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Exploring the Impact of AI-Driven Marketing Strategies on Customer Engagement and Loyalty in Pakistan's Online Shopping Sector

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ABSTRACT

This study examines the impact of AI-enabled marketing strategies on customer satisfaction, engagement, loyalty, and advocacy in Pakistan's online shopping sector. Focusing on the post-purchase phase, it investigates how AI-driven activities such as uniqueness, telepresence, delegation, interactivity, personalization, and customer relationship management shape customer behaviors and organizational outcomes. Drawing on dual concern theory, which examines the balance between egoistic and altruistic motivations, the study employs PLS–SEM analysis on data from 426 online shoppers to assess the impact of these AI strategies on key customer outcomes. The findings reveal that AI-driven marketing significantly enhances customer satisfaction, thereby improving customer engagement, loyalty, and advocacy. Furthermore, AI engagement fosters psychological rewards related to self-identity and life meaning, thereby contributing to long-term customer relationships. For executives and marketers in emerging markets, particularly Pakistan, the study underscores the need to integrate AI technologies to personalize the shopping experience and drive meaningful post-purchase engagement. This not only strengthens customer satisfaction and loyalty but also cultivates sustainable brand advocacy. The research contributes to the literature by offering practical insights into AI-driven customer engagement and by providing a deeper understanding of the psychological impact of AI marketing on customer behavior, with a focus on long-term relational benefits.

1 | Introduction

The rapid evolution of artificial intelligence (AI) technologies has significantly transformed digital marketing, particularly in online retail. AI-powered marketing systems enable companies to process vast amounts of customer data, automate engagement, and offer highly personalized experiences at scale (Acatrinei et al. 2025; Wilson et al. 2024; Huang and Rust 2021; Dwivedi et al. 2022). By leveraging intelligent personalization, interactive interfaces, automated decision-making, and advanced customer relationship management tools, AI-driven marketing allows businesses to go beyond mere transactions and build lasting customer relationships in increasingly competitive online markets (Iyelolu et al. 2024).

Most research on AI-driven marketing has concentrated on the pre-purchase phase of the customer journey. Studies have highlighted how AI tools such as recommendation algorithms, targeted advertising, and predictive analytics can boost purchase intentions, increase perceived relevance, and enhance decision-making efficiency (Hollebeek et al. 2024). However, although it is widely acknowledged that customer value often materializes after the initial purchase, the post-purchase phase remains relatively underexplored in the field

of AI marketing. There is a lack of comprehensive understanding regarding how AI-enabled interactions impact customer satisfaction, engagement, loyalty, and advocacy following a purchase (Acatrinei et al. 2025).

The gap is particularly topical in emerging markets, where digital commerce is gaining momentum, but institutional and technological requirements differ significantly from those in developed economies. Online stores in the world (including Pakistan) are gradually implementing AI-based applications to handle customer relations, but there is a lack of empirical studies that address their use as a part of the post-purchase experience (Iqbal et al. 2018; Rumokoy and Frank 2025). Because digital literacy, trust in technology, and expectations of service quality differ, findings from developed countries cannot be readily applied to emerging economies, and local research is necessary.

To fill these gaps, this research paper discusses the effects of AI-based marketing tactics, that is, uniqueness, telepresence, delegation, interactivity, personalization, and customer relationship management on customer satisfaction and consequently influence customer engagement, loyalty, and advocacy within the Pakistani online shopping industry. Based on existing marketing and behavioral theories, the study conceptualizes post-purchase engagement as a relationship process whereby AI-enabled interactions establish value by satisfying customers' functional and psychological needs (Dai and Liu 2024; Yoo et al. 2024).

Specifically, the research integrates findings from dual concern theory, which posits that self-oriented (egoistic) and other-oriented (altruistic) motivations converge in individual behavior (Pruitt 1992). Recent studies suggest that both motives can be triggered by AI-powered systems of engagement that can increase personal utility and promote relational or identity-based rewards (Iyelolu et al. 2024). Using this lens, the current research examines the role of AI-based interactions after purchase, which can lead not only to satisfaction and loyalty but also to more profound psychological effects that foster continued interaction and further promotion.

This research contributes to literature in three major ways. First, it further advances AI marketing research by redirecting analytical emphasis from pre-purchase decision-making to post-purchase engagement, which has received limited empirical attention. Second, by disaggregating AI-driven marketing into its separate dimensions of strategy, the study provides more detailed insight into how specific AI-enabled practices shape customer satisfaction and downstream behavioral outcomes. Third, conducting analysis in an emerging market context broadens the external validity of current AI marketing theories and yields new data on Pakistan's online shopping industry.

This study contributes to existing knowledge on the use of AI-based marketing concepts as long-term customer relationships and provides useful information to companies that may use AI-based technologies to facilitate customer satisfaction, engagement, loyalty, and promotion even after the customer has made a purchase.

2 | Theoretical Foundation

In today's fiercely competitive online shopping environment, AI-enabled marketing activities are essential in shaping customer experiences, particularly during the critical post-purchase phase. The AI-driven strategies of uniqueness, telepresence, delegation, interactivity, personalization, and customer relationship management (CRM) play a pivotal role in fostering deeper customer relationships by providing personalized, seamless, and engaging experiences. These AI strategies are crucial for enhancing customer satisfaction (CS), engagement (CE), loyalty (CL), and advocacy (CA), all of which contribute significantly to customer retention and long-term brand success (Rane 2023). By employing these strategies, brands are better positioned to meet the evolving needs of their customers, ensuring sustained, meaningful engagement that strengthens customer relationships over time.

Uniqueness refers to AI's ability to offer personalized services that make customers feel valued and distinct in their interactions with the brand. When customers perceive their experiences as unique or specially tailored to their specific preferences, this not only drives higher customer satisfaction but also significantly enhances loyalty (Hasanah 2025). This personalized approach helps brands build emotional attachment among customers, fostering a deeper, long-term commitment. This aligns with the idea that personalization is a key driver of customer loyalty in AI-based systems (Casaca and Miguel 2024). The personalized experiences enabled by AI allow brands to go beyond mere transactions, fostering connections that sustain customer loyalty, even in competitive markets.

Customer experiences can be enhanced through telepresence, supported by immersive technologies such as virtual reality (VR) and augmented reality (AR), thereby making interactions more lifelike and interactive. The experiential quality of these technologies not only boosts customer satisfaction but also increases engagement, as it helps customers spend more time with the brand and build stronger bonds (Lemon and Verhoef 2016). Past studies indicate that telepresence generates more interactive consumer-brand interactions, resulting in increased customer loyalty and brand-related advocacy (Qiao et al. 2022).

Customer service is facilitated by delegating tasks, using AI-driven automation technologies such as chatbots and virtual assistants, minimizing friction, and shortening response times. Automated systems are more convenient and bring higher satisfaction, offering more efficient and individually tailored solutions (Mariani et al. 2023). This enhances efficiency and, in turn, customer trust, which increases customer loyalty. To that extent, Delegation is vital for enhancing satisfaction and fostering customer loyalty by reducing perceived effort (Manyanga et al. 2022).

Interactivity is facilitated by real-time AI-powered communication devices, such as live chat and messaging platforms, which deepen customer engagement by providing immediate, personalized responses. This live interaction helps a customer feel listened to and appreciated, which enhances emotional

attachment to the brand (Muhammad and Stukalina 2025). When customers have meaningful and engaging experiences, they tend to promote the brand by positively spreading word-of-mouth and raising brand awareness (Faisal and Ekawanto 2022).

One of the most effective AI-based marketing tools is personalization, which customizes the shopping experience to suit individual customers' preferences. AI can make every interaction specific to the unique needs of the customer by delivering content and product recommendations that are personalized, which increases satisfaction and provides a sense of loyalty (Roy et al. 2025). Customer relationship management (CRM) systems enhanced by AI assist in maintaining long-term relationships after the purchase through personalized follow-ups, loyalty rewards, and sustained contact. Such systems strengthen customer loyalty by making customers feel appreciated even after the first purchase and by encouraging continued interaction (Ijomah 2024).

All these AI-based marketing practices ultimately increase customer satisfaction and engagement, which, in turn, result in greater customer loyalty and advocacy. The more consumers interact with a brand, the stronger the emotional attachment they form, thereby increasing the likelihood that they will promote it to their networks. This forms a positive reinforcement loop, in which happy customers become loyal supporters, which in the long-term leads to the development of the brand (Singh and Singh 2024).

The customer engagement theory (CET) is a principal theory that can be used to explain how customer–brand relationships work. CET assumes that customer engagement is a multidimensional construct encompassing cognitive, emotional, and behavioral investments in brand-related activities (Brodie et al. 2011). Engagement, as seen by CET, is not an issue of interaction but of active and significant customer participation in a brand. These types of engagement are complemented by AI-driven marketing tactics such as personalization, telepresence, and interactivity, through which customers receive personalized, immersive, and interactive interactions with the brand, thereby building stronger relationships (Algharabat 2018). This is because increased engagement leads to higher customer loyalty and advocacy, as clients are more inclined to remain loyal to and recommend brands that appeal to them cognitively, emotionally, and behaviorally (Kulikovskaja et al. 2023).

This study is also informed by the dual concern theory (Pruitt 1992), which provides information on customer behavior regarding AI-driven marketing. The theory asserts that consumers are motivated by self-interested (egoistic) and other-interested (altruistic or biospheric) issues. Self-interests such as convenience, financial savings, or personal satisfaction are egoistic needs that are fulfilled in AI-dominated marketing. Personalization and Delegation are AI tools that address these needs by providing personalized services and reducing effort, thereby enhancing customer satisfaction (Rouf et al. 2025). On the one hand, altruistic motivations are aligned with environmental sustainability and corporate social responsibility. Customers become more interested in the brand and are more willing to recommend it when AI-powered CRM systems prioritize sustainability and are guided by these principles. This coincidence between customer motivation and AI-based marketing instruments increases brand loyalty and advocacy (Nguyen et al. 2023).

In conclusion, the combination of AI-based marketing operations and customer engagement theory and dual concern theory offers a universal insight into the role of AI in customer satisfaction, engagement, loyalty, and advocacy. Considering both egoistic and altruistic motivations, AI-powered tools enable brands to generate individualized, relevant, and meaningful customer experiences. This helps build stronger relationships with customers, improve customer loyalty and advocacy, and support sustainable brand development in the highly competitive online shopping market.

2.1 | Hypothesis Development

The integration of AI-enabled marketing activities in the online shopping environment plays a crucial role in influencing CS, CE, CL, and CA. AI-driven strategies, including personalization, real-time interactions, and customer relationship management (CRM), provide brands with powerful tools to enhance the customer experience at various stages of the buying process. Based on the existing literature and the proposed research model, the following hypotheses have been developed to explore the relationships among these variables and the mechanisms that drive customer behavior.

2.1.1 | AI-Enabled Marketing Activities and Customer Satisfaction

Customer satisfaction (CS) is an important effect of AI-driven marketing activities. By employing various AI strategies, brands can personalize the experience, reduce obstacles, and interact with customers at a new level, which is essential for improving customer satisfaction. In this respect, the dual concern theory (Pruitt 1992) is particularly important, as it posits that consumer behavior is influenced by self-interested (egoistic) and other-interested (altruistic or biospheric) motivations. By satisfying both egoistic and altruistic needs, AI tools also contribute to customer satisfaction.

Uniqueness (UQ), for example, through AI personalization, generates personalized experiences that make customers feel important. Uniqueness is much associated with increasing the level of satisfaction by satisfying the egoistic need of being recognized and addressed in a specific manner (Agyei et al. 2021). Telepresence (TP) is a concept that can be supported by immersive technologies such as AR and VR, which focuses on the customer by making the interaction more engaging, satisfying both egoistic (e.g., enjoyment and excitement) and altruistic (e.g., sustainability) needs through novel experiences in creating a stronger connection with the brand (Enyejo et al. 2024). Friction and expediency of problem resolution is achieved through delegation (DG) through AI-based automation systems, which include chatbots, when considering egoistic needs of convenience and efficiency, and then enhancing satisfaction (Akter et al. 2022). Interactivity (INT) based on real-time AI application, such as

live chats, enables customers to feel engaged and heard, which leads to a stronger emotional attachment to the brand, which improves satisfaction (Hilali 2025). Personalization (PR) is personalized shopping, meaning that the shopping experience depends on the preferences of the customer, thereby contributing to the relevance and personal satisfaction requirement, and directly enhancing customer satisfaction (Douha et al. 2024). Finally, AI-based customer relationship management (CRM) systems promise to keep in contact with customers after buying products, which includes personalized follow-ups and loyalty programs, to keep customers satisfied in the long-term (Ozay et al. 2024). Thus, we hypothesize that:

H1a. *UQ has a positive relationship with CS.*

H1b. *TP has a positive relationship with CS.*

H1c. *DG has a positive relationship with CS.*

H1d. *INT has a positive relationship with CS.*

H1e. *PR has a positive relationship with CS.*

H1f. *CRM has a positive relationship with CS.*

2.1.2 | Customer Satisfaction and Customer Engagement, Loyalty, and Advocacy

Customer engagement (CE), customer loyalty (CL), and customer advocacy (CA) are established precursors of customer satisfaction (CS). With satisfied customers, there is likely to be increased customer involvement in the brand. Customer satisfaction will motivate greater cognitive, emotional, and behavioral investment in brand interactions, thereby increasing customer engagement, loyalty, and advocacy (Verhoef et al. 2021; Akter et al. 2022). Customer engagement (CE) is a direct outcome of customer satisfaction. When a customer is satisfied with a brand, they invest time and emotional effort in engaging with it, thereby forming a stronger bond (Agyei et al. 2021). Customer loyalty (CL) is motivated by a sense of commitment and attachment that develops through satisfaction. Loyal customers are more willing to interact with the brand over the long-term and to make repeat purchases (Verhoef et al. 2021). Customer advocacy (CA) is similarly driven by satisfaction. Satisfied customers are more likely to share their positive experiences, recommend the brand to their peers, and become brand ambassadors (Akter et al. 2022). The hypotheses that will be put forward are therefore as follows:

H2a. *CS has a positive relationship with CE.*

H2b. *CS has a positive relationship with CL.*

H2c. *CS has a positive relationship with CA.*

2.1.3 | Customer Engagement and Customer Loyalty

Customer engagement (CE) has been identified as a major way of increasing customer loyalty (CL). Fully involved customers who allocate more feelings, thinking, and action to a brand develop more enduring relationships. CE not only strengthens emotional attachment to the brand but also increases the likelihood that customers will remain loyal over time. Benegas and Zanfardini (2023) assert that engagement is a key factor in ensuring long-term loyalty, as engaged customers are more likely to defend the brand and contribute to its success. Engaged customers demonstrate a deeper emotional commitment to the brand, which makes them more likely to continue their relationship and resist switching to competitors (Kulikovskaja et al. 2023; Benegas and Zanfardini 2023). Therefore, we hypothesize:

H3a. *CE has a positive relationship with CL.*

2.1.4 | Customer Loyalty and Customer Advocacy

Customer loyalty (CL) is a crucial contribution to CA. Not only are they likely to make repeated purchases, but they also have a higher probability of communicating their favorable experiences to others. Such advocacy conduct is essential, and it results in organic brand promotion and adds to the word-of-mouth marketing process (Agyei et al. 2020). Loyal customers are likely to recommend the brand to their friends, family, and social circles, thereby enhancing the brand image and expanding the customer base. Consequently, CL directly affects CA, as satisfied customers serve as brand ambassadors. The concept of loyalty is thus not merely about customers' readiness to engage in repeat interactions with the brand, but also about their intention to actively promote it to others (Hilali 2025). Their marketing is a testament to their strong emotional connection to and satisfaction with the brand's products, thereby increasing their presence and trustworthiness. Kulikovskaja et al. (2023) argue that loyalty is not just about repeat purchases but about customers' readiness to actively promote the brand, which enhances its visibility and reputation. Thus, we hypothesize:

H4a. *CL has a positive relationship with CA.*

2.1.5 | Mediating Relationships

In addition to the direct relationships outlined, CE and CL are hypothesized to mediate the effects of CS on CL and CA. CE, which is driven by CS, is expected to mediate the relationship between satisfaction and loyalty. Customers who find their experiences satisfying are more likely to become more active with the brand and to exhibit greater emotional and cognitive investment. This interaction, in its turn, makes them more loyal. Customers who are engaged will become more attached to the brand and, therefore, more loyal in the long-term (Sumampouw et al. 2025).

Likewise, CL is presumed to mediate the connection between CS and CA. Loyal customers share more positive experiences and recommend the brand to others. Loyal customers advocate for the brand because of the emotional attachment and trust they have toward it. CL can be pivotal in the process of transferring satisfaction into active brand promotion, namely, through word-of-mouth and personal recommendations (Leckie et al. 2021). Therefore, the following mediating hypotheses are proposed:

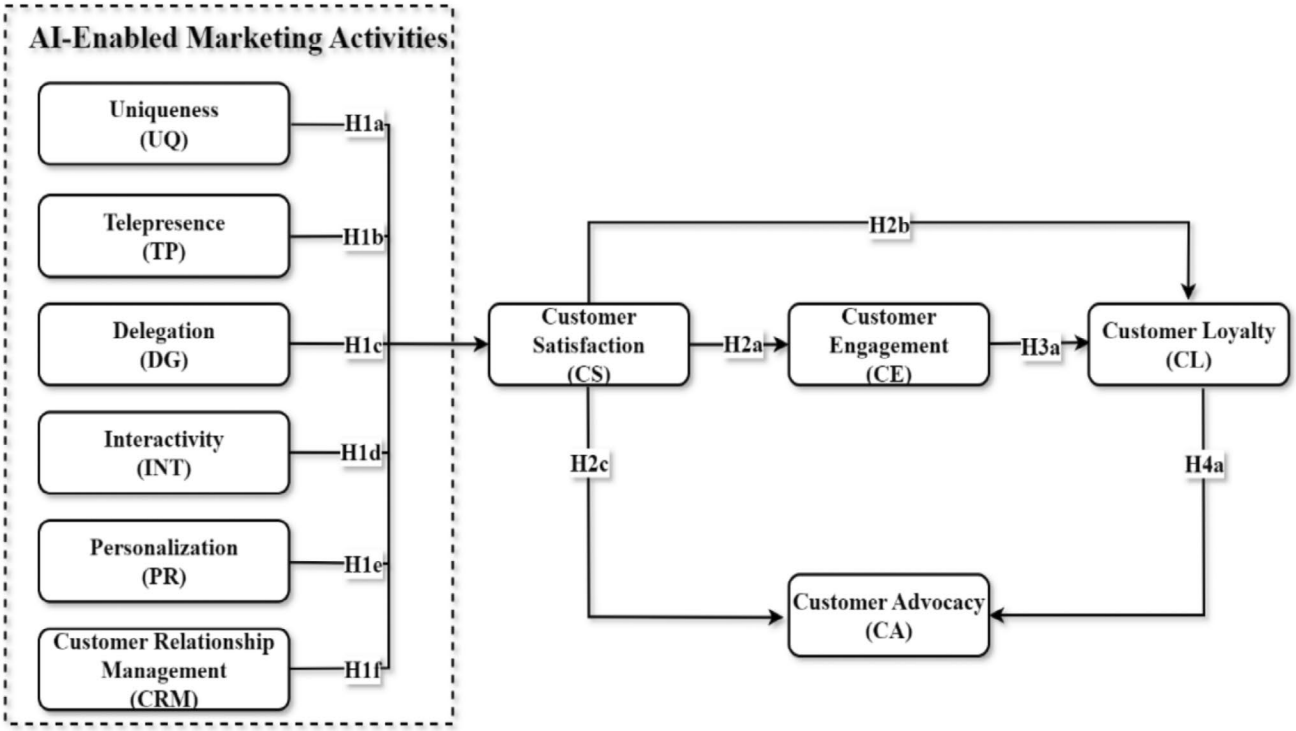

FIGURE 1 | Research framework. *Source:* Author's work.

H3b. *CE has a mediating role between CS and CL.*

H4b. *CL has a mediating role between CS and CA.*

2.2 | Research Framework

Based on the proposed theoretical framework and hypotheses, this research model is tied to AI-driven marketing practices and their effects on post-purchase customer outcomes, providing a fresh lens for new economies. Unlike previous research, which primarily focuses on pre-purchase decision-making in developed markets, this framework is more specific to online shopping in Pakistan, where post-purchase engagement mechanisms are the primary focus. The model enhances our understanding of AI adoption by examining the influence of AI-powered marketing methods on customer satisfaction and, consequently, on behavior, loyalty, and marketing through engagement, trust, and consumer readiness across low, medium, and high levels of digital development. This contextual approach is an important addition to the literature, as it extends AI-driven marketing theory to emerging markets and focuses on relational paths, which are particularly important in such contexts. Figure 1 represents the research framework of the study:

3 | Methodology

3.1 | Data Collection and Sampling Procedures

The research employed an online survey to investigate the associations between AI-enhanced marketing activities and customer satisfaction, engagement, loyalty, and advocacy among online customers in Pakistan who used AI-enhanced e-commerce platforms. The 426 respondents in the sample were selected from an online consumer panel, which represents the Pakistani online shopping landscape. The interviewees needed to meet the selection criteria, which included recent exposure to AI-related marketing, such as personalized product recommendations, interactive customer support, or AI-evolved chatbots, during online product searches and order requests. The questionnaire was completed over 4 weeks by respondents representing various age groups, levels of education, and socioeconomic statuses. Some of the avenues used to administer the questionnaire included social media, email invitations, and online forums to reach a large number of respondents. Cities such as Karachi, Lahore, and Islamabad were selected for targeting because online shopping is more prevalent in these cities due to better technological infrastructure and higher computer usage.

A simple random sampling method was used to select participants, ensuring that the population was well represented with respect to gender, age, and education. This response rate was 85.2%, achieved with 426 responses, which may be regarded as a benchmark for such an online survey in Pakistan. The initial study was a pilot study that examined the constructs within the framework of AI-driven marketing, their viability, reliability, and practicability prior to the main survey. The pilot testing included 20 respondents who provided feedback on the clarity and relevance of the survey questions. The remainder of the survey was distributed in response to positive feedback. Of the 545 questionnaires distributed, 426 were completed and returned between May and July 2024; however, some responses were excluded due to incomplete data. For a breakdown of the demographic profile of the respondents. Refer to Table 1.

TABLE 1 | Demographic profile of respondents.

Name	Category	Frequency	Valid percent
Gender	Male	234	54.9
	Female	192	45.1
Age (years)	21–25	98	23.0
	26–30	147	34.5
	31–35	111	26.1
	36–40	70	16.4
Education	Undergraduate	46	10.8
	Graduate	185	43.4
	Postgraduate	123	28.9
	Other professional certificate/ diploma	72	16.9

3.2 | Measures

The survey used established multi-item scales, adapted for AI-enabled marketing in Pakistan's e-commerce sector, with a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). Constructs measured consisted of AI-enabled marketing activities, six dimensions, uniqueness, telepresence, delegation, interactivity, personalization, and customer relationship management (CRM). For uniqueness (UQ), telepresence (TP), delegation (DG), and interactivity (INT), three items were used for each dimension. In contrast, personalization (PR) and CRM utilized four items each. These dimensions were adapted from the work of Yoo et al. (2024) and Song and Bonanni (2024), focusing on customized experiences, customer contact, and how AI impacts customer interactions. Customer satisfaction (CS) was measured using a three-item scale adapted from Dutta et al. (2017), which emphasized individualized and responsive customer relationships. This scale gauges customers' overall satisfaction with AI-mediated marketing practices, particularly in the post-purchase stage. To measure customer engagement (CE), a four-item scale was employed, adapted from Jessen et al. (2020). This scale covers the cognitive, emotional, and behavioral aspects of engagement, focusing on customers' intellectual, emotional, and physical investment in their interactions with the brand after purchase.

For customer loyalty (CL), the five-item scale developed by Heitmann et al. (2007) was used, which measures emotional commitment and the likelihood of repurchase. This scale focuses on the emotional attachment of customers to the brand and their intent to continue purchasing from it. Customer advocacy (CA) was measured using a four-item scale from Rosi and Ekasari (2023), which examines the extent to which satisfied customers recommend the brand to others, including word-of-mouth and sharing behaviors, concerns the extent of customer engagement with the brand post-purchase, accounting for the intellectual, emotional, and physical investments customers make in their interactions Lastly, customer engagement was quantified with the help of the three items of (Ullah Khan et al. 2023), specifically designed to measure the extent of customer engagement during the post-purchase phase. These multi-item scales were adapted to provide a comprehensive measure of each construct, ensuring the reliability and validity of the survey and aligning with established research in the field of AI-enabled marketing.

3.3 | Data Analysis

For the data analysis, we employed PLS–SEM to test the proposed relationships between AI-enabled marketing activities, customer satisfaction, engagement, loyalty, and advocacy. This method was selected for its suitability to complex models with multiple constructs and its ability to handle non-normal data and small sample sizes. The analysis followed a two-step approach, beginning with the evaluation of the measurement model for reliability and validity, using metrics like Cronbach's alpha, AVE, and discriminant validity tests. The second step involved testing the structural model using bootstrapping to assess the significance of the path coefficients and evaluating R^2 values for explained variance. This dual approach provided a comprehensive understanding of the dynamics between AI activities and consumer outcomes in Pakistan's online shopping sector.

4 | Results

This section presents the results of the PLS–SEM analysis, which explores the relationships among AI-enabled marketing activities, CS, CE, CL, and CA. The analysis is organized into three key sections: the evaluation of the measurement model, the testing of the structural model, and the examination of mediation effects. Additionally, we interpret the model fit, predictive relevance, and R^2 values.

4.1 | Measurement Model

The measurement model was assessed for reliability and validity through several key metrics, including factor loadings, Cronbach's alpha (CB-alpha), composite reliability (CR), and average variance extracted (AVE) (Hair et al. 2017). The results indicated that all constructs met the required thresholds, demonstrating strong reliability and validity. As shown in Table 2, the factor loadings for all items exceeded the acceptable threshold of 0.70, a critical value indicating that each construct was reliably measured (Hair et al. 2017). For example, customer advocacy (CA) items, such as CA2 (0.906) and CA1 (0.832), exhibited robust loadings, demonstrating the reliability of the measures for this construct. Similarly, the items for customer satisfaction (CS), including CS1 (0.826) and CS3 (0.868), showed high loadings, confirming that these items effectively captured the construct of customer satisfaction. These strong factor loadings across all constructs confirm the reliability of the measurement model.

Reliability analysis using Cronbach's alpha and composite reliability (CR) further confirmed the internal consistency of the

TABLE 2 | Factor loading, reliability, and validity.

Constructs	Items	Outer loading	CB-alpha	CR	AVE
Customer advocacy	CA1	0.832	0.885	0.885	0.744
	CA2	0.906			
	CA3	0.815			
	CA4	0.894			
Customer engagement	CE1	0.829	0.808	0.810	0.723
	CE2	0.853			
	CE3	0.868			
Customer loyalty	CL1	0.852	0.883	0.884	0.682
	CL2	0.855			
	CL3	0.818			
	CL4	0.754			
	CL5	0.847			
Customer relationship management	CRM1	0.899	0.883	0.884	0.743
	CRM2	0.899			
	CRM3	0.869			
	CRM4	0.776			
Customer satisfaction	CS1	0.826	0.814	0.814	0.729
	CS2	0.867			
	CS3	0.868			
Delegation	DG1	0.815	0.796	0.797	0.711
	DG2	0.854			
	DG3	0.859			
Interactivity	INT1	0.870	0.861	0.864	0.783
	INT2	0.885			
	INT3	0.899			
Personalization	PR1	0.832	0.857	0.857	0.699
	PR2	0.824			
	PR3	0.863			
	PR4	0.825			
Telepresence	TP1	0.870	0.858	0.863	0.779
	TP2	0.906			
	TP3	0.871			
Uniqueness	UQ1	0.848	0.842	0.843	0.760
	UQ2	0.890			
	UQ3	0.877			

Source: Author's work.

constructs. As recommended by Nunnally and Bernstein (1994), a value above 0.70 for these measures indicates satisfactory reliability. For example, customer advocacy (CA) had a Cronbach's alpha of 0.885 and a CR of 0.885, indicating high internal consistency. Additionally, the average variance extracted (AVE) values for all constructs were above the 0.50 threshold, indicating that the constructs explained a sufficient amount of variance in their indicators (Fornell and Larcker 1981). For instance, the

TABLE 3 | HTMT.

Constructs	CA	CE	CL	CRM	CS	DG	INT	PR	TP	UQ
CA										
CE	0.556									
CL	0.827	0.534								
CRM	0.618	0.507	0.575							
CS	0.624	0.732	0.602	0.668						
DG	0.615	0.665	0.648	0.604	0.824					
INT	0.567	0.612	0.594	0.580	0.677	0.709				
PR	0.600	0.603	0.600	0.598	0.656	0.669	0.589			
TP	0.532	0.531	0.521	0.511	0.694	0.757	0.588	0.565		
UQ	0.536	0.612	0.589	0.594	0.780	0.739	0.691	0.625	0.707	

Source: Author's work.

AVE for customer satisfaction (CS) was 0.729, confirming the construct's convergent validity.

4.1.1 | Discriminant Validity by Heterotrait–Monotrait Ratios

Discriminant validity was tested using the HTMT ratio, as shown in Table 3. All HTMT values were below 0.90, indicating that the constructs are sufficiently distinct from each other. For example, the HTMT value between CS and customer loyalty (CL) is 0.602, which is well below the threshold, confirming discriminant validity (Henseler et al. 2015).

4.2 | Model Fit and Predictive Power

The model fit indices presented in Table 4 suggest that the model fits the data well. The SRMR value of 0.097 is within the acceptable range, indicating a good fit between the data and the model. The NFI value of 0.771 further supports the model's adequacy. Additionally, the RMSE values presented in Table 4 show acceptable predictive accuracy, with Q^2 predict values above 0.3, indicating good predictive relevance for the constructs. The R^2 values presented in Table 4 indicate that the model explains a substantial portion of the variance in the key constructs. Specifically, CS has the highest R^2 value of 0.588, indicating that the model explains nearly 59% of the variance in customer satisfaction. The R^2 values for CE, CL, and CA are also notable, ranging from 0.355 to 0.578, indicating a good fit for these outcomes.

4.3 | Common Method Bias (CMB)

To assess potential common method bias (CMB) in the data, a Harman's single factor test was conducted. The result indicated that the Harman-single factor value was 42.3%, which is below the commonly used threshold of 50%, suggesting that CMB is not a significant concern in this study. Additionally, the variance inflation factor (VIF) values for all constructs were below 3.3, further confirming that multicollinearity is not an issue. These findings indicate that the study results are not unduly affected by CMB, thereby supporting the model's reliability and validity.

TABLE 4 | PLS predict, *R*-square, *R*-square adjusted.

Constructs	Q^2 predict	RMSE	R^2	R^2 adjusted
CA	0.341	0.821	0.578	0.576
CE	0.349	0.815	0.355	0.353
CL	0.349	0.818	0.298	0.294
CS	0.580	0.655	0.588	0.582

Model fit summary

Test	Saturated model	Estimated model
SRMR	0.050	0.097
d_ULS	1.591	5.965
d_G	0.918	1.003
χ^2	2293.796	2434.720
NFI	0.785	0.771

Source: Author's work.

4.4 | Path Analysis (SEM)

The path analysis using structural equation modeling (SEM) revealed several significant relationships between the constructs. Uniqueness (UQ) positively affects customer satisfaction (CS) ($\beta = 0.230$, $p = 0.000$), while telepresence (TP) also has a significant positive relationship with CS ($\beta = 0.112$, $p = 0.006$) as shown in Table 5 and Figure 2. Additionally, delegation (DG) ($\beta = 0.267$, $p = 0.000$) and customer relationship management (CRM) ($\beta = 0.174$, $p = 0.000$) both show significant positive effects on CS. Customer satisfaction (CS) strongly influences customer engagement (CE) ($\beta = 0.595$, $p = 0.000$) and customer loyalty (CL) ($\beta = 0.380$, $p = 0.000$), with CS also having a positive impact on customer advocacy (CA) ($\beta = 0.205$, $p = 0.000$). Further, CE

TABLE 5 | SEM path.

Hypothesis	Beta	SD	*T* values	*p*	Bias	2.5%	97.5%
H1a: UQ → CS	0.230	0.051	4.505	0.000	0.000	0.133	0.330
H1b: TP → CS	0.112	0.040	2.764	0.006	0.000	0.029	0.189
H1c: DG → CS	0.267	0.048	5.572	0.000	−0.001	0.173	0.360
H1d: INT → CS	0.085	0.041	2.055	0.040	0.000	0.002	0.166
H1e: PR → CS	0.092	0.042	2.175	0.030	0.001	0.008	0.174
H1f: CRM → CS	0.174	0.035	4.921	0.000	−0.001	0.104	0.242
H2a: CS → CE	0.595	0.059	10.033	0.000	−0.005	0.465	0.697
H2b: CS → CL	0.380	0.060	6.335	0.000	−0.007	0.262	0.497
H2c: CS → CA	0.205	0.038	5.402	0.000	−0.003	0.134	0.281
H3a: CE → CL	0.226	0.055	4.138	0.000	−0.002	0.117	0.330
H4a: CL → CA	0.634	0.036	17.461	0.000	0.000	0.560	0.704
Mediation							
H3b: CS → CE → CL	0.135	0.039	3.419	0.001	−0.001	0.065	0.217
H4b: CS → CL → CA	0.241	0.042	5.759	0.000	−0.004	0.163	0.327

Source: Author's work.

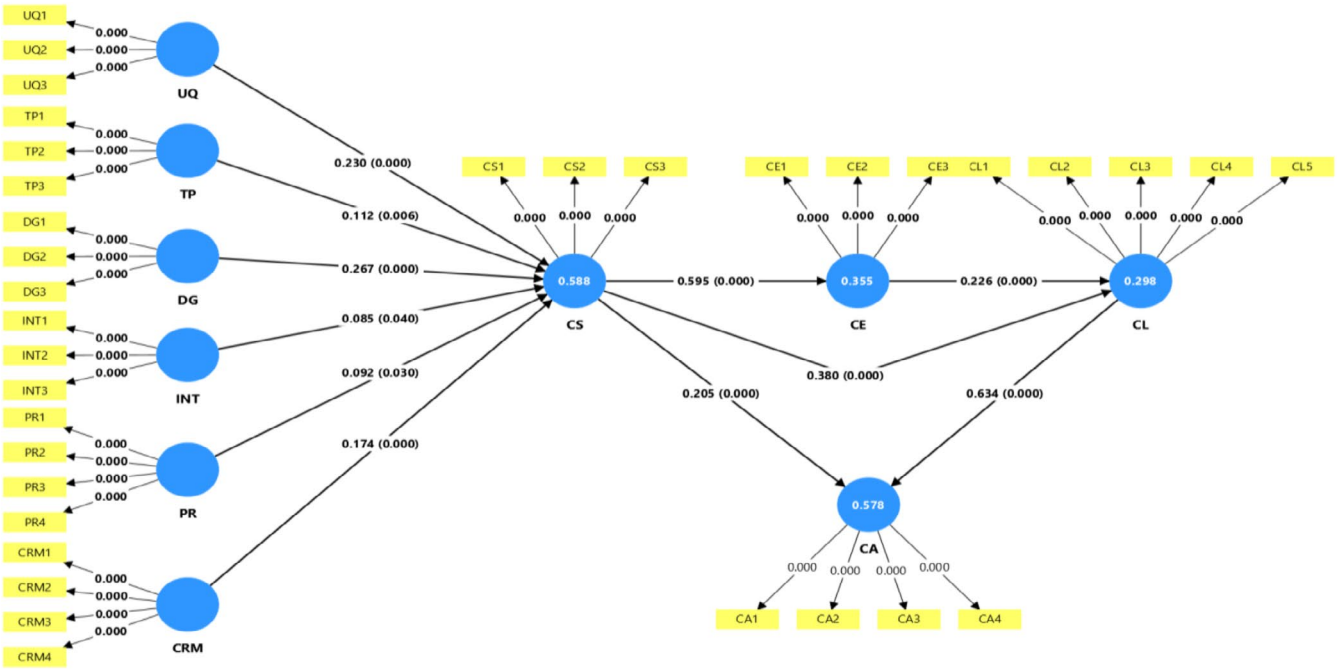

FIGURE 2 | Path model by SEM. *Source:* Author's work. [Colour figure can be viewed at wileyonlinelibrary.com]

positively influences customer loyalty (CL) ($\beta = 0.226$, $p = 0.000$), and customer loyalty (CL) significantly impacts CA ($\beta = 0.634$, $p = 0.000$).

The mediation analysis showed that CE mediates the relationship between CS and customer loyalty (CL) ($\beta = 0.135$, $p = 0.001$), while customer loyalty (CL) mediates the relationship between CS and CA ($\beta = 0.241$, $p = 0.000$). These results collectively suggest that customer satisfaction drives engagement and loyalty, which ultimately lead to increased advocacy, underscoring the importance of AI-driven marketing in shaping customer behavior. All path coefficients were statistically significant, confirming the robustness of the proposed model.

4.5 | Importance-Performance Map Analysis (IPMA)

The importance-performance map analysis (IPMA) used in the present study shows the Importance of constructs (*x*-axis)

versus their performance (y-axis). Two constructs, CE and CS, are depicted in Figure 3 by colored markers. The orange line depicting CE is centered on the importance scale, indicating a moderate level of importance across the model. Nevertheless, its performance is not poor; it is only about 65, leaving no doubt that, although it has a rather moderate degree of importance, it performs well under the conditions of the research. On the contrary, CS, highlighted in yellow, is positioned somewhat higher on the importance scale, which is why it exerts greater influence on the model. Its performance score, however, is lower, at approximately 60, implying that while it is important, the way it is being done or the extent to which it is being attained in the prevailing situation could use improvement. These results imply that although both CE and CS are necessary, greater attention should be paid to improving CS performance to further enhance performance, while the high performance of CE must be maintained. This indicates a strategic need to improve CS performance to better align it with its significance in the model.

5 | Discussion

This study offers valuable insights into how AI-driven marketing strategies shape post-purchase customer experiences and relational outcomes in Pakistan's online shopping sector. The findings indicate that AI interactions significantly enhance customer satisfaction, which in turn fosters greater engagement, loyalty, and advocacy. These results emphasize that AI-powered marketing should be viewed not only as a transactional tool but also as a means of building long-term relationships and shaping post-purchase perceptions.

AI-driven strategies contribute to customer satisfaction by providing efficient, responsive, and personalized experiences. Customers value features like uniqueness and delegation, which reduce cognitive load while differentiating the brand experience. This aligns with prior research suggesting that AI automation and differentiation enhance perceived convenience and value, particularly in digital environments characterized by information overload (Vashishth et al. 2024). In Pakistan's online shopping market, where service quality and reliability can be uncertain, AI-driven support that simplifies decision-making and delivers unique experiences is especially effective in driving satisfaction.

The study also highlights the importance of telepresence, interactivity, and personalization in post-purchase evaluations. These factors reinforce the role of immersive and responsive digital interactions in enhancing service quality and emotional connection with brands (Hollebeek et al. 2024; Saleem et al. 2024). However, the weaker influence of these elements relative to delegation-based features may reflect consumer preferences in emerging markets such as Pakistan, where functional benefits and reliability are often prioritized over advanced experiential features. This suggests that efficiency-driven AI capabilities have a stronger impact on satisfaction in these contexts.

Specifically, the research integrates findings from dual concern theory, which posits that self-oriented (egoistic) and other-oriented (altruistic) motivations converge in individual behavior (Pruitt 1992). Recent studies suggest that both motives can be triggered by AI-powered systems of engagement that can increase personal utility and promote relational or identity-based rewards (Song and Bonanni 2024). Using this lens, the current

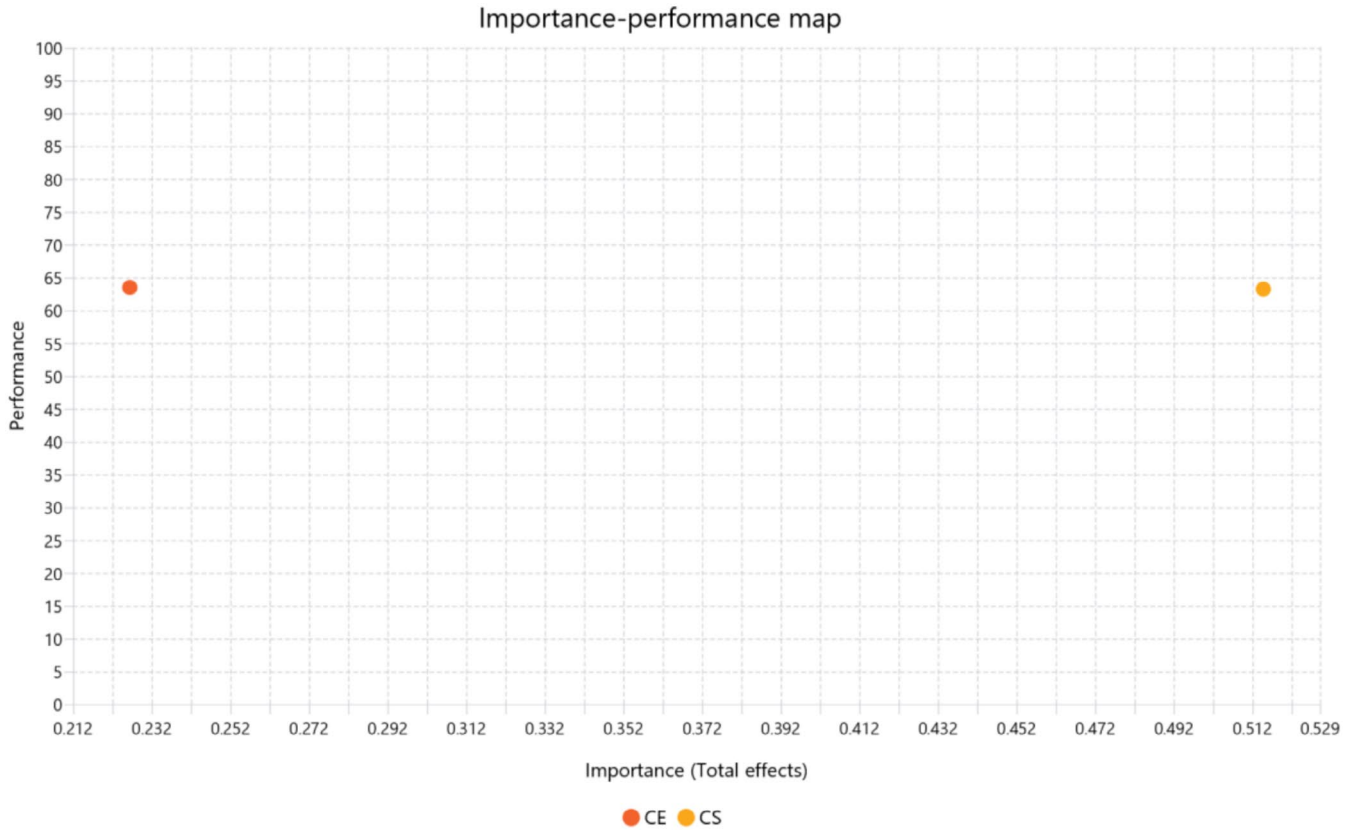

FIGURE 3 | Importance-performance map. *Source:* Author's work. [Colour figure can be viewed at wileyonlinelibrary.com]

research examines the role of AI-based interactions after purchase, which can lead not only to satisfaction and loyalty but also to more profound psychological effects that foster continued interaction and further promotion.

This research contributes to literature in three major ways. First, it further advances AI marketing research by redirecting analytical emphasis from pre-purchase decision-making to post-purchase engagement, which has received limited empirical attention. Second, by disaggregating AI-driven marketing into its separate dimensions of strategy, the study provides more detailed insight into how specific AI-enabled practices shape customer satisfaction and downstream behavioral outcomes. Third, conducting analysis in an emerging market setting broadens the external validity of current AI marketing theories and yields new data on the online shopping industry in Pakistan. In general, the study contributes to existing knowledge on the use of AI-based marketing concepts as long-term customer relationships and provides useful information to companies that may use AI-based technologies to facilitate customer satisfaction, engagement, loyalty, and promotion even after the customer has made a purchase.

The findings also reveal that customer loyalty strongly predicts advocacy, showing that customers are more likely to recommend and support brands once a stable relational bond has been established. This aligns with existing research suggesting that advocacy is an advanced stage in the customer–brand relationship, typically emerging after loyalty is achieved (Ledro et al. 2025). In collectivist cultures such as Pakistan, where word-of-mouth and peer influence carry significant weight, loyal customers are likely to play a pivotal role in shaping brand reputation and attracting new customers.

The study also highlights the mediating effects in the post-purchase relationship process. Customer satisfaction alone does not directly lead to loyalty or advocacy; instead, it operates through engagement and loyalty as intermediary steps. This sequential development supports relationship-building models and further extends prior research by demonstrating how AI-enabled post-purchase interactions foster long-term relational outcomes through psychological and behavioral mechanisms. These processes are especially relevant in emerging markets, where building trust and maintaining relational continuity require sustained interaction.

5.1 | Theoretical Implications

This study builds upon the dual concern theory by applying it to the post-purchase stage. Although the previous studies were mainly focused on egoistic and altruistic values at the pre-purchase stage (Nkrumah 2021; Rayne et al. 2025). Our results indicate that the same values also impact customer engagement after the purchase. This extension provides better insight into the influence of these values on post-purchase consumer behavior and the attainment of psychological gains such as self-identity and life-meaning rewards.

Furthermore, this research contests the prevailing opinion within the literature on green consumer behavior, where the biospheric values (environmental concerns) have been commonly regarded as the central focus of the green brand engagement (Rouf et al. 2025). We propose that in post-purchase interactions with AI-driven brands, human concerns, such as family and community, are more salient than environmental issues. This change of direction offers a new understanding of how AI technologies can serve as an active stimulus, attracting consumers' attention not only to their eco-concerns but also to their personal and social desires. This research extends the literature on customer engagement beyond conventional indicators such as brand loyalty and purchase intention, emphasizing the psychological benefits that may arise from post-purchase interactions with AI-powered brands. This provides better insight into how AI marketing can transcend transactional relationships to promote long-term emotional bonds with consumers.

5.2 | Managerial Implications

For marketers, this study provides several key insights to enhance customer engagement and brand loyalty. To begin with, the brands need to give much emphasis on customer engagement marketing (CEM) strategies that aim at developing meaningful post-purchase relationships with the customers. Through AI technologies such as personalization and interactivity, brands can significantly enhance customer satisfaction and foster greater emotional attachment. Such interactions, in turn, increase customer loyalty and advocacy. To do so, marketers must develop individualized messages that appeal to both egoistic and altruistic drives so that consumers feel appreciated at the individual level and connected to a larger social good.

Additionally, the effectiveness and accuracy of engagement strategies can be enhanced by segmenting the customer base into egoistic/altruistic groups. By identifying which consumers prioritize self-enhancement or self-transcendence in brand interactions, marketers can tailor messages to highlight how the brand's products or services can help consumers achieve their self-goals while benefiting society at large. Emphasizing community well-being or family values in marketing campaigns may foster emotional connections with the brand, helping it retain customers and build long-term loyalty. These are some of the activities that enable a brand to establish a reputation for reliability in consumers' personal and social lives.

Finally, personalization must be listed as the main element of any AI-oriented marketing approach. Customized experiences: brands that offer customized product recommendations, personalized follow-ups, and personalized support are more likely to form meaningful relationships with consumers. Such one-to-one communication enhances customer satisfaction, thereby contributing to engagement, loyalty, and advocacy. Other strategies that should be tried by marketers include user-generated content campaigns, in which consumers are empowered to make positive contributions about the brand. These efforts help transform satisfied consumers into loyal advocates who increase the brand's reach and influence.

5.3 | Limitations and Future Research

Although this study provides empirical data on how AI-enabled marketing influences customer satisfaction, engagement,

loyalty, and advocacy, it has several limitations that warrant careful consideration and present opportunities for future research. A significant weakness concerns the study's contextual scope. The empirical data were collected for a single national market that exhibits rapid yet uneven growth in digital infrastructure and AI adoption. The relationships observed are not necessarily applicable in other environments, as consumer familiarity with AI technologies, regulatory environments, and market maturity vary across countries. Future studies could extend this paper by examining multiple countries or conducting cross-cultural comparisons to assess the stability of the proposed relationships and the contextual factors that influence the effectiveness of AI-directed marketing strategies.

The second limitation concerns the study's research design. Furthermore, the use of cross-sectional data limits the ability to establish causality and to monitor the development of customer reactions to AI-enabled interactions over time. Customer engagement and customer loyalty are dynamic processes, particularly in AI-enabled interactions, where systems continually learn and evolve. Future research with longitudinal designs or controlled experiments may offer more information about causal processes and unravel how the effects of AI-enabled marketing change at various points of customer–brand interaction.

Third, the systems of analysis are centered on a selected set of psychological processes to describe post-purchase engagement. Although this approach clarifies the theory, it may not account for other significant cognitive and relational factors that affect customer responses to AI-based marketing. Future studies may expand the model by including variables such as trust in AI algorithms, perceptions of fairness and transparency, and customer perceptions of risk, thereby providing a more detailed explanation of customer behavior in AI-supported marketing contexts.

Lastly, this research is based on self-reported survey data, which is prone to response-related biases, such as social desirability and common method bias. Although standard procedural controls were used, these biases cannot be completely excluded and may affect the strength of observed relationships. To address these issues, future studies can combine survey data with objective indicators, such as behavioral usage data, clickstream data, or firm-level performance metrics, to improve measurement validity and increase confidence in the results.

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Ethics Statement

The authors have nothing to report.

Consent

Participation was voluntary, and informed consent was obtained from all respondents before data collection All authors have reviewed and approved the final manuscript for publication.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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