The Impact of Chatgpt on Customer Experience in Digital Marketing

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Citation:

Abstract

ChatGPT is an AI model designed for conversational purposes. This field has gained significant popularity in digital marketing, providing organizations with a vital tool for interacting with customers and enhancing their marketing efforts. The primary objective of this research is to examine the impact of ChatGPT on customer experience in digital marketing. Additionally, this study aims to investigate the moderating effects of business type, familiarity and comfort with technology on customer experience. Furthermore, the research explores the moderating roles of gender, age, and education level. Data for this study was collected electronically from 394 customers who interacted with ChatGPT in digital marketing using an open-access questionnaire. The results confirm the importance of the moderating role of familiarity and comfort with technology, business type, age, and education level in the relationship between customer experience with ChatGPT and Overall Satisfaction (OS) with digital marketing, while gender has no significant impact. The findings of this paper contribute to the existing literature on the use of conversational AI models in digital marketing and customer experience, providing insights and recommendations for future research.

Keywords: ChatGPT, Chatbot, Digital marketing, Marketing, Consumer behavior.

1|Introduction

With the proliferation of technology and internet platforms, digital marketing has become an integral part of modern companies [1]. Chatbots have evolved as a prominent tool in digital marketing to enhance customer experience, as they offer a simple and personalized approach for businesses to communicate with their customers [2]. A chatbot is a computer program that simulates human conversation through text-based communication [3] and can be programmed to perform various tasks such as answering consumer questions, making recommendations, and assisting with transactions and negotiations [4].

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ChatGPT is a family of language models developed by OpenAI that can respond to text prompts in a human-like manner [5], [6]. These models are developed using massive datasets [7]. According to the Web of Science database, there are approximately 26,000 manuscripts with the term artificial intelligence in their titles since 1970, but only 13 of them have the word "ChatGPT" in their titles [8]. Therefore, the apparent lack of published studies on the topic of chatbots creates challenges that researchers must now face to investigate this important subject.

ChatGPT has been used in various natural language processing applications, including translation, software programming, medicine, writing, and content creation [1], [9–11]. The latest version of ChatGPT, "ChatGPT-3", released in 2020, is one of the largest language models ever produced, with 175 billion parameters.

In digital marketing, there is a growing body of research examining the impact of chatbots on customer experience [10]. However, many of these studies have focused on the technical aspects of chatbots, such as accuracy and performance, and have not fully considered the impact of other factors on customer experience, such as familiarity and comfort with technology, personalization, communication, accuracy, and convenience.

2|Research Background

The number of studies conducted on the use of conversational AI models in marketing and customer experience is limited. Previous studies have focused on the impact of these models on customer satisfaction but have not examined the moderating role of factors such as business type, familiarity and comfort with technology, gender, age, and education level. This study fills this gap by examining the moderating role of these factors in the relationship between customer experience with ChatGPT and Overall Satisfaction (OS) with digital marketing. Previous studies have also examined the impact of conversational AI models on other aspects of customer experience, such as perceived usefulness, perceived interaction, and perceived anthropomorphism. These studies have shown that conversational AI models can have a positive impact on these aspects of customer experience. However, more research is needed to understand other factors that influence the impact of conversational AI models on customer experience.

In this study, a survey questionnaire was used to collect data from a sample of consumers who have used chatbots in digital marketing as part of a quantitative research approach. To test the proposed hypotheses and examine the moderating effects of familiarity and comfort with technology and company type, the data was analyzed using moderated regression analysis and ANOVA. The findings of this study will help researchers to understand better the aspects that drive customer experience in digital marketing and also provide insights into how organizations may use chatbots to improve customer satisfaction. This research will also impact the design and development of chatbots in digital marketing as it provides recommendations on how to customize chatbots for different types of organizations.

3|Research Questions

The present research seeks to answer the following research questions, summarized in *Fig.1*:

I. How does ChatGPT influence customer experience in digital marketing?

II. In digital marketing, how do familiarity and comfort with technology influence the link between personalization, communication, accuracy, convenience, and OS with ChatGPT among customers?

III. How does business type influence the link between personalization, communication, accuracy, convenience, and overall customer satisfaction?

IV. Do demographic factors (gender, age, and education level) influence overall consumer satisfaction?

4|Research Objectives

This research has the following five objectives:

I. To examine the relationship between service quality (personalization, communication, accuracy, and convenience) and OS among customers.

II. To examine the role of familiarity and comfort with technology in moderating the relationship between service quality and OS.

III. To investigate how business type moderates the relationship between service quality and OS.

IV. To examine whether familiarity and comfort with technology mediate the relationship between business type and OS.

V. To provide insights and recommendations for businesses on how to improve overall customer satisfaction by enhancing service quality and effectively utilizing technology.

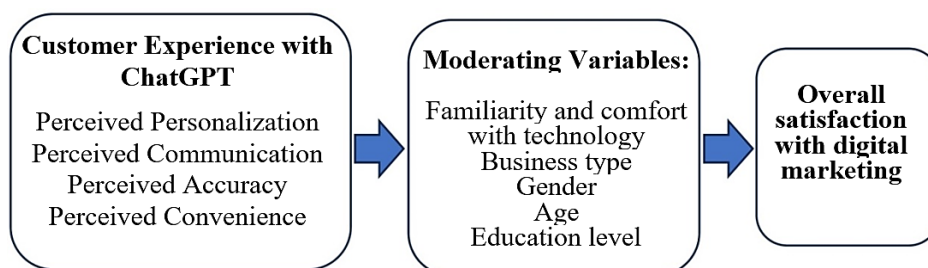VI. To examine variations in OS based on gender, age, and education level.

Customer Experience with ChatGPT

Perceived Personalization
Perceived Communication
Perceived Accuracy
Perceived Convenience

Moderating Variables:

Familiarity and comfort
with technology
Business type
Gender
Age
Education level

Overall satisfaction with digital marketing

Fig. 1. Research question structure.

5|Literature Review

This section reviews previous studies related to the current research topic and explains how the research hypotheses were formed. The findings from previous studies are divided into four subsections to focus on the study's objectives coherently. These subsections include measuring customer experience and satisfaction, comfort and familiarity with technology, the impact of business type, the impact of demographics, and research hypotheses.

The popularity of chatbots as a tool for improving customer experience in digital marketing has increased. These chatbots provide businesses with a quick and personalized way to communicate with customers and can automate customer service, freeing up human agents to focus on more complex issues [11]. Additionally, chatbots can collect data that can be used to improve marketing and personalize the customer experience [12]. ChatGPT is a language model that can be used to train chatbots to be more engaging and informative. This model has been trained on a massive dataset of text and code so that it can understand and generate text messages similar to a human.

Since ChatGPT was released in November 2020, and its latest version, ChatGPT-3, was released in November 2022, it is logical that the research area in this subject still has many research gaps that require pioneering efforts by researchers to fill [13]. This section of the research includes a review of previous studies on this topic and identifies some research gaps that the present study can address through the following subsections.

6|Measuring Customer Experience and Satisfaction

This section delves into the literature concerning three primary axes: defining overall customer satisfaction and customer experience, understanding how ChatGPT enhances customer experience, and determining how to measure overall customer satisfaction and customer experience within the context of this study on ChatGPT in digital marketing.

Overall customer satisfaction is a metric that indicates the extent to which a customer's products, services, and overall experience meet their expectations [14], [15], while customer experience is defined as the overall perception and understanding of a brand.

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According to the literature, chatbots can offer various benefits in terms of improving customer experience in digital marketing [16]. Chatbots can enhance customer interactions by providing quick support and reducing response times, eliminating the need for customers to wait for a human representative [17]. This can assist customers in identifying items or services that best suit their needs by offering tailored suggestions and increasing customer satisfaction [18], [14]. ChatGPT can be utilized in various ways to enhance chatbots. For instance, it can be employed to create more natural and engaging conversations, provide more accurate and targeted responses to queries, and generate more personalized marketing messages. As chatbots become more sophisticated, ChatGPT is likely to play a significant role in improving customer experience in digital marketing.

A review of the literature indicates that customer experience comprises four primary elements that should be measured: Perceived Personalization (PP), Perceived Communication (PR), Perceived Accuracy (PA), and Perceived Convenience (PC) [11], [15], [16]. Additionally, measuring OS is essential for statistical analysis and for examining the components of customer experience [18]. Customer satisfaction can be measured through three main components: expressing satisfaction [3], recommending to others [15], and the intention to use the service again in the future [12].

7|Comfort and Familiarity with Technology

This section examines the impact of customers' comfort and familiarity with technology on their OS with ChatGPT in digital marketing.

Customers desire chatbots that provide appropriate and relevant responses that are accurate and helpful, as well as a user interface that is easy and convenient. However, not all artificial intelligence chatbots are equally easy to use.

Customers' comfort and familiarity with technology can influence how they interact with chatbots [11]. Conversely, several studies have shown that customers' comfort and familiarity with technology have a significant impact on their satisfaction with chatbots, indicating that their satisfaction with chatbots is only notable for customers who have previously interacted with chatbots [9], [19]. The question this study aims to answer is: To what extent do ease and convenience affect the relationship between customer experience and OS?

8|The Impact of Business Type

This section investigates how the type of business influences the relationship between customer experience and overall customer satisfaction regarding ChatGPT in digital marketing. In other words, it seeks to answer the question: does the type of business play a moderating role in how customer experience affects overall customer satisfaction?

Thousands of businesses globally leverage ChatGPT to engage with their customers across a wide range of industries [1], [13], [20]. Major corporations have adopted ChatGPT-powered platforms in sectors such as retail and e-commerce (e.g., Amazon, Walmart, Alibaba, eBay, ASOS, IKEA, and Target) [13], technology and communications (e.g., Google, Microsoft, Facebook, Apple, IBM, Intel, Samsung, LG, Sony, Panasonic, Cisco, Dell, HP, Oracle, SAP, Ericsson, Nokia, and Huawei) [4], and transportation and travel (e.g., Uber, Booking, Pfizer, Novartis, Johnson & Johnson, and Glaxo) [10], [11], [23]. The purpose, functionality, and optimal use of AI chatbots vary significantly, depending on the industry and specific application.

The type of business can also influence the customer experience of using a chatbot. Different types of businesses may have distinct customer characteristics and expectations that affect how chatbots are used [7], [24]. For instance, a chatbot used in a retail company may differ from one used in a healthcare business [17]. The company type can also influence the design and type of chatbot, such as the language used [22].

This study aims to assess the moderating effect of business type on the relationship between customer experiences and OS regarding ChatGPT in digital marketing, a gap in the existing literature.

9 | Demographic Influences

This section examines previous studies on how three demographic characteristics (gender, age, and education level) moderate the relationship between customer experience with ChatGPT and OS in digital marketing.

Gender

Lio and Lee [15] found that chatbot users were more likely to be male than female, even when no information about their gender was provided. This might suggest that men use chatbots more frequently than women. For example, chatbots used for customer service might be used more by women, while chatbots used for gaming might be used more by men. However, more research is needed to confirm this. Another study by Aljasser and Sasidhar [25] showed that women were more satisfied with their banking experience compared to men, and this satisfaction was positively correlated with loyalty. The researchers believe this might be because women value personalized services more and feel more comfortable when interacting with female customer service representatives.

Age

studies by Siswi and Wahyono [26] and Lio and Lee [15] showed that younger individuals were more likely to be satisfied with chatbots' ability to provide accurate and helpful information. Another study by Wirtz et al. [27] found that individuals aged 18-34 were more likely to rate their customer experience with chatbots higher. Additionally, a study by Yoo and Kim [24] indicated that older users might be more skeptical of chatbots and less likely to use them frequently. This might be because younger individuals are more familiar with technology and are more likely to expect a chatbot to be able to understand and respond to their needs quickly and efficiently.

Education level

Wirtz et al. [27] found that individuals with a bachelor's degree or higher were more likely to rate their customer experience with chatbots higher. Another study by Zhang and Zhu [20] suggested that individuals with higher education levels were more likely to trust chatbots to provide accurate and helpful information [15]. A study by Rudolph et al. [8] showed that chatbot developers should consider the education level of their users when designing chatbots. Users with higher education levels were more likely to use chatbots for complex tasks, while users with lower education levels used chatbots for simpler tasks. This might be because individuals with higher education levels are more familiar with artificial intelligence.

This research suggests that gender, age, and education level can all have a moderating effect on the relationship between customer experience and OS with chatbots in digital marketing. However, more research is needed to fully understand these relationships with a focus on ChatGPT specifically, rather than all chatbots in general.

10 | Research Hypotheses

Based on the literature review and the sources mentioned in the previous sections, the following hypotheses will be tested to achieve the objectives of this research:

Hypothesis 1. "Familiarity and comfort with technology" positively moderates the relationship between the components of "customer experience" (PP, PR, PA, PC) and "OS."

Hypothesis 2. "Type of business" positively moderates the relationship between the components of "customer experience" (PP, PR, PA, PC) and "OS."

Hypothesis 3. "Gender" positively moderates the relationship between the components of "customer experience" (PP, PR, PA, PC) and "OS."

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11|Method

This research aims to examine the impact of ChatGPT on customer experience in digital marketing.

Table 1. Questionnaire variables and items.

Questionnaire Items	Variables
-I am comfortable using technology to interact with businesses [11].	Familiarity and comfort
-I consider myself familiar with the technology used in digital marketing [18].	with technology
-I feel confident when using ChatGPT in digital marketing [12].	
-The information provided by ChatGPT is personalized based on my needs [16].	PP
-ChatGPT understands my preferences and needs [11].	
-ChatGPT provided recommendations and suggestions that were relevant to me [15].	
-The information provided by ChatGPT was relevant to my needs [16].	PR
-ChatGPT provided me with useful and informative information [11].	
-ChatGPT provided me with relevant options and alternatives [15].	
-The information provided by ChatGPT was accurate and reliable [3].	PA
-ChatGPT provided me with correct and up-to-date information [15].	
-I trust the information provided by ChatGPT. the author	
-ChatGPT was easy to use and search [16].	Perceived comfort
-ChatGPT provided me with a quick and efficient solution to my request [15].	
-ChatGPT saved me time and effort compared to other methods [11].	
-I am satisfied with my experience interacting with ChatGPT [3].	OS
-I recommend ChatGPT to others [15].	
-I will use ChatGPT again in the future [12].	
-Retail (e.g., clothing, electronics, home goods) author	Type of business
-Health care (e.g., hospitals, clinics, pharmacies) author	
-Financial (e.g., banks, credit institutions, investment companies) author	
-Travel and tourist affairs (e.g., hotels, airlines, car rental companies) author	
-Technology (e.g., software, hardware, telecommunications) author	
-Education (e.g., schools, colleges, universities) of the author	

12|Statistical Population and Sample

The target population for this study is the statistical population of customers who have interacted with ChatGPT in digital marketing. The sample size was estimated for a survey with a 95% confidence level and a 5% margin of error. Questionnaires were sent to individuals who met the following criteria: 1) aged 18 or over, 2) engaged with ChatGPT in digital marketing, 3) able to read and understand English, and 4) willing to participate in the study.

13|Data Collection Methods, Tools, and Validity

A multi-step process was undertaken to ensure the validity of the questionnaire as the primary research tool. This questionnaire was developed after reviewing prior research and consulting with over 15 digital marketing clients. The initial questionnaire was presented to a panel of experts for validation to ensure it aligned with the study's objectives. Before finalization and distribution, a pilot test was conducted with a sample of 30 digital marketing clients to assess the quality and clarity of each questionnaire item.

The survey questionnaire comprises four sections. The first section collects demographic information such as age, gender, and education level. The second section employs a 5-point Likert scale to measure familiarity and comfort with technology. The third section uses a 5-point Likert scale to evaluate the consumer experience with ChatGPT in digital marketing, specifically assessing PP, relevance, accuracy, and ease of use. The fourth section, using an open-ended question, explores the moderating effect of business type on customer experience."

14 | Data Analysis

Survey data was analyzed using descriptive statistics such as mean, standard deviation, frequency, and percentage to explore the demographic characteristics and distribution of variables within the sample. To test research hypotheses and examine the moderating effects of business type, familiarity, and comfort with technology on customer experience, inferential statistics, including correlation analysis, multiple regression analysis, and moderated regression analysis, were employed. Statistical Package for the Social Sciences (SPSS) was used to evaluate the data.

15 | Ethical Considerations

Participant privacy and confidentiality were safeguarded by utilizing a secure online survey platform, storing data in a password-protected file, and using anonymous participant identifiers. Participants were informed about the study's purpose, the voluntary nature of their participation, and their right to withdraw at any time 1 without penalty. Informed consent was obtained from all participants prior to commencing the study.

16 | Results and Discussion

This section of the present study presents and discusses the results through the following three subsections: data description, results of hypothesis testing, and discussion.

17 | Data Description

Table 2 displays the demographic characteristics of the collected data. The descriptive statistics of the variables can be described as follows:

Table 2. Demographic description of the collected data.

Specifications	Title	Frequency	Percentage
Gender	Male	213	54
	Woman	181	46
Age	18-24	122	31
	25-34	153	39
	34-55	67	17
	45-54	36	9
	55 and above	16	4
Education level	Diploma and below	28	7
	Pre-university	150	38
	Student	204	52
	Graduate	12	3

The average ratings for PP, relevance, accuracy, ease of use, and OS in digital marketing indicate a high degree of customer experience when using ChatGPT. The mean score for familiarity and comfort with technology was 96.3, suggesting that individuals had a moderate level of technological familiarity and comfort.

18 | Hypothesis Test Results

Significance levels: $p > 0.001$ (), $p > 0.01$ (), and $p > 0.05$ ().

Fig. 2 summarizes the results of the hypothesis tests.

Hypothesis 4. the results of the moderated regression analysis revealed that familiarity and comfort with technology significantly moderated the relationship between PP ($\beta = 0.32$, $p > 0.01$), perceived relevance ($\beta = 0.30$, $p > 0.01$), PA ($\beta = 0.29$, $p > 0.01$), perceived ease of use ($\beta = 0.29$, $p > 0.01$), and OS. The interaction effects between the independent variables and familiarity and comfort with technology were significant, indicating that PP, relevance, accuracy, and ease of use had a greater impact on OS among participants who

were more familiar and comfortable with technology. The weight of the influence of customer experience elements can be compared in *Table 3*.

Hypothesis 5. An ANOVA was conducted to assess whether business type moderated the relationship between PP, relevance, accuracy, ease of use, and OS. Results indicated a significant moderating effect of business type, suggesting that the impact of these factors on OS varied across different industries. Specifically, the interactions between the independent variables (PP, relevance, accuracy, and ease of use) and business type were significant (F values ranging from 3.01 to 3.62, $p > 0.05$), implying that the influence of these factors on satisfaction was not uniform across all business types. Mean scores and standard deviations for each business type (healthcare, travel and tourism, finance, retail, technology, and education) revealed distinct levels of satisfaction.

Hypothesis 6. An ANOVA was employed to examine whether gender served as a moderator in the relationship between ChatGPT and customer experience. The analysis revealed no significant interaction effect between gender and ChatGPT ($F = 0.34$, $p < 0.05$), indicating that gender did not influence the impact of ChatGPT on customer experience. This suggests a consistent effect of ChatGPT on customer satisfaction across both genders.

Hypothesis 7. An ANOVA was employed to assess the moderating role of age in the impact of ChatGPT on customer experience in digital marketing. Findings revealed a significant moderating effect of age on the link between ChatGPT and customer experience ($F = 8.54$, $p > 0.001$). The mean customer experience scores were considerably higher for younger customers compared to older consumers, indicating a more pronounced positive impact of ChatGPT on customer experience for younger consumers.

Hypothesis 8. ANOVA was utilized to examine the influence of education level on the relationship between ChatGPT and customer experience in digital marketing. Results demonstrated a significant moderating effect of education level on the association between ChatGPT and customer experience ($F = 4.63$, $p > 0.01$). Participants with higher education levels exhibited significantly higher mean customer experience scores compared to those with lower education levels, suggesting a more beneficial impact of ChatGPT on customer experience for individuals with higher levels of education.
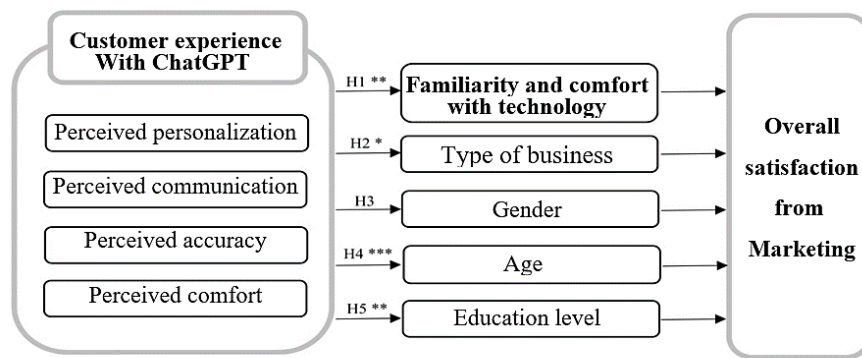
Significance level: $p > 0.001$ (***), $p > 0.01$ (**) and $p > 0.05$ (*).
Fig. 2. Structure of hypothesis test results.

Table 3. Impact weight of customer experience elements.

Customer Experience Elements	Mean	Standard Deviation	Confidence Interval on .05 Level	Influence Weight
-Perceived personalization	4.23	0.99	$4.132 \leq 4.328$	39.6%
-Perceived relevance	4.15	0.98	$4.053 \leq 4.247$	25.9%
-Perceived accuracy	4.12	1.02	$4.019 \leq 4.221$	20.7%
-Perceived convenience	4.08	1.00	$3.981 \leq 4.179$	13.8%

19 | Discussion

This section of the present study discusses the answers to the research questions by comparing its results and suggestions with those of previous related studies. While the benefits of chatbots are evident, the impact of other aspects on customer experience in relation to ChatGPT and their OS in digital marketing has not been fully explored in the previous literature. In this regard, the present study aimed to investigate the moderating role of five variables: customers' comfort and familiarity with technology, business type, gender, age, and education level.

Customers' comfort and familiarity with technology may influence how they interact with chatbots and their overall usage. For instance, they are more likely to use and find chatbots useful [11]. The question addressed in the present study is to what extent ease influences the relationship between customer experience and OS. The results reported that familiarity and comfort with technology play a significant role in moderating customer experience with ChatGPT and OS in digital marketing. A higher level of familiarity and comfort with technology improved the impact of ChatGPT on customer experience. These results of the current study are consistent with the results of most previous studies, whether general studies on chatbots or recent specialized studies on ChatGPT (e.g., references [17], [27], [28]).

In contrast, a study conducted by Trivedi and Jain [29] showed that other factors, such as the chatbot's ability to understand customer needs and provide accurate information, are more important in determining satisfaction. Also, the study by Gnewuch et al. [30] showed that the impact of customers' comfort and familiarity with technology on their satisfaction with chatbots is only significant for customers who have previously been familiar with chatbots. Their findings suggest that businesses should focus on other factors when designing and deploying chatbots, such as the chatbot's ability to understand customer needs and provide accurate information. Here, there is no contradiction between the results of the present study and the results of this group of other studies. Instead, the results of the current study determine the fundamental essence of the impact of chatbots on customer experience, which is confirmed by most previous studies, as mentioned earlier.

Business type

Based on our findings, business type exerts a significant moderating effect on the relationship between customer experience with ChatGPT and OS with digital marketing. This implies that the impact of ChatGPT on customer experience varies considerably across different business types, aligning with previous studies (e.g., [15], [17], [27], [28],). For businesses with large customer databases, ChatGPT can be a valuable tool for providing customer support and answering frequently asked questions [28]. This can free up human customer service representatives to focus on more complex issues, leading to improved customer satisfaction. However, for businesses with small customer databases, ChatGPT may not be necessary or cost-effective [27].

In these instances, human customer service may be the best way to provide a personalized and satisfying experience. Overall, businesses that have adopted ChatGPT more than others are those that need to provide continuous customer support (e.g., digital marketing, customer service, sales, and educational services) [15]. ChatGPT can be a valuable tool for these businesses as it can help them improve customer satisfaction, reduce costs, and grow their business. On the other hand, businesses that have adopted ChatGPT less are those that deal with complex products or services, sensitive customer data, or public information (e.g., financial services, manufacturing, and government services) [15]. ChatGPT may not be able to provide the same level of support or security as a human customer service representative in these cases.

Gender

According to our findings, gender does not have a significant moderating effect on the relationship between customer experience with ChatGPT and OS with digital marketing. The impact of ChatGPT on customer experience does not vary substantially between male and female consumers. This result is inconsistent with

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the suggestions of most previous studies on the impact of gender. Still, most previous studies have been applied to chatbots in general rather than specifically to ChatGPT. To elaborate, Lio and Lee [15] found that chatbots are perceived as more masculine than feminine, even when no information about their gender is provided [12]. This bias may lead to men using chatbots more than women. For instance, chatbots used for customer service may be used more by women, while chatbots used for gaming may be used more by men. However, further research is needed to confirm this. Additionally, Aljasser and Sasidhar [25] found that women have higher satisfaction with their banking experience than men, and this satisfaction is positively correlated with loyalty. The authors suggest that this may be because women value personalized services more and feel more comfortable interacting with female customer service representatives [31].

Age

According to the findings of this study, age has a strong moderating effect on customers' experiences with ChatGPT and their OS with digital marketing. In other words, younger ages were associated with a stronger positive relationship between ChatGPT and customer experience. Customers with younger ages reported a more favorable impact of ChatGPT on their overall customer experience in digital marketing. This result aligns with the impact of age in all previous studies, both on chatbots in general [16] and ChatGPT specifically (e.g., references [1], [24]), but the current study revealed a mediating role between customer experience. Siswi and Wahyono [26] and Lio and Lee [15] found in their studies that younger individuals were more likely to be satisfied with a chatbot's ability to provide accurate and useful information [12], [32].

Additionally, the study by Wirtz et al. [27] stated that individuals aged 18-34 were more likely to give higher ratings to their experience with a chatbot. On the other hand, the study by Yoo and Kim [24] showed that older users might be more skeptical of chatbots and may not use them as frequently [16]. Ultimately, the significant moderating role of age may be due to younger individuals being more familiar with technology and being more likely to expect a chatbot to be able to understand and respond to their needs quickly and efficiently.

Education level

Based on the findings of this study, customers with higher education levels were associated with a stronger positive relationship between ChatGPT and customer experience. Customers with higher education levels reported a more positive impact of ChatGPT on their overall customer experience in digital marketing. In the same vein, studies by Tlili et al. [32] and Wirtz et al. [27] found that individuals with a bachelor's degree or higher were more likely to rate their customer experience with a chatbot higher [24], [26]. Also, the study by Zhang and Zhu [20] suggested that individuals with higher education levels were more likely to trust chatbots to provide accurate and useful information [15]. While the study by Rudolph et al. [8] showed that chatbot developers should consider the education level of their users when designing chatbots [1]. Users with higher education levels use chatbots more for complex tasks, while users with lower education levels use chatbots for simpler tasks. This may be because individuals with higher education levels are more familiar with artificial intelligence and are more likely to trust a chatbot to provide accurate and useful information.

20 | Conclusion

This part of the study focuses on the academic and practical contributions of ChatGPT to the relationship between customer experience and OS in digital marketing, as well as implications for future research.

A reflection on scientific and applied fields

The current study provides valuable insights for organizations looking to incorporate ChatGPT into their digital marketing efforts. When deploying ChatGPT to enhance customer experience, businesses should consider consumers' age, education level, familiarity and comfort with technology, as well as their business type. Businesses may optimize the impact of ChatGPT on customer experience and improve their overall digital marketing strategies by tailoring it to the wants and characteristics of their consumers and businesses. This study is expected to be highly beneficial for both academic and applied fields. In the academic field, it

provides a valuable perspective on the potential of ChatGPT to enhance customer experience in digital marketing. This information can be used to inform future research on ChatGPT and its impact on customer experience. In the applied field, this study can help businesses make informed decisions about using ChatGPT in their digital marketing efforts. The findings of this study can also help businesses optimize the impact of ChatGPT on customer experience by tailoring it to the specific needs of their customers and businesses.

This study has several advantages. First, it provides a better understanding of the impact of ChatGPT on customer experience in digital marketing. Second, it determines whether there are differences in this impact across different types of businesses. Finally, it will help design more effective digital marketing techniques that can improve customer experience. Fourth, it provides valuable information for businesses that use ChatGPT to communicate with consumers, allowing them to enhance their services and strengthen customer relationships. Overall, the results of this study will be beneficial for companies, marketers, and researchers working in the field of digital marketing.

Suggestions for future research

This study offers valuable insights into the potential of ChatGPT to enhance customer experience in digital marketing. However, many unanswered questions remain regarding the impact of ChatGPT on customer experience. Future research is needed to explore these questions and further our understanding of ChatGPT's potential to revolutionize digital marketing. Four primary directions for future study include: 1) examining the impact of ChatGPT on customer experience across different cultures and countries, 2) investigating the application of ChatGPT in various digital marketing domains, 3) studying the long-term impact of ChatGPT on customer relationships, and 4) exploring the ethical implications of using ChatGPT in digital marketing.

Research limitations

This study is subject to several limitations that should be addressed in future research. First, future research could benefit from using a more representative sample to improve the study's external validity. Second, this study relied on self-reported data, which is susceptible to response bias. To provide a more comprehensive assessment of ChatGPT's impact on customer experience, future research could incorporate objective measures of consumer experience, such as behavioral data and physiological markers. Third, this study focused on the impact of ChatGPT on customer experience rather than other marketing outcomes, such as sales and brand loyalty. Further studies could examine these outcomes to provide a more complete picture of ChatGPT's performance in digital marketing.

Beyond addressing these limitations, future studies should explore additional elements that may influence the link between ChatGPT and customer experience. Finally, the replicability of the paper could be significantly increased and expanded in the following ways: 1) the findings could be sent to marketing companies to be tested on larger datasets and administered to a greater number of individuals, and 2) the findings could be used as a compass for creating a new questionnaire focusing on consumer behavior through digital marketing interactions with ChatGPT.

Author Contributions

Zeynab Dehnavi conceptualized and designed the study, collected and analyzed the data, and wrote the manuscript. Zeynab was responsible for interpreting the results and ensuring the accuracy and integrity of the work. The author approved the final version of the manuscript.

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Data Availability

The data used in this study is available from the corresponding author upon reasonable request.

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Conflicts of Interest

The author declares no conflicts of interest concerning the research, authorship, and publication of this paper.

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