

GENERATIVE ARTIFICIAL INTELLIGENCE PERSONALIZATION,
CONSUMER TRUST, AND PURCHASE INTENTIONS IN PAKISTAN'S
DIGITAL COMMERCE ECOSYSTEM

Ubaid Ullah^{*1}, Dr. Mahboob Ullah², Khalid Bilal³, Dr. Muhammad Farhan Amjad⁴

^{*1}Visiting Lecturer Business Education Department, IER. University of the Punjab Lahore

²Associate Professor, Department of Management Sciences, Abasyn University, Peshawar, Pakistan

³Department of Management Sciences, Abasyn University, Peshawar, Pakistan

⁴Manager Technical at a power plant

^{*1}ubaid66221@gmail.com, ²mahboob.ullah@abasyn.edu.pk, ³khalid.bilal@abasyn.edu.pk,

⁴farhan.sheikh@ymail.com

DOI: <https://doi.org/10.5281/zenodo.21899601>

Keywords

Generative Intelligence; AI Personalization; Consumer Trust; Purchase Intention; Digital Commerce; Pakistan

Article History

Received: 11 March 2026

Accepted: 15 April 2026

Published: 30 April 2026

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Corresponding Author: *

Ubaid Ullah

Abstract

Generative Artificial Intelligence (GenAI) is transforming digital commerce through personalized recommendations, generated promotional content, conversational assistance, and adaptive customer interactions. This study examines the effects of GenAI personalization on consumer trust and purchase intention and tests the mediating role of consumer trust among Pakistani digital-commerce consumers. A quantitative, explanatory, cross-sectional design was used with 384 consumers who had experienced AI-enabled personalization. Data were collected through a structured questionnaire and analyzed using descriptive statistics, reliability and validity assessment, correlation analysis, and Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate that GenAI personalization positively affects consumer trust and purchase intention, while consumer trust also positively affects purchase intention. Trust significantly mediates the relationship between GenAI personalization and purchase intention, with the direct effect remaining significant, indicating partial mediation. The findings support the Stimulus–Organism–Response (S-O-R) framework and emphasize that the commercial value of GenAI personalization depends not only on relevance and convenience but also on transparency, reliability, privacy protection, and consumer control. The study provides implications for digital-commerce firms, policymakers, and researchers seeking to develop trustworthy and consumer-centered GenAI applications in Pakistan.

1. INTRODUCTION

Generative Artificial Intelligence has moved digital commerce beyond conventional recommendation systems by enabling firms to generate personalized product descriptions,

recommendations, promotional messages, customer-service responses, and conversational shopping experiences. These capabilities can improve relevance, reduce search effort, and

strengthen consumer engagement (Dwivedi et al., 2023; Cheng & Jiang, 2022).

However, personalization also creates concerns about privacy, surveillance, manipulation, data security, and the transparency of AI-generated information. Consumers may value highly relevant recommendations while becoming less comfortable when personalization appears intrusive or inexplicable. Trust is therefore central to AI-mediated commerce because consumers must assess both the platform and the AI system producing recommendations.

Pakistan provides an important context because digital commerce, smartphone use, social commerce, digital payments, and online marketplaces are expanding, while concerns about product authenticity, payment security, privacy, seller reliability, and dispute resolution remain relevant. Existing research has increasingly examined AI personalization, but GenAI-specific evidence in Pakistan remains limited.

Accordingly, this study examines GenAI personalization as a technological stimulus, consumer trust as the psychological mechanism, and purchase intention as the behavioral response. The study addresses whether GenAI personalization increases purchase intention and whether consumer trust explains part of this relationship.

2. Problem Statement and Research Gap

GenAI can enhance relevance and convenience in digital commerce, but personalization can also increase consumer vulnerability when data practices are unclear or recommendations appear manipulative. Existing studies often combine conventional AI personalization, recommendation systems, chatbots, and GenAI, making it difficult to isolate the distinctive effects of generative personalization. In Pakistan, empirical evidence integrating GenAI personalization, trust, and purchase intention into one framework is comparatively limited.

The principal gap is therefore the insufficient understanding of how GenAI personalization affects Pakistani consumers' purchase intentions and whether consumer trust serves as the

mechanism linking personalization with behavioral intention. This study addresses that gap within the S-O-R framework.

3. Research Questions

RQ1: What is the effect of GenAI personalization on consumer trust in Pakistan's digital commerce ecosystem?

RQ2: What is the effect of GenAI personalization on consumers' purchase intentions in Pakistan?

RQ3: What is the effect of consumer trust on consumers' purchase intentions?

RQ4: Does consumer trust mediate the relationship between GenAI personalization and purchase intention?

4. Research Objectives

To examine the effect of GenAI personalization on consumer trust.

To determine the effect of GenAI personalization on purchase intention.

To assess the effect of consumer trust on purchase intention.

To test the mediating role of consumer trust.

To provide an empirically supported framework for GenAI-enabled consumer responses in Pakistan.

5. Literature Review

5.1 GenAI Personalization and Consumer Experience

GenAI enables dynamic, individualized content and interactions rather than merely ranking existing products. Personalization can reduce information overload, improve perceived relevance, and simplify decision making. However, excessive personalization may create perceptions of intrusion or manipulation. The effectiveness of GenAI therefore depends on balancing relevance with consumer expectations and control (Dwivedi et al., 2023; Madhuri et al., 2024).

5.2 GenAI Personalization and Consumer Trust

Trust reflects confidence in the reliability, competence, credibility, and integrity of a platform and its AI-supported interactions.

Personalization can strengthen trust when it signals relevance and competence, but opacity, privacy concerns, and perceived manipulation can weaken it. Experimental evidence also shows that AI disclosure may reduce purchase intentions under certain conditions by affecting emotional trust (Cicek et al., 2024).

5.3 Consumer Trust and Purchase Intention

Trust reduces uncertainty and perceived risk in online transactions and consequently supports consumers' willingness to purchase. When consumers consider AI-generated recommendations reliable and aligned with their interests, they are more likely to accept recommendations and proceed toward purchase. The literature therefore supports trust as a key mechanism connecting AI personalization with consumer behavior.

5.4 Research Gap

The literature indicates a positive but conditional relationship between personalization and consumer outcomes. There is limited evidence specifically addressing GenAI personalization and the trust-based mechanism in Pakistan. This study integrates GenAI personalization, consumer trust, and purchase intention into a unified empirical model.

6. Underpinning Theory and Hypotheses

The study is grounded in Stimulus-Organism-Response (S-O-R) theory (Mehrabian & Russell, 1974). GenAI personalization represents the external stimulus, consumer trust represents the internal psychological state, and purchase intention represents the behavioral response. The framework proposes that consumers evaluate personalized AI interactions before developing trust and behavioral intentions.

H1: GenAI personalization has a positive and significant effect on consumer trust.

H2: GenAI personalization has a positive and significant effect on purchase intention.

H3: Consumer trust has a positive and significant effect on purchase intention.

H4: Consumer trust positively and significantly mediates the relationship between GenAI personalization and purchase intention.

7. Methodology

7.1 Research Design and Population

A quantitative, explanatory, cross-sectional design was employed. The unit of analysis was the individual digital-commerce consumer. The population comprised Pakistani adults who had used digital-commerce platforms and experienced AI-enabled personalization, including personalized recommendations, AI-generated promotional content, conversational shopping assistance, customized advertisements, or AI-supported customer service.

7.2 Sampling and Data Collection

Purposive non-probability sampling was used because respondents needed prior experience with AI-enabled digital commerce. The final sample comprised 384 valid respondents. Data were collected electronically using a structured self-administered questionnaire. Participation was voluntary and responses were treated confidentially.

7.3 Measurement

The questionnaire included demographic/digital-commerce characteristics and three principal constructs: GenAI personalization, consumer trust, and purchase intention. Items were measured on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). GenAI personalization covered relevance, individualized recommendations, tailored promotional content, contextual adaptation, and usefulness. Trust covered reliability, credibility, accuracy, integrity, and willingness to rely on AI recommendations. Purchase intention covered likelihood and willingness to purchase, revisit, and continue using the platform.

7.4 Data Analysis

The analysis comprised descriptive statistics, reliability and validity assessment, Pearson correlations, and PLS-SEM. Cronbach's alpha and composite reliability were used to assess

internal consistency; AVE and discriminant validity criteria were used to assess the

measurement model. Bootstrapping was used to test the mediation effect.

8. Results

8.1 Respondent Profile

Characteristic	Category	n	%
Gender	Male	211	55.0
	Female	173	45.0
Age	18-24	126	32.8
	25-34	157	40.9
	35-44	67	17.4
	45+	34	8.9
Education	Bachelor's	182	47.4
	Master's	146	38.0
	Other	56	14.6
Online shopping	< monthly	51	13.3
	1-2/month	119	31.0
	3-5/month	137	35.7
	>5/month	77	20.1

The sample was predominantly young and digitally active: 73.7% were aged 18-34, and

55.8% reported shopping online at least three times per month.

8.2 Descriptive Statistics

Construct	Mean	SD
GenAI Personalization	3.74	0.71
Consumer Trust	3.62	0.76
Purchase Intention	3.69	0.73

All three constructs showed moderately high mean scores, indicating generally favorable

perceptions of GenAI personalization, trust, and purchase intention.

8.3 Reliability and Validity

Construct	Cronbach's α	CR	AVE
GenAI Personalization	0.91	0.93	0.68
Consumer Trust	0.89	0.92	0.66
Purchase Intention	0.88	0.91	0.67

All reliability coefficients exceeded 0.70 and AVE values exceeded 0.50, supporting internal consistency and convergent validity. The Fornell-

Larcker results also indicated adequate discriminant validity.

8.4 Correlations

Relationship	r	p
GenAI Personalization - Consumer Trust	0.684	< .01

GenAI Personalization - Purchase Intention	0.641	< .01
Consumer Trust - Purchase Intention	0.736	< .01

All variables were positively and significantly associated. The strongest correlation was between

consumer trust and purchase intention ($r = .736$, $p < .01$).

8.5 Hypothesis Testing

Hypothesis	Path	β	t	p	Decision
H1	GenAI Personalization → Trust	0.684	16.68	< .001	Supported
H2	GenAI Personalization → Purchase Intention	0.214	3.45	.001	Supported
H3	Trust → Purchase Intention	0.590	9.83	< .001	Supported

GenAI personalization had a strong positive effect on trust and a smaller but significant direct

effect on purchase intention. Trust had a substantial positive effect on purchase intention.

8.6 Mediation Analysis

Effect	β	SE	t	p
Direct: Personalization → Purchase Intention	0.214	0.062	3.45	.001
Indirect: Personalization → Trust → Purchase Intention	0.404	0.052	7.77	< .001
Total Effect	0.618	0.045	13.73	< .001

The indirect effect was significant while the direct effect remained significant, demonstrating partial mediation. Thus, GenAI personalization affects

purchase intention both directly and through consumer trust. H4 was supported.

8.7 Explanatory and Predictive Power

Endogenous Construct	R ²	Q ²
Consumer Trust	0.468	0.302
Purchase Intention	0.611	0.417

GenAI personalization explained 46.8% of the variance in consumer trust, while personalization and trust jointly explained 61.1% of the variance in purchase intention. Positive Q^2 values indicated predictive relevance.

9. Discussion

The findings support all four hypotheses and confirm the proposed S-O-R logic. First, GenAI personalization strongly increased consumer trust ($\beta = .684$, $p < .001$), suggesting that relevant, individualized, useful, and responsive AI interactions can signal platform competence and reduce uncertainty. This is consistent with prior research on AI-enabled personalization and customer service (Cheng & Jiang, 2022; Dwivedi et al., 2023).

Second, GenAI personalization positively affected purchase intention ($\beta = .214$, $p = .001$). The smaller direct effect suggests that personalization alone is insufficient to explain purchasing behavior. Personalized experiences can reduce search effort and improve relevance, but consumers still require confidence in the platform and its recommendations.

Third, consumer trust had a strong positive effect on purchase intention ($\beta = .590$, $p < .001$). This reinforces trust as a central determinant of online purchasing where consumers face uncertainty regarding sellers, products, payment, information accuracy, and data security.

Finally, trust partially mediated the relationship between personalization and purchase intention ($\beta = .404$, $p < .001$). The indirect effect was larger than the direct effect, indicating that much of the commercial value of GenAI personalization operates through strengthened consumer confidence. The result extends the S-O-R perspective by demonstrating how a technological stimulus can influence behavioral intention through an internal psychological mechanism.

10. Implications

10.1 Theoretical Implications

The study extends S-O-R theory to GenAI-enabled digital commerce and positions consumer trust as a central psychological mechanism between technology and behavioral

intention. It also provides a foundation for incorporating privacy risk, transparency, usefulness, authenticity, AI competence, and consumer control into future models.

10.2 Managerial and Practical Implications

- Design personalization around relevance, accuracy, and genuine consumer benefit rather than maximum personalization intensity.
- Provide understandable information about AI use and how recommendations are generated where appropriate.
- Give consumers meaningful control over personalization preferences and data use.
- Review AI-generated product information for accuracy and maintain human support for complex or high-risk decisions.
- Integrate privacy, cybersecurity, data minimization, and secure access into personalization systems.

10.3 Policy Implications

Policymakers should promote transparency, responsible data use, consumer autonomy, accountability, complaint mechanisms, and protection against deceptive or manipulative AI-enabled marketing. Regulation should balance consumer protection with continued innovation.

11. Recommendations

- Adopt trust-centered GenAI personalization strategies.
- Strengthen transparency and consumer-friendly AI disclosure.
- Provide meaningful consumer control over personalization and data use.
- Maintain AI accuracy, quality assurance, and human oversight.
- Strengthen data governance and cybersecurity.
- Invest in organizational and consumer AI literacy.
- Establish responsible AI governance covering privacy, bias, security, accountability, and human oversight.
- Support Pakistan-specific research on GenAI and digital consumer behavior.

12. Limitations and Future Research

The cross-sectional design limits conclusions about changes in trust and purchase intention over time. Purposive non-probability sampling limits generalizability, while self-reported purchase intention may not correspond to actual behavior. The model included only three principal constructs and did not incorporate privacy risk, usefulness, transparency, authenticity, value, innovativeness, or AI literacy. In addition, rapid technological change may alter consumer perceptions, and Pakistan-specific findings may not generalize to other contexts.

Future studies should use longitudinal and probability-based designs, larger geographically distributed samples, and actual behavioral or transactional data. Researchers should also test privacy concerns, perceived usefulness, risk, transparency, AI literacy, authenticity, explainability, and consumer innovativeness as mediators or moderators. Comparative studies across countries, platforms, product categories, and consumer segments, as well as studies distinguishing different forms of GenAI personalization, are recommended.

13. Conclusion

This study demonstrates that GenAI personalization positively influences consumer trust and purchase intention in Pakistan's digital commerce ecosystem, while trust strongly increases purchase intention and partially mediates the personalization-purchase intention relationship. The findings show that the value of GenAI personalization is not determined solely by technological sophistication; it depends substantially on whether consumers perceive AI-enabled experiences as relevant, reliable, transparent, and trustworthy. For digital-commerce firms, building trust alongside personalization is therefore essential for sustainable consumer engagement and purchasing behavior.

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