ways in which AI-driven marketing touches upon customer experiences, privacy, and trust. When companies leverage AI for personalized marketing, companies impart to consumers the enjoyment of having pertinent and interesting content, but simultaneously, consumers worry about data protection and ethical usage of individual data. In the view of the study, the transparency of AI methods is essential for building consumer and company trust. Furthermore, it may be noted that any changes in consumer behaviour due to the operation of AI are likely to influence wider societal trends, expectations, and preferences. More opportunities and challenges for the workforce could be created by the automation of marketing activities due to their implications on employment. Ethical use of AI would eventually create a better marketing environment focused on customers.

7.5 Conclusion

Personalization, efficiency, and data-driven strategies come into play with AI integration in digital marketing, thus shaping the industry from a useful aspect. The key factors that influence this adoption are technological advancements, data availability, organizational

readiness, cost, ethical dimensions, and customer acceptance. By taking measures that address these factors, businesses can harness the power of AI for creating impactful customer experiences and suggest sustainable growth in a competitive environment.

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