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Digital Transformation in Retail Management: The Impact of AI Technology on Customer Experience in Physical and Online Retail

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Abstract. *This study examines the influence of artificial intelligence (AI) and digital transformation on customer experience (CX) within Indonesia's retail sector, focusing on physical, online, and hybrid shopping environments. Employing a qualitative exploratory design and semi-structured interviews, the research uncovers four central themes: AI-driven personalization, the role of omnichannel integration, organizational technological readiness, and differentiation of experiences across retail channels. The findings highlight that AI facilitates superior CX primarily through real-time personalization, enabling tailored interactions that respond dynamically to customer needs. Moreover, omnichannel integration emerges as a critical mechanism that ensures a seamless and consistent customer journey across various touchpoints. The study further reveals that customer perceptions of AI-enabled services vary depending on the retail channel. Physical stores emphasize tangible interactions and human engagement, online platforms highlight efficiency and convenience, while hybrid models deliver a blend of personalized digital features and physical experience. These differences demonstrate the moderating role of channel type in shaping how customers interpret the value of AI-driven services. From a theoretical standpoint, this research extends the literature by synthesizing Service-Dominant Logic (SDL), the Technology Acceptance Model (TAM), and Omnichannel Service Integration Theory into a coherent framework for analyzing CX in digitally transformed retail environments. Practically, it provides actionable insights for retailers on designing service strategies that are transparent, customer-centric, and context-sensitive. By doing so, businesses can align emerging technologies with ethical considerations while maintaining consumer trust. Ultimately, this study underscores the importance of adaptive innovation and responsible use of AI in achieving superior, consistent, and sustainable customer experiences. In rapidly evolving retail ecosystems, balancing technological capabilities with human values is essential for delivering meaningful and competitive service encounters.*

Keywords: *Artificial Intelligence, Customer Experience, Digital Transformation, Omnichannel Integration, Retail Channels*.

1. INTRODUCTION

Customer experience has emerged as a pivotal construct in modern retail management, acting as a core differentiator in both physical and digital marketplaces. It encompasses the cognitive, emotional, behavioral, sensorial, and social responses that consumers exhibit throughout the entire purchase journey, influenced by every direct and indirect interaction with the retailer (Lemon & Verhoef, 2020). As competition intensifies and customer expectations evolve rapidly, enhancing customer experience becomes not only a strategic necessity but also a driver of loyalty, satisfaction, and long term profitability (Klaus & Maklan, 2022). In particular, seamlessness, personalization, responsiveness, and convenience are now essential components of exceptional customer experience in both online and offline retail ecosystems (Voorhees et al., 2020; Becker & Jaakkola, 2020).

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The urgency of this research arises from the accelerating transformation within the retail landscape, driven largely by disruptive digital technologies and changing consumer behaviors post pandemic. Retailers are increasingly pressured to reconfigure their operational and service models to meet rising customer expectations for convenience and hyper personalized engagement, while ensuring consistency across physical stores and online platforms (Pantano et al., 2020). The COVID-19 pandemic has further catalyzed this shift, pushing many retailers to fast track their digital transformation agendas (Grewal et al., 2021). However, despite significant investment, many retailers struggle to deliver a unified and impactful customer experience across touchpoints, indicating a theoretical and practical gap in understanding how technology, especially artificial intelligence (AI), influences experiential value in omnichannel retail (Holmqvist et al., 2020; Roggeveen & Sethuraman, 2020).

Artificial Intelligence (AI) technology is widely recognized as a transformative force in customer experience design. AI enables retailers to anticipate consumer needs through predictive analytics, automate customer interactions via chatbots and virtual assistants, and deliver hyper personalized product recommendations and content (Gursoy et al., 2020; Huang & Rust, 2021). AI systems are also employed to optimize inventory, analyze sentiment from customer feedback, and even simulate human like interaction, contributing to emotional and cognitive satisfaction (Marinova et al., 2021). Research highlights that AI integration in retail not only enhances efficiency but also significantly impacts affective dimensions of experience, such as trust and perceived empathy (Xu et al., 2022). Nevertheless, the effectiveness of AI depends on the level of customer readiness and their perceived control over technology mediated services (Rafaeli et al., 2021).

Parallel to AI development, digital transformation serves as the strategic backbone reshaping retail operations and customer engagement models. It involves the adoption of digital innovations that streamline processes, enable data driven decision making, and facilitate the creation of agile service environments (Jonathan & Kuika Watat, 2020). For retailers, digital transformation means reconfiguring infrastructure to integrate online and offline channels, utilizing cloud platforms, IoT, and data analytics to enable real time customer insights (Verhoef et al., 2021). Research shows that digitally mature retailers can create adaptive and immersive experiences, thereby increasing customer satisfaction and competitive advantage (Vial, 2021). However, transformation success requires not only technological change but also cultural and organizational realignment to support customer centric innovation (Susanti et al., 2023).

The integration of omnichannel retail strategies bridging physical and digital touchpoints is increasingly seen as a mediating mechanism that connects AI and digital transformation to customer experience outcomes. Omnichannel integration ensures consistency and continuity

across customer journeys, improving satisfaction and reducing friction between online and offline interactions (Piotrowicz & Cuthbertson, 2020). This convergence enhances the customer's perception of convenience and control, two critical elements in experience evaluation (Herhausen et al., 2020). Moreover, an effective omnichannel strategy powered by AI and digital infrastructure can enable real time personalization and seamless service across platforms (Jocevski, 2020). Therefore, omnichannel integration is not merely an operational tactic but a strategic mediator in technology experience linkages.

Finally, the type of retail channel whether physical, online, or hybrid can moderate the influence of AI and digital transformation on customer experience. Physical environments still offer sensorial and social experiences that are hard to replicate digitally, while online channels provide speed and convenience (Pantano & Pizzi, 2020). The customer's perception and expectations vary significantly across channels, which can alter how they interpret AI enhanced interactions or digital processes (Flavián et al., 2020). Understanding this moderating effect is vital for designing tailored strategies that align with customer channel preferences and optimize experiential outcomes (Bartikowski et al., 2021).

Given this context, the purpose of this study is to examine how AI technology and digital transformation influence customer experience in retail settings, while also investigating the mediating role of omnichannel integration and the moderating role of retail channel type. The study contributes theoretically by extending customer experience literature within the framework of emerging technologies, and empirically by providing actionable insights for retail managers seeking to design consistent and superior experiences across physical and digital platforms.

Despite the increasing scholarly attention on how artificial intelligence (AI) and digital transformation (DT) can enhance customer experience (CX), existing research remains fragmented in addressing how these technologies jointly contribute to a seamless and value driven omnichannel experience. While prior work has acknowledged the role of AI in customer service automation, predictive analytics, and personalization (Edelman & Abraham, 2022), many studies examine AI applications in isolation such as chatbots or recommender systems without exploring how AI supports holistic omnichannel integration (Wilson et al., 2024). For example, Hossam et al. (2024) demonstrated the use of AI powered video analytics to track in store customer movement, generating real time heatmaps and behavioral insights. However, these technological advances often remain siloed from digital touchpoints, leaving a gap in understanding how AI can bridge online and offline interactions into a unified CX journey. Furthermore, although digital transformation initiatives are widely pursued in retail (Vial, 2021), few studies examine how the convergence of AI and DT jointly affects the emotional,

cognitive, and behavioral responses of consumers throughout the purchase journey (Nagy & Hajdu, 2022). This lack of integrative modeling highlights a theoretical gap in explaining the simultaneous impact of AI and DT on CX across all customer touchpoints.

Additionally, while omnichannel integration is frequently positioned as a strategic mediator between technology deployment and experiential outcomes, there is insufficient empirical work examining the moderating effect of retail channel type physical, online, or hybrid on these relationships. Recent work exploring the use of voice based digital assistants in physical point of sale environments (Lesiak et al., 2024) indicates a positive effect on operational efficiency and customer satisfaction. However, these insights do not account for how customer expectations and experiences differ across channel contexts, particularly when digital personalization techniques (e.g., AI generated recommendations) are deployed across platforms. Moreover, Ibrahim et al. (2025) proposed a theoretical framework linking AI to omnichannel CX but lacked empirical validation in multi channel settings. Industry reports by Avasant (2024) and Strategy Software (2024) further emphasize the importance of orchestrating omnichannel experiences, yet fall short of detailing how consumer perceptions shift when moving between physical and digital environments. This creates a significant research void in determining whether and how the type of retail channel moderates the relationship between AI/DT integration and perceived CX quality. Thus, an empirically tested, multivariate model incorporating AI, DT, omnichannel integration, and retail channel type remains largely unexplored.

This study introduces a novel, integrative framework that investigates how artificial intelligence and digital transformation jointly affect customer experience through the mediating role of omnichannel integration and the moderating effect of retail channel type. It offers a comprehensive empirical model by combining behavioral data from physical and digital retail touchpoints, while also controlling for factors like trust, perceived control, and customer readiness for AI technologies. The research not only extends the theoretical understanding of omnichannel CX in the digital era but also provides actionable insights for retail managers seeking to deliver consistent, personalized, and seamless experiences across diverse retail formats.

2. THEORETICAL STUDY

The foundation of this research is grounded in two primary theoretical frameworks: Service Dominant Logic (SDL) and the Technology Acceptance Model (TAM), both of which are extended to accommodate emerging dynamics in AI and digital transformation. SDL (Vargo & Lusch, 2004) emphasizes that value is co created through interactions among firms,

technologies, and customers rather than embedded solely in products or services. In the context of retail, AI and digital transformation act as operant resources that enable firms to co create personalized and seamless experiences across physical and digital environments (Lemon & Verhoef, 2016). AI technologies such as machine learning algorithms, conversational agents, and recommendation engines enhance customer interactions by predicting needs, automating responses, and adapting content delivery. Digital transformation, on the other hand, reconfigures business models and infrastructure to integrate disparate channels into a cohesive service experience (Verhoef et al., 2021).

Additionally, the Technology Acceptance Model (TAM) and its successors, such as the Unified Theory of Acceptance and Use of Technology (UTAUT), provide a lens for understanding how customers respond to AI enabled interactions. Constructs such as perceived usefulness, perceived ease of use, and trust are critical in shaping how customers perceive technology mediated touchpoints (Xu et al., 2022). The integration of AI and digital tools into omnichannel strategies requires customers to not only accept but also rely on these technologies to derive value. As such, customer readiness and perceived control serve as moderators influencing the success of technological integration (Rafaeli et al., 2021).

Moreover, this study builds on Omnichannel Service Integration Theory, which posits that consistent and coordinated service across channels leads to superior customer experiences (Herhausen et al., 2020). When AI and digital systems are effectively integrated, they reduce friction across touchpoints and facilitate real time personalization. However, the moderating role of the retail channel type whether physical, online, or hybrid introduces variability in customer perceptions of experience quality, highlighting the need for contextualized strategies (Pantano & Pizzi, 2020). This theoretical synthesis underpins the proposed model linking AI, digital transformation, omnichannel integration, and customer experience outcomes.

3. RESEARCH METHODS

This study adopts a qualitative exploratory approach to deeply investigate how artificial intelligence (AI) technologies and digital transformation shape customer experience within both physical and online retail contexts. The research object focuses on the Indonesian retail sector, encompassing physical, digital, and hybrid retail formats. This approach aims to uncover the nuanced perceptions of consumers and retailers regarding AI enabled personalization, omnichannel integration, and digital innovations in enhancing customer engagement and satisfaction (Marinova et al., 2021; Rafaeli et al., 2021).

The research methodology is based on semi structured interviews with key stakeholders, including retail managers, technology implementers, and customers who have interacted with AI enabled services across various channels. This method allows for in depth insights into the emotional, cognitive, and behavioral responses elicited by AI and digital systems (Xu et al., 2022). A purposive sampling technique is employed to ensure participants have relevant experience in omnichannel retail environments and familiarity with AI enhanced services (Gursoy et al., 2020).

To ensure reliability and validity, interview protocols are developed based on constructs from the Service Dominant Logic (SDL), Technology Acceptance Model (TAM), and Omnichannel Service Integration theories (Verhoef et al., 2021; Herhausen et al., 2020). Thematic analysis is applied to identify key patterns and emerging themes related to customer experience, technological readiness, perceived trust, and channel specific interactions (Lemon & Verhoef, 2020). The study integrates triangulation by comparing perspectives from multiple stakeholder groups, thereby enhancing the credibility and depth of findings (Pantano & Pizzi, 2020).

This qualitative design is appropriate due to the complex and context dependent nature of customer experience and digital integration. It provides rich, empirical insights that quantitative models often overlook, particularly in dynamic retail environments undergoing rapid technological change (Holmqvist et al., 2020).

4. RESULTS AND DISCUSSION

This research utilized a qualitative exploratory approach through semi structured interviews involving key retail stakeholders in Indonesia including physical, digital, and hybrid retailers. The data collection process aimed to uncover stakeholder perceptions regarding the implementation of artificial intelligence (AI) technologies and digital transformation in shaping customer experience (CX).

Thematic analysis revealed four prominent themes: AI driven personalization, omnichannel integration, technological readiness, and channel-based experience differentiation. The findings indicate that AI enabled personalization through real time product recommendations, adaptive content delivery, and chatbot assistance plays a pivotal role in enhancing the convenience and satisfaction dimensions of customer experience. Respondents emphasized that these AI features create a sense of tailored interaction that heightens engagement and loyalty.

However, the success of such implementations is moderated by customers' trust and perceived control over AI mediated services, echoing the tenets of the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) (Xu et al., 2022). Customers who feel a lack of transparency or agency tend to experience diminished value, signaling the need for transparent communication and user centered AI design.

AI-Driven Personalization and Customer Experience

The integration of artificial intelligence (AI) into retail environments has substantially reshaped how customer experience (CX) is designed and delivered. In this study, participants consistently highlighted personalization as the most visible and impactful outcome of AI implementation. Features such as algorithm driven product recommendations, conversational chatbots, virtual shopping assistants, and adaptive website interfaces were found to directly influence how customers perceive the relevance, convenience, and emotional resonance of their interactions with retail platforms. Through these intelligent systems, retailers are able to analyze behavioral patterns, purchasing history, and demographic data in real time, allowing them to tailor content and services according to individual customer profiles. Such personalization mechanisms foster a sense of being "understood" by the brand, which enhances emotional engagement and customer loyalty. For example, one participant explained that AI generated recommendations made them feel as if the system had a deep awareness of their preferences, thereby increasing trust and satisfaction. This sense of hyper relevance delivered automatically reflects a shift in retail service logic, where value is co created through interactive, data driven encounters rather than traditional transactional methods (Lemon & Verhoef, 2020; Huang & Rust, 2021).

Table 1. Customer Perceptions of AI-Based Personalization Features

AI Feature	General Response	CX Impact
Product recommendations	Positive, relevant	Convenience, satisfaction
Chatbots	Mixed, efficient	Speed vs. lack of empathy
Virtual assistants	Positive, engaging	Emotional connection
Adaptive content	Positive, intuitive	Attention, retention

Source: Field Interviews, (2025)

As illustrated in Table 1, customer responses to AI driven personalization features vary in emotional and functional impact. Product recommendations and adaptive content were consistently perceived as useful and relevant, contributing positively to convenience and attention retention. Virtual assistants received favorable responses due to their interactive and tailored nature, fostering emotional engagement. However, chatbots elicited mixed reactions

while customers appreciated the quick replies, some expressed discomfort due to the impersonal tone and lack of empathy. These findings suggest that while AI can enhance efficiency and personalization, emotional resonance remains a critical dimension of customer experience. Retailers must, therefore, balance automation with human like interaction to ensure technological tools support both practical and affective needs of customers.

However, the effectiveness of AI in enhancing CX is not uniform across all customer segments; it is contingent upon factors such as perceived trust, technological readiness, and the level of control customers feel over AI mediated interactions. Several interviewees voiced concerns about data privacy and the lack of transparency in how AI systems operate, which can undermine trust even in highly personalized experiences. Some customers expressed discomfort with the "invisible surveillance" that personalization often implies, especially when product suggestions appear immediately after a brief interaction or browsing session. These reactions underscore the importance of designing AI tools with transparency and ethical data practices in mind. The Technology Acceptance Model (TAM) and its derivatives, including the Unified Theory of Acceptance and Use of Technology (UTAUT), support these findings by emphasizing perceived usefulness, ease of use, and trust as primary predictors of technology adoption (Xu et al., 2022). When customers feel in control and believe the system respects their autonomy, the AI's role transitions from merely functional to emotionally affirming. Thus, while personalization is a powerful CX enhancer, it must be embedded within an ethical, transparent, and user centered framework to unlock its full potential. These insights not only validate prior academic claims but also offer actionable considerations for retail managers deploying AI to improve experiential outcomes in competitive, omnichannel contexts.

Omnichannel Integration as a Mediator

The findings of this study underscore the critical role of omnichannel integration as a mediating mechanism that bridges the influence of AI and digital transformation on customer experience (CX). Respondents described how seamless transitions between digital and physical retail environments significantly shape their perception of service quality. In cases where retailers employed a unified data system enabling continuity of promotions, real time inventory updates, and synchronized communication across apps, websites, and physical stores customers reported a heightened sense of control and satisfaction. For example, a customer could research a product online, reserve it through a mobile app, and finalize the purchase at a nearby store, all while enjoying consistent service messaging and personalization. This continuity aligns with the Omnichannel Service Integration Theory, which posits that when customers experience congruence across touchpoints, it minimizes friction and enhances the

perceived value of the interaction (Herhausen et al., 2020). Participants from the retailer side emphasized that integrating AI systems within omnichannel infrastructures enables dynamic responsiveness, such as sending personalized offers via SMS when a customer enters a store, or updating online recommendations based on in store purchases. These synergistic effects of AI and omnichannel design illustrate the compound benefit of technology alignment in CX management.

Moreover, the study reveals that the absence of integration often results in fragmented experiences that erode customer trust and satisfaction. Several participants recounted instances where personalized offers sent online were not recognized in store, or where customer service representatives lacked access to recent digital interactions producing frustration and diminishing the perceived professionalism of the brand. These inconsistencies, according to the data, stem from the siloed deployment of technology and the lack of a centralized customer data platform. From a managerial perspective, this suggests that digital transformation efforts must go beyond adopting isolated technologies and instead prioritize architectural coherence and interoperability. The literature supports this by asserting that a true omnichannel strategy entails not just the availability of multiple channels, but the strategic integration of those channels into a seamless and coherent ecosystem (Verhoef et al., 2021). Furthermore, participants noted that omnichannel integration increases the potential for experiential innovation such as allowing customers to scan QR codes in physical stores to access immersive product videos or AI generated usage tips. These hybrid experiences blur the line between digital and physical, offering new ways to create memorable, personalized, and interactive service encounters. Thus, omnichannel integration not only mediates but amplifies the impact of AI and digital transformation on customer experience, reinforcing its role as a cornerstone in modern retail strategy.

Channel Type as a Contextual Moderator

The study identifies the type of retail channel physical, online, or hybrid as a significant moderating factor that shapes the relationship between AI/digital transformation and customer experience (CX). Through interviews, it became evident that customers interpret and respond to technological enhancements differently depending on the context of their interaction. Physical retail environments are particularly valued for their sensory and social dimensions, such as the ability to touch products, receive human interaction, and enjoy the atmosphere of the store. AI applications in physical stores like smart mirrors, voice assistants, or in store navigation are seen as novel and assistive, yet they do not replace the expectation of human service. Conversely, in online settings, customers prioritize speed, personalization, and

convenience. Here, AI features such as chatbots, dynamic pricing, and tailored recommendations are not only accepted but expected. Participants noted that any lack of personalization or delay in digital interactions is perceived as a service failure. This dichotomy supports existing literature suggesting that the value of AI is contingent upon the specific customer goals and interaction context (Pantano & Pizzi, 2020; Flavián et al., 2020).

Interestingly, hybrid or omnichannel experiences where customers navigate between online and physical touchpoints present a more complex dynamic. For example, when a customer browses products online and completes the purchase in store (or vice versa), expectations shift toward consistency and service continuity across platforms. Several participants emphasized that inconsistencies between channels, such as unavailable inventory in-store despite online listings, create dissonance and reduce satisfaction. In contrast, when AI is leveraged to bridge the channel divide such as updating customer profiles in real time, syncing purchase histories, or offering location-based promotions customers experience a sense of cohesion and control, which enhances CX. This moderating role of retail channel type implies that technological innovation alone is insufficient; it must be tailored to the affordances and expectations inherent in each retail format. These findings resonate with the contextual interaction theory, which posits that customer evaluations are situationally dependent and shaped by perceived congruence between technological features and interaction goals (Bartikowski et al., 2021). Therefore, retail managers must consider not only what technologies to implement but where and how these technologies align with customer intent within specific channels. Customizing the deployment of AI and digital tools in accordance with channel specific behaviors and expectations can significantly strengthen customer engagement and loyalty across the retail spectrum.

Theoretical and Practical Implications

Theoretically, this study advances the discourse on customer experience (CX) in retail by proposing an integrative framework that combines Service Dominant Logic (SDL), the Technology Acceptance Model (TAM), and Omnichannel Service Integration Theory. By framing AI and digital transformation as “operant resources” that enable value co creation, the research underscores how these technologies do not merely augment service delivery but fundamentally redefine the nature of customer firm interactions (Vargo & Lusch, 2004; Lemon & Verhoef, 2016). Through empirical data, the study illustrates that AI technologies operate beyond automation they support cognitive and emotional dimensions of CX by enhancing relevance, immediacy, and empathy. Furthermore, by embedding TAM constructs such as trust, perceived control, and ease of use within an omnichannel framework, this research

bridges a critical gap in understanding the interplay between technological acceptance and experiential outcomes. The inclusion of the retail channel type as a moderator further enriches existing models by contextualizing how and where customers engage with AI enhanced services. This layered analysis contributes to emerging literature that calls for multidimensional, context sensitive models of technology driven CX (Nagy & Hajdu, 2022; Ibrahim et al., 2025).

From a practical standpoint, the findings yield actionable insights for retail managers seeking to optimize customer experience in an era of digital disruption. First, the deployment of AI must be carefully aligned with customer expectations and touchpoint specific behaviors. In physical settings, AI should complement human interaction rather than replace it supporting operational efficiency without undermining the value of personal service. In contrast, in digital and hybrid environments, retailers should prioritize hyper personalization, responsiveness, and transparency, particularly in how customer data is used. Second, omnichannel integration should be pursued not only as a technological project but as a strategic imperative requiring organizational alignment and customer centric design. Retailers are advised to invest in centralized customer data platforms, real time analytics, and cross channel staff training to ensure a cohesive service experience. Finally, retailers must recognize the heterogeneity of customer readiness and tailor their technological interfaces accordingly. Offering options for human override, providing clear explanations of AI functionalities, and ensuring data ethics compliance will enhance trust and foster long term engagement. These insights are particularly relevant for markets like Indonesia, where digital maturity levels vary widely across customer segments. Ultimately, the research provides a roadmap for balancing innovation with empathy, enabling retailers to craft seamless, meaningful, and differentiated customer experiences in a competitive omnichannel landscape.

Research Limitations and Future Directions

While this study offers valuable insights into the influence of artificial intelligence (AI) and digital transformation on customer experience (CX) within Indonesian retail settings, several limitations must be acknowledged. First, the research employs a qualitative methodology with a purposive sample, which, while rich in depth, limits the generalizability of the findings. The participant pool, consisting mainly of retail professionals and digitally active consumers, may not fully represent the broader diversity of customer profiles, particularly those with limited technological access or digital literacy. Additionally, data collection focused on subjective perceptions, which, although insightful for understanding experiential and emotional dimensions, may be influenced by cognitive biases such as recall

accuracy or social desirability. These methodological constraints restrict the ability to infer causality or establish statistically robust generalizations. Moreover, the study was conducted within a specific cultural and economic context Indonesia which has its own digital adoption curve, infrastructure disparities, and consumer behavior patterns. Therefore, the applicability of the findings to other regions or markets with different levels of digital maturity must be approached with caution.

Given these limitations, several avenues for future research are proposed. First, quantitative or mixed method approaches could be employed to test and validate the proposed integrative model across broader and more diverse samples. Structural equation modeling (SEM), for instance, could examine the strength of relationships between AI adoption, omnichannel integration, channel type, and customer experience outcomes. Second, longitudinal studies are needed to explore how customer perceptions of AI and digital services evolve over time, particularly as familiarity increases and technology matures. Such studies could also examine potential shifts in trust, control, and satisfaction in response to regulatory changes or data breaches. Third, future research could explore cross cultural comparisons to understand how sociocultural factors influence the acceptance and interpretation of AI driven CX. Studies across countries with varying digital ecosystems such as comparing Indonesia with more digitally advanced markets like South Korea or digitally emerging regions in Africa could uncover critical insights for global retailers. Lastly, further investigation is warranted into the ethical dimensions of AI in retail, including transparency, fairness, and inclusivity. By addressing these research gaps, future studies can enrich the theoretical and practical understanding of digital retail transformation and support the development of inclusive, effective, and ethical customer experience strategies.

5. CONCLUSION AND SUGGESTIONS

This study concludes that artificial intelligence (AI) and digital transformation significantly shape customer experience (CX) in retail by enabling personalization, operational efficiency, and seamless omnichannel interactions. AI-driven personalization manifested through tailored recommendations, chatbot interactions, and adaptive content enhances emotional and cognitive satisfaction, particularly when aligned with customer trust and perceived control. The mediating role of omnichannel integration further reinforces this impact by ensuring consistent and coordinated service delivery across touchpoints, while the moderating role of retail channel type highlights the contextual nuances in how customers perceive and interact with technology. Physical environments emphasize human interaction and sensory engagement, whereas digital channels prioritize speed, automation, and

convenience. Hybrid models demand strategic synchronization across platforms to deliver unified experiences. Collectively, these findings support the theoretical integration of Service Dominant Logic, Technology Acceptance Model, and Omnichannel Service Integration Theory, providing a robust foundation for future empirical and conceptual exploration.

In practical terms, retailers are encouraged to approach AI and digital transformation not merely as technological upgrades but as strategic tools for enhancing CX holistically. This includes designing AI features that are transparent, ethically sound, and tailored to different channel formats and customer segments. Investment in centralized customer data infrastructure, staff training, and agile service design is essential to actualize omnichannel integration. Moreover, customer readiness and trust should be prioritized through inclusive UX design, data privacy assurances, and the option for human override. Given the contextual scope and qualitative nature of the study, future research should consider quantitative validation across larger samples, longitudinal tracking of customer behavior, and comparative studies across diverse cultural and technological settings. These efforts will ensure that technological innovation in retail remains customer centric, ethically responsible, and globally adaptive.

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