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The impact of artificial intelligence technology and customer engagement on consumer repurchase intention: The mediation and moderation approach

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Chronicle**Article history****Received:** Feb 12, 2026**Received in the revised format:** Feb 23, 2026**Accepted:** March 5, 2026**Available online:** March 25, 2026**Minhaj Ikram and Afshan Anwar** are currently affiliated with Iqra University**Email** minhajikram@gmail.com**Email** afshan.g24961@iqra.edu.pk**Abstract**

This research examines the role of artificial intelligence technology (AIT) in customer repurchase intention (CRI) in the digital commerce sector of Pakistan. It specifically considers the mediating role of customer engagement on social media (CESM) and the moderating role of trust to address the contextual research gaps on emerging markets. Primary data was taken from a sample of online grocery store customers who booked services online using structured questionnaires and analyzed using Partial Least Squares Structural Equation Modeling. The structural model shows significant explanatory power in CRI. Key results are that AIT is found to have a strong and significant positive direct influence on both CRI and CESM. In addition, trust is a significant positive predictor of CRI. Importantly, the path from CESM to CRI as well as the hypothesized moderating effect of trust on the relationship between AIT and CRI were found to be statistically insignificant. These findings offer actionable insights for digital retailers, which may indicate that businesses need to focus investments in AIT as a key driver for relational outcomes, and transparent data practices to build trust. In contrast, resources directed to only the increment in social media engagement as a strategy to increase repurchases may need to be re-evaluated due to its insignificant impact on customer repurchase intention.

Corresponding Author***Keywords:** Artificial Intelligence Technology, Customer repurchase intention, Customer engagement on Social Media, Trust, Digital Commerce, PLS SEM, Pakistan.

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INTRODUCTION

In the fast-loving digital era, artificial intelligence has become one of the most profoundly transformative technologies that have changed the world of electronic commerce, customer interaction, and strategic marketing (Marinova et al., 2020). Artificial intelligence is the simulation of human intelligence processes by machines, which can perform complex tasks that normally require human intelligence, such as dynamic decision making, pattern recognition, and predictive analytics. From hyper personalized product suggestions to intelligent chatbots, voice assistants to automated recovery of customer service, algorithmic technologies are now embedded in the everyday texture of consumer interactions in complex ways. The role these technologies play in both marketing and customer service processes has grown exponentially in the last decade (Gursoy et al., 2021). This surge is fueled mostly by the unparalleled ability of algorithmic systems to process huge amounts of unstructured consumer data in real-time to generate actionable insights that can be used to inform highly customer centric strategies. Globally, retail enterprises are increasingly investing in machine learning for the optimization of backend processes, frontline customer satisfaction and long-term brand loyalty (Lemon & Verhoef, 2021). The combination of advanced technology such as natural language

processing and robotic process automation allows companies to better understand changing consumer behavior, anticipate unarticulated needs and provide seamless experiences. For example, advanced recommendation systems that run on websites like Amazon and Alibaba use deep learning to analyze data on past consumer behavior and make highly relevant recommendations for products, which have a significant effect on user engagement and repeat purchase decisions (Chatterjee et al., 2023). The global retail market for these technologies reflects this momentum and is boosted by the need for intelligent solutions that meet customer expectations and gain a competitive edge in saturated markets (MarketsandMarkets, 2023).

While developed countries throughout North America and Europe have made significant progress in integrating algorithmic solutions in all customer interfaces, implementation in developing countries is comparatively limited (Ali et al., 2023). Emerging economies in South Asia, Pakistan included, have only recently started to fully appreciate the disruptive potential of digital transformation. The digital ecosystem in Pakistan is currently in a critical stage of growth that displays immense commercial potential in spite of infrastructural, financial and educational constraints (Ahmed & Qureshi, 2022). With a rapidly growing consumer base of people buying goods online and making payments digitally, local enterprises are researching algorithmic technologies in order to understand consumer behavior and reduce customer churn (Khan & Raza, 2024). Prominent electronic commerce sites and digital grocery services have started personalized marketing efforts, though at a smaller scale than their global counterparts.

Despite all of these early technological advancements, there is a large empirical and contextual gap in the academic literature. A large amount of previous research investigating consumer behavior has been conducted in a nearly developed market, with focus on technological efficiency and the initial consumer acceptance (Wamba-Taguimdje et al., 2021; Zhang et al., 2020). These previous works tend to ignore important post adoption behavioral outcomes such as repurchase intention. Furthermore, most existing literature focuses on direct technological effects and overlooks, for the most part, the complex mediating roles of digital engagement and the moderating role of interpersonal trust (Rahman et al., 2022).

There is a lack of understanding of how customer engagement on social media converts the functional benefits of the digital platforms into tangible financial loyalty. While digital tools aim to stimulate increased interaction on social platforms, the degree to which such improved interaction translates into actual repurchase decisions is an important empirical gap, especially in emerging markets where digital behaviors may not follow the Western paradigm (Kotler et al., 2021). Additionally, consumer perceptions of trustworthiness may vary significantly across cultures and levels of digital literacy. Specific insights from the existing literature regarding the role that trust may play in enhancing or eroding the efficacy of digital interventions in the direct impact towards repurchase intentions within a developing market context do not currently exist (Akter et al., 2022).

LITERATURE REVIEW

Stimulus Organism Response theory

The Stimulus Organism Response theory has been used as a theoretical framework as a basis of this research. Originating from the pioneering work of Mehrabian and Russell (1974), this model provides an overarching lens of academia where the complex

interaction of external environmental stimuli, internal psychological states and subsequent behavioral responses can be understood in a systematic way. The theory it says that there is a tripartite model of the external stimuli influencing the internal cognitive and the affective state of the organism that then brings forth particular approach or avoidance behavioral response.

Over the years, this hard theoretical base has evolved from its inside, and has found wide application in the field of modern digital media research. This evolution is critical as the stimuli to today's consumers have changed beyond physical stimuli experienced within the retail to include various complex stimuli in the digital world. In terms of this research advanced algorithmical interfaces and personalised digital platforms are the external technological stimuli. These are stimuli to affect the internal states of consumers, which are their level of active digital engagement, and their psychological trust of the retailer (Zhang et al., 2020). These internal states are later mediating the translation of the technological stimuli into meaningful behavioural responses (conceptualized here as the ultimate customer repurchase intention).

HYPOTHESES DEVELOPMENT

Artificial Intelligence Technology and Repurchase Intention

When retail businesses are using advanced technological capabilities, such as predictive analytics, to deliver customized marketing messages, they are using these tools to improve multiple critical touchpoints of the customer journey-all in direct way. These enhancements include the streamlined checkout process, and very relevant product suggestions, and immediate automated for delivery inquiries. Such systemic improvements entail an immense level of convenience for the customers and a reduction of mental effort to complete a transaction (Gursoy et al., 2021). As a result, this frictionless digital experience provides a direct reinforcement of the consumer decision to continue to purchase from that particular business often skipping the need for the middleman emotional or social factors.

H1: Customer Repurchase Intention has a Positive Significant Direct impact on Artificial Intelligence Technology.

The Artificial Intelligence Technology and the Social Media Engagement

The integration of intelligent algorithms into social media strategies has the potential to greatly transform the way that digital brands interact with their target audiences. Algorithms are constantly optimizing content delivery which makes sure that the most relevant promotional post are delivered to the most precise target audience are delivered at the best time of the day drastically increasing visibility and interaction rates [Chatterjee et al., 2021]. Furthermore, automated chatbots deployed directly on social media platforms are in a position of providing instant responses to customer queries, while also making digital interactions with brands much more dynamic and satisfying. This active environment is proactively encouraging consumers to participate, share promotional content and create a better interactive footprint in the ecosystem of social media.

H2: Customer Engagement on social media has a significant positive effect as a result of Artificial Intelligence Technology.

Customer Engagement On Social Media & Customer Repurchase Intention

Active engagement on social media often includes the participation by liking, commenting, participating in polls or creating user generated content (Hollebeek et al., 2014). Traditional models of marketing in the West often hypothesize that such active digital involvement leads to a deep feeling of community, and personal connection with the brand which should in theory lead to a higher chance of repeat purchase. It is often assumed that constant digital dialogue leads to brand affinity and keeps the retailer top of mind when it comes to purchase need. However, in some emerging market situations consumers may use social media channels less to build relational loyalty, and more as a functional utility, such as to register complaints or seek discounts. Therefore, it is important to test empirically whether this digital engagement is actually bridging the gap between technological capabilities and financial loyalty.

H3: Customer Engagement on Social Media has significant effect on Customer Repurchase Intention

H4: Customer Engagement on Social Media mediates the relationship between Artificial Intelligence Technology to Customer Repurchase Intention.

The Moderating Impact of Consumer Trust

The relationship between digital technology and repurchase intention is strongly influenced by the level of trust that customers have in the retail brand and the data systems behind it. When consumers have a high degree of trust believing that the platform is reliable, ethical and secure they are much more likely to willingly embrace digital interactions (Ali et al., 2023). Trust drowns out any potential concerns of data privacy breaches or algorithmic prejudice. In a low trust environment, customers may have a high degree of skepticism or resistance towards digital platforms, which may reduce the potential positive impact of the technology on their intention to repurchase. Understanding whether trust is something that drives sales in and of itself, or if actively interacts with the technology to drive the multiplication of its effects is a critical component of designing effective digital retention strategies.

H5: Trust moderates the relationship between the Artificial Intelligence Technology and Customer Repurchase Intention.

CONCEPTUAL FRAMEWORK

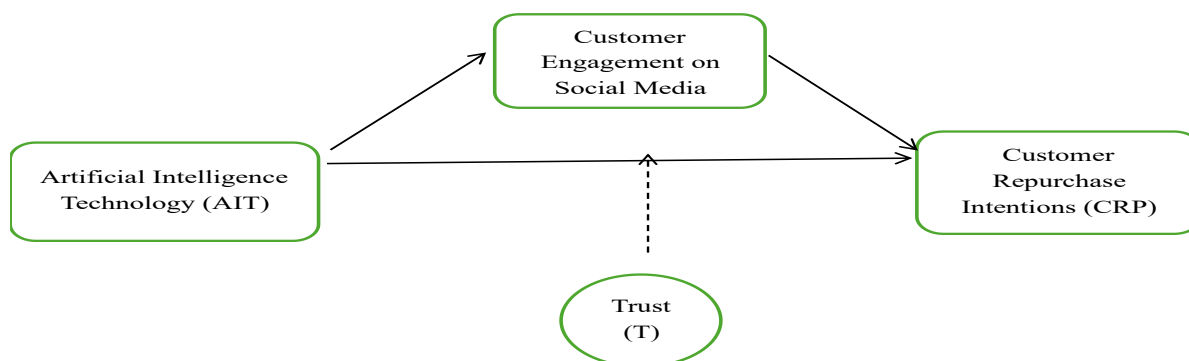


Figure 1.
Conceptual Framework

RESEARCH METHODOLOGY

This section represents the research design and methodology of the study.

Research Design and Philosophical Approach

This research paper applies the explanatory and deductive quantitative research design in order to systematically investigate the complex relationship between

artificial intelligence technology, customer engagement on social media, trust, and the customer repurchase intention. A deductive approach is a very well-suited approach for this research as it is based on testing specific hypotheses which are based on certain theoretical frameworks, such as Stimulus Organism Response theory, and verifying them through the collection of empirical data (Saunders et al., 2019). Through the application of quantitative methodology, the research can be conducted objectively by measuring consumer perceptions and behavioral intentions objectively and less likely to be biased subjectively (Creswell & Creswell, 2017). Furthermore, the study uses the cross sectional survey method for data collection at a given point in time, and the method involves the collection of primary data. This time horizon is particularly effective and pragmatic in attempting to pick up the current consumer behaviors in the fast-paced digital marketplace of Pakistan; and the research can be considered as a snapshot in time of the immediate impact of algorithmic technologies without any attrition risks associated with the longitudinal research (Sekaran and Bougie, 2016).

Target Population and Sampling

The target population for this empirical investigation were the online grocery customers of Pakistan who actively use the digital service platforms such as Foodpanda and Careem. These platforms make extensive use of algorithmic recommendations and automated customer service, which makes their users the perfect demographic to test the impact of artificial intelligence. A purposive sampling technique was used deliberately to make sure that only respondents with prior and relevant experience with these particular digital services were included in the dataset (Etikan et al, 2016). While purposive sampling by definition has its limitations in terms of population level generalizability, it is methodologically rigorous and perfectly appropriate for structural equation modeling, for which the goal is to test theoretical relationships and not to produce descriptive frequency estimations for the general population (Hair et al., 2019).

The final sample was 200 valid responses. According to the commonly accepted recommendations for sample size for Partial Least Squares Structural Equation Modeling, a sample size of 200 is well above the minimum threshold to achieve an acceptable statistical power (Hair et al., 2021). This sample size will guarantee stable parameter estimates for a complex structural model involving simultaneous mediation and moderation pathways making the empirical results robust and highly reliable.

Data Collection Process and Ethical Issues

Primary data collection was put in place using highly structured questionnaires distributed physically and using secure online links. This dual distribution approach was used in order to get a cross section of the target population including both digitally native younger consumers, as well as older demographics who may not want to take the survey online. The survey was self administered so respondents could answer the questionnaire at their own pace so as to reduce response pressure and social desirability bias (Podsakoff et al., 2003).

Strict adherence to ethical research guidelines was adhered to throughout the whole data collection phase. All participants were given clear instructions of the academic goal of study. Informed consent was received prior to participating and respondents were assured of their complete anonymity, and strict confidentiality of their data. The

researchers ensured no personally identifiable information was collected and the participants were given the right to exit a survey at any time without consequence.

Instrument Development and Validity

The survey instrument was developed carefully based on established measurement scales that were adapted from previous peer reviewed literature in order to ensure the proper capture of the theoretical constructs. Responses were captured with a standardized Likert scale which provided respondents a range of different levels of agreement to ensure their perceptions were captured accurately. Prior to full scale deployment of the survey, face, and content validity was thoroughly established. A panel of subject matter experts and experienced academic researchers reviewed the measurement tool to identify whether the measurement items accurately, clearly, and fully represented the theoretical dimensions of artificial intelligence technology, social media engagement, trust and repurchase intention which the researchers sought to measure (DeVellis, 2016). Based on their feedback as experts, minor refinements were made to the wording of some of the items to eliminate ambiguity, and ensure that the language was contextually appropriate for the Pakistani digital commerce sector.

Statistical Technique

To strictly analyze the measurement models and structural models proposed, Partial Least Squares Structural Equation Modeling were chosen as the main analytical method using the SmartPLS software application. This sophisticated multivariate analytical strategy was employed in place of the traditional covariance based structural equation modeling for a number of good methodological reasons. First, the variance based approach of this technique is especially suitable for the evaluation of complex exploratory frameworks which involve simultaneous mediation and moderation effects (Hair et al., 2019). Second, it performs exceptionally well in predictive research models in that it seeks to maximize the amount of variance of the dependent constructs that are explained, which is the exact same as the primary objective in the predictive model of customer repurchase intention. Finally, this method is very robust to deviations from multivariate normality, which makes it the ideal analytical choice for real world consumer behavior data (Henseler et al., 2015).

DATA ANALYSIS AND FINDINGS

Data Screening and Demographic Profile

The dataset containing 200 subjects had a rigorous screening process to ensure the absolute suitability to Partial Least Squares Structural Equation Modeling. The preliminary analysis established there was no missing response to the twenty items to the survey instrument. Outlier detection was performed by using standardised measures such as z score, boxplots and mahalanobis distance testing (Hair et al., 2019). This is quite a detailed screening which proved that there were no extreme values of the whole data set and that the parameter estimates that would result from that would not be skewed by anomalous responses.

The demographic profile plays a role in uncovering a holistic and a very relevant picture about the respondents and their online grocery purchasing behaviors. The distribution of gender shows little dominance of female with 55.3 percent female respondent as compared to 44.7 percent male respondent.

Income levels show that it is a well rounded financial profile with 21.6 percent earning less than 10000 PKR, 23.1 percent earning between 10000 and 50000 PKR, 24.6 percent earning between 50000 and 100000 PKR and the largest share of 30.7 percent earning more than 100000 PKR. The age distribution is very strong in all the stages of development, the 16 to 25 years has the highest percentage at 28.1 percent. This is followed by the one between 26 and 35 years old with 25.1 percent, between 36 and 45 years old with 21.1 percent and above 45 years old with 25.6 percent. In terms of digital commerce engagement, 27.6 percent of respondents purchase online one to two times and a large number of 27.1 percent are frequent shoppers who make more than six purchases. The demographic profile is illustrated in table 1:

Table 1.
Demographic Profile

Demographic Factor	Category	Frequency	Percentage (%)
Gender	Male	89	44.7%
	Female	110	55.3%
Income	Less than 10k	43	21.6%
	10 – 50k	46	23.1%
	50k – 100k	49	24.6%
	More than 100k	61	30.7%
Age	16-25 years	56	28.1%
	26-35 years	50	25.1%
	36-45 years	42	25.6%
	Above 45 years	51	21.1%
	Frequency of Online Purchase	1-2 times	55
	3-4 times	43	21.6%
	5-6 times	47	23.6%
	Above 6 times	54	27.1%

Measurement Model Assessment

The reliability and validity of the measurement model were thoroughly assessed to ensure that the latent constructs were adequately measured. Internal consistency was determined by using Cronbach alpha and composite reliability measures. All constructs had an above-average recommended stringent threshold of 0.70 (Hair et al., 2021). In particular, Artificial Intelligence Technology, Customer Engagement on Social Media, Customer Repurchase Intention, and Trust provided Cronbach alpha values of 0.852, 0.843, 0.887 and 0.852 respectively. The composite reliability values were between 0.882 and 0.930, further supporting the good internal coherence of the conceptual constructs. Convergent validity was measured using Average Variance Extracted for each latent variable. All constructs met a comfortable threshold of >0.50, which is the minimum acceptable level set in academic literature (Hair et al., 2019). Customer Repurchase Intention had the highest convergent validity with a value of 0.816 followed by Artificial Intelligence Technology with 0.635, Trust with 0.631, and Customer Engagement on Social Media with 0.518. These empirical results affirm collectively that the measurement model is statistically sound and very appropriate for structural evaluation. The convergent validity is depicted below in table 2:

Table 2.
Measurement Model: Cronbach’s Alpha, Composite Reliability, AVE

	Cronbach’s alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AIT	0.852	0.869	0.896	0.635
CES				
M	0.843	0.845	0.882	0.518

CRI	0.887	0.888	0.930	0.816
T	0.852	0.867	0.894	0.631

Discriminate Validity

Discriminant validity was performed in three different ways such as Fornell Larcker criterion, Heterotrait Monotrait ratio of correlations and indicator cross loadings (Henseler et al., 2015). According to Fornell Larcker criterion, the square root of Average variance extracted for Customer repurchase intention was 0.903 which comfortably exceeded all of its inter construct correlations. Similar theoretically acceptable patterns were observed for the variables of Artificial Intelligence Technology (0.797), Customer Engagement on Social Media (0.719), and Trust (0.794), thus showing minimal conceptual overlap between the different variables. The table 3 shows the Fornell Larcker criterion:

Table 3.
Fornell Larcker criterion

	AIT	CESM	CRI	T
AIT	0.797			
CESM	0.711	0.719		
CRI	0.834	0.604	0.903	
T	0.785	0.679	0.774	0.794

The results of the Heterotrait Monotrait ratio showed further strong support for discriminant validity because the correlations between the main constructs were strictly within the acceptable limit of 0.85 (Henseler et al., 2015). Finally, extensive analysis of the cross loadings showed all individual survey items loaded significantly higher than expected on their assigned theoretical constructs and not on any other competing constructs in the model. The HTMT is also presented in table 4 below:

Table 4.
Heterotrait Monotrait ratio

	AIT	CESM	CRI	T	T x AIT
AIT					
CESM	0.839				
CRI	0.847	0.700			
T	0.810	0.813	0.871		
T x AIT	0.458	0.444	0.376	0.426	

Structural Model and Predictive Value

The structural model was tested on the basis of explanatory power and predictive accuracy. The R square values represent the proportion of variance of the endogenous constructs explained by the exogenous predictors. The conceptual model explained 50.5 percent of the variance of Customer Engagement on Social Media with moderate explanatory power. For Customer Repurchase Intention, the R square value achieved a very robust value of 0.733, indicating a high level of explanatory strength (Hair et al., 2019). Predictive relevance was determined using the blindfolding procedure to produce Q square values. Both endogenous constructs resulted in Q square values that were well above zero as Customer Engagement on Social Media was found to be 0.502 and Customer Repurchase Intention was found to be 0.728. This definitely proves that the proposed structural model has a high predictive accuracy and a tremendous practical value for the digital grocery sector.

The predictive power and predictive relevance of the research model is presented below in table 5.

Table 5.
The Predictive Power & Predictive Relevance

	R-square	Q-square
CESM	0.505	0.502
CRI	0.733	0.728

HYPOTHESES TESTING

The hypothesized direct relationships were examined by means of a comprehensive bootstrapping procedure to calculate path coefficients, t values, and p values. The analysis showed that Artificial Intelligence Technology has a strong and a statistically significant positive impact on Customer Engagement on Social Media with a path coefficient value of 0.711, a t statistic value of 16.241, and a p value of 0.000. This result is strong empirical evidence for Hypothesis 2. Furthermore, Artificial Intelligence Technology showed a significant direct positive effect on Customer Repurchase Intention, with the results of the path coefficient value of 0.618, the t statistic value of 6.646, and the p value of 0.000, which are strong evidence to support Hypothesis 1. Trust was also found to be a very important positive predictor of Customer Repurchase Intention with a path coefficient of 0.328, a t statistic of 4.239 and a p value of 0.000.

On the other hand, the hypothesized relationship between Customer Engagement on Social Media and Customer Repurchase Intention was not supported by the data at all. The path coefficient was negative 0.055 with t statistic value of 0.744 and p value of 0.457, suggesting the complete lack of statistical significance. This results in the definitive rejection of Hypothesis 3.

To answer Hypothesis 4, formal mediation analysis was performed to find out if Customer Engagement on Social Media mediates the relationship between Artificial Intelligence Technology and Customer Repurchase Intention. The specific indirect effect by multiplying the path coefficient between Artificial Intelligence Technology and Customer Engagement on Social Media with the path coefficient between Customer Engagement on Social Media and Customer Repurchase Intention (Hair et al., 2021). This calculation gave an indirect effect of negative 0.039. Because the path from the proposed mediator to a dependent variable was statistically insignificant, the indirect effect is also statistically insignificant. Therefore, no mediation takes place, and Hypothesis 4 is strictly rejected.

Finally, the moderating effect of Trust on Artificial Intelligence Technology and Customer Repurchase Intention was investigated. The interaction term had a path coefficient of near zero 0.005, a t statistic of 0.176, and a p value of 0.861. This clearly shows that Trust does not interact with the technology to increase the intentions to repurchase, thereby rejecting Hypothesis 5. The detailed results of hypotheses are presented below in table 6.

Table 6.
Path Analysis

	Estimates	Standard deviation	T statistics	P values	Result
AIT -> CESM	0.711	0.044	16.241	0.000	Significant
AIT -> CRI	0.618	0.093	6.646	0.000	Significant

Artificial intelligence technology					Ikram & Anwar (2026)
CESM -> CRI	-0.055	0.073	0.744	0.457	Insignificant
T -> CRI	0.328	0.077	4.239	0.000	Significant
T x AIT -> CRI	0.005	0.026	0.176	0.861	Insignificant

DISCUSSION

The empirical results from this study provide an in-depth understanding of the impact of artificial intelligence technology on consumer behavior in the digital commerce sector. The structural model supported the central and dominant role of artificial intelligence in the direct driving of relational outcomes, while revealing highly unexpected and critical insights about social media engagement and trust.

The direct positive effect of artificial intelligence on customer repurchase intention as well as customer engagement on social media is in perfect accordance with the basic expectations of modern technology acceptance literature (Davis, 1989; Lemon & Verhoef, 2021). It confirms that technological innovation serves as a main facilitator of consumer interaction. When online platforms employ sophisticated algorithms for convenient navigation and predictive ordering, it is a natural tendency for customers to increase their digital interaction and propel their return (Gursoy et al., 2021).

However, the total absence of mediation is a very interesting contextual deviation from the standard literature of western marketing. The inconsequential link between social media involvement and repurchase intention contradicts the general assumption that active digital involvement automatically leads to financial loyalty (Hollebeek et al., 2014). In case of Pakistani consumers of online groceries, social media engagement seems functional and not relational. Consumers will use social media extensively in order to seek customer support, solve missing items or look for promotional discounts. This sort of high frequency engagement does not necessarily create brand love or ensure a repeat purchase. Instead, the consumer decision to repurchase is driven entirely by the direct efficiency of the artificial intelligence interface and the independent trust that they have in the platform (Khan & Raza, 2024). The failure of the mediation hypothesis raises an important reality in emerging markets where functional reliability outweighs social digital participation.

Furthermore, while the research confirmed that trust was a critical independent predictor of repurchase intention, trust totally failed to moderate the relationship between artificial intelligence and repurchase behavior. This can be explicitly stated that the factors of technological efficiency and relational trust are two independent parallel factors in the eyes of consumers instead of being interaction mechanisms (Ali et al., 2023). A consumer may experience that the algorithmic recommendations are very efficient and may have very little trust in terms of the privacy of the data. Their ultimate repurchase decision considers both factors together rather separately, and not allowing trust to exponentially increase the technological convenience.

CONTRIBUTIONS

This research goes on to develop the current theoretical models such as the Stimulus Organism Response theory (Mehrabian & Russell, 1974) and it proves that the artificial intelligence is a direct relationship catalyst and it is not a background functional tool. By establishing adoption of innovation as an important predictive factor of both digital engagement and repurchase intentions, the research does a good job of linking technological adoption theories and relationship marketing paradigms. The unimportant mediating role of social media engagement holds a monumental theoretical change in digital marketing scholarship. It is asking the future researchers

and academicians to create a hard demarcation between the surface level digital interactions with the deep relational engagement (Chatterjee et al., 2021). High volume digital interactions may be a form of brand loyalty when in fact, they may be driven by service recovery efforts or because of price sensitivity. Contextually, showing how trust and technological adoption are totally independent adds more colours to existing notions of moderation in emerging economies. It indicates that trust need not function synergistically in the markets like Pakistan with technology efficiency and relational assurance having equal significance but conceptual compartmentalization by the consumer.

MANAGERIAL IMPLICATIONS

For retail managers and strategic directors operating in emerging digital markets, these particular findings provide unambiguous strategic direction. Businesses need to intensely concentrate capital investments in artificial intelligence as the primary reason for customer retention (Davenport et al., 2020). The user interface, algorithmic rightness and frictionless checkout processes score with the true engines of repurchase intention.

Critically, managers are not to assume that because the posts are visible, gone viral or showing high activities on social media platforms, it will automatically translate into repeat purchase of the groceries. Resources devoted to digital marketing must focus on marketing strategy beyond engagement metrics for the masses. Since the data proves that social media engagement does not mediate repurchase intentions, it means that companies should not invest too much in social media entertainment and instead redirect those funds to making the basic algorithmic functionalities and transparent service delivery better. Since trust is a separate driving force of repurchase intention, firms must cultivate this trustworthiness through transparent data practices, secure financial transactions, and extremely consistent logistical delivery (Akter et al., 2022). A dual approach that simultaneously promotes technological readiness and develops interpersonal trust will help to maximize long term financial loyalty.

LIMITATIONS AND FUTURE RESEARCH

Despite its strong methodological contributions, this study identifies some limitations that open the way for a future scholarly inquiry. The use of cross sectional survey data limits the potential to make any definitive causal relationships over a long period of time (Saunders et al., 2019). Future studies would benefit immensely from longitudinal research designs to observe how the consumer's perception of artificial intelligence evolves as the technology and the users mature.

Additionally, the fact that social media engagement has been treated as one composite construct may have masked the specific nuanced effects of the cognitive, emotional and behavioral dimensions of social media engagement. Disaggregating these dimensions might provide much more detailed understanding about which forms of engagement actually translate into relational outcomes (separation of complaints from actual brand advocacy). Finally, the use of this precise structural model across different cultural or market contexts may be helpful in determining the generalizability of these unique results of contextual finding more generally at the global level.

CONCLUSION

This comprehensive study is capable of throwing light on the intricate inter-relationships of relationship between artificial intelligence technology, the engagement of social media, consumer trust and repurchase intention in the rapidly expanding digital commerce sector. Artificial intelligence obviously became an important and direct force in relation to both digital engagement and results of relationships. Trust was found to be a necessary independent support for sustaining customer relationship in highly technological environments.

Crucially, the rejection of the mediation hypothesis is an important academic reminder that high volume digital activity is not synonymous with relational depth and guaranteed revenue. Consumers interact with technology for convenience, but social media for utility and these two things do not always cross to create loyalty. Ultimately, this research offers immensely valuable frameworks for academic and practical understanding of how to maneuver through consumer behavior in a time period defined by the technological innovation and evolving market dynamics.

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Consent to Participate: Yes

Consent for publication and Ethical approval: Because this study does not include human or animal data, ethical approval is not required for publication. All authors have given their consent.

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