

Investigating the Influence of AI-Generated Marketing Content on Consumer Perceptions and Decision-Making in E-commerce

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ABSTRACT

This research project investigates the impact of AI-generated marketing content on consumer perceptions and decision-making in the realm of e-commerce. A multidisciplinary approach has been employed, integrating insights from psychology, marketing, and artificial intelligence, to comprehensively examine how AI-generated content influences crucial factors such as trust, credibility, engagement, and satisfaction, which in turn shape consumer perceptions and purchase intentions. The study utilizes research design which incorporates primary survey and content analysis, while considering contextual factors and ethical considerations. The findings aim to provide marketers, policymakers, and e-commerce companies with valuable insights for optimizing marketing strategies and establishing ethical standards for AI applications in the sector.

Keywords: *AI-generated content, E-commerce, Consumer perceptions, Decision-making*

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INTRODUCTION

The ongoing transformation of e-commerce in the digital era, fueled by the rise of online marketplaces, evolving consumer preferences, and increased internet accessibility, has propelled it into a dominant force in the global economy. Amid the challenges faced by traditional brick-and-mortar retail, e-commerce has emerged as a significant driver of economic activity.

ROLE OF ARTIFICIAL INTELLIGENCE (AI) IN E-COMMERCE

With its extensive applications in a rapidly evolving landscape, Artificial Intelligence (AI) has emerged as a transformative force in technology, facilitating businesses with tasks such as

analyzing extensive data sets, predicting consumer behavior, and automating processes. The use of AI in generating content represents a cutting-edge application that is reshaping the marketing landscape. AI is changing the economic environment and bringing about changes that will benefit consumers and entrepreneurs. It is becoming more prevalent in business, particularly in business administration, marketing, and financial management. AI creates new opportunities, resulting in significant changes in the broader economic systems. For example, it leads to the rapid discovery of large data patterns and enhanced product design to satisfy the needs and preferences of clients. The rising usage of AI to improve service efficiency and quality has primarily benefited e-commerce (Khrais, L. T., 2020).

E-COMMERCE AND AI-GENERATED MARKETING CONTENT

The use of AI in e-commerce has not only impacted marketing content development, but also the entire e-commerce environment. Advertisements, customer reviews, product descriptions, and personalised suggestions are all examples of AI-generated marketing content. This has significantly sped up and scaled the rate at which e-commerce enterprises may market and present their items and services to customers.

AI-powered marketing content not only replicates human behaviour but also ensures that recommendations are natural and personalised, making them more engaging and relevant to specific customers. This personalised approach improves the user experience and increases client engagement (Kumar, V., 2019). Furthermore, AI-driven content development streamlines the process, resulting in increased efficiency and resource optimisation in e-commerce operations, which aligns with the goal of producing fast and beautiful solutions while preserving system resources.

AI-generated marketing content is an excellent illustration of how AI improves the naturalness, efficiency, and interaction capabilities of e-commerce platforms. It is critical in providing consumers with a flawless and engaging e-commerce experience while helping businesses to promote their products and services on an unprecedented scale.

CONSUMER BEHAVIOR IN E-COMMERCE

Understanding consumer behavior is paramount in e-commerce. Consumers rely on websites and online platforms to guide their purchasing decisions, with factors such as engagement, credibility, and trust playing vital roles in the decision-making process. The internet's rapid development and digital economy growth have transformed consumer behavior, shifting

towards online shopping, especially in the B2C sector. This change is driven by the convenience of accessing information, comparing prices, and satisfying consumer needs. However, internet shopping also comes with potential risks like payment safety and after-sales service concerns (Mittal, A., 2013).

AI GENERATED CONTENT AND DECISION MAKING

AI is increasingly being used in operational marketing, such as risk identification and contact centre response management, as well as marketing, such as customer analysis and targeting, design and selection of advertising copy to match target customers, and pricing to maximise yield from individual customers (Marinchak et al., 2018). We anticipate that AI will be used in strategic decision making in the future (e.g., which business models to use, which strategies to follow, which markets to target, which products to market, which channels of communication and distribution to use, what pricing and competitive positioning strategies to follow, and so on). However, the use of AI in marketing strategy has received little public attention. (Stone, M., Aravopoulou, E., Ekinici, Y., Evans, G., Hobbs, M., Labib, A., ... & Machtynger, L., 2020)

THE IMPORTANCE OF THIS RESEARCH

Given the rapid evolution of the e-commerce sector, comprehending the intricate interactions between AI-generated marketing content and consumer behavior is strategically imperative. This research aims to shed light on these dynamics, offering insights that can help businesses, marketers, and policymakers effectively navigate the dynamic landscape of e-commerce.

OBJECTIVES

1. Assess the Impact of AI-Generated Marketing Content on Customer Perceptions in the E-commerce Sector.

This objective emphasizes the evaluation of AI-generated content's effect on how consumers view products or brands.

2. Analyze the Role of AI-Generated Content in Shaping Consumer Decision-Making Processes.

This objective highlights the exploration of how AI-generated content influences the steps consumers take in making purchasing decisions.

3. Compare the Effectiveness of AI-Generated and Manually-Generated Content in E-commerce and Examine Customer Responses.

This objective maintains the focus on comparing AI-generated and manually-generated content, while also underlining the importance of understanding customer responses.

PROBLEM STATEMENT

In the rapidly evolving landscape of e-commerce, the increasing integration of Artificial Intelligence (AI) has prompted a fundamental shift in marketing strategies. AI-generated marketing content is becoming increasingly prevalent, but its influence on consumer perceptions and decision-making processes remains a critical question. This study seeks to address this gap by investigating the impact of AI-Generated Marketing Content on customer perceptions and decision-making in the e-commerce sector. Specifically, the research aims to assess how AI-Generated Marketing Content affects customer perceptions within the e-commerce sector, analyze the role of AI-Generated Content in shaping consumer decision-making processes, and compare the effectiveness of AI-Generated and Manually-Generated Content in e-commerce while examining customer responses. Through a comprehensive examination of these aspects, this research endeavors to provide valuable insights into the changing dynamics of e-commerce marketing, shedding light on the implications of AI integration for both businesses and consumers.

REVIEW OF LITERATURE

1. Schank, R. C. (1987). What is AI, anyway? This article delves into the scientific and technological objectives of artificial intelligence (AI) and outlines ten essential challenges within AI research. It serves as an introduction to Scientific DataLink's microfiche publication of the Yale AI technical reports. Within this context, the article showcases research examples conducted at the Yale Artificial Intelligence Project, illustrating how these studies address each of the identified research problems.
2. Bughin, J., Hazan, E., Sree Ramaswamy, P., DC, W., & Chu, M. (2017). Artificial intelligence the next digital frontier. Artificial intelligence is on the verge of ushering

in the next phase of digital disruption, demanding prompt preparations from companies. Early-adopting firms are already reaping real-life benefits from AI, intensifying the urgency for others to expedite their digital transformations. This review centers on five pivotal AI technology systems: robotics and autonomous vehicles, computer vision, language, virtual agents, and machine learning, with a particular emphasis on deep learning, which serves as the foundation for many recent advancements across the AI spectrum.

3. Dimitrieska, S., Stankovska, A., & Efremova, T. (2018). Artificial intelligence and marketing. AI's role in marketing revolves around tracking and predicting consumers' future purchase decisions and enhancing their journey. AI's power lies in big data, machine learning, and robust solutions. Big data enables precise targeting, while machine learning helps decipher insights from data. AI machines can predict trends and consumer behavior, and they possess human-like understanding of concepts, emotions, and interactions, responding appropriately. The future promises more intelligent searches, personalized ads, chatbots, fraud prevention, and customer service improvements. This paper explores the evolving relationship between marketers and AI systems.
4. Nalini, M., Radhakrishnan, D. P., Yogi, G., Santhiya, S., & Harivardhini, V. (2021). Impact of artificial intelligence (AI) on marketing. AI marketing involves using AI technologies to automate decision-making processes in marketing based on data, audience analysis, and economic trends. AI enables timely, personalized communication with customers, optimizing efficiency. AI is considered the next industrial revolution, offering solutions to current and future challenges while creating new industries and technologies.
5. Gkikas, D. C., & Theodoridis, P. K. (2019). Artificial intelligence (AI) impact on digital marketing research. This paper explores the relationship between digital marketing and artificial intelligence (AI) while highlighting the scarcity of AI research in the specific context of digital marketing. It emphasizes the need for more focused research in digital marketing areas, such as consumer behavior on social media, targeted advertising, and predictive models in online purchases. The paper also provides insights into the current

state of AI applications in digital marketing and suggests a machine learning model suitable for various digital marketing contexts.

6. Wu, J., Gan, W., Chen, Z., Wan, S., & Lin, H. (2023). Ai-generated content (aigc): A survey. In the rapidly evolving landscape of digital intelligence and the digital economy, Artificial Intelligence-Generated Content (AIGC) has emerged as a transformative force. AIGC leverages artificial intelligence to generate content based on user-inputted keywords or requirements, enhancing convenience and offering diverse applications. This literature review provides a comprehensive overview of AIGC, covering its definition, capabilities, and industrial relevance. It also explores the integration of AIGC with the Metaverse and presents existing challenges and future directions. This analysis emphasizes the significance of AIGC in driving artificial intelligence's development and serving evolving societal needs for sustainable growth.
7. Chen, C., Fu, J., & Lyu, L. (2023). A pathway towards responsible ai generated content. The emergence of AI-Generated Content (AIGC) has been met with substantial interest, with applications spanning a wide spectrum of content types, including images, text, audio, and video. However, as this technology rapidly evolves, it has also become a subject of heightened scrutiny, particularly in terms of responsible usage. This review of literature focuses on three primary concerns that have the potential to impede the ethical development and practical deployment of AIGC. These concerns encompass risks related to privacy, bias, toxicity, misinformation, and intellectual property (IP). By comprehensively documenting both established and potential risks, as well as scenarios of potential misuse of AIGC, this paper seeks to raise awareness about these challenges. The overarching goal is to foster a more ethical and secure deployment of AIGC by addressing these issues. Moreover, the literature provides valuable insights into promising strategies for mitigating these risks, as well as optimizing generative models. This, in turn, enables AIGC to be harnessed responsibly, ultimately benefiting society as a whole.
8. Fedorko, R., Král', Š., & Bačík, R. (2022, July). Artificial intelligence in e-commerce: A literature review. The growing prevalence of artificial intelligence in the context of information and communication technologies is a notable trend. Particularly within

today's e-commerce landscape, businesses are increasingly focused on leveraging AI to shape customer behavior in favor of specific products and brands. The application of artificial intelligence is often seen as a progressive step forward in this sector. This literature review primarily concentrates on elucidating the core concepts of e-commerce and artificial intelligence, highlighting their respective advantages. Additionally, it seeks to assess the significance of artificial intelligence within the e-commerce domain.

9. Khrais, L. T. (2020). Role of artificial intelligence in shaping consumer demand in E-commerce. The integration of technology into business operations, particularly in e-commerce, aims to influence customer behavior towards specific products and brands. Artificial intelligence (AI) plays a central role in personalization, but its ethical aspects, particularly explainability, remain a contentious issue. This study employs various analytical methods to explore the concept of explainability in AI, contributing to the development of Explainable Artificial Intelligence (XAI) models. XAI seeks to make AI decision-making processes transparent and interpretable, improving the ethical use of AI in e-commerce.
10. Cheng, X., Cohen, J., & Mou, J. (2023). AI-enabled technology innovation in e-commerce. Advanced digital and internet-based technologies have assumed a prominent role in the realm of e-commerce, with AI-driven technology innovations serving as key drivers of development. This review spotlights the potential research avenues regarding the beneficial impacts of AI-driven technology innovations on the digital economy, particularly within the e-commerce domain. It also explores the transformative potential of AI for traditional industries. The special issue underlines the significance of understanding organizational and customer perspectives, encompassing privacy considerations, perceived benefits, and risks associated with AI-driven technology innovations in e-commerce, as well as the cultivation of enduring trust relationships between users and AI systems.
11. Singh, R. (2021). A Study of Artificial Intelligence and E-Commerce Ecosystem—A Customer's Perspective. The e-commerce ecosystem, a thriving force even during global challenges, has rapidly become indispensable to the Indian economy and digital landscape. This growth is underpinned by the strategic use of data, where Artificial

Intelligence (AI) and Machine Learning (ML) systems play a pivotal role in harnessing vast customer-generated data. However, this symbiotic relationship between operators and users, while beneficial, has raised significant cybersecurity concerns. The extensive use of AI/ML systems has made the e-commerce sector a prime target for data breaches, privacy infringements, and fraud. E-commerce operators are increasingly engaged in aggressive data collection practices, encroaching on customer privacy. This issue has become more pronounced post-NSA-Snowden disclosures, with customers seeking to protect their data privacy. The e-commerce industry faces a challenge in striking a balance between data security and data-driven growth.

12. Kolodin, D., Telychko, O., Rekun, V., Tkalych, M., & Yamkovyi, V. (2020, March). Artificial intelligence in E-commerce: Legal aspects. The proliferation of e-commerce and the integration of AI technologies pose challenges related to human rights violations, such as breaches in personal data regulations and privacy infringements. This article's core objective is to address the need for legal regulation in these civil relationships. It highlights the widespread adoption of AI in e-commerce and emphasizes the global and national efforts to establish legal frameworks governing AI usage. However, in Ukraine, there is a notable absence of comprehensive legal regulations for the use of AI in e-commerce.
13. Furman, J., & Seamans, R. (2019). AI and the Economy. This review explores the substantial impact of artificial intelligence (AI) on the economy, supported by various statistics and research findings. It underscores the potential for AI and robotics to drive productivity growth while acknowledging potential labor market disruptions. The review also addresses policy options, including the possibility of AI-specific regulation, expanded antitrust enforcement, and alternative strategies to mitigate labor market impacts.
14. Sehtya, A. (2021). Role of Artificial Intelligence in E-commerce. The influence of artificial intelligence (AI) on the E-commerce landscape is continuously expanding. It extends to various facets of E-commerce operations, spanning from product selection to the successful completion of orders. This research is dedicated to dissecting the distinct components of AI and their profound impact on E-commerce. AI's role is

instrumental in minimizing human efforts during online shopping, ultimately enhancing the user experience by delivering higher efficiency and satisfaction levels.

15. Song, X., Yang, S., Huang, Z., & Huang, T. (2019, August). The application of artificial intelligence in electronic commerce. The rapid evolution of science, technology, and our economic landscape has ushered in the widespread adoption of artificial intelligence (AI), significantly impacting our work and lifestyles. Within the realm of E-commerce, AI has not only found extensive application but has also proven to be a driving force behind its development. This paper offers a concise exploration of the current state and future prospects of AI in E-commerce. It delves into the practical applications of AI in areas such as AI-assisted operations, intelligent logistics, recommendation engines, and optimal pricing, exemplified through a case study of Baidu Takeaway. The research underscores the substantial influence and significance of AI on the progression of E-commerce.
16. Nichifor, E., Trifan, A., & Nechifor, E. M. (2021). Artificial intelligence in electronic commerce: Basic chatbots and the consumer journey. This study empirically explores the impact of AI-driven chatbots on online retail, specifically in terms of communication content. It contributes to the literature by evaluating perceived utility and ease of use, as per the Technology Acceptance Model. The research, encompassing ten online stores in Romania, employs non-reactive content analysis, and data is collected incognito. The findings reveal both the underperformance of market leaders and the considerable potential of chatbot technology in the field. Importantly, the study highlights that low-quality content hampers the customer journey and prevents satisfaction.
17. Soni, V. D. (2020). Emerging roles of artificial intelligence in ecommerce. The focus of this study revolves around unraveling the significance of artificial intelligence in the realm of E-commerce. Over the past few years, the digital landscape has been dominated by the rapid proliferation of E-commerce. Simultaneously, technological advancements have given birth to various platforms that serve as instrumental tools for staying abreast of emerging trends and meeting market demands. As such, this research

hones in on the myriad applications of artificial intelligence within the E-commerce sector.

18. Bassetti, T., Galvez, Y. B., Pavesi, F., & Del Sorbo, M. (2020). Artificial intelligence: impact on total factor productivity, E-commerce & fintech. This study explores the far-reaching impact of Artificial Intelligence (AI) as a source of innovation and its potential influence on productivity. Drawing parallels with historical disruptive technologies, it aims to assess the effects of AI on total factor productivity. Using a unique dataset of firm-level AI patents, the research investigates whether firms' AI technology development positively correlates with productivity and wages. It also spotlights the e-commerce and fintech sectors as prominent adopters of AI.
19. Mohdhar, A., & Shaalan, K. (2021). The future of e-commerce systems: 2030 and beyond. This chapter emphasizes the ongoing evolution of highly sophisticated and efficient systems, shifting the focus from past performance to future functions and relevance. It highlights the pivotal role of software in contemporary businesses and examines how omnichannel transactions operate within the context of the Fourth Industrial Revolution. The chapter discusses the current state and challenges of commerce systems, their architecture, and the innovative aspects of cyber-physical systems in electronic commerce. It also explores the use of omnichannel systems in communication, transactions, and composition, offering insights into their potential and anticipated challenges. The study is expected to benefit a wide range of commerce stakeholders, from governments and supply chain organizations to consumers.
20. Nursetyo, A., & Subhiyakto, E. R. (2018, November). Smart chatbot system for E-commerce assistance based on AIML. This study introduces an intelligent chatbot system based on Artificial Intelligence Markup Language (AIML) designed to serve as an e-commerce assistant. Integrated into the Telegram application, the chatbot processes user queries through parsing, pattern matching, and AIML-based data crawling. User requests are classified into three categories: general questions, calculations, and stock checks, with the calculation function enabling order and payment processing. The study's results, based on 300 trials, demonstrate the chatbot's

ability to effectively respond to user queries with an average response time of 3.4 seconds.

RESEARCH METHODOLOGY

An empirical study titled "Investigating the Influence of AI-Generated Marketing Content on Consumer Perceptions and Decision-Making in E-commerce" is designed to provide a rigorous examination of the impact of AI-generated content in the e-commerce sector. The study's objectives are aligned with addressing the evolving landscape of e-commerce and the growing prevalence of Artificial Intelligence (AI) in marketing strategies. The objectives can be translated into specific research methodologies to conduct an empirical investigation.

SAMPLING TECHNIQUES

Sampling strategy to select a representative sample of consumers within the e-commerce sector. This could involve a mix of demographic variables, such as age, gender, and online shopping frequency. This research paper employs a convenient sampling technique to investigate consumer preferences in the context of e-commerce. The selection of this sampling method is motivated by practical considerations, including time, resource constraints, and overall ease of implementation. Despite efforts to reach a substantial sample size, the study ultimately gathered responses from 158 participants out of the initially targeted 397. Among these, 46 respondents expressed a distinct inclination against e-commerce, indicating a preference for alternative shopping channels, so effectively 112 responses were analysed.

A sample survey questionnaire was distributed to 297 individuals across various age groups and genders. Despite persistent efforts, the study yielded responses from 158 participants. This sample size provides valuable insights into consumer perspectives, with a specific focus on the 46 respondents who explicitly stated their aversion to e-commerce platforms. Out of the 158 respondents, 46 individuals reported a complete disinterest in purchasing from e-commerce sites. This subset of participants represents a distinct segment of the population that relies on alternative shopping methods.

The utilization of a convenient sampling technique has both advantages and limitations. While it facilitated quick data collection within the study's constraints, the smaller sample size may

impact the generalizability of the findings. Despite this limitation, the study provides valuable insights into a specific subgroup of consumers who actively avoid e-commerce platforms.

DATA COLLECTION METHODS

Primary source quantitative data collection methods will be paramount. Surveys stand as a robust tool to quantitatively probe into customer perceptions, decision-making processes, and responses to AI-generated content within the e-commerce sector. This method allows for the systematic gathering of structured data, enabling a comprehensive analysis of the impact of AI-generated marketing content. By employing surveys, the research aims to capture quantifiable insights, providing a solid foundation for statistical analyses and yielding valuable, data-driven conclusions regarding the dynamic relationship between AI-generated content and consumer behavior in the e-commerce landscape.

VARIABLES

Assess the Impact of AI-Generated Marketing Content on Customer Perceptions in the E-commerce Sector.

- Independent Variable: AI-Generated Marketing Content
- Dependent Variable: Customer Perceptions in the E-commerce Sector

Analyze the Role of AI-Generated Content in Shaping Consumer Decision-Making Processes.

- Independent Variable: AI-Generated Content
- Dependent Variable: Consumer Decision-Making Processes

Compare the Effectiveness of AI-Generated and Manually-Generated Content in E-commerce and Examine Customer Responses.

- Independent Variable: Type of Content (AI-Generated vs. Manually-Generated)
- Dependent Variable: Customer Responses in E-commerce (effectiveness and engagement)

HYPOTHESES

Assess the Impact of AI-Generated Marketing Content on Customer Perceptions in the E-commerce Sector.

- Null Hypothesis (H0): AI-Generated Marketing Content has no significant impact on Customer Perceptions in the E-commerce Sector.
- Alternative Hypothesis (H1): AI-Generated Marketing Content has a significant impact on Customer Perceptions in the E-commerce Sector.

Analyze the Role of AI-Generated Content in Shaping Consumer Decision-Making Processes.

- Null Hypothesis (H0): AI-Generated Content does not play a significant role in shaping Consumer Decision-Making Processes.
- Alternative Hypothesis (H1): AI-Generated Content plays a significant role in shaping Consumer Decision-Making Processes.

Compare the Effectiveness of AI-Generated and Manually-Generated Content in E-commerce and Examine Customer Responses (effectiveness and engagement).

- Null Hypothesis (H0): There is no significant difference in the effectiveness and engagement of AI-Generated Content compared to Manually-Generated Content in E-commerce.
- Alternative Hypothesis (H1): There is a significant difference in the effectiveness and engagement of AI-Generated Content compared to Manually-Generated Content in E-commerce.

Statistical Tool for Analysis

Assess the Impact of AI-Generated Marketing Content on Customer Perceptions in the E-commerce Sector.

- T-Test: To compare means and determine if there is a significant difference in customer perceptions between different AI-generated content groups.

Analyze the Role of AI-Generated Content in Shaping Consumer Decision-Making Processes.

- Regression Analysis: Multiple regression analysis can help you explore how AI-generated content and other variables jointly influence consumer decision-making processes.

Compare the Effectiveness of AI-Generated and Manually-Generated Content in E-commerce and Examine Customer Responses (effectiveness and engagement).

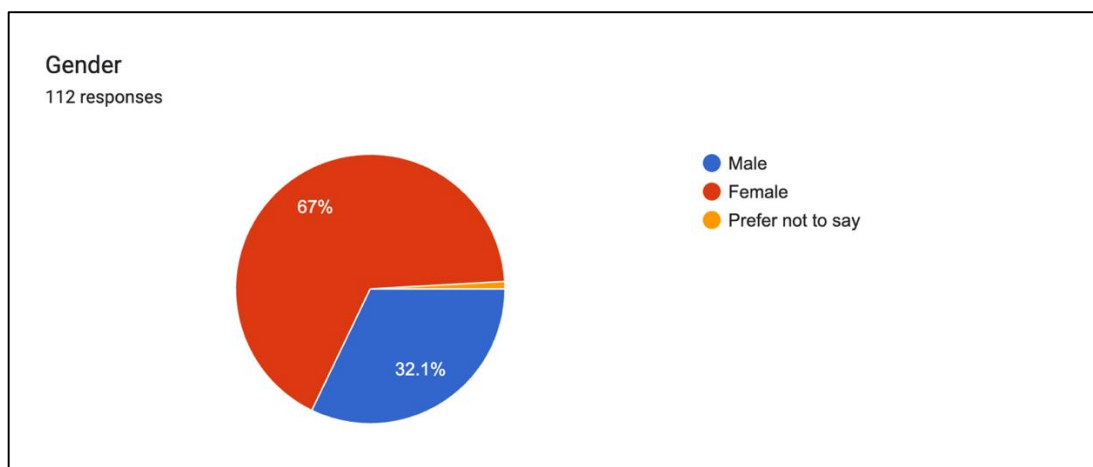
- T-Test: To compare the means of effectiveness and engagement scores between the AI-generated content group and the manually-generated content group.

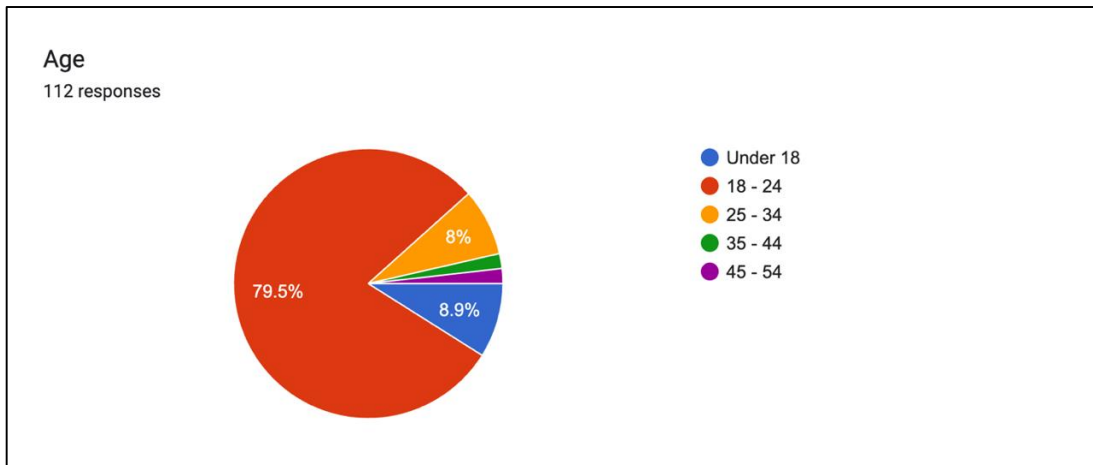
RESULTS & DISCUSSIONS

A. Survey Results

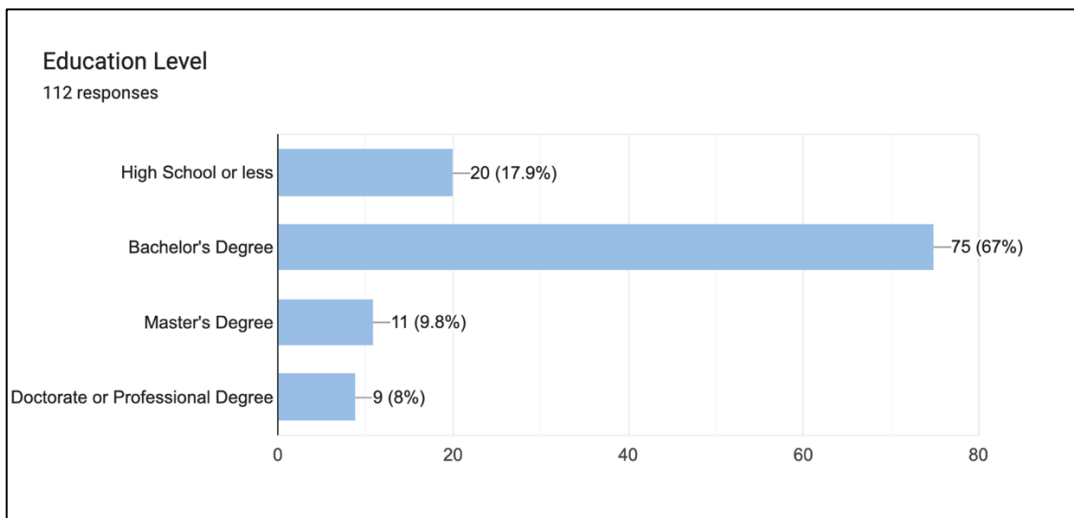
These survey results are the outcome of a questionnaire sent to 297 respondents via WhatsApp and email, receiving 158 valuable responses. 46 respondents reported not using any e-commerce sites, and their responses were therefore omitted from the study due to their lack of relevance. Our research focuses on the remaining 112 replies, which provide a useful dataset for a more in-depth investigation of e-commerce-related perceptions and behaviours.

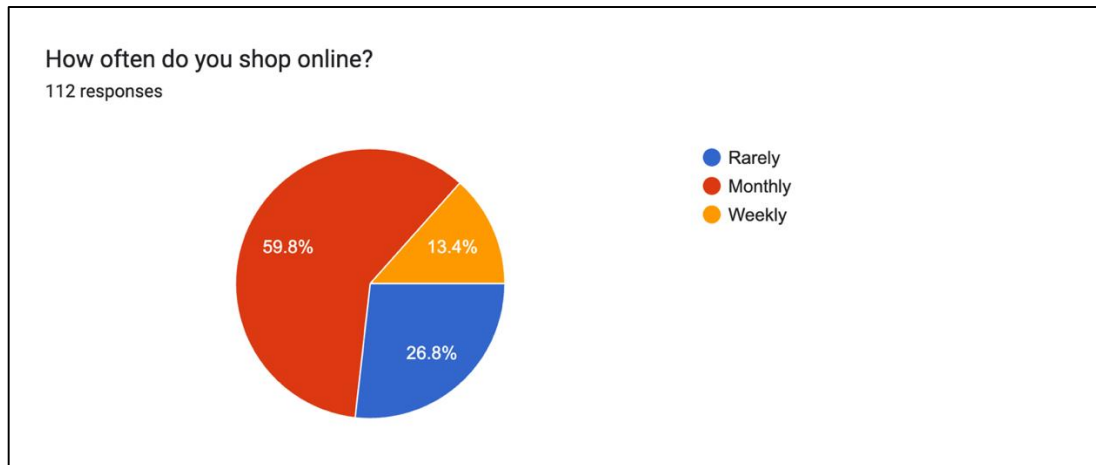
As the survey collected responses from 112 participants to understand respondent demographics. In terms of gender, 67% identified as female, 32.1% as male, and 0.9% preferred not to say. Regarding age, 8.9% were under 18, 79.5% were between 18 and 24, 8% were between 25 and 34, and 1.8% each fell into the age groups of 35 to 44 and 45 to 54.



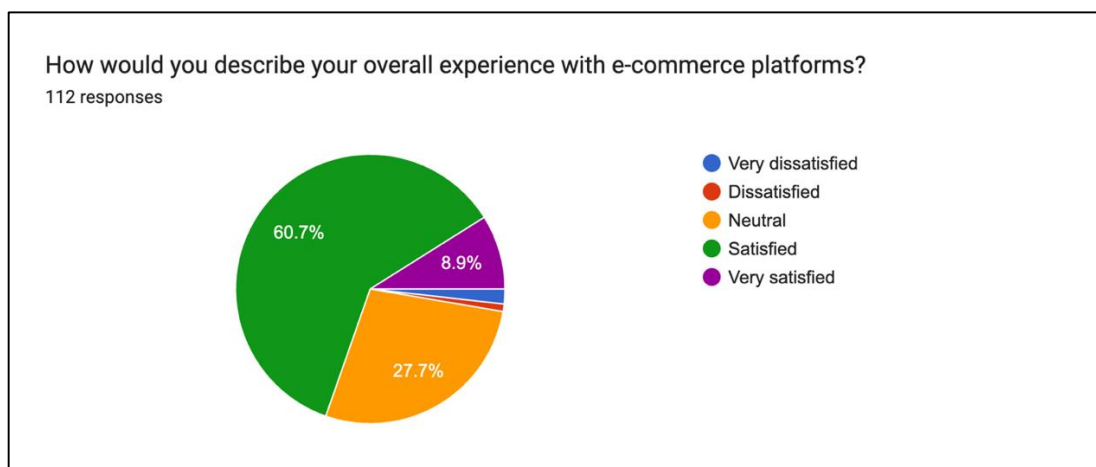


The study revealed a wide range of education levels among respondents: 17.9% had a high school diploma or less, 67% had a Bachelor's degree, 9.8% had a Master's degree, and 8% had a Doctorate or Professional Degree. In terms of online shopping frequency, 26.8% shopped infrequently, 59.8% monthly, and 13.4% weekly. These findings provide a more detailed knowledge of our respondents' educational backgrounds and online shopping behaviours.

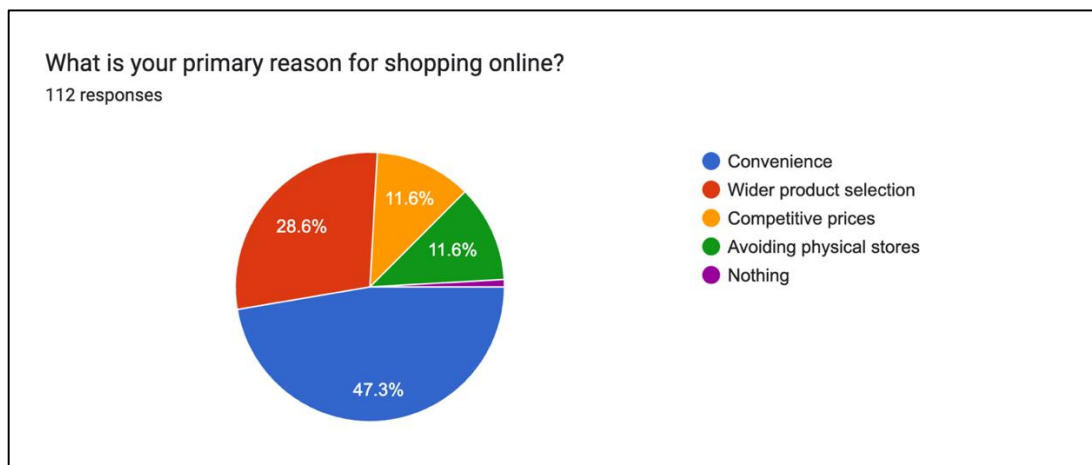
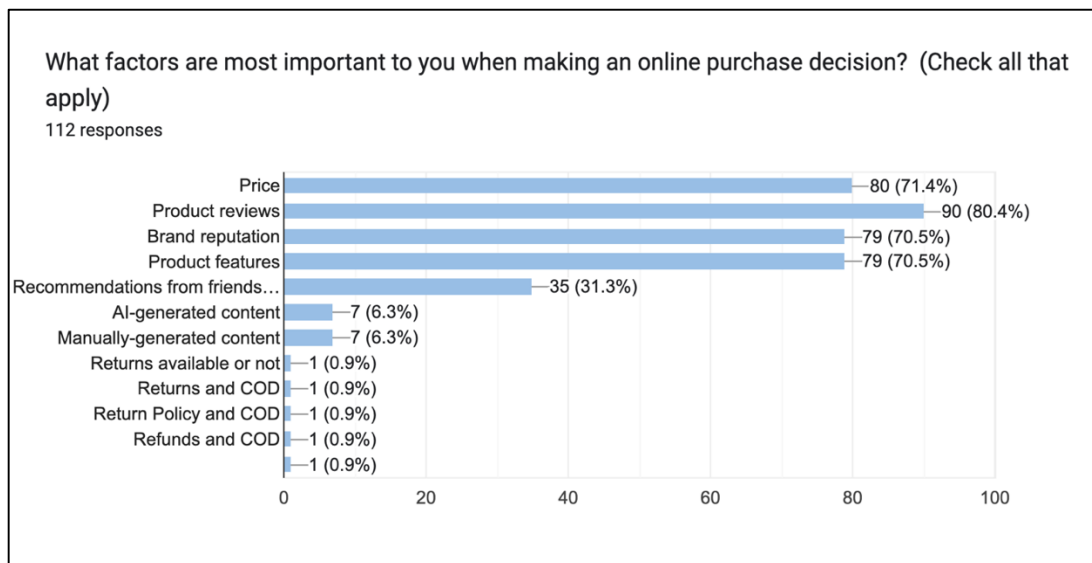




The poll found that 1.8% were very dissatisfied, 0.9% were displeased, 27.7% were indifferent, 60.7% were satisfied, and 8.9% were very satisfied with e-commerce platforms. In terms of online product reviews, 51.8% always read them, 24.1% frequently, 14.3% occasionally, 8% rarely, and 1.8% never. These data shed light on respondents' diverse opinions and degrees of engagement without providing the overall number of responses.



The questionnaire found that 1.8% of respondents were very dissatisfied, 0.9% were displeased, 27.7% were neutral, 60.7% were satisfied, and 8.9% were very satisfied with e-commerce platforms. In terms of online product reviews, 51.8% always read them, 24.1% frequently, 14.3% occasionally, 8% rarely, and 1.8% never. These insights capture the many opinions and degrees of participation among our respondents without stating the total number of responses.



B. Testing

Objective 1: Assess the Impact of AI-Generated Marketing Content on Customer Perceptions in the E-commerce Sector

Statistical Analysis: T-test

In order to better understand the influence of AI-generated marketing content on consumer perceptions, we used a T-test to compare means, investigating both scenarios where equal variances are assumed and cases where they are not.

Group Statistics

	AI-Generated Marketing Content	N	Mean	Std. Deviation
Customer Perceptions in the E-commerce Sector	1	23	3.04	.928
	2	27	3.07	.675

Group Statistics

	AI-Generated Marketing Content	Std. Error Mean
Customer Perceptions in the E-commerce Sector	1	.194
	2	.130

Results:

- The p-value for "equal variances assumed" is 0.218, and the t-statistic is -1.247.
- "Equal variances are not assumed": The p-value is 0.194 and the t-statistic is -1.323.

Interpretation:

- The p-values in both situations are more than the 0.05 significance level.
- As a result, there is insufficient evidence to reject the null hypothesis.
- The negative t-statistics imply that the group exposed to AI-generated marketing content had poorer mean perception scores, although these changes are not statistically significant.

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means

		F	Sig.	t
Customer Perceptions in the E-commerce Sector	Equal variances assumed	.265	.609	-.135
	Equal variances not assumed			-.131

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
Customer Perceptions in the E-commerce Sector	Equal variances assumed	48	.893	-.031
	Equal variances not assumed	39.508	.896	-.031

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Customer Perceptions in the E-commerce Sector	Equal variances assumed	.227	-.488	.426
	Equal variances not assumed	.233	-.502	.441

Objective 2: Analyze the Role of AI-Generated Content in Shaping Consumer Decision-Making Processes.

Regression Analysis: Impact on Consumer Decision-Making

A regression analysis was conducted in our research of how AI-generated content effects consumer decision-making processes, focusing on the variable "AI-Generated Content" as it relates to the dependent variable "Consumer Decision-Making Processes."

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.187	.160		13.673	.000
1 Consumer Decision-Making Processes	.345	.082	.373	4.196	.000

Coefficients^a

Model	95.0% Confidence Interval for B		Collinearity Statistics	
	Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	1.870	2.504		
1 Consumer Decision-Making Processes	.182	.509	1.000	1.000

Results:

- "AI-Generated Content" has a coefficient of 0.345.
- The p-value linked with the result is 0.000 (less than 0.05), showing statistical significance.
- The positive coefficient indicates that AI-generated content and consumer decision-making processes have a positive relationship.

Interpretation:

- The findings support the alternative hypothesis (H1), demonstrating that AI-generated material influences consumer decision-making processes significantly.
- A one-unit increase in AI-generated content correlates to a 0.345 unit increase in consumer decision-making processes on average, according to a coefficient of 0.345.

Objective 3: Compare the Effectiveness of AI-Generated & Manually-Generated Content in E-commerce & Examine Customer Responses (engagement).**Statistical Analysis: T-tests**

In our investigation of user engagement and effectiveness in the context of E-commerce, we used t-tests as a strong statistical technique to objectively compare the performance of AI-Generated Content vs Manually-Generated Content. This strategy enabled us to examine and develop relevant conclusions about the unique characteristics of user engagement and the impact on decision-making processes between these two content categories.

Group Statistics

	Type of Content (AI- vs. Manually-Generated)	N	Mean	Std. Deviation
Engagement	1	29	2.52	1.056
	2	46	2.48	1.150
Effectiveness	1	29	3.31	.967
	2	46	2.80	.833

Group Statistics

	Type of Content (AI- vs. Manually-Generated)	Std. Error Mean
Engagement	1	.196
	2	.170
Effectiveness	1	.180
	2	.123

ENGAGEMENT RESULTS

- The p-values are 0.883 (equal variances assumed) and 0.881 (equal variances not assumed). Both are greater than 0.05, suggesting no significant difference in engagement between AI-Generated and Manually-Generated Content.

Mean Difference and Confidence Interval

- The mean difference is 0.039, with a confidence interval ranging from -0.488 to 0.566, indicating that there is no significant difference in mean involvement.

EFFECTIVENESS RESULTS

- The p-values are 0.019 (equal variances assumed) and 0.024 (equal variances not assumed). Both are less than 0.05, suggesting a significant difference in effectiveness between AI-Generated and Manually-Generated Content.

Mean Difference and Confidence Interval

- The mean difference is 0.506, with a confidence range ranging from 0.087 to 0.925, indicating a substantial difference in mean effectiveness.

Overall Interpretation:

- The results provide evidence to reject the null hypothesis for effectiveness, suggesting that AI-Generated Content is significantly more effective than Manually-Generated Content in E-commerce.
- However, for engagement, there is no significant difference between the two types of content.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
Engagement	Equal variances assumed	.365	.548	.147
	Equal variances not assumed			.150
Effectiveness	Equal variances assumed	1.819	.182	2.406
	Equal variances not assumed			2.325

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
Engagement	Equal variances assumed	73	.883	.039
	Equal variances not assumed	63.427	.881	.039
Effectiveness	Equal variances assumed	73	.019	.506
	Equal variances not assumed	53.085	.024	.506

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Engagement	Equal variances assumed	.264	-.488	.566
	Equal variances not assumed	.259	-.479	.557
Effectiveness	Equal variances assumed	.210	.087	.925
	Equal variances not assumed	.218	.069	.943

CONCLUSION

The results for the first objective lead us to reject the null hypothesis. This means that, based on the data presented, AI-generated marketing content has no statistically significant impact on customer perceptions in the e-commerce sector. In contrast to the alternative hypothesis (H1) that AI-generated marketing content has a significant influence, the evidence from this study does not support such an argument. The findings point to a more complex situation in which the introduction of AI-generated content may not be the sole driver of significant shifts in customer views in the context of e-commerce.

In conclusion of this objective, an in-depth analysis of the data gives compelling evidence to reject the null hypothesis. The variable "AI-Generated Content" in particular emerges as a statistically significant predictor, holding significant influence on the extent to which

consumers experience AI-generated content and their purchasing decisions. This variable's positive coefficient indicates a direct and positive connection between them. This means that as consumers change their perceptions in response to AI-generated content suggestions, the actual effect of such content on their purchasing decisions rises. This insight highlights the real-world influence AI-generated content has on altering customer behaviours and decision-making processes, emphasising its importance in modern marketing contexts.

Our findings reveal significant trends in user engagement and effectiveness for AI-Generated and Manually-Generated Content. In terms of engagement, our findings indicate that there is not a noticeable distinction between the two content kinds. This means that, in terms of user engagement, AI-Generated and Manually-Generated Content perform similarly, with neither having a clear edge over the other. However, a significant distinction appears in terms of effectiveness, where a large and statistically significant difference is obvious. Particularly, respondents consistently ranked AI-Generated Content as more effective than its manually created alternative.

LIMITATION OF THE STUDY

This study is not without its limitations, which warrant acknowledgment to ensure a nuanced interpretation of the findings. First and foremost, budget constraints significantly impacted the research's scope. Financial limitations dictated the extent to which the investigation could delve into the multifaceted realm of AI-generated marketing content in the e-commerce sector. The constrained budget influenced the depth of the research, emphasizing the critical role of resource allocation in determining the achievable breadth of research goals.

Time constraints also played a pivotal role in shaping the study's limitations. The compressed timeline hindered the ability to conduct a more profound exploration of AI-generated marketing content across the entire spectrum of e-commerce. This limitation restricted the capacity to collect rich, detailed data and perform a comprehensive analysis, potentially compromising the depth of insights.

Another notable limitation is associated with the sample size. Challenges in participant recruitment and accessing specific demographic groups resulted in an insufficient sample size.

This limitation poses constraints on the generalizability of the study's results to the broader e-commerce field.

Furthermore, the study acknowledges a broader contextual limitation regarding market trends and competition. The influence of e-commerce giants like Amazon, utilizing powerful AI-generated content to impact consumer decisions through evolving market trends, remains an aspect not explicitly explored in this research.

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