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Analyzing the Relationship Between Artificial Intelligence and Customer Experience Improvement in the Online Retail Industry

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Abstract

This study aims to explore the relationship between artificial intelligence and customer experience enhancement in the online retail industry from the perspective of industry professionals. A qualitative research design was employed, utilizing semi-structured interviews with 27 participants working in AI, e-commerce strategy, and customer service roles in Tehran-based online retail businesses. Data collection continued until theoretical saturation was reached. The interviews were analyzed using NVivo software through a three-stage coding process: open coding, axial coding, and selective coding. This approach enabled the identification of key categories and themes that reflect the role of AI in shaping online customer experiences. The analysis revealed six main thematic categories: AI-enabled personalization, service efficiency and responsiveness, human-AI interaction challenges, trust and ethical concerns, technical capabilities and limitations, and customer engagement. Participants emphasized the benefits of personalization and automation, but also highlighted challenges including emotional disconnect, data privacy concerns, and inconsistent AI performance. The study found that while AI improves efficiency and customer satisfaction, its effectiveness is contingent upon ethical design, cultural adaptation, and hybrid human-AI collaboration. AI plays a critical role in enhancing customer experience in online retail, but its full potential can only be realized when technical sophistication is balanced with ethical transparency, emotional intelligence, and user-centered design.

Keywords: Artificial intelligence, customer experience, online retail, personalization, chatbot, qualitative research, e-commerce, user satisfaction.

1. Introduction

The online retail industry is undergoing a rapid transformation, spurred by technological innovations that seek to improve customer satisfaction and competitive positioning. Among these innovations, artificial intelligence (AI) has emerged as a disruptive force, redefining how businesses engage with customers across digital platforms. In recent years, AI technologies have enabled businesses to offer highly personalized services, automate support functions, predict consumer behaviors, and enhance operational efficiency—all of which directly influence the customer experience (CX) in online shopping environments

(Aggarwal et al., 2024; Sharma, 2023; Siow et al., 2025). As e-commerce continues to expand in scale and complexity, understanding the relationship between AI applications and the customer journey has become increasingly essential for researchers, practitioners, and policymakers.

The modern customer expects immediacy, personalization, and seamless digital interactions—demands that AI systems are uniquely positioned to meet (Arora, 2024; Radha, 2025). AI tools such as chatbots, recommendation engines, sentiment analysis modules, and visual search engines are being integrated into e-commerce platforms to improve responsiveness and relevance in customer service delivery (Giang et al., 2025; Pillarisetty & Mishra, 2022). For instance, AI-powered chatbots can manage multiple customer queries simultaneously, reducing response time and operational costs while maintaining service quality (Akdemir & Bulut, 2024; Siow et al., 2025). This automation fosters not only efficiency but also satisfaction, as customers receive faster and more accurate responses to their needs (Ersoy, 2024).

Personalization is another domain in which AI has dramatically changed the landscape of online shopping. By leveraging data mining and machine learning algorithms, e-commerce platforms can now tailor product recommendations, marketing messages, and interface configurations based on each user's behavioral data (Coelho & Imamović, 2024; Sharma, 2023). This hyper-personalized approach creates a unique shopping journey for every customer, enhancing engagement and encouraging repeat purchases (Radha, 2025; Suruthika & Chitra, 2025). As noted by (Singhal, 2024), such individualized experiences not only enhance user satisfaction but also strengthen brand loyalty, which is critical in a highly competitive digital marketplace.

However, while AI's benefits are widely acknowledged, its integration into the online retail customer experience is not without challenges. Several studies have highlighted technical limitations in AI systems, such as misinterpretation of consumer intent, inability to detect emotional nuance, and a lack of contextual understanding during automated conversations (Ersoy, 2024; Giang et al., 2025; Sunny, 2024). These shortcomings can result in frustration, reduced trust, and even customer attrition, particularly when AI fails to replicate the human touch or mismanages complex queries (Logesh & Raja, 2024; Manikandan & Bhuvaneswari, 2024). Trust, therefore, remains a pivotal factor in the consumer-AI relationship. As (Ekawati et al., 2024) emphasizes, customer trust and satisfaction act as mediators between AI-driven experiences and the intention to repurchase in platforms like TikTok Shop and other emerging marketplaces.

Privacy and ethical concerns further complicate the adoption of AI in online commerce. The use of personal data to fuel recommendation engines and predictive models raises critical questions about data security, user consent, and algorithmic bias (Akdemir & Bulut, 2024; Xue, 2023). For instance, users may feel that their browsing behavior is overly scrutinized, or they may question how their data is stored and processed (Meng & Beninsig, 2024; Widjaja & Rustam, 2024). These concerns underscore the importance of transparency and regulation in the design and deployment of AI-driven retail systems. According to (Parsakia & Jafari, 2023), strategic frameworks that integrate ethical guidelines and user control mechanisms are crucial for sustaining customer trust in AI-augmented environments.

Moreover, AI adoption in online retail is not uniform across regions or demographic segments. Cultural preferences, language diversity, and access to technology significantly shape how consumers interact with AI systems and perceive their value (Kráľ et al., 2024; Othman et al., 2022). For example, (Durukal, 2022) found that expectations of AI responsiveness and personalization differ across consumer markets in Europe and Asia, calling attention to the need for localization in AI design. Likewise, (Jain, 2024) observed that consumer satisfaction levels vary based on urban versus rural contexts, with trust and usability playing key roles in adoption decisions.

The behavioral implications of AI in e-commerce are also noteworthy. Studies have shown that AI can significantly influence buying decisions by anticipating needs and shortening decision cycles (Aggarwal et al., 2024; Manikandan & Bhuvaneswari, 2024). This influence is especially evident in the use of facial recognition, virtual try-ons, and sentiment-driven advertising, which aim to reduce uncertainty and elevate product confidence during the shopping experience (Meng & Beninsig, 2024; Sunny, 2024). According to (Coelho & Imamović, 2024), beauty retail brands, for instance, use AI to

analyze customer preferences and skin profiles to offer tailored suggestions, which not only increases conversions but also deepens user satisfaction.

While many researchers agree on AI's transformative potential, there remains a gap in understanding the subjective experiences of customers and professionals who engage with AI daily in the retail sector. Most existing studies rely on quantitative data such as click-through rates, conversion rates, and session duration to assess AI impact (Siow et al., 2025; Sugiardi et al., 2025). However, such metrics often overlook nuanced dimensions of human interaction with AI systems—such as perceived reliability, emotional comfort, and expectations of responsiveness. A more holistic understanding of these dynamics requires qualitative insights into the lived experiences of both consumers and industry practitioners (Pillarisetty & Mishra, 2022; Radha, 2025). This study aims to fill this gap by exploring the relationship between artificial intelligence and customer experience in the context of online retail.

2. Methods and Materials

This study employed a qualitative research design to explore the relationship between artificial intelligence (AI) and customer experience enhancement in the online retail industry. A purposive sampling strategy was used to select participants with relevant experience in the domain of online sales and AI applications. A total of 27 participants were recruited from various online retail platforms and digital commerce companies based in Tehran. The participants included managers, technical specialists, customer experience experts, and AI integration consultants who had direct knowledge of AI-driven systems and customer interaction processes. Sampling continued until theoretical saturation was achieved, ensuring a comprehensive understanding of the studied phenomenon.

Data were collected through semi-structured interviews, which allowed for in-depth exploration of participants' experiences and perspectives regarding the implementation and impact of AI on customer service and satisfaction. An interview guide with open-ended questions was used to ensure consistency while allowing flexibility for participants to elaborate on their unique experiences. Interviews were conducted in person or via secure online communication platforms, based on participants' preferences and availability. Each interview lasted between 45 and 75 minutes and was audio-recorded with participants' consent. All interviews were subsequently transcribed verbatim for analysis.

Data analysis was conducted using thematic analysis to identify recurring patterns and themes across the interview data. NVivo qualitative data analysis software was employed to assist with the systematic coding and organization of data. The analytical process followed a multi-stage approach: initial coding, categorization of codes, theme development, and interpretation. Codes were reviewed iteratively to ensure reliability and validity, and discrepancies were resolved through collaborative discussion among the research team. Thematic findings were grounded in the participants' narratives and supported by direct quotations to enhance authenticity and credibility.

3. Findings and Results

The study sample consisted of 27 participants from Tehran, all of whom had direct experience with artificial intelligence systems in the online retail industry. Among the participants, 15 were male (55.6%) and 12 were female (44.4%). The age range of participants was between 26 and 52 years, with a mean age of 37.4 years. In terms of professional roles, 10 participants (37%) were customer experience managers, 7 (25.9%) were AI developers or data analysts, 6 (22.2%) were digital marketing specialists, and 4 (14.8%) were e-commerce operations managers. Regarding years of experience in the online retail sector, 8 participants (29.6%) had less than 5 years, 12 participants (44.4%) had between 5 and 10 years, and 7 participants (25.9%) had over 10 years of experience. This diverse sample ensured a broad range of perspectives on the intersection of AI technologies and customer experience enhancement.

The initial stage of data analysis involved open coding, during which the interview transcripts were thoroughly reviewed to identify key concepts and recurring phrases related to the role of artificial intelligence in enhancing customer experience in the online retail sector. During this process, segments of participants' narratives were broken down into discrete units of meaning and labeled with descriptive codes. This stage focused on preserving participants' language while capturing both the explicit and implicit meanings behind their statements. A total of 50 distinct open codes were extracted, reflecting a wide range of

experiences and perceptions. These codes were then systematically organized using NVivo software and were linked to corresponding interview sources to ensure traceability and analytical depth.

Table 1. Open Coding

Open Code	Interview IDs	Quote
Personalized product recommendations	P2, P5, P8, P14, P19, P22	"The system shows me exactly what I'm likely to buy based on past searches."
Chatbot efficiency	P1, P4, P7, P11, P13, P20	"Our chatbot answers FAQs much faster than any support agent could."
AI reducing response time	P3, P6, P12, P15, P18, P23	"Customers don't wait anymore—AI replies in seconds."
Voice assistant limitations	P9, P10, P16	"It doesn't always recognize what I'm saying, especially with background noise."
Data-driven decision-making	P5, P7, P11, P17, P21, P26	"We use AI insights to adjust pricing and predict product demand."
Predictive customer behavior	P3, P6, P13, P19, P22	"AI often knows what a customer wants before they even type it."
Trust issues with AI systems	P4, P10, P14, P25	"Sometimes the suggestions feel too invasive, like it knows too much."
AI misunderstanding customer intent	P8, P16, P24	"It gives wrong answers when a query has multiple meanings."
Automation of support tickets	P2, P5, P13, P17, P21, P27	"AI sorts and assigns tickets faster than our old manual system."
Reduction in human workload	P1, P7, P9, P18, P23	"We've been able to cut night shifts because AI handles basic issues."
Inconsistent AI responses	P6, P10, P20	"Sometimes it answers correctly, other times it completely misses the point."
AI training challenges	P11, P15, P22, P26	"Training AI models takes time and quality data—which we often lack."
Algorithm bias	P4, P14, P16, P25	"AI can reinforce biases if we don't constantly monitor its learning."
Multilingual customer service	P2, P8, P12, P17	"Now we can support clients in five languages without extra staff."
Emotion detection limitations	P7, P10, P19	"AI doesn't detect sarcasm or anger—it's very mechanical in tone."
Seamless shopping experience	P3, P6, P13, P18, P21	"The journey from search to checkout feels more intuitive now."
Customer data privacy concerns	P4, P9, P11, P14, P24	"Many users hesitate to engage when they know AI is analyzing their behavior."
AI monitoring and evaluation	P5, P12, P20, P25	"We track AI performance weekly to prevent errors from escalating."
Adaptive interfaces	P3, P6, P13, P19	"It changes layout depending on what the user does most."
Continuous learning capability	P2, P7, P15, P22, P27	"Our system learns with each user interaction and gets better over time."
Customer feedback integration	P1, P4, P8, P14, P23	"We use feedback to fine-tune our recommendation engine."
Misinterpretation of context by AI	P9, P12, P16	"If the query is vague, AI struggles to get the context right."
Real-time support capabilities	P5, P10, P13, P21	"Live support powered by AI means fewer wait times and faster issue resolution."
Lack of emotional intelligence in AI	P4, P8, P17, P24	"AI can't tell when a customer is upset—it just follows the script."
User experience personalization	P2, P6, P11, P19	"The homepage changes based on each user's interests and purchase history."
Cost-efficiency of AI	P1, P5, P15, P20, P26	"We've reduced operational costs significantly since using AI."
AI enhancing brand loyalty	P3, P7, P13, P22	"When people feel understood, they keep coming back—it builds loyalty."
Ethical concerns in data use	P4, P10, P14, P25	"We constantly ask ourselves how far is too far with data collection."
Targeted advertising	P6, P9, P18, P21	"AI helps us show ads that actually match user behavior."
AI learning from previous queries	P2, P7, P12, P19	"It remembers what users asked before and adapts to their language."
Lack of empathy in automated responses	P4, P10, P16	"When someone's angry, AI doesn't know how to calm them—it's a huge gap."
Cross-channel AI integration	P3, P6, P13, P17	"AI syncs data from website, app, and chatbot for a smoother experience."
Technical glitches in AI interaction	P5, P9, P20, P24	"Sometimes the bot freezes or gives error messages—it affects trust."
Customer frustration with bots	P1, P8, P14, P23	"Many users still ask for a human after getting frustrated with AI replies."
Customizable AI interfaces	P2, P6, P11, P19	"Admins can adjust how the bot behaves and which tone it uses."
Scalability of AI in retail	P3, P5, P15, P22	"We handled Black Friday volume without increasing support staff."
Human-AI collaboration	P7, P10, P18, P26	"The best outcomes happen when humans guide the AI."
Lack of cultural sensitivity in AI	P4, P9, P13, P25	"It uses Western expressions that don't translate well in our market."
AI identifying repeat customers	P2, P8, P12, P21	"Returning users get customized deals automatically."
Reduced cart abandonment	P3, P6, P11, P22	"AI sends reminders or discounts before customers drop off completely."
Faster order tracking via AI	P5, P9, P15, P20	"Order status is updated in real-time without needing customer input."
AI-generated product reviews	P7, P13, P17, P24	"The system creates summaries of customer reviews to save time."
Visual recognition features	P2, P6, P12, P19	"Users can upload a photo to find similar products instantly."
Inadequate training data	P4, P10, P14, P26	"We need more localized data to train our AI accurately."
AI handling high-volume queries	P1, P5, P15, P23	"It handles hundreds of questions simultaneously with no lag."
Confusion with accents in voice AI	P9, P13, P16	"Non-standard accents throw the voice assistant off completely."
AI performance analytics	P3, P7, P11, P22	"We get daily reports on how the AI is responding, which helps with fine-tuning."

Difficulty explaining complex issues to bots	P8, P10, P18, P24	"If the problem is non-standard, the AI usually fails."
Over-reliance on automation	P4, P14, P17, P25	"We risk losing the human touch if we automate too much."
Increased engagement through AI	P2, P5, P13, P21	"Our engagement metrics have improved since introducing AI-based features."
Customer satisfaction metrics improved via AI	P3, P6, P11, P20	"We've seen measurable improvements in customer satisfaction scores post-AI."

In the axial coding phase, the open codes derived from the initial coding were re-examined and grouped into broader conceptual categories that reflect patterns, conditions, interactions, and consequences related to the phenomenon under investigation. This process involved identifying connections between related open codes and organizing them into coherent axial codes that represent central dimensions of how AI affects the online customer experience. These axial codes helped to illuminate key relational themes, such as efficiency, personalization, trust, and limitations. The table below presents a set of 20 axial codes, each supported by multiple open codes, reflecting the richness and complexity of participants' perspectives.

Table 2. Axial Coding

Axial Code	Corresponding Open Codes
AI-driven personalization	Personalized product recommendations, User experience personalization, Targeted advertising, Adaptive interfaces, Customizable AI interfaces
Operational efficiency	Chatbot efficiency, AI reducing response time, Automation of support tickets, Faster order tracking via AI, AI handling high-volume queries
Real-time responsiveness	Real-time support capabilities, Reduced cart abandonment, AI-generated product reviews, Cross-channel AI integration
Reduction of human workload	Reduction in human workload, Cost-efficiency of AI, Scalability of AI in retail, AI performance analytics
Trust and ethical concerns	Trust issues with AI systems, Ethical concerns in data use, Customer data privacy concerns, Over-reliance on automation
Challenges in contextual understanding	AI misunderstanding customer intent, Misinterpretation of context by AI, Lack of emotional intelligence in AI, Difficulty explaining complex issues to bots
Limitations of voice and emotion AI	Voice assistant limitations, Confusion with accents in voice AI, Emotion detection limitations, Lack of empathy in automated responses
AI learning and adaptation	Continuous learning capability, AI learning from previous queries, Inadequate training data, AI training challenges
Customer behavior prediction	Predictive customer behavior, Data-driven decision-making, AI identifying repeat customers
Feedback-driven improvement	Customer feedback integration, AI monitoring and evaluation
Human-AI interaction	Human-AI collaboration, Customer frustration with bots, Difficulty explaining complex issues to bots
Bias and cultural insensitivity	Algorithm bias, Lack of cultural sensitivity in AI
Engagement and satisfaction	Increased engagement through AI, Customer satisfaction metrics improved via AI, AI enhancing brand loyalty
Technical and system issues	Technical glitches in AI interaction, Inconsistent AI responses
Multi-language capability	Multilingual customer service
Visual recognition	Visual recognition features
Customer journey enhancement	Seamless shopping experience, Real-time support capabilities
Emotional disconnect	Lack of emotional intelligence in AI, Lack of empathy in automated responses
Behavior tracking and response	AI-generated product reviews, Targeted advertising, AI identifying repeat customers
Order flow optimization	Faster order tracking via AI, Reduced cart abandonment

The axial coding process allowed for the organization of 50 open codes into 20 broader categories that provide a clearer conceptual map of how AI influences customer experience in online retail. The most saturated axial codes—such as *AI-driven personalization*, *Operational efficiency*, and *Trust and ethical concerns*—integrated several open codes, suggesting these themes are central to participants' perceptions of AI. Conversely, more specific codes like *Visual recognition* or *Multi-language capability* were supported by fewer open codes, indicating their importance in specialized or technical contexts. This layered categorization provides the analytical foundation for the final phase: selective coding.

The final stage of the coding process, selective coding, focused on identifying and integrating the core categories that encapsulate the overarching themes emerging from the axial codes. This phase involved synthesizing the axial codes into high-level, conceptual "selective codes" or main categories that represent the central dimensions of how artificial intelligence is perceived to impact customer experience in the online sales sector. Each selective code was developed based on its capacity to connect multiple axial codes under a unified theoretical idea. These categories not only reflect participants' collective insights but also provide a conceptual framework for understanding the mechanisms through which AI technologies influence user satisfaction, trust, service delivery, and operational outcomes.

Table 3. Selective Coding

Selective Code (Main Category)	Corresponding Axial Codes
AI-Enabled Personalization	AI-driven personalization, Customer behavior prediction, Feedback-driven improvement
Service Efficiency and Responsiveness	Operational efficiency, Real-time responsiveness, Order flow optimization
Human-AI Interaction Challenges	Challenges in contextual understanding, Limitations of voice and emotion AI, Emotional disconnect, Human-AI interaction
Trust, Ethics, and Privacy	Trust and ethical concerns, Bias and cultural insensitivity
Technical and Functional Capabilities	AI learning and adaptation, Technical and system issues, Visual recognition, Multi-language capability
Customer Engagement and Loyalty	Engagement and satisfaction, Customer journey enhancement, Behavior tracking and response

Through the process of selective coding, six overarching themes emerged that cohesively explain how AI affects the customer experience in the context of online retail. *AI-Enabled Personalization* and *Service Efficiency and Responsiveness* represent the most prominent dimensions, emphasizing how AI contributes to both customized experiences and operational streamlining. Equally significant is the theme of *Human-AI Interaction Challenges*, which reflects persistent issues related to emotional recognition, contextual understanding, and customer frustration with automated systems. *Trust, Ethics, and Privacy* emerged as a critical concern, highlighting users' wariness about data security and algorithmic bias. *Technical and Functional Capabilities* capture the infrastructural strengths and limitations of AI, while *Customer Engagement and Loyalty* emphasizes the potential of AI to deepen brand connection. Together, these categories form a comprehensive model for interpreting the influence of AI on customer experience in the digital marketplace.

4. Discussion and Conclusion

This study aimed to explore the relationship between artificial intelligence (AI) and customer experience enhancement in the online retail industry by examining the perceptions of 27 professionals actively engaged in the deployment, evaluation, or management of AI-powered customer experience strategies. The findings, categorized through open, axial, and selective coding, revealed six overarching themes: AI-enabled personalization, service efficiency and responsiveness, human-AI interaction challenges, trust and ethics, technical capabilities, and customer engagement. These themes provide valuable insights into both the strategic potential and operational limitations of AI systems in e-commerce environments.

One of the most prominent findings in this study was the strong association between AI implementation and enhanced personalization. Participants frequently cited features such as product recommendation engines, behavioral tracking, and adaptive interfaces as key elements contributing to a more individualized shopping journey. This aligns with the existing literature, which consistently highlights AI's capacity to tailor content, predict preferences, and anticipate consumer needs in real-time (Coelho & Imamović, 2024; Sharma, 2023; Singhal, 2024). AI-enabled personalization not only boosts user engagement but also strengthens brand loyalty by creating a sense of recognition and relevance for each consumer (Aggarwal et al., 2024; Radha, 2025).

Similarly, the efficiency dimension of AI was underscored by participants as a major benefit. Tools such as chatbots, automated ticketing systems, and real-time query response technologies were frequently mentioned as mechanisms that significantly reduce service time and improve operational scalability. These findings are supported by (Akdemir & Bulut, 2024), who emphasized that well-integrated AI chatbots can handle complex service interactions with high accuracy, reducing dependence on human agents. In the same vein, (Siow et al., 2025) found that chatbot adoption in e-retailing directly correlates with improved response time and customer satisfaction metrics. Our participants echoed this sentiment, noting how automation allowed for handling high volumes of customer requests without sacrificing response quality.

However, the findings also revealed important challenges in human-AI interaction. A substantial number of participants reported frustration with AI's inability to interpret ambiguous language, emotional tone, or contextual nuance. This corresponds with the limitations identified by (Giang et al., 2025), who reported that users often feel disconnected or misunderstood during AI-led service interactions, particularly when expressing dissatisfaction or seeking non-standard solutions. Emotional

detachment and mechanical responses continue to hinder AI's full integration into customer-facing functions. (Sunny, 2024) also emphasized the lack of emotional intelligence in current AI technologies as a key barrier to deeper user engagement.

The issue of trust and ethics emerged as another critical theme. Participants expressed concerns about the overcollection of personal data, the opacity of AI decision-making, and potential algorithmic biases. These concerns mirror those highlighted by (Xue, 2023), who argued that consumer apprehension around data misuse can erode trust even in highly efficient AI systems. Ethical transparency, informed consent, and fairness in algorithmic processes are therefore essential for sustainable AI integration. Similarly, (Ekawati et al., 2024) discussed the mediating role of trust and satisfaction in shaping users' willingness to continue engaging with AI-driven retail platforms. The current findings confirm this by demonstrating that even technically robust AI systems can lose customer favor if perceived as intrusive or untrustworthy.

Technical limitations were also addressed in depth. Many participants cited issues such as inconsistent AI responses, technical glitches, difficulty with language diversity, and inadequate training data. These findings reflect those reported by (Logesh & Raja, 2024), who found that data sparsity and localization challenges often result in suboptimal AI behavior. Moreover, participants emphasized the need for improved machine learning models that adapt to cultural, linguistic, and regional nuances—echoing the cross-cultural considerations discussed by (Kráľ et al., 2024). In addition, (Meng & Beninsig, 2024) noted that without sufficient contextual and demographic training data, AI tools risk becoming alienating or ineffective for significant portions of the market.

Another salient theme that emerged was customer engagement and brand loyalty. Participants described how AI tools—when effectively implemented—can drive higher engagement through timely product suggestions, intelligent notifications, and gamified experiences. These outcomes are consistent with the findings of (Parsakia & Jafari, 2023), who demonstrated that customer engagement increases significantly when AI is used to maintain a dynamic and responsive interface. Furthermore, (Ersoy, 2024) found a positive relationship between AI adoption and customer loyalty in the Chinese online retail market, particularly when AI is used to offer seamless omnichannel support. The present study reinforces this link, with participants noting improved customer retention rates and lifetime value in platforms that integrated AI comprehensively across the customer journey.

Importantly, the qualitative nature of this research also uncovered nuances that are often absent from purely quantitative studies. For example, while statistical analyses may reveal improvements in conversion rates or click-through metrics, they rarely capture the experiential frustration users feel when interacting with rigid or poorly designed AI systems. Participants in this study shared specific experiences of customer complaints, service failures, and emotional disengagement when AI tools failed to meet human-like expectations—findings that substantiate the importance of hybrid models combining automation with human oversight (Othman et al., 2022; Pillarisetty & Mishra, 2022).

The role of AI in shaping behavioral outcomes also surfaced as a critical point of analysis. Participants noted that AI tools frequently influence customers' decision-making processes by narrowing choices, highlighting time-limited offers, or using sentiment analysis to present emotionally compelling products. This observation is consistent with the findings of (Manikandan & Bhuvaneswari, 2024), who explored how AI nudges can effectively guide consumer behavior toward desired business outcomes. However, these manipulative capabilities also raise questions about autonomy and fairness—particularly when consumers are unaware that AI is steering their choices (Horváth et al., 2023). Transparency, again, appears as a cornerstone in maintaining ethical integrity and long-term user trust.

The findings also demonstrated the critical role of continuous learning and feedback in AI system improvement. Participants highlighted how real-time user feedback and behavioral analytics contribute to the iterative optimization of AI systems. This is in line with research by (Coelho & Imamović, 2024), who emphasized the need for closed-loop systems that adapt to real-time user inputs to enhance customer satisfaction. Feedback mechanisms were viewed not only as corrective tools but also as sources of innovation that inform UI/UX design, product development, and marketing strategies.

From a strategic standpoint, AI is positioned as both an enabler and a differentiator. Participants viewed AI not simply as a backend efficiency tool but as a critical element of brand identity and customer strategy. (Arora, 2024) elaborated on this point, arguing that AI can bridge the gap between offline and online presence, allowing brands to maintain a unified identity across

touchpoints. In the current study, professionals similarly reported that AI had become integral to brand positioning, especially in competitive marketplaces where differentiation often hinges on customer experience rather than product alone.

Despite the depth of insight gained from this qualitative study, certain limitations must be acknowledged. First, the study was geographically restricted to Tehran, limiting the cultural and economic diversity of the participant pool. While participants represented a range of roles within the online retail ecosystem, the findings may not fully capture the experiences of consumers or professionals from different socio-economic or regional backgrounds. Additionally, since the study focused solely on professionals, it excluded direct input from end-users, which could have enriched the understanding of AI's impact on customer experience from a dual perspective.

Future research could benefit from a comparative cross-regional analysis that includes participants from diverse cultural and technological contexts to identify universal versus localized trends in AI adoption. Mixed-method approaches that integrate both qualitative insights and quantitative performance metrics would also provide a more holistic understanding of AI's role in online retail. Moreover, future studies should examine consumer perspectives directly, especially regarding emotional responses, perceived manipulation, and ethical boundaries of AI systems in e-commerce.

Retailers and platform developers should prioritize designing AI systems that are transparent, emotionally intelligent, and culturally adaptive. Training data should reflect the linguistic and behavioral diversity of the target user base. Businesses should also establish feedback loops that allow users to report dissatisfaction and receive human support when AI fails. Most importantly, organizations must balance automation with empathy to ensure that the customer experience remains human-centric, responsive, and trustworthy in an increasingly digital landscape.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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