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AI-Driven Marketing Automation and Its Impact on Customer Engagement in Middle East and Asia

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Abstract
The introduction of AI-based marketing automation technology represents a new innovative approach to enabling customers to receive personalized and timely marketing messages. Although AI-powered marketing technology has gained increased popularity, there is very little research that explores the psychological processes associated with AI marketing technology and its effect on the engagement and loyalty of customers within digitally transforming markets. The current study focuses on understanding the effects of AI-based marketing automation technology on customer engagement from the perspective of TAM, SOR theory, and Customer Engagement theory.
A sequential explanatory mixed methods design was used in which quantitative analysis based on PLS-SEM analysis was complemented with a qualitative thematic analysis. The proposed framework explores the relationship between AI-based marketing automation, customer trust, perceived personalization, customer engagement, and customer loyalty with privacy issues, culture, and digital literacy serving as moderating variables.
It was found that marketing automation through artificial intelligence is a major contributor towards personalized experiences, and this, in turn, contributes towards building customer trust and engagement. Customer trust acts as a major mediating factor for linking AI-enabled experiences with engagement outcomes, and customer engagement, in turn, has a significant effect on building customer loyalty. It was also discovered that privacy issues negatively impact the development of trust, while digital literacy and favorable culture positively contribute towards customer engagement when they encounter AI-enabled experiences.
Keywords: Artificial Intelligence, Marketing Automation, Customer Engagement, Customer Trust, Personalization, Customer Loyalty.

Introduction

The fast growth of the technological sector has changed the current marketing scenario, thus creating new possibilities for utilizing Artificial Intelligence (AI) in order to increase business effectiveness, improve

decisions, and ensure a high level of personalization of customers' experiences. The implementation of automated marketing through AI entails various technologies such as machine learning, predictive analytics, natural language processing, recommendation engines, and advanced CRM systems, which enable real-time interaction with customers based on big data and analytics (Huang & Rust, 2021; Davenport et al., 2021). In an omnichannel setting, firms analyze their customer base to optimize marketing activities according to changing needs (Paschen et al., 2023). The main form of interaction of automated systems with consumers in this framework is the creation of personalization, which means that businesses should shift their focus from mass marketing to personalization in real time (Verhoef et al., 2021).

When the consumer comes across highly customized automation experiences, it has a significant impact on his/her relational perceptions. This means that greater personalization leads to an increase in customer trust, thereby setting a crucial psychological base for the consumer and the automation experience. As soon as trust is established, it becomes a main driver behind multidimensional customer engagement, not just transactions but also cognitions, emotions, and behaviors that determine relationship building with organizations (Kumar et al., 2019). In the end, as these three elements of customer engagement continue, they lead to customer loyalty through advocacy and repurchasing. From a theoretical point of view, the relationships in this chain can be explained via:

- Resources-Based View (RBV): Argues that AI-driven resources like data infrastructure and analysis tools are considered valuable, rare, and non-imitable resources that act as initiators for the model by allowing complex marketing automation (Barney, 1991).
- Dynamic Capability Approach: Focuses on the capability of firms to detect changes in the environment and to reconfigure their resources, which helps the firm gain the capability to provide personalized experiences in dynamic environments (Chatterjee et al., 2022).
- Service Dominated Approach: Focuses on the significance of interactions and value co-creation; hence, stressing the significance of building customer trust and multi-dimensional customer engagements as the pre-requisites for building customer loyalty (Vargo & Lusch, 2016).

Although there is already an abundant stream of literature on marketing automation by artificial intelligence, there are still important areas in need of investigation. Current academic work has mainly shown a linear connection between AI skills and relational results (Paschen et al., 2023; Huang & Rust, 2021). Nevertheless, most empirical evidence comes from developed Western countries, and the causal chain from personalization through trust, engagement, and loyalty remains poorly studied in less developed and fast-evolving countries.

Importantly, the proposed model assumes that the links between these variables do not function in isolation; instead, they face significant limitations. There are specific consumer features in different environments that can either reinforce or undermine their relationships. This is why the current research includes three key moderators:

- Personalization Privacy Worries: Personalized AI-based systems need much information gathering, which may raise data security concerns and hinder the process of moving from personalization to trust.
- Cultural Dimensions: The diverse cultural values influence consumer perception and loyalty toward automated communication.
- Digital Knowledge Base: The technical knowledge base of the customer influences his/her ability to understand and interact with the AI system.

To bridge these gaps, this paper aims to explore how the hierarchical impact of artificial intelligence-based marketing automation influences customer loyalty through mediation by perceptions of personalization, customer trust, and the multidimensional aspects of customer engagement including cognitive, affective, and behavioral. In parallel, the role of privacy concerns, culture, and digital literacy as moderating factors will be considered throughout these relationships. With these precise variables in mind as part of an overarching analytical approach, this paper will attempt to offer a greater insight into the relationship between artificial intelligence and customer behavior to derive sustainable competitive advantages from marketing automation.

Literature Review

Theoretical Foundation

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) offers a fundamental perspective for studying customers' acceptance of AI-based technologies. Based on TAM, users tend to adopt technologies in case they are useful and easy to use (Davis, 1989). In relation to marketing automation based on AI, customers perceive usefulness of technology through the belief that AI recommendations, AI-supported communication, and other AI services improve their customer journey and purchase decisions. Similarly, perceived ease of use affects customers' decisions regarding the adoption of AI platforms and services. Previous literature found that the use of AI for personalized marketing improves consumer attitudes and acceptance of technology due to increased perceived benefits of interaction with AI (Huang & Rust, 2021; Davenport et al., 2021). Therefore, TAM can be applied to explore the impact of marketing technologies powered by AI on consumers' behavior.

Theory of Customer Engagement: According to the Theory of Customer Engagement, engagement is a multi-dimensional construct that has been defined on the basis of the cognitive, emotional, and behavioral aspects of the involvement that the customer has with the brand (Brodie et al., 2011; Kumar et al., 2019). Cognitive engagement deals with the psychological engagement and concentration of the customers towards the brand, while emotional engagement signifies the feelings of emotional attachment with the brand. Behavioral engagement entails actions taken by the customers involving themselves in the interaction. These elements can be enhanced through marketing automation powered by AI.

Stimulus-Organism-Response (SOR) Model: The Stimulus-Organism-Response (SOR) model offers a holistic approach to explaining the impact of AI-driven marketing on consumer behavior. Under SOR model, external stimuli affect internal psychological states, and then, these states affect behavior (Mehrabian & Russell, 1974). In the case of AI-powered marketing, personalization, recommendations, predictive analysis, and chatbots are all considered stimuli. The impact of stimuli is realized through psychological factors such as relevance, trust, and quality of experience that constitute the organism part of SOR model. The responses generated include consumer engagement, loyalty, and satisfaction with the brand. Recent research indicates that trust and relevance serve as vital mediators for realizing beneficial consumer behavior following AI-powered interactions (Mariani et al., 2022; Paschen et al., 2023). Thus, SOR model presents a strong theoretical foundation for investigating mediation and moderation effects in AI-powered marketing contexts.

Review of Literature

Personalization with AI and Customer Experience: The use of AI for personalization is arguably the most important use of artificial intelligence in marketing. Through machine learning algorithms and predictive analysis, businesses are able to examine customer behavior, preferences, and past transactions in order to give highly tailored recommendations and communications (Huang & Rust, 2021). There is empirical evidence supporting that personalized experiences in marketing increase customers' satisfaction, value perception, and purchase intentions (Davenport et al., 2021). The use of AI for personalization also leads to high-quality customer experiences as it decreases the level of information overload and increases relevance of marketing activities. Nevertheless, while previous research shows the positive effect of personalization on customers, there is a lack of research regarding how the perception of relevance works as a mediator in this process.

Conversational AI Chatbots and Customer Interaction: Conversational AI technology, such as chatbots and virtual assistants, has changed customer interaction with businesses by allowing real-time communication and personalized support. Conversational AI technology increases the speed and efficiency of customer service by providing accurate information through real-time customer feedback without any delay (Mariani et al., 2022). Research shows that conversational AI has an effect on increasing customer satisfaction and service quality as customers perceive accuracy, speed, and human-like interactions. However, the long-term

impact of conversational AI on emotional connection and relationship quality requires further research as it is still unknown how these will influence each other.

Trust and Privacy in AI-Based Marketing: Trust is an important element which impacts consumers' acceptance of artificial intelligence-based marketing methods. Even though artificial intelligence systems help with improving efficiencies and customization, customers are worried about issues like privacy of information, transparency of algorithms, and automation of decision-making procedures (Paschen et al., 2023). Literature suggests that trust can be considered a major element that impacts customers' inclination towards disclosing their information and engaging with technology driven by artificial intelligence systems. At the same time, privacy issues might limit the impact of customization since it can create the impression of surveillance and manipulation of information.

Outcomes of AI Marketing: Customer Engagement: Customer engagement is among the most frequently mentioned outcomes of marketing automation with artificial intelligence technologies. Prior studies have found that artificial intelligence contributes to the improvement of engagement through increased personalization, responsiveness, and quality of interactions. This positively impacts customer loyalty and relationship building. At the same time, prior literature tends to regard customer engagement as a unidimensional concept without consideration of its cognitive, emotional, and behavioral facets. This calls for future investigations focused on exploring the role of AI marketing in multidimensional customer engagement.

Regional Disparities in AI Adoption: Asia and the Middle East: While AI adoption has witnessed an exponential growth trend around the globe, there still persist many regional disparities pertaining to the availability of digital infrastructure, cultural attitudes towards the adoption of technologies, level of technological readiness, and perceptions about privacy issues. The majority of scholarly research related to AI marketing has been conducted in North American and Western European countries, making generalizations about emerging digital economies difficult (Verhoef et al., 2021). Asian and Middle Eastern consumers may have varying attitudes toward technological innovation, trust, and data sharing, thus impacting their reactions to automated interactions enabled by AI marketing. However, not enough research has yet focused on the issue of cross-cultural validity of established correlations.

Research Gap

Although there is a wealth of studies on AI-enabled marketing automation, there still exist multiple gaps in the research landscape in this area. Firstly, there is a strong emphasis in previous literature on technical aspects and performance measures, whereas little attention has been paid to the theories of customer engagement and underlying psychological processes (Chatterjee et al., 2022). Secondly, although personalization and customer experience are recognized as important outcomes of AI applications, there is still much room left for exploring the mediating role of perceived relevance, quality of customer experience, and trust. Thirdly, contextual factors such as privacy issues, transparency of algorithms, and customer technology readiness have hardly ever been considered in the literature on moderation of AI-employee relationships. Fourthly, existing research pays more attention to operational efficiency and accuracy of targeting than to multidimensional engagement outcomes embracing cognition, emotions, and behavior. Finally, although there is a huge amount of literature published, the majority of it concerns Western economies only.

In order to fill such research gaps, the current paper proposes an integrative theoretical model that takes into account principles of TAM, Customer Engagement Theory, and SOR Theory. Specifically, this theoretical model seeks to explore the effects of marketing automation via artificial intelligence on customer engagement from a multi-dimensional perspective, using relevance, customer experience, and trust as mediating factors, and privacy issues, AI transparency, and customer technology readiness as moderators. Through its focus on Asia and the Middle East, the proposed research helps advance a better comprehension of AI-mediated customer engagement in varied settings.

Conceptual Framework Development

A conceptual model that seeks to show how AI marketing automation affects customer engagement and loyalty can be developed based on TAM, customer engagement theory, and the Stimulus–Organism–Response (SOR) model. According to this model, AI marketing automation is considered a strategic competency of an organization that allows it to offer personalized, data-driven and interactive experiences to customers using various touch points in the digital ecosystem. Contrary to the belief that technology itself can influence engagement outcomes, this framework considers the psychological processes through which the AI-based marketing technologies work.

As suggested by SOR theory (Mehrabian & Russell, 1974), AI marketing automation is the stimulus that elicits responses from consumers. AI recommendation systems, predictive analytics, AI communication systems, and chatbots create personalized experiences that enable marketers to communicate effectively with their target audiences (Huang & Rust, 2021; Davenport et al., 2021). AI-based technologies are used to anticipate consumers' wants and needs and offer customized messages to consumers.

In this regard, one of the first mediating factors proposed by the theoretical framework for the impact of AI-driven marketing automation on customer outcomes is the perception of personalization. The concept of perceived personalization refers to the extent to which customers feel that marketing communication and recommendations, as well as services, are tailored to their individual needs and preferences. In previous studies, perceived personalization has been found to increase customer satisfaction, usefulness, and interaction experience, making customers more receptive to marketing campaigns enabled by AI tools (Mariani et al., 2022; Paschen et al., 2023).

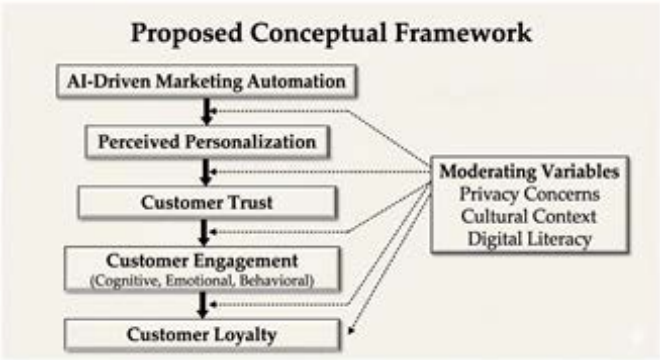
Additionally, based on the Customer Engagement Theory, the framework suggests customer trust as the next mediating factor. In this context, customer trust denotes customers' perceptions about the reliability, ethics, and fairness of AI applications in making automated decisions. Even though AI tools make marketing processes more efficient and personalized, customers consider whether their choices can be trusted and whether they coincide with customers' interests. Previous research indicates that trust can serve as a key psychological mediator that contributes to establishing positive relationships through technology-based interactions (Brodie et al., 2011; Kumar et al., 2019).

In the conceptual framework, customer engagement is seen as a multi-dimensional concept, including cognitive, emotional, and behavioral aspects. Cognitive engagement relates to the level of attention and mental involvement customers have with respect to the brand, while emotional engagement is about the affective link customers make and the emotions evoked by the brand. Behavioral engagement relates to participation and interactions customers perform actively (Brodie et al., 2011). It can be assumed that higher customer engagement will lead to loyalty through repurchase intentions, relational commitment, and favorable word-of-mouth communication.

Additionally, the proposed model incorporates three potential moderating factors which might impact the intensity of the relationships between personalization and satisfaction, personalization and loyalty, and AI-based services use and trust. Specifically, privacy issues might negatively affect the influence of personalized services and customer trust on their satisfaction with and loyalty towards the brand in question as it increases customers' anxieties concerning data collection and misuse. Further, cultural background might have an effect on customers' perception of technological solutions provided by organizations because there are significant differences between customers in Asia and the Middle East in regard to their attitudes towards technological solutions, trust building, and privacy protection. Finally, digital literacy of customers impacts their perception and interaction with AI-based services.

As such, the framework argues that the role of AI-powered marketing automation in boosting customer engagement takes place indirectly via personalized experiences and customers' trust, leading to customer loyalty. Privacy issues, cultural differences, and digital skills determine the influence of this relationship. By considering the technological, psychological, and contextual components within one framework, this theoretical model explains the way in which marketing abilities enabled by AI technologies affect customer engagement in new digital markets in Asia and the Middle East.

Proposed Conceptual Framework



Methodology

The current study utilized a sequential mixed-methods approach involving theoretical review, quantitative methods, and qualitative methods to propose and validate a theoretical model describing the impact of AI-powered marketing automation on customer engagement. A mixed-methods approach allows for the development of more in-depth understandings of complicated phenomena by combining the advantages of quantitative and qualitative methods (Creswell & Plano Clark, 2018). The present research was conducted in three interrelated stages. In the first place, the theoretical review was performed for identifying key constructs and creating the theoretical framework. Secondly, a quantitative survey was conducted for assessing associations between AI-powered marketing automation, perceived personalization, customer trust, customer engagement, and customer loyalty. Lastly, qualitative interviews were conducted for examining psychological processes behind the mentioned associations and providing additional context for the results obtained via quantitative methods.

Theoretical Review and Framework Development

The first step entailed a thorough review of the current literature on topics such as artificial intelligence, marketing automation, customer engagement, personalization, trust, and digital consumer behavior. Academic papers relating to the research topic were selected through online platforms such as Scopus, Web of Science, ScienceDirect, Emerald, SpringerLink, and Google Scholar. The primary focus of the literature search was peer-reviewed journal articles written from 2018 to 2025 with the aim of including any new advancements in AI-powered marketing.

Three different theories have formed the basis of the theoretical review process. These included the Technology Acceptance Model (TAM), Customer Engagement Theory, and the Stimulus-Organism-Response (SOR) Theory. By means of thematic synthesis, key constructs were identified and used to form a conceptual model of how AI-based marketing automation affects customer engagement through personalization and customer trust as mediating variables, under the influence of privacy, culture, and digital literacy.

Quantitative Study

Research Design

The quantitative approach involved the use of a cross-sectional survey method for the analysis of the proposed conceptual model. A structured questionnaire was used to gauge consumer perception and experience regarding AI marketing technologies on different digital platforms. Surveying facilitated an assessment of direct, indirect, mediating, and moderating relations between different constructs in the proposed research model.

Sampling and Data Collection

Consumers with prior experience with AI marketing applications such as e-commerce personalization, AI recommendations, digital banking, streaming platforms, and AI chatbots were targeted in this study. The sampling technique chosen for this purpose was purposive sampling, which allowed ensuring that subjects selected for the study had been sufficiently exposed to AI marketing automation.

In total, about 110 valid data entries were obtained using an online survey conducted via Google Forms. Some screening questions were incorporated into the survey to verify participants' understanding of AI-based personalization and automated customer interactions. The chosen sample size was deemed acceptable for exploratory modeling purposes.

Measurement Instrument

An elaborated questionnaire based on a five-point Likert scale, varying from 1 (Strongly Disagree) to 5 (Strongly Agree) was employed. Items for the measurement were derived from well-known scales from previous literature. The constructs under consideration include AI-based marketing automation, perception of personalization, customer trust, customer engagement (cognitive, affective, and behavioral aspects), customer loyalty, privacy, and digital literacy. Minor adjustments were made in order to align the items with the context of AI-based marketing practices.

To improve validity and reliability, an expert review of the questionnaire by academics and pilot testing were conducted prior to the complete data collection.

Data Analysis

Quantitative data was analyzed using partial least squares structural equation modeling (PLS-SEM) approach in SmartPLS program. PLS-SEM consists of two steps of analysis. First of all, it involves a measure of model adequacy through the evaluation of reliability and validity criteria such as Cronbach's alpha, composite reliability, average variance extracted (AVE), factor loading, Fornell-Larcker criterion, heterotrait-monotrait ratio (HTMT). Then comes analysis of the structural model through path coefficients, coefficient of determination (R^2), effect sizes (f^2), Q^2, and bootstrapping.

The mediation role of perceived personalization and consumer trust was tested by employing bootstrap methods, while the moderating role of privacy concerns, culture, and digital literacy was investigated by interaction analysis.

Qualitative Study

Research Design

After the completion of the quantitative study, a qualitative exploratory approach was adopted to explore the phenomenon further. The purpose of conducting a qualitative study was to identify psychological factors that affect customer involvement and to add more depth to the quantitative results obtained.

Participants and Data Collection

Semi-structured interviews were held with selected participants drawn from those who had participated in the survey. The purposeful sampling method was used, taking into consideration differences in levels of trust, privacy concerns, engagement, and digital literacy among individuals.

These issues included perceptions about personalized marketing based on artificial intelligence, trust toward artificial intelligence systems, exposure to conversation agents, issues about privacy, and behaviors of engagement.

Analysis of Qualitative Data

The transcription of the interviews was subject to thematic analysis as suggested by Braun and Clarke (2006). The steps used during analysis included familiarizing oneself with the data, initial coding, generating themes, refining themes, and finally interpreting the themes generated. Of great importance was the consideration of themes that were related to perceived personalization, trust, privacy issues, readiness for technology, and engagement. Following this process, the findings from the qualitative analysis were then compared with the findings from the quantitative analysis. This helped in verifying any consistency or inconsistency in the findings as a result of triangulating both sets of findings.

Integrating Results of Quantitative and Qualitative Analyses

In the last step, results obtained from the theoretical review, quantitative data, and qualitative analysis were combined. Quantitative results offered statistical support about the hypothesized connections, while qualitative analysis helped to uncover reasons for such relationships from a psychological and contextual perspective. It was possible to integrate these results into the understanding of how AI-based marketing automation impacts customer engagement through personalization and trust but considering issues like privacy, culture, and digital literacy.

A mixed-methods approach can improve the quality of the research since it provides an opportunity to incorporate theoretical and empirical dimensions into the analysis and consider them together with relevant context. In this way, a mixed methods approach is quite suitable for studying novel concepts.

Results and Discussion

Quantitative Findings

Respondents' Background

A total of 110 survey results were collected among consumers who have previously used AI-based marketing tools such as personalized e-commerce websites, AI-based recommendations, online banking facilities, and conversational AI systems. Most of the respondents were within the age group 21-35 years (65%) which is an example of active digital consumers. Around 78% of the respondents claimed daily usage of AI-based services.

Table 1 Demographic Profile of Respondents (N = 110)

Characteristic	Category	Frequency (%)
Gender	Male	52
	Female	48
Age	21–35 years	65
	Above 35 years	35
Education	Postgraduate/Professional Degree	70
	Undergraduate	30
AI Interaction Frequency	Daily	78
	Weekly	22

Measurement Model Assessment

Validity and reliability testing yielded psychometric properties that were deemed satisfactory. Values for Cronbach's alpha were between 0.81 and 0.92 and higher than the 0.70 recommended threshold by Hair et al. (2022). Composite Reliability (CR) values were greater than 0.80, while the Average Variance Extracted (AVE) was also higher than 0.50. Discriminant validity was assessed using Fornell-Larker Criterion and HTMT less than 0.85.

Table 2 Measurement Model Assessment

Construct	Cronbach's Alpha	CR	AVE
AI-Driven Marketing Automation	0.88	0.91	0.67
Perceived Personalization	0.89	0.92	0.70
Customer Trust	0.91	0.93	0.73
Customer Engagement	0.87	0.90	0.65
Customer Loyalty	0.90	0.92	0.71

All values exceeded recommended thresholds (Hair et al., 2022).

Results of Structural Model

The analysis of structural model indicated significant relationships between the constructs used. First, it was determined that AI-powered marketing automation positively affected perceived personalization ($\beta = 0.63$, $p < 0.001$), which means that using advanced technologies, customers feel more personalized and relevant treatment. The obtained results confirm the existing body of literature stating that with the help of AI technologies, companies provide their customers with additional benefits such as personalized predictions and intelligent recommendations (Huang & Rust, 2021; Davenport et al., 2021).

Second, the use of AI technologies and resulting personalized experience contributed to the development of customer trust because of positive interactions between customers and companies ($\beta = 0.55$, $p < 0.001$). Further, trust was demonstrated to have a significant impact on customer engagement ($\beta = 0.49$, $p < 0.001$). Finally, it was found that there was a significant relationship between customer engagement and customer loyalty ($\beta = 0.68$, $p < 0.001$).

Table 3 Structural Model Results

Hypothesis	Relationship	β	t-value	p-value	Result
H_1	AI Marketing Automation → Perceived Personalization	0.63	7.41	<0.001	Supported
H_2	Perceived Personalization → Customer Trust	0.55	6.84	<0.001	Supported
H_3	Customer Trust → Customer Engagement	0.49	5.96	<0.001	Supported
H_4	Customer Engagement → Customer Loyalty	0.68	8.12	<0.001	Supported

Table 4 Coefficient of Determination (R^2)

Endogenous Construct	R^2
Perceived Personalization	0.59
Customer Trust	0.56
Customer Engagement	0.64
Customer Loyalty	0.69

The R^2 values indicate moderate-to-substantial explanatory power, suggesting that the proposed framework adequately explains customer engagement and loyalty outcomes (Hair et al., 2022).

Mediation Analysis

From the mediation results, it is evident that personalization and trust perceptions play a crucial role as psychological mediators between marketing automation technologies and the customers' engagement and

loyalty. These findings agree with the Stimulus–Organism–Response (SOR) model, where the environment impacts behavior via internal psychological processes (Mehrabian & Russell, 1974).

Table 5 Mediation Effects

Indirect Relationship	β	p-value	Result
AI Marketing Automation → Perceived Personalization → Customer Trust	0.35	<0.01	Partial Mediation
Perceived Personalization → Customer Trust → Customer Engagement	0.27	<0.01	Partial Mediation
Sequential Mediation (Full Path)	0.21	<0.01	Supported

The significant serial mediation effect shows that marketing automation with the help of AI is influencing customer loyalty indirectly using personalization, trust, and engagement.

Moderation Analysis

Privacy issues had a significant negative impact on the effect of customer perceived personalization on customer trust ($\beta = -0.22$, $p < 0.05$), meaning customers who are concerned about data privacy tend not to trust the AI systems regardless of their personalization benefits. On the other hand, digital literacy enhanced the effect of marketing automation through AI on customer perceived personalization ($\beta = 0.18$, $p < 0.05$). Culture was another moderating factor of the effect of trust on engagement ($\beta = 0.17$, $p < 0.05$).

Table 6 Moderation Effects

Moderator	Relationship	β	p-value	Effect
Privacy Concerns	Personalization → Trust	-0.22	<0.05	Negative
Digital Literacy	AI Automation → Personalization	0.18	<0.05	Positive
Cultural Context	Trust → Engagement	0.17	<0.05	Positive

Qualitative Findings

Thematic analysis of the interview data generated four dominant themes.

Table 7 Summary of Qualitative Themes

Theme	Representative Interpretation
Perceived Personalization Enhances Value	Customers appreciate relevant recommendations and customized experiences.
Trust Determines Engagement Depth	Trust is essential for continued interaction with AI-enabled services.
Privacy Concerns Create Resistance	Excessive personalization may generate perceptions of surveillance.
Digital Literacy Facilitates Acceptance	Technologically competent consumers are more receptive to AI interactions.

Convenience and relevance were repeatedly mentioned as attributes that increased by virtue of personalization. On the other hand, trust became an overriding factor in engagement. Some participants also found that the more transparent data use was in relation to the technology, the higher levels of engagement were achieved by customers. These findings corroborate the notion of transparency in AI marketing research (Paschen et al., 2023).

Discussion

The results strongly indicate the appropriateness of using the proposed framework based on TAM, CET, and SOR theory. Firstly, the significant relationship between AI-powered marketing automation and customer perception of personalization aligns with TAM, indicating that customers find such technologies to be useful because they deliver relevant, personalized content (Davis, 1989; Huang & Rust, 2021).

Secondly, the mediating effect of trust supports the notion of organism in SOR theory. Customer engagement does not depend only on technologies, but customers need to first realize the personalized value provided by the technology and build trust towards it (Mehrabian & Russell, 1974; Mariani et al., 2022).

Thirdly, customer engagement strongly predicts customer loyalty, thus providing empirical evidence for Customer Engagement Theory (Brodie et al., 2011). This implies that cognitive, affective, and behavioral types of engagement together help build up loyal intentions and customer relationships.

Moreover, moderation analysis revealed that context is another important factor affecting the performance of AI tools. Specifically, privacy concerns weaken the effect of personalization on trust; meanwhile, digital literacy strengthens customers' attitudes towards engaging in AI-mediated communication. This emphasizes the importance of cultural context in determining the success of using AI, implying that businesses operating in Asia and the Middle East should consider local practices and technology adoption rates (Verhoef et al., 2021).

In general, it may be concluded that marketing automation through AI can act as an important strategic relational capability rather than just a technical solution.

Implications of the Study

Theoretical Implications

This paper makes a contribution to the literature on AI-enabled marketing automation by providing empirical evidence for an integrated framework that identifies factors driving AI's effects on customer engagement and loyalty. While previous research focused either on AI adoption, the effect of personalization, or on organizational outcomes related to AI deployment, the present study extends existing literature by proposing an integrated approach using TAM, SOR, and CET as theoretical underpinnings (Davis, 1989; Mehrabian & Russell, 1974; Brodie et al., 2011).

Specifically, first, the results provide evidence for TAM by showing that the usefulness of AI-enabled marketing automation goes beyond its technological capabilities and is determined in part by the customer perception of relevance and personalization of the technology. That is, the positive relationship found between AI-enabled marketing automation and perceived personalization suggests that the usefulness of AI tools depends, among other aspects, on their ability to personalize communication with customers in a way that increases interaction usefulness. This aspect of TAM has not been studied extensively and is important from a theoretical perspective in light of emerging literature (Huang & Rust, 2021; Davenport et al., 2021).

Second, the research provides support for the utilization of the SOR Theory in the domain of digital marketing. As indicated by the stimulus–organism–response framework, artificial intelligence is a stimuli outside the individual, while personalization perception and customer trust are internal states that determine consumer reactions. Thus, the significant mediation effects observed in the research evidence that engagement and loyalty do not result from the impact of AI technologies but stem from customers' evaluation of their experience of interacting with an organization using artificial intelligence (Mariani et al., 2022; Paschen et al., 2023).

Third, the results make contributions to the Customer Engagement Theory in that they provide empirical support for the use of engagement as an important means through which artificial intelligence-driven experiences can lead to customer loyalty. In the past, most of the studies conducted on the topic viewed engagement as a unidimensional concept. Contrary to this, the current study views engagement as a multidimensional concept that is made up of the cognitive, emotional, and behavioral dimensions, thereby making it useful in developing customer relationships.

Lastly, the research makes a valuable contribution to current studies of AI-powered marketing by considering the issue of privacy, cultural background, and digital literacy in moderating contexts. The results show that the impact of marketing automation with the help of artificial intelligence is not only dependent on external factors but also relies heavily on personal ones. This means that future work in AI needs to go beyond merely technical frameworks and consider other aspects such as psychological and cultural factors in its approach.

Managerial Implications

There are numerous implications for organizational practice resulting from the research findings. First of all, it is essential to understand that artificial intelligence technology should not be regarded as a source of efficiency but rather a means of personalizing customers' experiences. In turn, personalized experiences serve as the key to gaining customer trust and engaging customers. As a result, companies should adopt AI technologies that are able to make accurate recommendations and interact with customers according to their individual preferences.

Secondly, it is essential to emphasize that developing customers' trust in artificial intelligence is crucial for successful marketing. Even though artificial intelligence has a number of advantages, including efficiency and personalization, building trust is still a critical element of customer engagement. Hence, managers need to implement transparency in using AI technologies, ensuring that customers understand the logic behind their actions and can ask questions concerning recommendations provided by AI algorithms. Hybrid solutions combining human and artificial intelligence can be especially helpful in building trust in high involvement service settings, such as finance, medicine, and consultancy.

Third, privacy management should not be viewed from the standpoint of fulfilling regulatory compliance but rather from a strategic perspective. The fact that privacy issues lead to a negative moderation in relation to building trust between customers and marketers indicates that despite the level of personalization, customers' trust may not necessarily be built when there is too much information gathered about them.

Fourth, the role of digital literacy as a positively moderating factor means that organizations must focus on making customers more competent in the use of technology. Customers must be educated and made ready for technology use, especially as regards the use of AI-enabled services. Improving the digital skills of consumers will increase their acceptability and satisfaction with AI-related initiatives.

Lastly, the importance of cultural context in this respect implies that firms engaging in international marketing activities must never resort to adopting standardized approaches in applying AI marketing practices. Customer perceptions of privacy, trust, personalization, and the willingness to engage in new technology may differ based on different cultural contexts.

On the whole, it can be concluded that a marketing approach based on AI requires not only an advanced level of technology usage but also the ability to offer the clients personalized, trustworthy, clear, and culturally sensitive services.

Conclusion

This study is relevant to existing literature on the application of AI in marketing as it looks into the effect of AI-driven marketing automation on customer engagement and loyalty via the mediating effects of perceived personalization and customer trust. Using TAM, SOR theory, and Customer Engagement Theory, the research proposes an integrated model that outlines the psychological processes involved in the generation of relational benefits from marketing activities powered by AI.

The analysis shows that the use of AI technology in marketing boosts perceived personalization, which fosters higher levels of trust and customer engagement. The latter then plays an important role in ensuring customers' loyalty to the brand. However, the efficiency of AI-based marketing depends on different contextual factors, including privacy concerns, culture, and digital literacy. Although personalization creates value and improves customer relationships, privacy fears could undermine trust in brands.

In other words, the current research views AI-based marketing automation not only as a technological solution but also as a relational capacity that enables valuable customer interactions and value creation. The analysis combines technological, psychological, and contextual approaches to enrich the knowledge about how AI technologies can be used for building effective customer relations, making contributions both to the theory and practice in the realm under discussion.

Future Research Directions

However, despite the above benefits of this study, there are still multiple research areas that warrant future inquiry. To start with, it would be important to design longitudinal research in order to find out the development of customer trust, engagement, and loyalty among consumers of AI-driven marketing systems over time as customers gain more experience with them. Secondly, since there are significant differences between people in various cultures regarding their perceptions of privacy, trust, and use of new technologies, it would be valuable to conduct cross-cultural studies in order to determine the cultural conditions affecting the use of AI.

Thirdly, as the technology itself evolves with the development of more advanced systems such as generative and conversational AI, as well as emotionally intelligent systems, it would be interesting to see whether such systems can lead to even higher emotional engagement and customer loyalty compared to regular automation systems.

Fourthly, industry-specific studies are needed. The processes by which engagement is achieved via AI applications could vary depending on industries such as health care, financial services, education, tourism, and retail. It would be helpful to determine what specific challenges and possibilities exist in each industry.

Fifthly, future studies could build upon the developed model by introducing mediating variables such as fairness, control, psychological ownership, and empowerment. Likewise, future studies could focus on moderator variables like age, personality, AI literacy, and technophobia to understand the conditions under which customers benefit from the use of intelligent marketing systems.

Finally, as AI continues to advance, the ethical implications associated with decision-making, data governance, transparency, and ethical application of AI need to be addressed in the future. This is crucial in terms of finding out how organizations can leverage innovation while fostering sustainable customer relationships.

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