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INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH & REVIEWS

journal homepage: www.ijmrr.online/index.php/home

ARTIFICIAL INTELLIGENCE (AI) DRIVEN SMART PAYMENT SYSTEMS: INCORPORATING INNOVATION IN CONSUMER EXPERIENCE WITH REPURCHASE INTENTION

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How to Cite the Article: Anita Verma (2026). Artificial Intelligence (AI) Driven Smart Payment Systems: Incorporating Innovation in Consumer Experience with Repurchase Intention. International Journal of Multidisciplinary Research & Reviews, 5(9), 215-226.



<https://doi.org/10.56815/ijmrr.v5i9.2026.215-226>

<i>Keywords</i>	<i>Abstract</i>
Artificial Intelligence, Customer Experience, Repurchase Intention, Smart Payment Services.	This study intends to examine consumer experience and repurchase intention among consumers using smart payment services. AI characteristics like personalization, convenience, security, and quality of chatbot support were considered as stimuli that influence consumer experience, affecting repurchase intention. Responsiveness, rather than personalization, convenience, security, and chatbot support qualities induced by AI, has effects on consumer experience, which in turn affects repurchase intention.

1. INTRODUCTION

The adoption of AI in the world of financial technology has impacted how smart payment platforms interact with their customers. Financial institutions have started using AI chatbots and video call bots for transaction inquiries, verification of transactions, and automating service delivery, indicating that this adoption enhances the user experience, security, and efficiency of services as artificial intelligence applications become more prevalent in the banking system due to the creation of information systems. AI features like intelligence have been known to portray role in influencing the behavioral intentions of the user to adopt mobile banking services. The design and interaction feature of AI fintech chatbots act as stimuli that shape the cognitive and affective states of the users, hence the customer experience.

2. LITERATURE REVIEW

The implementation of AI in the context of smart payments can be considered the use of machine learning technology and automatic decision-making systems that will assist with transaction processes, fraud detection, and customer communication. Regarding smart banking, AI chatbots and video



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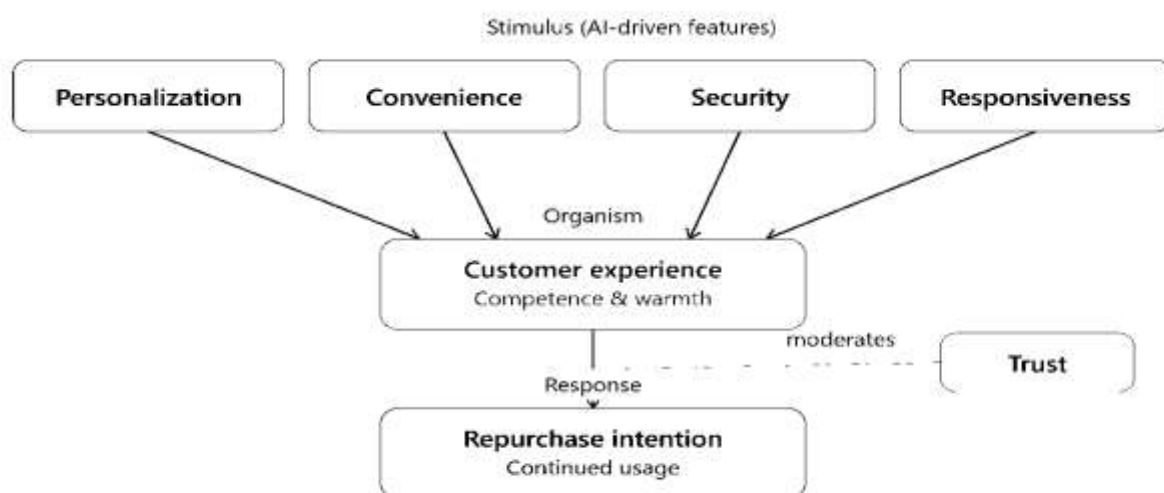
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assistants have become vital elements of this process that help banks deal with a huge volume of transactions, reduce costs, and enhance security (Demirel and Topcu, 2024). The technology is vital for mobile wallets since it allows developing tailored offers and building trust while providing compatibility with the user's preferences and habits (Hasan et al., 2024). Repurchase intention is the desire of customers to continue trading with a particular company after their first interaction with it. Research conducted in the related services industry proves that trust serves as a critical antecedent, having both a direct impact on repurchase intention and an indirect impact, moderated by perceived quality and customer satisfaction, respectively (Gün and Söyük, 2025). This mechanism of influence, wherein trust impacts perceived quality, which in turn affects customer satisfaction and then drives repurchase intention, provides a framework that can be applied to the smart payment sector due to the presence of the same order of events, whereby trust in an artificial intelligence-based security system impacts any usage decision. It is worth noting that this result was achieved through structural equation modelling.

3. RESEARCH METHODOLOGY

The deductive method has been engaged, with hypotheses (H1 to H6) based on the SOR framework towards the empirical testing (Akhtar et al., 2024). An explanatory design is engaged, which is quantitative, as it is intended at testing the relationships between AI-driven stimuli, customer experience, and repurchase intention at a particular point in time, consistent with a similar cross-sectional study and AI adoption model (Akhtar et al., 2024). The target population consisted of adults who are users of smart payment applications, consisting of 300 respondents (Gün and Söyük, 2025).

Fig. 1: Conceptual Model



Research Objectives of the study

1. To identify AI-driven stimuli relevant to smart payment services.
2. To evaluate the consequences of AI-driven stimuli on consumer's experience.
3. To study relationship between AI-driven consumer experience and repurchase intention in smart payment services.



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Hypotheses of the study

The following hypotheses are proposed for the study:

H1: AI-driven personalization impacts customer's experience.

H2: AI-driven convenience impacts customer's experience.

H3: AI-driven security impacts customer's experience.

H4: AI-driven responsiveness impacts consumer's experience.

H5: Customer experience impacts repurchase intention.

H6: Trust mediates inter-relationship amid customer's experience and repurchase intention.

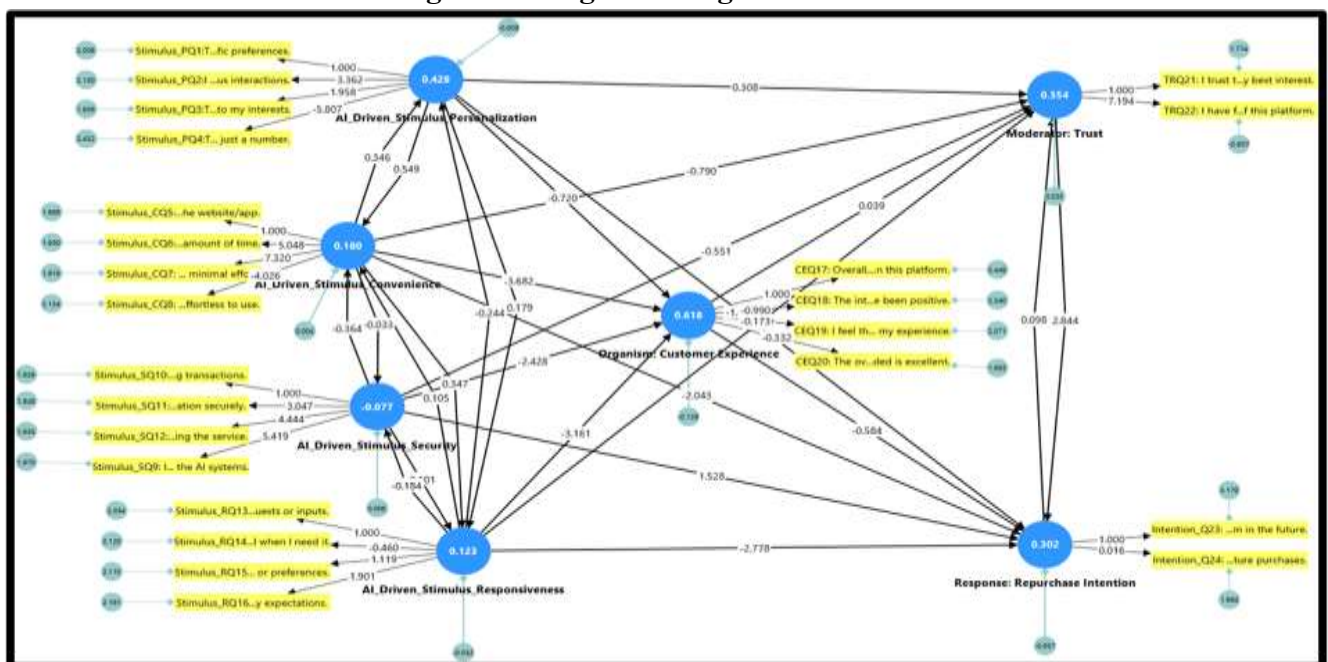
4. RESEARCH METHODOLOGY

The deductive method has been employed, starting from the theoretical framework as well as the hypotheses (H1 to H6) based on the SOR framework towards the empirical testing (Akhtar et al., 2024). The target population consisted of 300 users of smart payment applications. This study proposed a questionnaire with structured questions using validated and modified scale questions measured through a 5-point Likert scale in line with the scale questions. A pilot study was conducted in light of the practice of conducting a pilot test for the first draft to ensure the clarity of items in the survey questions before their general circulation.

5. ANALYSIS & DISCUSSION OF RESULTS

Exploratory Factor Analysis (EFA) was conducted using the Maximum Likelihood extraction method with Varimax rotation. The EFA was also used to analyze the underlying structure of 24 variables related to AI-driven features and smart payment services. The extracted factors are not independent or well-defined, which is confirmed by the factor score Coefficient matrix.

Fig.II showing Path diagram for CFA



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Confirmatory Factor Analysis (CFA) includes the factor loadings and error terms for items, which confirm the validity of constructs. The model fitness data show that the model structure fits the data well (e.g., CFI = 1.000, RMSEA = 0.000). The ratio between chi-square and degrees of freedom is 0.824 (acceptable range). This states that these data are well-indicative of a good model fit. The value of SRMR is 0.0095 (typically < 0.08), which falls within the commonly accepted threshold for a well-fitting model. Most indicator variables show high significance (p-value = 0.000 < 0.05). It confirms that the items accurately measure their respective constructs. But the p-values for the main constructs - Trust (0.258), Customer Experience (0.606), and Repurchase Intention (0.896) — are all above 0.05. It indicates that these structural relationships are not statistically significant in this specific model. Organism (Customer Experience) is the strongest part (61.8% of the variance) of the model among the rest of the components. Personalization has the highest explanatory power among the stimuli at 0.928 (42.8%).

TABLE I SHOWING MODEL FITNESS OF CFA

Model fitness

	Estimated model	Null model
Chi-square	186.206	282.252
Number of model parameters	74.000	24.000
Number of observations	300.000	n/a
Degrees of freedom	226.000	276.000
P value	0.975	0.385
ChiSqr/df	0.824	1.023
RMSEA	0.000	0.009
RMSEA LOW 90% CI	0.000	0.000
RMSEA HIGH 90% CI	n/a	0.025
GFI	0.952	n/a
AGFI	0.936	n/a
PGFI	0.717	n/a
SRMR	0.045	n/a
NFI	0.340	n/a
TLI	8.774	n/a
CFI	1.000	n/a
AIC	334.206	n/a
BIC	608.286	n/a



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TABLE II SHOWING DISCRIMINANT VALIDITY

Discriminant validity

	AI Driven Stimulus Convenience	AI Driven Stimulus Personalization	AI Driven Stimulus Responsiveness	AI Driven Stimulus Security	Moderator: Trust	Organism: Customer Experience	Response: Repurchase Intention
AI Driven Stimulus Convenience							
AI Driven Stimulus Personalization	0.663						
AI Driven Stimulus Responsiveness	0.874	1.037					
AI Driven Stimulus Security	1.008	0.796	1.083				
Moderator: Trust	0.7	0.368	0.583	0.557			
Organism: Customer Experience	0.684	0.66	0.992	0.895	0.295		
Response: Repurchase	1.712	1.271	2.339	1.895	0.769	0.774	



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TABLE III: HYPOTHESIS ANALYSIS SUMMARY BY CFA MODEL

Hypothesis	Relationship	Estimate	p-value	Supported
H1	AI Personalization -> Customer Experience	-0.006	-	No
H2	AI Convenience-> Customer Experience	+0.004	-	No
H3	AI Security-> Customer Experience	+0.006	-	No
H4	AI Responsiveness-> Customer Experience	-0.032	0.606	No
H5	Customer Experience-> Repurchase Intention	-0.957	0.896	No
H6	Trust moderates-> Repurchase Intention	+0.035	0.258	No

FIG III SHOWING PLS SETUP FOR FACTOR ANALYSIS

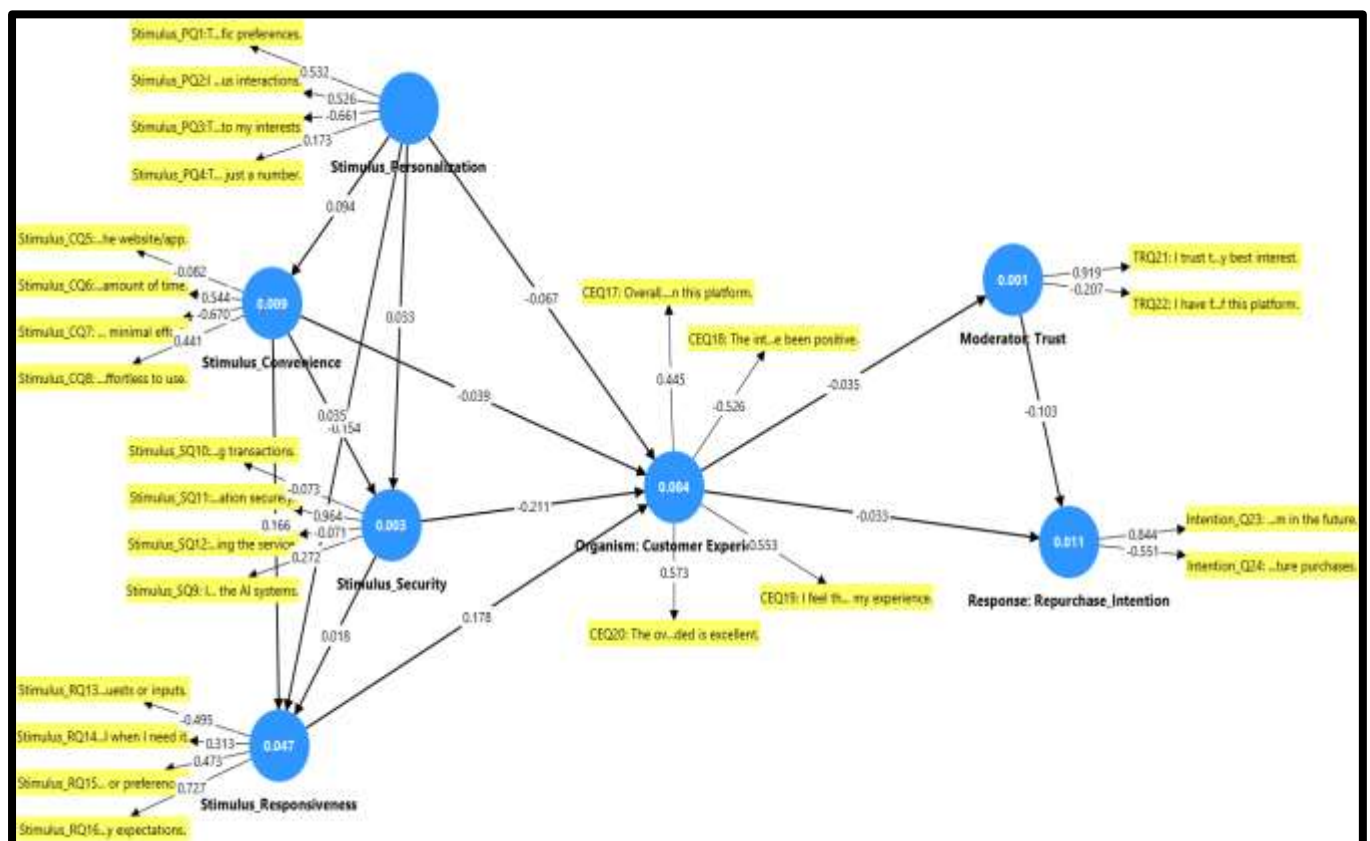


FIG IV SHOWING PATH DIAGRAM FOR SEM



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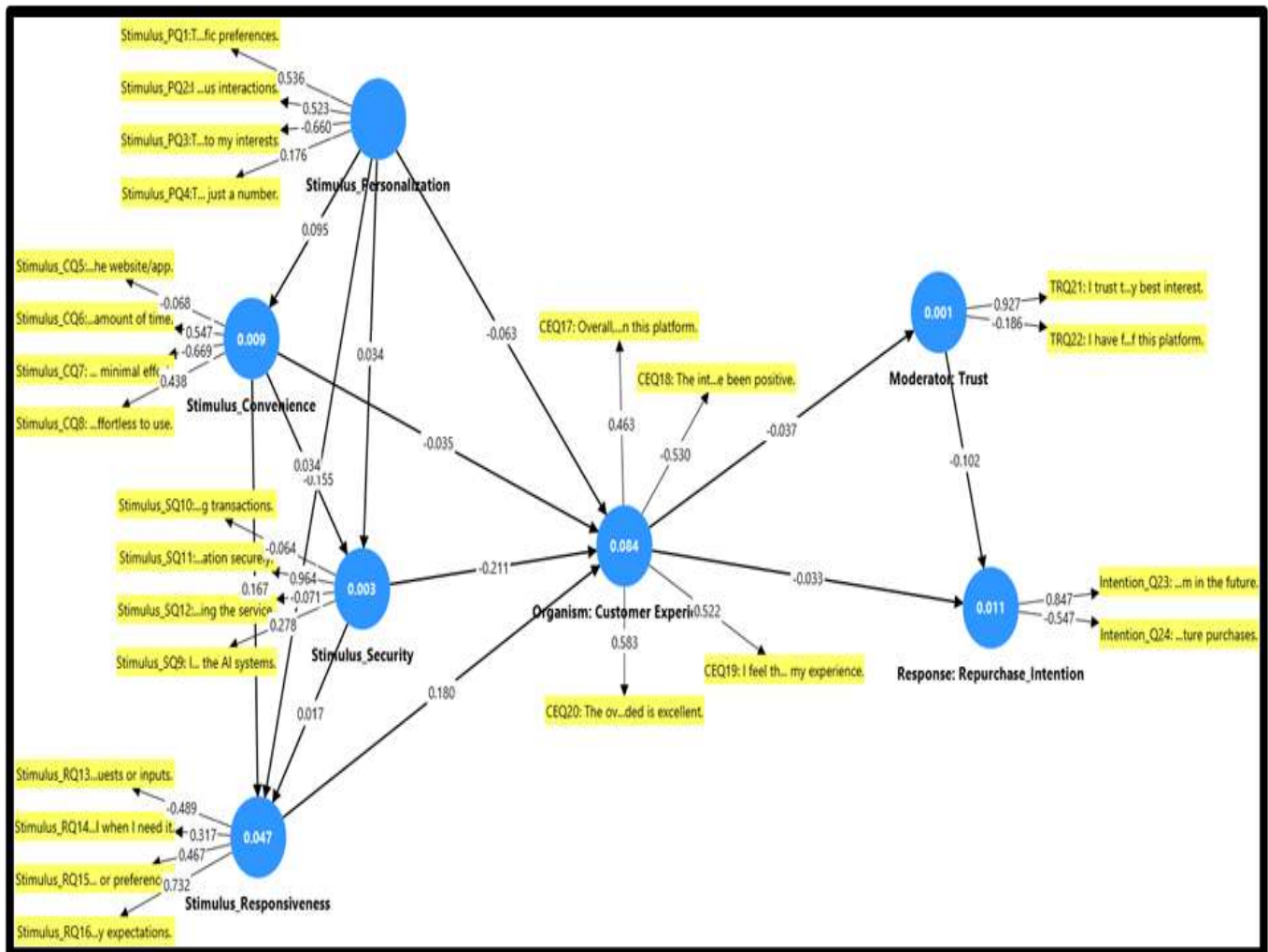


TABLE IV CONSTRUCT RELIABILITY AND VALIDITY BY SEM MODEL

	Cronbach's alpha	Average variance extracted (AVE)
AI-driven Stimulus Convenience	0.050	0.236
AI-driven Stimulus Personalization	-0.020	0.257
AI-driven Stimulus Responsiveness	-0.054	0.274
AI-driven Stimulus Security	0.105	0.254
Moderator: Trust	0.329	0.443
Organism: Customer Experience	0.080	0.277



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Response: Repurchase Intention	-0.036	0.508
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TABLE V MODEL FITNESS SUMMARY BY SEM MODEL

	Saturated model	Estimated model
SRMR	0.088	0.089
d_ULS	2.337	2.368
d_G	0.425	0.431
Chi-square	694.449	701.313
NFI	-1.469	-1.493

In the case of SRMR, both the Saturated (0.088) and Estimated (0.089) models are slightly above the typical threshold for a "good" fit (often suggested at less than or equal to 0.08).

TABLE VI SHOWING HYPOTHESIS ASSESSMENT BY SEM MODEL

Hypothesis	Path	Coefficient	Status
H1	Personalization-> Customer Experience	-0.063	Not Supported
H2	Convenience-> Customer Experience	-0.035	Not Supported
H3	Security-> Customer Experience	-0.211	Not Supported
H4	Responsiveness-> Customer Experience	+0.180	Supported (Directional)
H5	Customer Experience-> Repurchase Intention	-0.033	Not Supported
H6	Trust moderates Customer Experience-> Repurchase Intention	-0.102	Not Supported

In conclusion, based on this dataset, none of the hypotheses (H1–H6) are satisfied by the analysis. In **PLS-SEM** path analysis, a path coefficient represents the strength and direction of the relationship between two constructs. A hypothesis suggesting a "positive influence" is supported only if the path coefficient is positive (and statistically significant). Hypothesis H4, according to Table VI, is the only hypothesis that aligns with the direction of prediction. The positive path coefficient (0.180) indicates that as AI-driven responsiveness increases, customer experience improves.

According to the outcome of the data analysis, only Hypothesis H4 is satisfied (positive path coefficient 0.18). It provides a significant relation between the role of AI responsiveness and enhancing customer experience. The framework also suggests strong interactions with customers via



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rapid, AI-enabled positive stimulus. The customer's internal state and overall experience are directly improved by responsiveness, i.e., one of the AI-driven features. In today's fast-paced smart environment, speed and relevance are crucial factors to prioritize real-time AI capabilities, which can impact customers' sentiment. So, highly responsive AI communication is required for enhancing customer experience so that repurchase intention can increase. A real-time chatbot available 24/7 can help drive this repurchase intention. AI recommendation engines should be designed in such a way that they can provide instant and context-aware assistance through transparent AI-driven security protocols. This transparency builds the trust required for users to feel safe. Finally, efficient navigation will significantly boost user satisfaction. This approach will transform the smart environment into a supportive space.

6. CONCLUSION

This study examined several dimensions of AI-driven features to enhance customers' interaction on repurchase tendencies. Only the responsiveness factor was supported out of four stimuli. Ultimately, this signifies that an AI platform's ability for providing the responses at timely and adaptive manner is the primary catalyst for a superior customer experience. However, personalization, convenience, and security are not the only drivers of overall satisfaction. Businesses must seek to leverage AI's investigation strategically and should focus more on enhancing responsiveness in addition to interaction speed. These are tangible factors that positively impact customers' experience, as well as repurchasing intention also increases.

AUTHOR(S) CONTRIBUTION

The writers affirm that they have no connections to, or engagement with, any group or body that provides financial or non-financial assistance for the topics or resources covered in this manuscript.

CONFLICTS OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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SOURCES OF FUNDING

The authors received no financial aid to support for the research.

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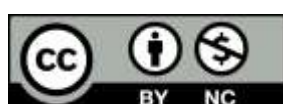
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