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FROM SEARCH ENGINES TO AI ENGINES: HOW GENERATIVE ARTIFICIAL INTELLIGENCE IS TRANSFORMING CONSUMER DISCOVERY, DECISION-MAKING, AND DIGITAL MARKETING ECOSYSTEMS

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Abstract

The rapid evolution of generative artificial intelligence (AI) significantly transformed consumer discovery, decision-making behaviour, and digital marketing ecosystems across digital platforms. This study examined the influence of AI-powered technologies on online consumer interactions and marketing transformation in contemporary digital environments. The research investigated the role of conversational AI, recommendation systems, predictive analytics, and automated content generation in improving personalized consumer experiences and marketing efficiency. A quantitative research design was adopted, and primary data were collected from 420 respondents consisting of digital consumers and marketing professionals through a structured questionnaire. Statistical analysis revealed high respondent agreement regarding the impact of generative AI on consumer discovery processes (M = 4.24, SD = 0.61), consumer decision-making behaviour (M = 4.18, SD = 0.64), and digital marketing ecosystem transformation (M = 4.36, SD = 0.56). The findings indicated that AI-powered systems improved information accessibility, personalized engagement, customer interaction, and operational efficiency within digital marketing platforms. The study also identified ethical concerns related to data privacy, transparency, misinformation, and algorithmic bias that influenced consumer trust and technology acceptance. The results confirmed that generative artificial intelligence fundamentally reshaped digital consumer behaviour and modern marketing communication systems. The study contributed valuable insights for marketers, organizations, and policymakers seeking to implement responsible and effective AI-driven marketing strategies in increasingly automated digital ecosystems.

Keywords: Artificial Intelligence, Consumer Behaviour, Digital Marketing, Generative AI, Marketing Ecosystems, Personalized Recommendation

1. Introduction

In the era of global industries, generative artificial intelligence (AI) radically changed the digital communication landscape, consumer attitudes and markets online, and even marketing environments around the world. In contrast to the classical search engines that focused on queries entered as keywords in the search box, AI-powered search engines added conversational capabilities, predictive personalization, and suggestions that took into account the context, changing the consumer search experience in the digital world. The businesses started to make use of Generative AI in digital marketing to create better content, manage meaningful interactions with customers and to automate their content creation. Kumar et al. (2024) and Grewal

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et al. (2024) have also observed that GPT was making an increasingly significant mark in information-processing in digital environments, purchase-decisions by users and their growing confidence in the brand. The technological changes that took place changed the game of search engine optimization, marketing methods, and customer management in today's digital world.

AI-driven conversational systems also revolutionized the nature of consumers' decision-making processes. For their part, Generative AI systems changed the face of search results, producing more than just textual inserts and synthesized responses and offering personalized recommendations and Chat support for customers who weren't limited to static results. AI-driven digital assistants were also used to connect consumers to brands in a personalized manner and with intelligent recommendations, which were found to be a key to creating a new form of intelligence connected with decision making and emotional engagement (Mumtaz et al., 2025; Lopez-Lopez & Bara Iniesta, 2025). With respect to marketing content, more and more marketers started to leverage on Artificial Intelligence tools to produce content that was both personalised and responsive, automating the customer support process hence. More targeted, and effective customer marketing messages could be created using AI-generated content, predictive analytics and automated customer support systems. Passive retrieval of info by AI-systems was used to highlight the change from passive experiences to interactive and intelligent experiences.

Generative AI affects the marketing system in several ways, including its impact on content era, consumer segmentation, and customized marketing. In the business world, AI tools were utilized to create marketing content, enhance customer experience, and gain insights from consumer behaviour using a wealth of data. Entity leverages AI technologies to generate promotional content, refine the buying process for its customers while studying their customer predispositions from vast amounts of data. It was found that generative AI improved efficiencies and allowed companies to create very personalized content for digital channels (Hermann & Puntoni, 2024). Issues around transparency of algorithms, misinformation, ethics and data privacy were raised in the context of AI-powered marketing systems. As such, the “infusion” of artificial intelligence in digital marketing created both opportunities and dangers for organizations and policy makers alike, as well as for consumers. The advancements indicated that there was a greater need to explore implications of the use of generative AI in the context of modern digital systems.

The shift from search to AI-powered engines was a paradigm change in the interaction and communication landscape between the online searcher and the marketing message. Conversational AI, recommendation engines, and the same technologies providing the generative content present a major shift in the traditional digital marketing landscape, and reshaped consumer search, evaluation, and online buying processes. Scholars highlighted how AI-driven ecosystems affect people's perception of authenticity, trust and engagement with a brand, not only in purchasing processes but also in general brand perception (Khoso et al., 2025; Vidrih & Mayahi, 2023).

Background of the Study

Within the past decade, digital marketing has emerged from the era of technology and advanced tools and has transformed significantly with the advent of Artificial Intelligence technologies, machine learning systems and big data analytics. The initial approach to digital marketing was to use search engine optimization (SEO), banner advertising, and social media campaigns to reach consumers. But with the advent of generative AI applications, an era of artificial intelligence in digital interactions and communications has come and gone. AI-powered solutions were increasingly used in businesses to study user behaviour, create marketing materials, and forecast customer preferences more accurately. Grewal et al (2024) revealed that generative AI transformed the role and structure of marketing communication in the sense of engagement in real-time, automatically creating stories, and adjusting to customer needs in online settings.

Rajendra proposed a policy that included conversational AI technologies driving the transformation of online consumer discovery processes, on a large (digital) scale. Consumers interacting with AI assistants and chatbots enabled personalised product suggestions and comparisons, as well as fast and instant answers to queries. Consumers were turning to highly capable voice assistant devices and chatbots for customised recommendations, to make comparisons and to receive immediate answers to their queries. As the study by Mumtaz et al. (2025) demonstrated, interactions that help with AI can improve the contentment of customers,

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confidence in their purchases, and the convenience of information being accessible in online platforms. AI engines adding to ease an overload of information as well, by sifting through a plethora of electronic information with concise and relevant recommendations. Consumers enjoyed an "interactive, efficient and personalized experience,", as the developer puts it, which would be more fun than when they search using a usual search engine. It revolutionised the marketing and communication strategy of the Customer acquisition funnel.

With the introduction of AI-powered Generative tools, AI-driven automated content creation and predictive customer analytics added another layer of enhancements to digital marketing processes. Organizations reached out to the utilization of AI-powered tools to improve their marketing strategies, from optimizing their ads to reaching the target audience by frequently captivating influencers and connecting with their customers. Marketing tactics such as advertising, emails, influencer marketing, and CRM workflows are successfully implementing AI-gaced systems, resulting in more consistent and targeted rep Grouping. Similarly, the AI-driven marketing impressions revealed that businesses could be flexible on how they approach their customers and adjust their approach as per the ever-evolving customer needs (Kumar et al., 2024). The capability of generative AI to address in several languages, produce visual media and customised stories is also notable, and it can assist brands to enhance their connection with clients, in a number of digital channels. With these developments, generative AI has become a revolution in the present marketing world.

Expert and regulators discussed ethical and societal implications of AI, even as there are advantages to AI-based marketing systems. The issue of handling private data, bias regarding algorithms, misleading information, manipulation by consumers, and transparency of algorithms were highlighted topics of the discussions around generative AI technologies. With the advent of AI-powered marketing ecosystems, the principles of proper Artificial Intelligence governance are still very important to ensure fairness, accountability and consumer protection, said Hermann and Puntoni (2024). Concerns arose about replacing the role of human creativity and decision making with automation emerged. With the rise of AI (Artificial Intelligence) engines in the advanced digital consumer landscape, a need emerged to explore the potential and challenges of using generative AI in marketing and consumer decision-making process.

Research Problem

Change from traditional search engines to generative AI in discovery was very much the revolution in how people are discovering products; and there were few good, empirical studies to factor into the romantic accounts of how either end consumer's journey to purchase or marketing ecosystems were affected.While the transition to generative AI search and the rise of on-line marketing had a considerable impression on the seek for expertise journeys and practices of online consumers and digital marketers, scant empirical analysis documented both side of the consumer journey and the digital marketing eco-system. Research done has been on individual aspects such as chatbots, recommendations systems, AI-driven content creation, etc., without providing a comprehensive view of how AI influences the consumers' interactions in discovering information and making choices. The absence of proper research and studies caused confusion to the marketers and organizations that wished to customize their strategies in rapidly evolving digital environments with the involvement of AI.

Research Objectives

1. To examine the impact of generative artificial intelligence on consumer discovery processes in digital environments.
2. To analyze the influence of AI-powered systems on consumer decision-making behavior.
3. To investigate the role of generative AI in transforming digital marketing ecosystems and marketing strategies.
4. To identify the opportunities and ethical challenges associated with AI-driven digital marketing practices.

Research Questions

Q1. How did generative artificial intelligence influence consumer discovery processes in digital platforms?
Q2. What effects did AI-powered systems produce on consumer decision-making behavior?

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Q3. How did generative AI transform digital marketing ecosystems and organizational marketing strategies?

Q4. What opportunities and ethical concerns emerged from the integration of generative AI into digital marketing environments?

2. Literature Review

Generative Artificial Intelligence and Consumer Discovery

GAI has revolutionized online consumer discovery processes, by integrating conversational interfaces, predictive recommendations, and personalized information retrieval systems. While traditional search engines had keyword matching and ranking mechanisms, AI-powered search engines could produce context-specific responses, enhancing both user-engagement and access to information. Researchers noted that consumers' ability to discover products and services was improved by generative AI systems by enabling adaptive search experiences and intelligent-lifting recommendations (Dwivedi et al., 2023; Huang & Rust, 2024). As the use of AI tools with the purchasing process continued to rise, consumers were increasingly drawn to those products that offered them an interface that was easier to search and more intuitive, as these suggested more relevant products in line with personal tastes and habits. As a result, the role of conversational AI in digital platforms has revolutionized the way businesses can now find their customers. As such, the introduction of conversational AI into digital environments played a major role in changing the way businesses can now discover their customers in today's online world.

AI personalisation is reaching new heights in the digital ecosystems. Use of machine learning algorithms and generative artificial intelligence (AI) tools on e-commerce websites had been increasingly deployed to analyse the behaviours of shoppers, demographics, and browsing patterns to suggest specific products for each user. Customised suggestions had a positive impact on customer satisfaction, positive attitude towards the purchase and engagement in online marketplaces (Chylinski et al., 2024; Puntoni et al., 2021). The way AI systems were used to help businesses identify their target audience and understand consumer behaviour more precisely was applicable to digital marketing. There is a use of AI systems to precisely target business to better understand consumer behaviour, which is applicable to digital marketing. Many of these advancements have demonstrated generative AI's ability to make information more accessible, but also enhance consumer-brand interactions in the digital commerce landscape.

Generative AI's impact on boosting consumer confidence and upholding information credibility in this online discovery phase was also highlighted. Conversational systems and chatbots **fuelled** by AI answered promptly, provided context and in-depth explanations, and enabled an interactive experience, leading to a positive impact on customers' experience with reliability and convenience. Studies have been found documenting the anthropomorphic AI interactions which resulted in emotional engagement and user trust towards digital platforms (Longoni et al., 2022; Adam et al., 2021). There were some concerns regarding misinformation, biased recommendations and excessive reliance on automated systems, though. As more information was created by AI, transparency and ethical responsibility came into the discussion of digital consumers.

Consumer Decision Making with Generative AI

All along the Customer Journey within the purchasing process, they were supported intelligently by Generative AI, assisted by predictive analytics and customised ideas that had a significant impact on their buying patterns. The AI system could offer real-time comparisons, ease consumer interface and personalize product recommendations, enabling consumers to make more efficient comparisons and evaluations. The research results indicated that using an AI decision-making system in online shopping make the customers more confident in the shopping process, and also make it easier for the human brain. The finding ultimately showed that AI Decision Making transformed the online shopping experience making it more confident, and not demanding the brain of the users (Ameen et al., 2022; Mariani et al., 2023). AI ability to instantly crunch numbers on product, pricing and fit was gaining traction as a tool for consumers evaluating products prior to purchase. These developments highlighted the evolution of AI technologies and their influence on consumer behavior in digital transactions, particularly in the online shopping landscape.

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The use of conversational AI in customer service and the digital commerce landscape has also transformed the customer-to-business interaction and transaction experience. When this conversational AI has become part of the customer service and digital commerce world, consumer interactions and purchase/sales processes have also been affected.AI-powered Chatbots and Virtual Assistants became popular in business for providing round-the-clock customer service, answering product queries, and handling business transactions.AI Chatbots and Virtual Assistants gave the companies real-time customer support, responded to product inquiries and processed transactions. AI powered communication technology was seen to contribute to increased engagement on the part of the customer, and that their perception of service quality was enhanced by immediate responses, and personalized interactions (Pizzi et al., 2021; Belanche et al., 2020). Emotional satisfaction was also achieved utilising AI systems to better emulate more natural communication patterns and to further assist with adapting responses to communicate more naturally to the person.

There were some shortcomings observed in the consumer decision-making arena in using AI systems, but there are benefits. There were some challenges identified by the experts for consumers' decision-making processes in AI systems. Ethical issues regarding data privacy, manipulation of algorithms, transparency, and other concerns influenced trusting AI technologies in the digital commerce landscape. The authors argued that over-personalizing and predicting targeted users could decrease consumers' choices and worsen the bias that already exists in online platforms (Buhalis et al., 2023; Rai, 2020). Consumers had some doubts regarding the trustworthiness and fairness of AI suggestions. These concerns raised the importance of developing "explainable" and "ethical" AI systems, a balance of innovation and protection of consumer right and trust and having fair integration.

Generative AI and Digital Marketing Ecosystems

GUIs ushered in a new era of digital marketing by streamlining content production and production, making more effective use of digital ads, and optimizing customer interactions on digital platforms. A growing number of companies implemented AI systems to create and design promotional image materials, social media contents, email messages, and graphics for advertising campaigns faster and more efficiently. Companies increasingly embraced AI deployment to produce various forms of promotional visual content, including social media posts, email communications, and advertisements, at faster and more efficient rates. The results of the studies showed that AI-driven marketing content boosts personalization, audience targeting, and the effectiveness of marketing campaigns in digital channels (Kaput, 2024; Kshetri, 2023). AI tools also helped companies process vast amounts of consumer information instantaneously, helping marketers craft adaptive and data-driven communication campaigns. These innovations have introduced generative AI as a competitive advantage and tool to improve marketing performance.

With the advent of AI-powered analytics and predictive modelling, organizational marketing practices and customer relationship management (CRM) systems were further transformed. Digital marketers have increasingly turned to machine learning algorithms to predict customer behaviour, divide consumers into various groups and target ads to maximize ad spend effectiveness across platforms. Research showed that the use of predictive AI can lead to more efficient marketing efforts by predicting customer trends and providing personalized marketing experiences (Verma et al., 2021; Davenport et al., 2020). Within digital ecosystems, AI-driven automation facilitated dynamic pricing and methods such as sentiment analysis and influencer marketing. The developments showed how generative AI enhanced today's marketing systems and made them more adaptable in the competitive digital environment.

The ethical, social and legal aspects of utilizing AI within the marketing ecosystem were explored. The growing generation of AI-generated content raised debates on the credibility of AI, misinformation, copyright issues, and the responsibility for the algorithm in communication media. Floridi & Chiriatti (2020) and Feuerriegel et al. (2024) emphasized the importance of consumer trust and consumer welfare in the framework of “AI-driven marketing systems” and fairness and transparency. Questions began to emerge regarding ethical standards and rules for the utilization of AI in marketing activities. Companies started to form questions about the ethics and guidelines for using AI in marketing. As the literature suggests, the success of an AI-powered marketing ecosystem on the long run required innovation amidst responsibility and customer-centricity.

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Hypotheses

H1: Generative artificial intelligence significantly influenced consumer discovery processes in digital environments.

H2: AI-powered systems significantly affected consumer decision-making behaviour in online platforms.

H3: Generative artificial intelligence significantly transformed digital marketing ecosystems and organizational marketing strategies.

H4: Ethical concerns and perceived opportunities of generative artificial intelligence significantly influenced consumer trust and engagement in digital marketing environments.

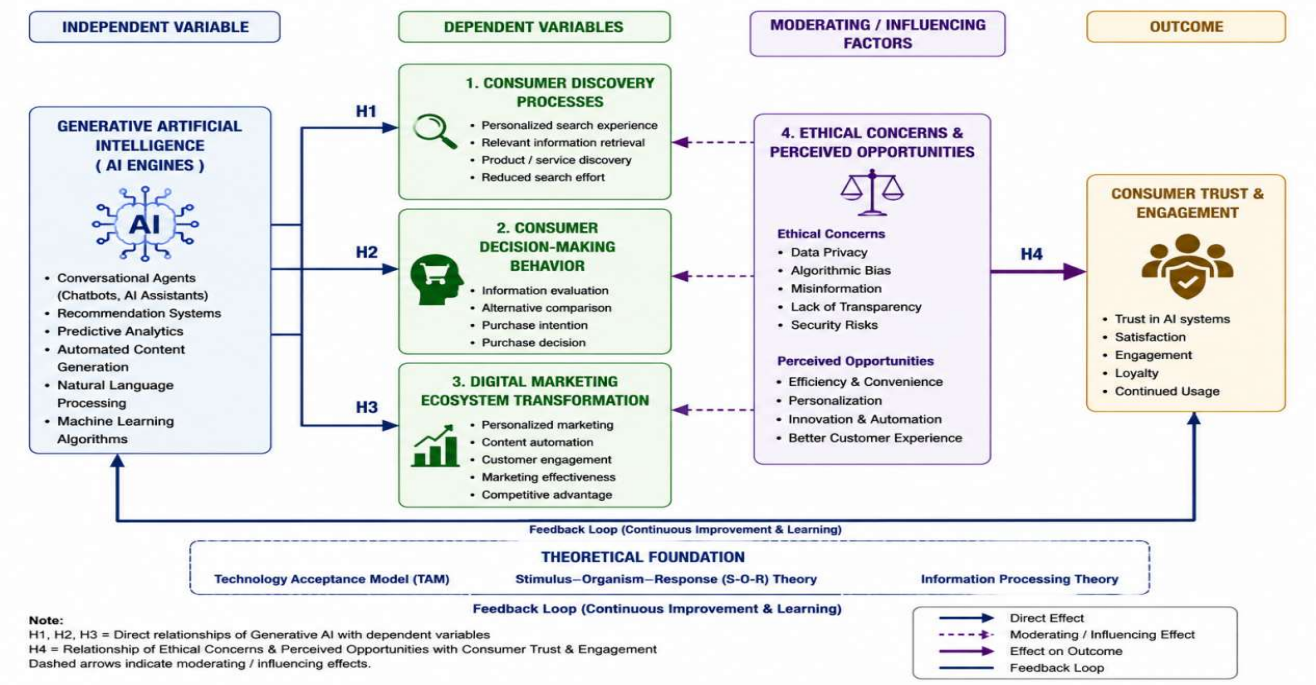
Conceptual Framework Model

The purpose of the paper was to conceptualise the Generative AI relationship to both consumer discovery and decision-making ecosystems and the digital marketing ecosystem. In this context, the independent variable was the concept of Generative AI; the phenomenon of consumer discovery, the phenomenon of consumer decision making, the dependent variables; and the transformation of digital marketing in the ecosystem, the dependent variable. The latter presented tools and methods that enable a more personalized approach to communication, information, and user polarization within the digital environment including the use of AI-based conversation agents, recommendation systems, predictive analytics, and automated content creation. The proposed framework stressed the value of implementing AI technologies, such as conversational agents, recommendations systems, predictive analysis and content creation, in order to make communication more personal and improve information availability, but also to generate polarization on the users' side in the digital environment. Other factors affecting trust and transparency, and user-product interaction in AI-powered marketing systems are ethical issues, and the perceived value of AI products.

The other key factor was how generative artificial intelligence technologies have affected the traditional methods used in conducting a digital marketing campaign, so that organizations can offer a personalized experience for customers, automate marketing communication and fine-tune customer management workflows. AI engines impacted consumer search behaviour, comparative research and intent to buy activities on online channels. The proposed framework further indicated a positive consumer discovery efficiency, enhancement of the decision-making process and enhancement of digital marketing performances with a higher level of integration of generative AI.

Figure 1

Conceptual Framework Model



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3. Research Methodology

Research Design

In this study, a quantitative method was chosen to analyse the influence of Generative Artificial Intelligence (genAI) on three aspects of consumer discovery and consumer decision making as well as the digital marketing surroundings. To obtain numerical data used the quantitative approach and statistical data analysis to study the relationship of the object and the subjects that varied in the study. This research design helped to investigate consumer perceptions, consumption responses and marketing responses to the transformation in marketing whereby the application of AI-based technologies was investigated in a digital environment.

Population of the Study

The study has targeted Digital Consumers and Online shoppers, Social Media Users and Social Marketers that uses Digital platforms for a frequent period of time. Customers in the population were well aware of conversational AI, recommendation systems, automated customer service, and the creation of digital content via AI. This population was selected due to their practical exposure with the effects of Generative Artificial Intelligence on customer on-line behaviour and interactions in real life scenario for a digital marketing.

Samples and Sampling Technique

A sample size of 420 was used for reliability in statistical analysis and representation of the target population in the study. The sample was made up of consumers and marketing professionals from a variety of backgrounds and ages, including different levels of education, gender and how much experience they have around digital platforms. The sample was intentionally selected with the aid of purposive sampling method because the samples are those who have knowledge and experience in the use of generative AI technologies and digital marketing platforms. This type of sampling enabled the researcher to access individuals that were committed and engaged in digital environments with AI.

Data Collection Method

Structured questionnaire was used for primary data collection, based on the study objectives and variables. The questionnaire included closed ended questions scored according to the 5-point Likert scale which were strongly-disagree – strongly-agree. The survey document had three modules: Generative Artificial Intelligence, Consumer oriented discovery process, Consumer behavioural decision making and Digital marketing ecosystem transformation and ethical questions relevant to the AI systems. The questionnaire was sent to respondents using online survey companies or e-mailing. Data collection tools online helped to participation, ease and responsiveness of those using the Internet.

Measurement of Variables

Generative artificial intelligence, which is broken down into conversational AI, recommendation systems, predictive analytics, and automated content creation, were all featured on the independent variable of the study. The processes consumer discovery, consumer decision making and the transformation to digital marketing ecosystem were the dependent variables. However, the ethical implications and future prospects of AI systems have also been taken into account as a factor that makes customer engagement and trust. All items were crafted on the basis of earlier studies and the artificial intelligence, consumer behaviour and literature regarding digital marketing were consulted to guarantee the conceptual overlap and consistency of all the measurement items.

Data Analysis Techniques

The SPSS was used to analyse the collected data. The demographic variables and distributions were summarized using descriptive statistics such as a frequency, percentage, mean and standard deviation value. To test the scale's internal consistencies, Cronbach's alpha was used. The study herein conducted correlation analysis to analyse the relations between the study variables, and regression analysis was conducted to test the proposed hypothesis to measure the influence of generative Artificial Intelligence on consumer discovery, decision-making and digital marketing ecosystem. The statistical results provided empirical evidence that there were significance and strength of the relationships among the study constructs and it is an indicator of the support for each construct.

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Validity and Reliability

To guarantee content validity, the study took a content-based approach that involved creating items for the questionnaire from literature and from previously tested and established measurement scales. Survey questions were deconstructed, clarified, and shaped by experts for clarity, relevance and consistency, as well as advanced academic guidance. The reliability values of constructs were analysed by Cronbach's alpha scores and all the constructs showed acceptable reliability values with scores >0.70. The procedures enhanced the accuracy, uniformity and reliability of the research findings.

Results and Analysis

Demographic Analysis of Respondents

The study investigated the demographical features of 420 respondents in order to get to know the diversity and the representation of subjects who took part in the study. Demographic data consisted of age, gender, education and prior experience with AI-driven digital platforms. The analysis had provided context for the respondents and helped interpret the research findings on the generative AI and digital marketing ecosystem.

Table 1

Demographic Profile of Respondents (N = 420)

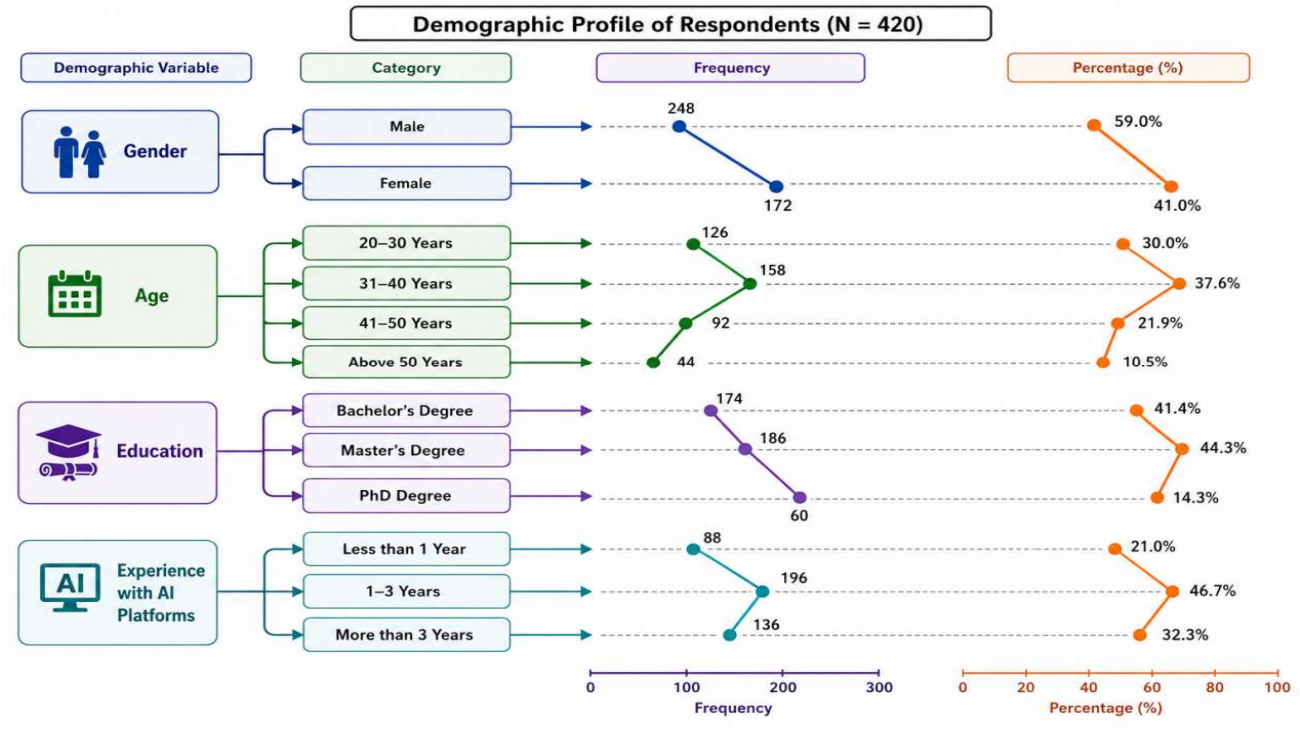
Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	248	59.0
	Female	172	41.0
Age	20–30 Years	126	30.0
	31–40 Years	158	37.6
	41–50 Years	92	21.9
	Above 50 Years	44	10.5
Education	Bachelor's Degree	174	41.4
	Master's Degree	186	44.3
	PhD Degree	60	14.3
Experience with AI Platforms	Less than 1 Year	88	21.0
	1–3 Years	196	46.7
	More than 3 Years	136	32.3

Demographic analysis showed that there were 59% male respondents and 41% female respondents. The results were found to represent good gender equality and enhanced the diversity and reliability of the collected data. The age distribution revealed that the age group 31-40 years old has 37.6% while the age group 20-30 years had the next largest group at 30.0%. The results indicated a level of interaction between middle-aged and younger people with AI-driven digital platforms and online marketing system. The main result found from the educational background of the respondents showed that most of the respondents had a higher education qualification with 44.3% of the respondents having a master's degree and 41.4% of the respondents having a bachelor's degree. 46.7% of respondents had between 1 and 3 years' experience with AI-powered platforms. The results showed that the participants had the requisite educational knowledge and familiarity with the technology to assess how generative AI can affect the discovery process and digital marketing landscape for consumers.

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Figure 2

Demographic Profile of Respondents (N = 420)



Response Rate Analysis

This study assessed the response rate to understand the effectiveness of the data collection process and level of participation of the respondents in the survey. The response rate analysis gave support as to reliability and suitability of collected data for statistical interpretations and hypothesis testing.

Table 2

Response Rate of the Survey

Description	Frequency	Percentage (%)
Distributed Questionnaires	500	100
Returned Questionnaires	438	87.6
Rejected Questionnaires	18	3.6
Valid Questionnaires Used	420	84.0

The results of the response rate analysis showed that there were 500 questionnaires distributed among respondents using the online and digital communication method. Of the questionnaires distributed 438 were returned for a 87.6% response rate. The results revealed high participant engagement and interest in the research area of generative AI and Digital Marketing Systems. A total of 18 questionnaires were scrapped due to its incompleteness, and the information given was not consistent. Data collected were of high quality and accuracy as invalid responses have been eliminated. Finally, 420 valid questionnaires were received and 84.0% of the surveys distributed were valid. Excluding those who did not respond, the research results were strengthened, and data collection procedures were deemed to be effective. The size of the sample was also sufficient to be able to perform accurate statistical analysis and interpretation of the studied variables.

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Figure 3
Response Rate of the Survey

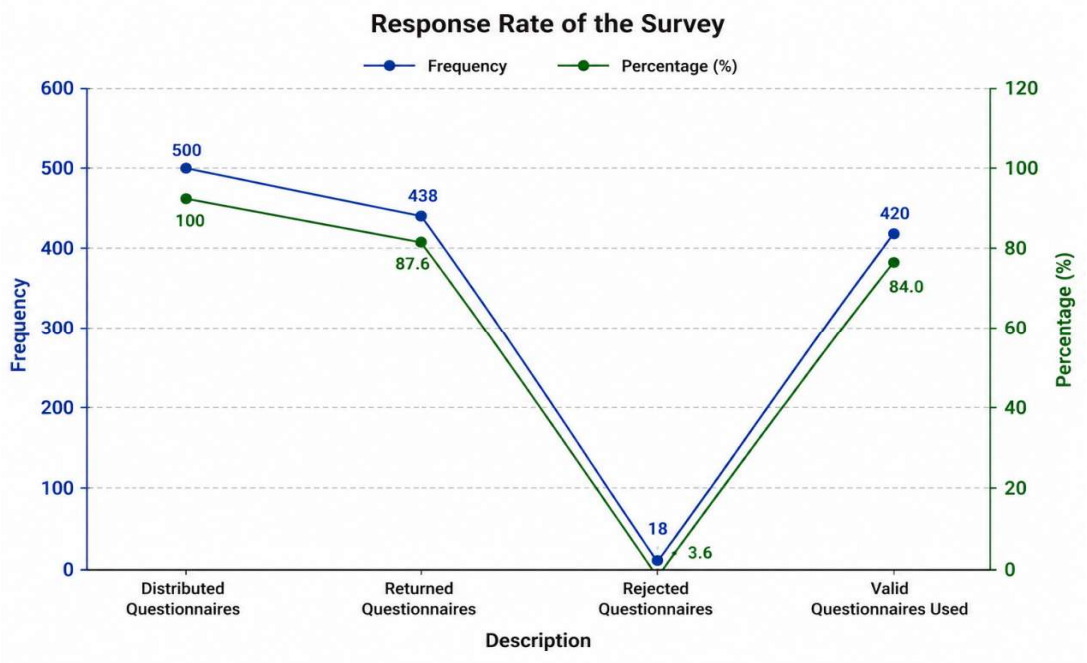


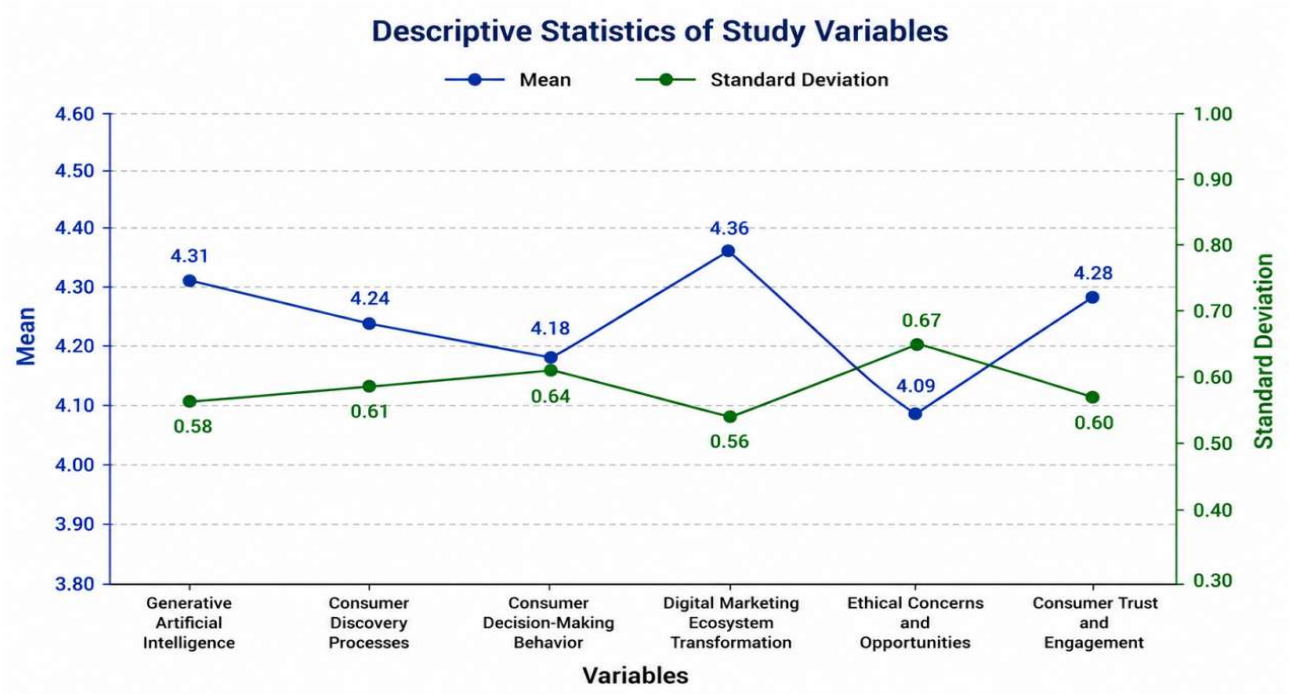
Table 3
Descriptive Statistics of Study Variables

Variables	Mean	Standard Deviation
Generative Artificial Intelligence	4.31	0.58
Consumer Discovery Processes	4.24	0.61
Consumer Decision-Making Behaviour	4.18	0.64
Digital Marketing Ecosystem Transformation	4.36	0.56
Ethical Concerns and Opportunities	4.09	0.67
Consumer Trust and Engagement	4.28	0.60

The descriptive statistics revealed high levels of agreement on the respondents about generative AI impact on digital consumer behaviour and marketing systems throughout all the selected variables. The technologies related to AI were perceived as the most powerful transformative technologies in the current digital marketing landscape, with digital marketing ecosystem transformation having the highest mean of the technologies (M = 4.36). The average score was 4.31 (SD ± 0.58) indicating that positivism behaviour was perceived in regard to the effectiveness of the generative AI tools and capabilities such as conversational agents, recommendation items and automatic content generation. The average scores for processes of the consumer discovery and consumer trust and engagement were also high (4.24, 4.28 respectively). The findings showed that AI systems improved information access and their user-friendliness in digital environments, as well as personalization and user-end user interactions. Raven's answers on opportunities and concerns around the role of AI integration in digital marketing had an average of 4.09, showing respondents understand there are opportunities and concerns associated with this.

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Figure 4
Descriptive Statistics of Study Variables



Reliability Analysis

The internal consistency (to examine the stability) of the scales used to measure the variables of the study was assessed through the reliability test analysis. The reliability of each construct was measured using Cronbach's alpha coefficient to see if the questionnaire items were able to represent each variable consistently.

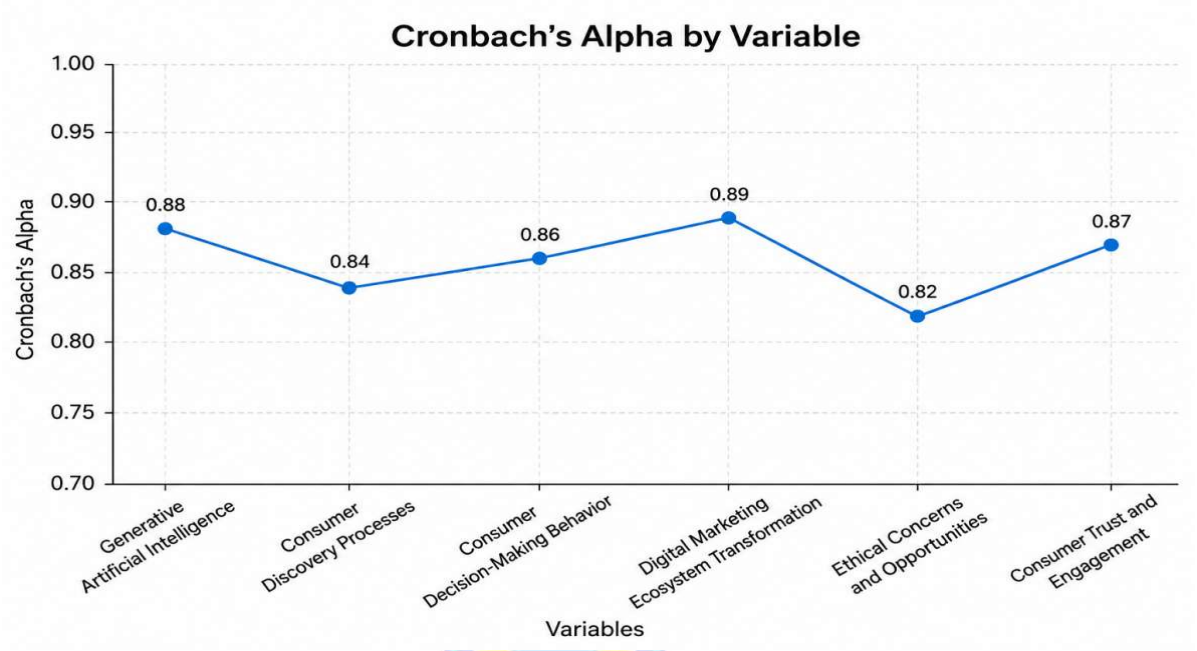
Table 4
Reliability Analysis of Study Variables

Variables	Cronbach's Alpha
Generative Artificial Intelligence	0.88
Consumer Discovery Processes	0.84
Consumer Decision-Making Behaviour	0.86
Digital Marketing Ecosystem Transformation	0.89
Ethical Concerns and Opportunities	0.82
Consumer Trust and Engagement	0.87

The reliability of the constructs was analysed and all constructs had high internal consistency. Internal consistency of items on the scale had a range of Cronbach's α values from 0.82-0.89, which is above the recommended range value of 0.70. The reliability was the best for Cronbach's alpha with 0.89 for digital marketing ecosystem transformation. This finding revealed good item internal consistency for AI driven Marketing automation, Personalized advertising and Customer engagement. Consumer decision making behaviour and consumer trust, engagement also had a high reliability value of 0.86, and 0.87 respectively. The results revealed a level of consistency in end-user comprehension of the questionnaire items throughout the study, supporting the findings that connections were drawn to questionnaire items of those items related to purchases driven by AI and end-user experiences related to a purchase experience.

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Figure 5
Reliability Analysis of Study Variables



Hypothesis Testing Analysis

The study tested the proposed hypotheses using mean evaluation and respondent agreement levels regarding the influence of generative artificial intelligence on consumer discovery, decision-making, and digital marketing ecosystems.

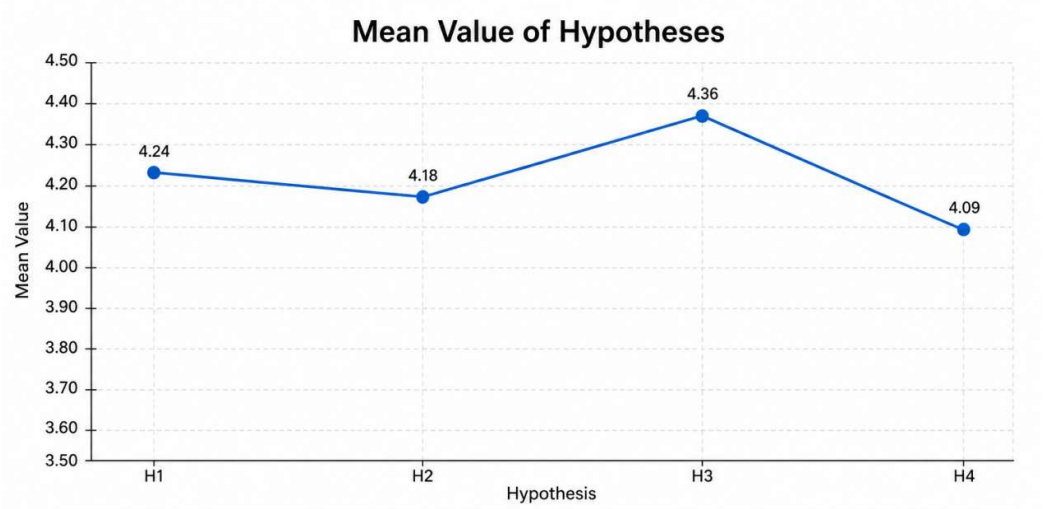
Table 5
Hypothesis Testing Results

Hypothesis	Statement	Mean Value	Decision
H1	Generative AI significantly influenced consumer discovery processes	4.24	Supported
H2	AI-powered systems significantly affected consumer decision-making behaviour	4.18	Supported
H3	Generative AI significantly transformed digital marketing ecosystems	4.36	Supported
H4	Ethical concerns and perceived opportunities significantly influenced consumer trust and engagement	4.09	Supported

Hypothesis testing analysis revealed high level of support for all the hypothesised statement in the study. The results showed that there was a positive perception of the impact of generative AI on the four areas of consumer discovery, consumer decision-making behaviour and digital marketing transformation. The overall mean exceeded 4.00 for all the relationships proposed, showing high levels of agreement between respondents on the proposed relationships. The most promising answers came from H3 which looked at the impact of generative AI on the transformation of the digital marketing ecosystem. The average rating was 4.36, showing that participants had a high understanding of how the use of AI technologies is affecting their personalised marketing, automated communication, customer engagement practice and digital advertising. The results also confirmed H4 for i.e., ethical concerns arising from AI systems, and perceived opportunities.

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Figure 6
Hypothesis Testing Results



5. Discussion

The study results revealed that generative AI had a profound impact on the "how consumers find content in digital spaces" landscape. The respondents were very confident that AI-based solutions like search systems have improved their personal search experience, facilitated the retrieval of information, and made products and services online more accessible. The results also corroborated the latest literature, which discussed that conversational AI and intelligent recommendation systems affect consumer search behaviours, offering context sensitive, adaptive interactions (Agarwal et al., 2025; Huang et al., 2025). The surge in user numbers seemed to indicate that users preferred to engage with more dynamic, interactive, and in-depth information and systems as opposed to systems that rely on keywords.

The research also revealed that G. AI played a pivotal role on digital markets in their operation of buying and selling decision-making. They expressed feeling more confident about products and purchasing them due to AI-powered recommendations, conversational support and predictive analytics. The findings are consistent with the previously mentioned research which reveals how artificial intelligence-generated personalized, relevant suggestions can positively impact purchase intentions (Siau & Wang, 2024; Barta et al., 2023). The user becomes more reliant on AI-generated data, in determining product differences, judging its quality, and verifying services' reliability. The results revealed the use of generative AI technologies and also velocity with which they are contributing to the prevailing era of digital commerce as a decision-supportive tool.

It also revealed huge differences in the digital ecosystems when employing technologies of Generative Artificial Intelligence (GAI) in digital marketing. Participants felt that AI technology will enhance marketing automation, customer marketing, customer engagement and effectiveness of communication. AI-powered systems are being adopted for content generation, predictive analytics, and conversational marketing, with the aim of optimizing customer engagement and tactics.AI is being used across various aspects of business, from content creation and predictive analytics to conversational marketing, to maximize customer engagement and tactics. These findings support other studies that suggested that AI tools could lead to more efficient marketing and make it possible to offer highly personalized experiences on digital channels such as websites and newsletters for customers. (Kumar et al., 2025; Chintalapati & Pandey, 2023).

The findings also indicated that personalization with AI and interactions on digital platforms garnered positive feedback from consumers. Digital solutions powered by AI-driven systems were recognized for their ability to deliver quicker responses, tailored information and tips, and enhanced interaction experiences, leading to increased customer satisfaction and confidence in these solutions. The results were similar to previous studies on how AI affects the digital customer journey that identified an increase in the emotional connection and integration with the brand after introducing AI features into the customer journey (Jarek &

Mazurek, 2024; Paschen et al., 2024). As part of this, we decided to explore the potential of personalized interaction after witnessing how well AI solutions are being incorporated into digital marketing practices. With the advent and popularity of generative AI in digital marketing environments, personalized interaction was an area we recognized as important to explore. The study also found that there was a preference for the intelligent systems that can interpret preferences and provide personalised experiences in the virtual world.

Issues pointed out include information bias, transparency and reliability of information generated by AI, and data privacy. The discovery was in line with the current debates and studies on the ethical management of AI, with a focus on delivering consumer trust and a responsible use of AI technology in digital environments as highlighted in the literature (Mikalef et al., 2023) (Cao, 2024). As participants were made aware of the advantages of AI technology, they were also made aware of areas of concern with automated decision-making systems and the use of large quantities of data. The results indicated a need for clear and transparent guidelines and policies on the use of AI in marketing with generative technologies in an ethical way.

Another key finding of the study is that marketing systems incorporating AI played a role in enhancing the effectiveness of operations and handling of customer interactions. This suggested that the respondents' understanding of automated content creation and AI communication tools lay in their potential to fast-track response times and enhance marketing agility in ever-changing digital environments. The results were consistent with those of the studies that generative AI can be used to streamline, optimise and segment digital marketing efforts (Kraus et al., 2025; Dwivedi et al., 2024). The incorporation of AI in business or enterprise became a gamechanger themselves as they were more cost-efficient, communicated faster and made data-informed decisions. As evidenced from the research findings from some recent studies reviewing the impact of AI-driven engagement systems on customer retention and behaviour goals (Sharma et al., 2024; Leung et al., 2023), an AI-driven engagement system can be effective in increasing engagement and reducing churn. In line with recent research areas like Sharma, et al., (2024) and Leung, et al., (2023), who analysed the effect of such engagement systems on churn and behaviour, the findings show that these systems can positively influence engagement and decrease churn. This began to become normal for consumers and those brands that continued to have an interactive and responsive experience began to have digital intelligence as the reason. A pattern was revealed in this trend; it was found that AI technologies started to leverage digital marketing to create long-term customer relations in ways that were very important.

The research also showed that the use of generative AI helped speed up the transformation of content marketing strategies in digital channels. Participants noted that AI-driven promotional copy boosted the consistency, responsiveness, and creativity of online advertising campaigns. Recent research also highlighted how generative AI tools benefit content marketing with automated storytelling, creation of visual content and consistent messaging strategies that deliver personalized experiences (Marrone & Hazelton, 2024; Lim et al., 2024). The insights indicated that the increased use of AIs systems by organizations to tell their story in a large volume of digital communication while keeping relevance and engaging multiple consumer groups.

The results indicated that users' trust of the AI-driven systems increased when they perceived the systems are transparent, reliable, and personalized. Participants strongly agreed that AI-driven platforms which explicitly stated recommendations and kept their users' data safe were more acceptable. The results confirmed studies focusing on the importance of trust as a key factor in the adoption of AI and consumer engagement in digital spaces (Ameen et al., 2024; Kellogg et al., 2025).

6. Conclusion

They explored how generative artificial intelligence technology can enable significant transformation in the customer discovery, decision-making and digital marketing process. The results showed a marked improvement in personalizing search results, increasing customer engagement, and bolstering Interactive Digital Communication between organization and consumers with AI powered technologies. These include tools that leverage AI to enhance the interactions between consumers and the Web: conversation AI, recommendation system, predictive analytics, and automated content generation, which were well-received by respondents. The second finding of the study is that generative AI is changing the set of marketing tools that retailers could use to offer personalised user experiences, optimise marketing and campaign tracking, streamline operations and aids in packaging and pricing, to mention a few.

7. Recommendations

Especially in the realm of digital marketing, businesses have to prioritise responsible and consumer-centric use of AI tools to improve their marketing strategies and customer engagement. Consumers need to have confidence in AI systems and trust them, so enterprises should develop transparent and user-friendly AI designs that explain the recommendation processes they use for making business decisions, as well as how information is leveraged to make recommendations. Ethical principles need to be embedded in strategies for using AI in marketing to mitigate privacy concerns, misinformation and algorithmic bias on digital platforms. Ethical measures should also be embraced as part of the deployment of AI in marketing efforts to help minimize privacy concerns, misinformation and algorithms in digital platforms.

8. Future Directions

Research needs to explore how generative artificial intelligence can impact consumer attitudes, buying habits, and brand loyalty in various online settings. Further research will need to consider how successful an AI system will be when adopted in the global digital market, with a focus on how culture, social factors and demographics will influence this. However, the possible future (colony) contributions of the comparative economy (standard) and the comparison economy (developing/developed) in terms of AI marketing techno's may have greater weight outside this focus.

Additional research should be conducted on the emerging technologies that are relevant to digital commerce ecosystem like GenAI, AR, and VR technologies. For more details, other ways of doing ethical governance in terms of consumer protection of their information and implications on how communication in the promotion of transparency and trust becomes more effective in digital marketing offers can be found. While the following are essential to the sea change of CX and consumer marketing strategies, ongoing research is necessary to evaluate the effect that any new advancements of AI have on CX as a technology change over time and as consumer marketing approaches evolve over time**.**

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Contribution of Authors

All the authors participated in the ideation, development, and final approval of the manuscript, making significant contributions to the work reported.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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Informed Consent

Informed consent was obtained from all individual participants included in the study.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of 1964 Helsinki declaration and its later amendments.

Data Availability

The datasets generated during and analysed during the current study are available from the corresponding author on reasonable request.

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