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TRUST AND ENGAGEMENT AS MEDIATORS IN AI-PERSONALIZED ONLINE SHOPPING FOR GEN Z

Sangheethaa Sukumaran[1*], Arun Korath[2] and Gowri Arun Menon[3]

[1]Associate Professor, College of Engineering & Technology, Fujairah University, UAE.
[2]Adjunct Professor, College of Business Administration, University of Kalbha, UAE.
[3]A Level Student, St. Mary's School, Fujairah, UAE.

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Corresponding Author: Sangheethaa Sukumaran
(sangheethaa@gmail.com)

ABSTRACT

The abstract must be between 200 and 300 words written in 'SC-Abstract' style. Scientific Culture is a peer-reviewed, open access international scientific journal, an open information vehicle of academic community with a global coverage and issues touching local and regional interest; it is intended as a starting point for presenting research devoted in the broad field of diachronical Cultural Heritage. The journal provides a broader coverage of studying ancient cultures with natural sciences focused on specific topics of global interest. Amongst the published themes emphasis is given to: Ancient cultures; hidden information in art by symbolism; composition of artifacts; parallels in ancient and recent cultural issues; the role of liberal arts to cultural background; cultural development and the question of independent, autochthonous, interactive patterns; theoretical approaches: archetypal concept and globalization effects; inter-, intra-settlement and environmental interactions on cultural evolution; art and science, virtual culture, cognitive archaeology via positive sciences etc.

KEYWORDS: AI Personalization, Generation Z, Trust; Engagement, Purchase Behavior, Mixed-Methods, Structural Equation Modeling.

1. INTRODUCTION

E-retailers increasingly leverage artificial intelligence (AI) to make shopping more personalized, with product recommendations and content specific to the consumer. Personalization is important to Generation Z (Gen Z) consumers, who expect brands to be aware of their individual interests and provide personalized experiences. Gen Z (born ~1995–2010) is a digitally native generation with their own set of behaviors and expectations when shopping online. They have matured with algorithmic personalization and are likely to be early adopters of emerging retail technologies. Understanding how Gen Z responds to AI-personalized online shopping environments is critical, as this generation's purchasing power and influence continue to rise (Ameen et al., 2023).

Prior studies suggest that AI-driven personalization can enhance customer satisfaction, loyalty, and purchase intentions by improving the relevance of recommendations and user experience. Personalized product suggestions reduce information overload and can make shopping more engaging and efficient, potentially increasing conversion rates (Nagy & Hajdu, 2021). At the same time, concerns about privacy and "creepiness" of personalization may erode consumer trust if not managed properly (Madhuri et al., 2024). Trust is a pivotal factor in online transactions, especially when AI algorithms are involved (Nagy & Hajdu, 2021). If consumers trust the personalized recommendations and the retailer's use of their data, they are more likely to engage with those recommendations and ultimately make purchases (Bhagat et al., 2023, Guerra-Tamez et al., 2024).

Even though there is a growing body of research use of AI algorithms in marketing, there is a need for greater insight into Gen Z's specific reactions to AI personalization. How does personalization influence Gen Z shoppers' trust in an online retailer or platform? Does it keep them more engaged during the shopping process? And do these factors translate into actual purchasing behavior? Few studies have examined these questions specifically for Gen Z, and none to our knowledge have used a mixed-methods design to uncover not just whether AI personalization affects trust and engagement, but how and why these effects occur. This study addresses that gap.

By using both survey and interview data, this research offers a clearer understanding of Gen Z's trust, engagement, and purchase behaviors in AI-personalized online shopping. The results will help e- commerce businesses tailor their personalization strategies to foster trust and meaningful engagement with this influential generation, ultimately driving purchase outcomes. In the following sections, we review relevant literature and theory, outline our methodology, present quantitative and qualitative results, and discuss the implications of our findings.

2. LITERATURE REVIEW

Personalization is the backbone of e-commerce for good reason. By using algorithms on customer data (past purchases, preferences, browsing history) to deliver relevant product recommendations, promotions, and shopping experiences, you can make the customer experience more convenient—and more enjoyable. Prior research demonstrates that AI-driven personalization can enhance user experience — increasing engagement, reducing information overload, and making consumers feel valued. For example, Oualid et al. (2024) found that individualizing content significantly boosted customer engagement metrics in an e-retail setting. Industry surveys report that a majority of consumers (Gen Z included) are more likely to buy from brands that personalize offerings.

But personalization can be a double-edged sword. While it can make consumers feel like you're anticipating their needs—and build trust—you can also create privacy and trust issues. Consumers will question how their data is collected, analyzed, and used. If you overdo it, personalization can start to feel creepy or invasive. That can dissolve trust fast (Madhuri et al., 2024).

Transparency and consent are key to building trust in AI-based personalization. If Gen Z consumers feel you're responsibly processing their data and personalizing shopping in a helpful way—not an invasive one—they'll trust the personalization—and your brand (Gao & Liu, 2023). Perception of misuse or abuse of personal data can destroy trust fast—especially for Gen Z, who are digitally native and concerned about data privacy issues.

Trust is what drives online consumption behavior. And for Gen Z, trust in technology is complex. They're comfortable with AI as a concept—but uneasy about brands using it (Guerra-Tamez et al., 2024). Other studies also highlight trust as one of the key outcomes of personalization. For example, Bhagat et al. (2023) showed that AI in e-retailing can improve purchasing intent through improved attitude and trust towards the e-retailer. Nagy and Hajdu (2021) also researched AI adoption of e-shopping and found trust as one of the key drivers for Gen Z consumers' attitudes and purchase

intentions.

Customer Engagement and Customer Experience: Besides trust, customer engagement is another key outcome of personalization. Personalized recommendations have been found to increase engagement by capturing users and showing them content that is relevant to them (Maslowska, 2016). When Gen Z shoppers see recommendations that match their preferences, they are more likely to click, continue browsing, and spend more time on the website. A study by Oualid et al. (2024) found that personalized content helps create a more meaningful experience and can replicate the attentiveness of a personal shopping assistant and thus deepen engagement. Consumers who are more engaged tend to buy more often and have bigger basket sizes, as engagement can carry over into purchasing (Pansari & Kumar, 2017). For Gen Z, who are used to instant, personalized content (e.g., social media feeds curated by algorithms), engagement is key.

The Personalisation, Trust and Purchase Behaviour: Ultimately, the holy grail of retailers is to drive purchase behaviour—whether as direct conversions or more long-term purchase frequency and loyalty. Madhuri et al. (2024) found that personalisation increases purchase intention mainly because trust is increased and consumers feel comfortable to buy. Similarly, a Frontiers study (Guerra-Tamez et al., 2024) found that Gen Z's purchase decisions were largely influenced by trust in the brand built through genuine AI recommendations and that a psychological flow state (immersive engagement) acted as a mediator between trust and purchase.

Personalisation through recommendations can prompt purchases when suggesting items consumers weren't explicitly looking for but find interesting (Adomavicius et al., 2018). Gen Z's spontaneity in certain situations can identify targeted AI recommendations to trigger an impulse buy hence increasing overall spend. But trust is still the gating factor to the purchase. If a consumer doesn't trust a recommendation (thinking it's a paid ad that's not relevant to them) they will likely ignore the recommendation and therefore not trigger any impulse buying.

Research Gaps: Together, these studies establish that AI personalization can foster trust (by demonstrating relevance and reliability) and engagement (by capturing user interest) in online shopping. However, they primarily quantify outcomes without unpacking the underlying consumer thought processes. Notably, much of the existing work examines trust and engagement separately; few have considered how these factors interact or jointly mediate purchase behavior

While previous studies have looked into the relationship between personalisation, trust, and purchase, there is limited research that focuses on Gen Z and uses a mixed-methods approach. Unlike (Bhagat et al., 2023, Guerra-Tamez et al., 2024), which relied solely on surveys to link AI personalization with trust and purchase intention, our study goes further by using a mixed-methods design to delve into the why and how behind those links. We extend their findings by examining Gen Z consumers' personal narratives and feelings, not just their ratings of trust

3. THEORETICAL FRAMEWORK

We adopt the Stimulus–Organism–Response (S-O-R) model of environmental psychology (Mehrabian & Russell, 1974) as the guiding framework. In online shopping, the model explains how features of the environment (stimuli) influence consumers' internal states (organism), which in turn shape behavioral responses.

In this study, AI-based personalization—including tailored product recommendations, customized content, and individualized promotions—represents the stimulus. Such features are designed to capture attention and convey relevance, which can activate both cognitive and affective processes in consumers. Cognitively, consumers evaluate the credibility, usefulness, and appropriateness of the personalized content; affectively, they may experience emotions such as reassurance, excitement, or, in some cases, discomfort or intrusion. These mental and emotional reactions form the organismic states that shape downstream behaviors.

We focus on two key organismic states—trust and engagement—as mediators between personalization and purchase behavior.

- Trust involves both cognitive trust (belief that AI recommendations are accurate, unbiased, and in the consumer's best interest) and affective trust (a sense of security, comfort, and positive emotional connection with the retailer). Trust may be strengthened when personalization is transparent, relevant, and non-intrusive, whereas overly invasive or irrelevant recommendations can undermine it.
- Engagement reflects the degree of cognitive absorption, emotional involvement, and behavioral participation during shopping. Cognitively, engagement manifests as focused attention and information processing;

affectively, it includes curiosity, enjoyment, and a sense of flow. Personalization that aligns with consumer interests can stimulate both mental involvement (e.g., deeper search, longer browsing) and positive emotional responses that encourage continued interaction.

Purchase behavior encompasses both behavioral intentions (planned or likely purchases) and actual actions (e.g., buying an item prompted by AI recommendations). In line with the S-O-R model, trust and engagement serve as mediators, translating the cognitive–affective impact of personalization into concrete purchase outcomes.

Conceptual Model and Hypotheses: Integrating insights from prior research into the S-O-R framework, we propose the model illustrated in Figure 1:

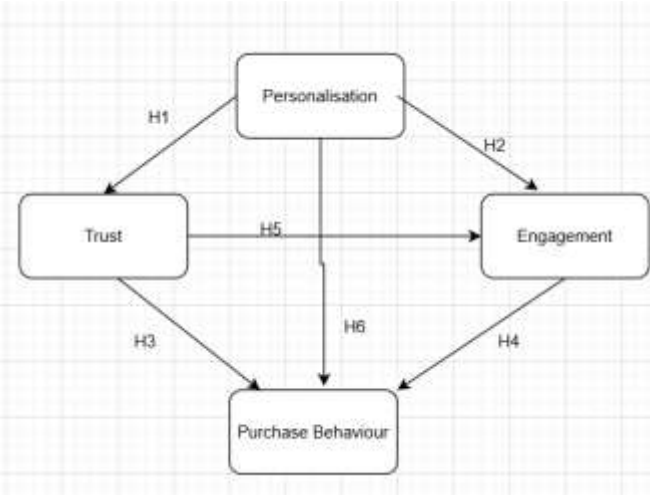

Figure 1: Conceptual Framework.

H1: Perceived AI personalization positively affects consumer trust in the online shopping platform.

H2: Perceived AI personalization positively affects consumer engagement.

H3: Consumer trust positively influences purchase behavior.

H4: Consumer engagement positively influences purchase behavior.

H5: Consumer trust positively affects engagement.

H6: Perceived AI personalization has a direct positive effect on purchase behavior.

This model incorporates a multiple mediation structure, allowing us to test both direct and indirect effects of personalization on purchase behavior.

This framework builds on and extends prior models like the Technology Acceptance Model (TAM) (Davis, 1989), which emphasizes perceived usefulness and ease-of-use. Personalization enhances perceived usefulness, and trust acts as a form of perceived credibility or risk reduction—both important in e-commerce adoption (Gefen et al., 2003). While TAM provides foundational insights (Nagy & Hajdu, 2021), our model explicitly integrates trust and engagement to capture relational and experiential aspects critical to Gen Z consumers.

AI-personalized shopping experiences are stimuli that elicit trust and engagement (organism states) among Gen Z consumers, resulting in higher purchase intentions and behaviors (responses). The following section outlines the mixed-methods methodology employed to test this model.

4. METHODOLOGY

4.1. Research Design

We employed a mixed-methods design (Creswell & Plano Clark, 2011) that blended quantitative and qualitative methodologies. The quantitative part enabled us to test the hypothesized relationships in our conceptual model on a larger group of Gen Z consumers, while the qualitative part offered richness through examining participants' attitudes and experiences with AI personalization. We used a convergent parallel design in which the quantitative survey and qualitative interviews were administered separately but at the same time. Data collection occurred during the same study phase, and findings were combined at analysis and interpretation.

4.2. Quantitative Component

Sample and Data Collection: Quantitative data were gathered via an online survey of Gen Z respondents (~18–25 years of age) with online shopping experience. Purposive sampling was employed to recruit participants via university mailing lists and social media groups. A screening question ("Have you shopped online in the last 6 months?") ensured relevance. We obtained N = 150 complete responses (after eliminating incomplete responses). The sample was 56% female, 44% male, with a mean age of 21.4 years (SD = 2.1). Participants varied in education level (mostly undergraduates and recent graduates) and frequency of online shopping. Participation was voluntary, with a nominal incentive (gift card raffle). Informed consent was obtained, promising confidentiality and anonymity.

Survey Instrument: The survey included validated multi-item scales adapted from prior studies and tailored to AI personalization in e-retail. A 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) was used.

- AI Personalization (4 items): Adapted from Liang et al. (2021). Example: "The product recommendations I see are tailored to me."
- Trust (4 items): Adopted from Gefen (2000) and McKnight et al. (2002). Example: "I trust the AI recommendations on this site."
- Engagement (4 items): Based on O'Brien & Toms (2010) and current personalization studies. Example: "I frequently click on or browse recommended products."
- Purchase Behavior/Intentions (4 items): Included both purchase intention and self-reported behavior. Example: "Personalized recommendations have led me to purchase items I wasn't planning to buy."

Demographics (gender, education, age) and frequency of online shopping were also collected. The instrument was pilot-tested on 10 Gen Z participants for clarity and adjusted based on feedback.

Data Analysis Procedures: Reliability and validity were tested using Cronbach's alpha and confirmatory factor analysis (CFA) with maximum likelihood estimation (AMOS v26). Fit indices included Chi-square, CFI, TLI, and RMSEA. Convergent validity was checked using factor loadings and AVE ≥ 0.50 (Hair et al., 2010, Fornell & Larcker, 1981). Discriminant validity was ensured by comparing the square root of AVE to inter-construct correlations. Composite reliability (CR > 0.70) was also calculated.

The structural model was tested using SEM (AMOS) to estimate hypothesized relationships and mediation effects. Bootstrapping (5,000 samples) was used to assess indirect effects (Preacher & Hayes, 2008). All analyses were conducted at $\alpha = 0.05$ significance level.

4.3. Qualitative Component

Participants and Data Collection: We conducted semi-structured interviews with 10 Gen Z consumers (5 female, 5 male; ages 18–24) recruited via convenience sampling. Sample size was determined by saturation—main themes began repeating after 10 interviews. Interviews were conducted via Zoom or telephone (30–45 minutes). Verbal consent was obtained for participation and audio recording. Identities were kept confidential using pseudonyms.

Interview Guide: Open-ended questions explored experiences with personalization, trust, engagement, and purchase behavior. Example questions:

- "Can you describe your experience with personalized product recommendations while shopping online?"
- "Do these recommendations influence your trust in the website?"
- "Have you ever purchased something because of these recommendations?"
- "What are the biggest advantages and disadvantages of AI personalization in your view?"

Data Analysis Procedures: Thematic analysis (Braun & Clarke, 2006) was used. Two researchers independently coded transcripts in NVivo 12 using both deductive and inductive approaches. Codes were grouped into themes (e.g., Value of Personalization, Privacy and Trust Concerns). Inter-coder reliability was established through discussion. Member checking with two interviewees validated findings. An audit trail was maintained, and qualitative results were integrated with quantitative findings through side-by-side comparison in the discussion.

5. RESULTS

5.1. Quantitative Results

Descriptive Statistics:

On a 5-point scale, the mean for perceived personalization was 3.8 (SD = 0.7), suggesting Gen Z participants generally felt the product recommendations were tailored to them. Trust in AI recommendations was moderate to high (Mean = 3.6, SD = 0.8), with some respondents indicating skepticism. Engagement had a mean of 3.5 (SD = 0.7), and purchase behavior/intention scored slightly lower (Mean = 3.4, SD = 0.8), indicating personalization often leads to consideration but not always to purchases.

Measurement Model:

Confirmatory factor analysis on 16 survey items for four latent constructs (Personalization, Trust, Engagement, Purchase) showed good fit: $\chi^2(df = 98) = 110.5$ ($p = .18$), CFI = 0.981, TLI = 0.972, RMSEA = 0.032. All indices met criteria for good fit (CFI, TLI > 0.95; RMSEA < 0.06). Standardized loadings ranged from 0.73 to 0.90, all significant ($p < .001$) (Hair et al., 2010).

Reliability was high: Cronbach's alpha values were 0.84–0.86, and composite reliability (CR) values ranged from 0.87–0.89. Average Variance Extracted (AVE) for all constructs was >0.50 (Fornell & Larcker, 1981). Discriminant validity was confirmed: the square root of each construct's AVE exceeded correlations with other constructs.

Structural Model – Hypothesis Testing:

Structural equation modeling confirmed all hypothesized relationships (H1–H6) with strong model fit.

- H1 (Personalization → Trust): $\beta = 0.58$, $p < .01$
- H2 (Personalization → Engagement): $\beta = 0.26$, $p < .01$
- H3 (Trust → Purchase Behavior): $\beta = 0.29$, $p < .01$
- H4 (Engagement → Purchase Behavior): $\beta = 0.47$, $p < .01$
- H5 (Trust → Engagement): $\beta = 0.53$, $p < .01$
- H6 (Personalization → Purchase Behavior, direct): $\beta = 0.16$, $p < .01$

The model explained substantial variance: $R^2 = 0.31$ (Trust), $R^2 = 0.52$ (Engagement), $R^2 = 0.68$ (Purchase Behavior).

Mediation Analysis:

Bootstrap analysis (5,000 samples) revealed significant indirect effects:

- Via Trust: 0.17
- Via Engagement: 0.12
- Via Trust → Engagement: 0.15

Total indirect effect ≈ 0.44; direct effect = 0.16. Approximately 74% of personalization's effect on purchase was mediated by trust and engagement, indicating partial mediation.

5.2. Qualitative Results

The interviews provided rich insights into how Gen Z perceives and interacts with AI personalization in online shopping. Thematic analysis revealed several recurring themes that help explain the quantitative results. Below, we present major themes with illustrative quotes (using Participant IDs P1–P10) and interpretations.

Personalization as a Valued Convenience – "It's showing me things I actually like"

Most participants appreciated AI-personalized recommendations, describing them as convenient and helpful for discovering new products. P3 shared:

"I love when Amazon or Instagram just knows what I want. It's showing me things I actually like, you know? I've discovered new brands that way. It feels convenient – like a friend who knows your taste handing you something and saying 'you'll probably like this.'" (P3)

Many reported that personalization reduced choice overload and enhanced engagement. For example, P7 stated:

"There are so many products out there. When the site narrows it down to things I would use, it's a relief. It's less overwhelming."

However, relevance and precision were critical. Poor recommendations led to disengagement:

"Sometimes the recommendations are way off – like showing me camping gear when I've never camped. Then I just ignore that section entirely." (P5)

In contrast, accurate personalization often triggered deeper engagement:

"When it's pinpoint – like recently it suggested sneakers just my type – I spent an hour looking at similar shoes based on that suggestion." (P8)

Conditional Trust – "I trust it when it feels transparent, but get skeptical if it's too aggressive"

Trust emerged as a nuanced theme. Participants reported trusting AI recommendations when they felt transparent and relevant, but becoming skeptical when personalization seemed invasive. P1 explained:

"If I know why something is being recommended, I usually comply. Like, 'Recommended because you bought X.' But if it knows too much, yeah, I do get creeped out." (P1)

Some participants (P1, P6, P9) suspected their devices were "listening" to them when eerily relevant ads appeared, raising privacy concerns. Despite such moments of distrust, participants were more willing to engage with established, reputable platforms:

"I trust Netflix recommendations because they've been great. Same with Amazon – they know my background, so I think it's real." (P4)

Privacy and data usage were central to trust. Many expressed willingness to share data in exchange for relevant suggestions but were turned off by excessive retargeting or perceived exploitation:

"I know they use my data. I'm kind of okay with it if I get something out of it – like better recs. But if it feels like they're just using me to push products, then nah." (P9)

Engagement and Enjoyment – "Sometimes it sucks me in… I'll click one thing and then I'm down the rabbit hole"

Personalized recommendations often led to high engagement levels. P8 described:

"Instagram got me good the other day. I was looking at one recommended post for a jacket, and then it kept showing me more clothes I wanted. I spent 30 minutes browsing – it totally drew me in." (P8)

Others echoed this immersive experience, describing shopping as entertaining and almost gamified:

"It's like 'what will they show me next?' It can be enjoyable." (P2)

However, engagement didn't always translate to purchases. Some participants used recommendations for inspiration:

"I do click a lot of suggested items just out of curiosity. I don't buy most of them, but I enjoy browsing." (P3)

Trust also influenced engagement. P6 stated:

"If I feel iffy about why something's recommended, I might not click it. But if I trust the site, I'll check stuff out." (P6)

Purchase Influences – "It made me buy something I didn't plan to"

Many participants admitted making spontaneous purchases due to AI recommendations. P7 shared:

"I was looking for a gift, and it recommended a phone sanitizer. I wasn't looking for that, but I bought one for myself! Totally spontaneous." (P7)

Others described how recommendations prompted impulse buys, especially for lower-cost items:

"For big things like a laptop, I research on my own. But for clothes or accessories, if it suggests something I like, I might just get it." (P4)

Some respondents, however, resisted recommendations by avoiding clicks or verifying product quality elsewhere:

"If a site recommends something, I'll check YouTube or Reddit before buying. I don't take it at face value." (P10)

Desire for Control – "I wish I could tweak what it shows me"

Several participants expressed a desire for more control over personalization settings. P5 said:

"Sometimes I want to say, 'stop suggesting this type of thing' or 'give me more of that.' I'd like a button for that." (P5)

P8 noted frustration with irrelevant suggestions following gift purchases:

"After I bought a drill for my dad, I kept getting tool suggestions. I had to make a new account to reset it." (P8)

This highlights a potential improvement area: allowing users to customize their recommendations could enhance trust and engagement.

5.3 Summary of Qualitative Insights

- Gen Z generally values AI personalization for its convenience and relevance.
- Trust is present but fragile; transparency and perceived fairness are crucial.
- Engagement can become immersive and lead to purchases, but not all engagement results in sales.
- Personalized suggestions often trigger impulse purchases, especially for low-stakes items.
- Many Gen Z users desire more control over personalization algorithms to refine their experience.

These insights complement the quantitative findings and provide a richer understanding of how AI personalization influences Gen Z's trust, engagement, and purchase behavior.

6. DISCUSSION

This study examined how AI-driven personalization in online shopping influences Gen Z consumers' trust, engagement, and purchase behavior, using a mixed-methods approach. Results from both the survey and interviews offer a coherent picture of Gen Z's responses to personalized e-commerce experiences. Here, we discuss findings in relation to existing literature and theory, explore practical implications, and acknowledge limitations.

Integration of Quantitative and Qualitative Findings

Both data strands converged on the insight that AI personalization generally benefits Gen Z shopping experiences but relies heavily on fostering trust and meaningful engagement. Quantitatively, personalization significantly increased trust (H1) and engagement (H2), which in turn positively influenced purchase behavior (H3, H4), with trust also enhancing engagement (H5). The qualitative findings explain these dynamics: participants described how relevance and transparency in personalization encouraged trust and sustained engagement, leading to higher likelihood of purchases.

Notably, our model revealed partial mediation: ~74% of personalization's influence on purchase was mediated through trust and engagement, while a direct effect ($\beta = 0.16$, $p < .01$) remained. Interviews clarified this by highlighting instances where highly targeted suggestions triggered impulse purchases without requiring prolonged engagement or established trust.

Importantly, the direct path from personalization to purchase (H6, $\beta = 0.16$) remained significant. Qualitative evidence explained this residual effect: in some cases, highly targeted recommendations triggered immediate purchases without requiring prolonged engagement or fully established trust—such as impulse buying a suggested accessory or gift.

The Stimulus–Organism–Response (S-O-R) framework proved effective: AI personalization (stimulus) generated internal states of trust and engagement (organisms), which led to purchase behavior (response). This extends earlier S-O-R applications (Huang, 2022, Jeong et al., 2022) by identifying trust and engagement as crucial organismic states in Gen Z's AI-mediated shopping. Unlike TAM and UTAUT, which focus on cognitive appraisals (e.g., perceived usefulness), our study highlights relational (trust) and experiential (engagement) mediators, emphasizing that success

with Gen Z requires not only functional technology but also emotional and experiential alignment.

6.1. The Role of Trust

Trust emerged as foundational for Gen Z's online behavior, consistent with previous research (Gefen, 2000, Pavlou, 2003). Participants valued transparency and relevance in recommendations as ways to build trust, echoing findings from Guerra-Tamez et al. (2024) and Nagy & Hajdu (2021) that trust is critical for AI adoption in shopping. Our results further showed that trust not only drives purchase intentions but also enables deeper engagement.

Practically, retailers can maintain trust by being transparent about data use (e.g., "Why am I seeing this recommendation?" features), offering user control, and avoiding over-personalization that feels intrusive. These strategies align with participants' desire for personalization to feel helpful rather than exploitative.

6.2. The Role of Engagement

Engagement was the strongest predictor of purchase ($\beta = 0.47$), encompassing attention, interest, and time spent on the platform. This supports the flow concept (Hoffman & Novak, 2009) and recent findings by Guerra-Tamez et al. (2024) that immersive engagement bridges trust and purchase behavior. Qualitative data confirmed that relevant recommendations often kept users absorbed, sometimes leading to impulse purchases.

For theory, this highlights engagement as a distinct construct deserving attention in online shopping models. For practice, it suggests that metrics like session duration and interaction depth are key indicators of commercial outcomes. Retailers should invest in interactive and gamified recommendation systems to sustain engagement and drive conversions.

Gen Z's Perspective and the Personalization-Privacy Paradox

Our findings align with previous characterizations of Gen Z as digital natives expecting seamless, tailored experiences (Priporas et al., 2017) but also cautious about privacy and manipulation (Ameen et al., 2023). Participants embraced AI personalization when it added value but resisted when it felt invasive. This reflects the personalization-privacy paradox (Awad & Krishnan, 2006), where consumers desire tailored content but worry about data use.

Gen Z participants resolved this paradox by setting personal boundaries—ignoring suggestions they found "creepy" and expressing a desire for more control over algorithms. This supports Madhuri et al. (2024)'s recommendation for brands to carefully balance personalization with privacy considerations.

6.3. Implications for Retailers and Marketers

Managerially, this study suggests several actionable recommendations for effectively leveraging AI personalization for Gen Z consumers:

6.4. Invest in High-Quality Personalization

Retailers should deploy AI solutions that provide accurate, timely, and relevant recommendations. High-quality personalization fosters engagement and trust, which translate into sales. Algorithms must be updated frequently using user feedback and evolving trends since Gen Z preferences shift rapidly, and outdated recommendations reduce credibility.

6.5. Provide Control and Transparency

To build trust, clearly explain why recommendations are shown (e.g., "Recommended because you viewed X") and give users some control over personalization (e.g., thumbs-down buttons, preference settings). As our qualitative results show, lack of control can frustrate users, especially when irrelevant suggestions (like gift-related items) keep appearing. Features enabling users to refine recommendations signal that the brand values their input.

6.6. Balance Personalization with Privacy

Brands must adopt strong privacy practices and communicate them clearly. Explicit assurances such as "We do not share your personal data with third parties" or easy opt-outs for tracking can alleviate privacy concerns. Our findings confirm that when privacy worries arise, trust erodes rapidly. Retailers who demonstrate ethical data practices can differentiate themselves positively with Gen Z.

6.7. Design for Discovery and Enjoyment

E-commerce platforms should create interfaces that encourage exploration through interactive recommendation features (e.g., carousels, "Discover More" sections) and even gamification. Making shopping fun increases session duration and purchase likelihood. To convert engagement into action, integrate features like quick add-to-cart buttons and time-limited personalized offers.

6.8. Monitor and Optimize Continuously

Analytics should track how Gen Z users interact with personalized content. High engagement with low conversion may signal trust issues, which can be

addressed by adding social proof (e.g., reviews for recommended products). Conversely, campaigns that lead to instant conversions should be analyzed for replicable success factors.

6.9. Segment within Gen Z

Although treated as a single cohort, Gen Z is diverse. Some are highly privacy-conscious, while others are more impulsive. Use AI to tailor not just product recommendations but also the style and frequency of personalization. For example, users who rarely engage with suggestions might prefer fewer prompts or an invitation to customize preferences (e.g., "Want better recommendations? Update your profile").

6.10. Theoretical Contributions

This study contributes to academic literature in several ways:

Integration of S-O-R with Trust and Engagement

It empirically validates the integration of the Stimulus–Organism–Response (S-O-R) model with trust and engagement constructs in the context of AI-driven e-commerce for Gen Z. By including trust (a relational factor) and engagement (an experiential factor) in the traditional S-O-R framework, this study provides a more robust behavioral explanation for technology-facilitated shopping environments. This expands existing technology acceptance literature by showing that beyond perceived usefulness and ease of use, factors like trust (risk/credibility) and engagement (enjoyment/involvement) are critical in the AI-personalization context.

6.11. Value of a Mixed-Methods Approach

The mixed-methods design enriches theoretical understanding by not only testing hypotheses but also uncovering mechanisms underlying consumer responses. While prior studies (e.g., Liang et al., 2022, Bhagat et al., 2023) demonstrated that personalization increases purchase intention, our qualitative findings explain how and why—for instance, by making consumers feel understood (triggering trust) or entertained (increasing engagement). This aligns with calls for deeper qualitative insights in marketing AI and information systems research (Ransbotham et al., 2018) to contextualize quantitative effects within user psychology.

6.12. Implications for Personalization Theory

The findings on Gen Z's desire for control and transparency highlight a potential extension to personalization theory. Traditional algorithms function as background processes, but our results suggest that actively involving users as participants—via feedback loops or preference controls—could improve outcomes. Theoretically, this points toward a personalization paradigm that is dialogic rather than monologic. Future research could explore such interactive personalization frameworks, particularly for digitally native generations like Gen Z who expect greater agency over their online experiences.

7. LIMITATIONS AND FUTURE RESEARCH

While this study provides valuable insights, it has certain limitations.

7.1. Sample Scope

The quantitative sample of 150 participants, though sufficient for SEM, was not randomly drawn from the entire Gen Z population. It was skewed towards university-educated young adults in the UAE, a context with high digital adoption and strong governmental promotion of AI technologies and heightened public awareness of privacy issues. Such cultural and technological conditions may foster higher baseline trust in AI personalization and different privacy expectations compared to Gen Z in other regions or socio-economic groups. As a result, these findings should be interpreted as exploratory and context-specific, rather than broadly generalizable to the entire Gen Z population who are less technologically exposed or from other regions. Future research could include more diverse Gen Z subpopulations or cross-cultural comparisons to explore how cultural context shapes personalization and privacy attitudes.

7.2. Cross-Sectional Design

The cross-sectional nature of the survey limits causal inference. Although SEM enabled testing of theoretically causal relationships, longitudinal or experimental studies are needed to establish causality. For instance, it is possible that highly engaged consumers notice personalization more (reverse causality). Future studies could use experiments (e.g., manipulating the degree of personalization) to assess its real-time effects on trust, engagement, and purchase behavior. Field experiments on live e-commerce platforms would offer high ecological validity.

7.3. Qualitative Sample Size

Our qualitative strand included 10 interviews, which achieved thematic saturation for major patterns but may not capture rare perspectives.

Future qualitative work could involve larger samples or focus groups, especially targeting Gen Z consumers at extremes (those who fully embrace AI vs. those who reject it), to understand boundary conditions.

7.4. Focus on Product Recommendations

This study examined only one type of personalization: product recommendations. AI personalization also includes features like personalized search, dynamic pricing, and chatbots. Future research could explore whether trust and engagement similarly mediate consumer responses to these other AI-driven features. For example, how does anthropomorphic AI (human-like recommenders) influence Gen Z trust compared to impersonal systems?

7.5. Additional Mediators and Outcomes

While trust and engagement were tested as mediators, other variables like emotional states (e.g., delight, irritation), satisfaction, or loyalty could enrich understanding. Our qualitative data hinted at emotions influencing behavior; future studies could measure these explicitly to explore their intersection with cognitive (trust) and behavioral (engagement) constructs.

7.6. Implications for Future Consumer Behaviour

This mixed-methods analysis highlights that AI personalization significantly impacts Gen Z purchasing behavior, mediated by trust and engagement. However, the same personalization can backfire if perceived as manipulative or privacy-invasive. As the first generation raised in an AI-rich environment, Gen Z offers a glimpse into future consumer expectations: personalization that is relevant, ethical, and user-controlled. For practitioners, this underscores the importance of using AI personalization as a relationship builder rather than a blunt sales tool. For researchers, these findings point to rich opportunities for studying relational and experiential dynamics in AI–consumer interactions, paving the way for ethical and consumer-centric AI design frameworks.

8. CONCLUSION

This study examined how AI-driven personalization influences Gen Z consumers' trust, engagement, and purchase behavior in online shopping using a mixed-methods approach. The findings reveal that personalization significantly shapes Gen Z consumer behavior, primarily through the mediating effects of trust and engagement. When Gen Z shoppers perceive recommendations as relevant, they are more likely to trust the platform, engage deeply, and ultimately make purchases. Quantitative results showed that perceived personalization strongly predicts trust ($\beta = 0.58$) and engagement ($\beta = 0.26$), which in turn drive purchase behavior ($\beta = 0.29$ and $\beta = 0.47$, respectively). Trust also enhances engagement ($\beta = 0.53$), demonstrating their interdependence. Mediation analysis confirmed that personalization impacts purchase behavior mostly indirectly via trust and engagement, though occasional direct effects (e.g., impulse buys) were observed. Qualitative insights enriched this understanding by highlighting how Gen Z values personalization for its convenience and relevance but expects transparency and control. Trust was often described as conditional—earned through ethical and user-centric personalization. When trust was present, participants reported higher engagement and even impulse purchases; when absent, they disengaged. These findings position AI personalization as a powerful but delicate tool. For businesses, this means designing personalization systems that prioritize relevance, transparency, and user control. Ethical and consumer-centric AI practices can turn personalization into a long-term loyalty driver rather than just a short-term sales tactic. Theoretically, this research advances the Stimulus–Organism–Response (S-O-R) model by integrating relational (trust) and experiential (engagement) constructs in the AI-driven retail context. It highlights the need to extend traditional consumer behavior models to account for Gen Z's expectations of ethical, participatory, and transparent AI systems. As digital technologies continue evolving, Gen Z offers a blueprint for aligning AI capabilities with human values. Businesses that embrace these insights are well-positioned to build lasting relationships with this generation and future cohorts in the digital marketplace.

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