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AI-ENABLED PERSONALIZATION AND DIGITAL TRUST IN ONLINE CONSUMER DECISION-MAKING: A STRUCTURED INTEGRATIVE REVIEW AND TRUST-CALIBRATED MODEL

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Keywords	***Abstract***
Artificial Intelligence; Personalization; Digital Trust; Privacy Calculus; Online Purchase Intention; Consumer Behaviour	Artificial intelligence (AI) increasingly supports online search, recommendation, service, and purchase decisions, but its benefits coexist with privacy concerns, opacity, perceived manipulation, and algorithm aversion. This structured integrative review explains when AI-enabled personalization improves consumer decision-making and when it weakens trust. Evidence is organized around capability quality, perceived usefulness, personalization relevance, privacy calculus, transparency, consumer control, trust, and satisfaction. The synthesis shows that personalization is valuable when recommendations are accurate, context-appropriate, explainable, fair, and correctable. Trust and satisfaction connect these evaluations with purchase intention and loyalty, whereas privacy intrusion, task complexity, product type, and digital literacy condition the effects. A trust-calibrated model and seven propositions are developed. The paper also links its technology-governance route to a companion paper on influencer credibility, electronic word-of-mouth, and social commerce. The review contributes an empirically testable framework and practical guidance for

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	explainable recommendations, responsible data use, consumer control, human escalation, and balanced performance measurement.

1. Introduction

Digital commerce increasingly delegates search, recommendation, service, and comparison tasks to algorithms. These systems reduce information overload and friction, yet also shift informational power from consumers to platforms. The central question is therefore not whether AI affects consumer behaviour, but when consumers accept, rely on, resist, or disengage from AI-mediated choice environments.

AI can improve targeting, responsiveness, and service productivity, while creating strategic and implementation risks (Davenport et al., 2020; De Bruyn et al., 2020; Huang & Rust, 2021). Consumers experience data capture, classification, delegation, and social interaction with AI differently (Puntoni et al., 2021). Technical performance alone does not ensure adoption, especially in subjective or sensitive tasks where algorithm aversion may emerge (Castelo et al., 2019; Longoni et al., 2019).

This paper isolates the technology-governance route from the broader original review. It asks how AI capability and personalization shape usefulness, privacy evaluations, trust, satisfaction, purchase intention, and loyalty. The companion paper examines the social route through influencer credibility, social relationships, e-WOM, and platform interaction. The two routes meet at platform trust and recommendation congruence.

2. Review Design and Theoretical Foundations

A structured integrative review was used to reconcile heterogeneous conceptual, experimental, survey, and review evidence rather than estimate a pooled effect. This approach supports theory building across multiple methods and levels of analysis (Snyder, 2019; Torraco, 2005). It also avoids claiming a completed PRISMA review because reproducible screening counts were unavailable.

Search terms covered AI, generative AI, recommendation systems, personalization, transparency, privacy, trust, consumer experience, algorithm aversion, purchase intention, and loyalty. The main window was 2019-July 2026, supplemented by seminal adoption, privacy, and trust studies. Backward and forward citation chaining connected recent reviews with foundational research.

Eligible sources were peer-reviewed studies or authoritative reviews with direct consumer, marketing, service, or digital-commerce outcomes. Evidence was coded by AI application, stimulus, psychological mechanism, behavioural outcome, theoretical lens, boundary condition, and managerial implication. Technical studies without consumer-response constructs and non-scholarly commentary were excluded.

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Table 1. *Structured review protocol*

Element	Operational decision
Purpose	Integrate heterogeneous evidence and develop a testable trust-calibrated model; no pooled effect size is claimed.
Contemporary focus	2019-July 2026, supplemented by seminal technology-acceptance, privacy, trust, and consumer-decision research.
Core constructs	AI capability quality, personalization relevance, perceived usefulness, privacy calculus, transparency, fairness, trust, satisfaction, purchase intention, and loyalty.
Quality screen	Clear research question, identifiable method or theoretical logic, consumer-relevant outcome, and defensible conclusions.
Synthesis method	Thematic coding, mechanism mapping, comparison of supportive and adverse effects, and proposition development.

Technology acceptance and decision efficiency. The Technology Acceptance Model links adoption to perceived usefulness and ease of use (Davis, 1989), while UTAUT adds performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). In online commerce, AI capability creates value only when it fits the consumer task and reduces decision effort without narrowing choice inappropriately.

Stimulus-organism-response logic. Stimulus-organism-response logic connects AI accuracy, relevance, disclosure, and control with internal evaluations such as usefulness, risk, trust, satisfaction, and autonomy, which then shape purchase, avoidance, loyalty, and advocacy. This sequence prevents personalization from being treated as an automatic direct cause of purchase.

Privacy calculus and calibrated trust. Consumers exchange information for anticipated benefits, but the privacy calculus depends on context, control, and vulnerability (Acquisti et al., 2015; Martin & Murphy, 2017). Overt data collection can offset relevance gains (Aguirre et al., 2015). Trust should therefore be calibrated to actual capability, limits, and accountability rather than simply maximized (Lee & See, 2004).

3. Thematic Synthesis

AI capability quality across the customer journey. AI creates value when its function matches the journey stage: search and recommendation reduce overload, conversational agents clarify alternatives, and service automation supports fulfilment and recovery (Chen & Prentice, 2025;

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Lemon & Verhoef, 2016). Capability quality includes accuracy, relevance, responsiveness, consistency, and graceful failure. Product type and source transparency influence whether consumers follow AI or prefer human or hybrid support (Mazzù et al., 2025).

Personalization as conditional value creation. Personalization improves choice quality when it delivers diagnostic relevance, visible benefit, and correctable recommendations. It can increase fit, trust, satisfaction, and loyalty (Hassan et al., 2025), but unexpected cross-context data use can make personalization feel like surveillance. Responsible data use is therefore part of value creation rather than an external legal constraint (Bleier et al., 2020).

Transparency, explainability, and consumer control. Transparency builds trust when it explains why a recommendation appears, what data shaped it, how uncertain it is, and how it can be changed or rejected. Editable preferences, opt-outs, feedback, data deletion, and human assistance reduce vulnerability and signal procedural fairness. Accountability, non-discrimination, and consumer welfare consequently shape the legitimacy of AI marketing (Hermann, 2022).

Trust, satisfaction, and purchase outcomes. Trust bridges system evaluations and behavioural reliance. Consumers must trust the platform to handle data responsibly, the algorithm to perform competently, and the firm to provide recourse. Trust and perceived risk are closely connected in voice-assistant settings (Hasan et al., 2021), while broader reviews identify convenience, effectiveness, security, personalization, and trust as interdependent drivers of brand-consumer relationships (Nogueira et al., 2025; Ribeiro et al., 2025). Satisfaction then converts useful assistance into loyalty and positive e-WOM.

Generative AI as a new decision interface. Generative AI can summarize reviews, compare alternatives, personalize explanations, and sustain dialogue. These benefits coexist with hallucination, source opacity, persuasive fluency, and automation bias. Because consumers may not reliably distinguish AI-generated from human responses, disclosure must be combined with source grounding, uncertainty communication, traceability, correction, and human escalation (Mousavi & Villanova, 2026).

Table 2. *Integrated evidence map*

Theme	Consumer value mechanism	Principal risk	Likely boundary condition
Capability quality	Accuracy and responsiveness reduce search and service effort.	Failure, inconsistency, or inappropriate delegation.	Task complexity and product type.

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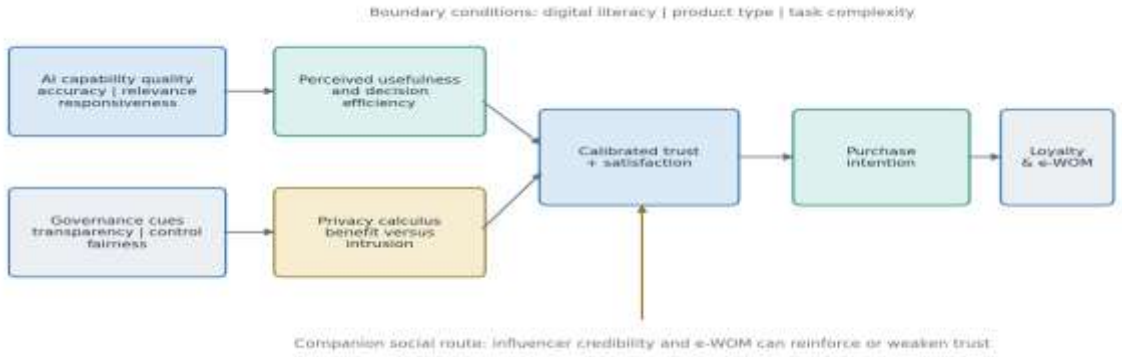
Theme	Consumer value mechanism	Principal risk	Likely boundary condition
Personalization	Relevance and fit improve perceived usefulness and value.	Intrusion, narrowing, and perceived manipulation.	Data sensitivity and consumer control.
Transparency	Explanations make recommendations interpretable and contestable.	Information overload or performative disclosure.	Digital literacy and explanation timing.
Trust and satisfaction	Competence, integrity, and recourse support reliance and loyalty.	Trust violation can spill over to the platform and brand.	Prior experience and failure severity.
Generative AI	Dialogue, synthesis, and adaptive explanation reduce decision effort.	Hallucination, source opacity, and automation bias.	Grounding quality and human escalation.

4. Trust-Calibrated Model and Interrelationship with the Companion Paper

Figure 1 integrates the evidence into a sequential model: capability quality shapes usefulness; governance cues shape privacy calculus and trust; and calibrated trust and satisfaction influence purchase intention and loyalty. Product type, task complexity, and digital literacy are boundary conditions, while the companion paper supplies the social-signal route.

Figure 1. *Trust-calibrated model of AI-enabled consumer decision-making*



Note. Solid paths represent the principal mechanism proposed in this paper. The lower path identifies the point of integration with the companion paper on social influence.

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P1: *AI capability quality positively influences perceived usefulness and decision efficiency when the capability matches the consumer task.*

P2: *Perceived personalization relevance positively influences perceived value, but the effect weakens when personalization is experienced as intrusive.*

P3: *Decision-relevant transparency and meaningful consumer control positively influence trust in AI-mediated commerce.*

P4: *Trust mediates the relationship between AI capability quality and online purchase intention.*

P5: *Satisfaction mediates the relationship between perceived usefulness and post-purchase loyalty.*

P6: *Privacy concern negatively moderates the relationship between personalization relevance and trust, while perceived control attenuates this negative moderation.*

P7: *Product type, task complexity, and digital literacy jointly condition whether consumers prefer AI, human, or hybrid decision support.*

Interrelationship with the companion paper. Together, the two papers propose a dual-route explanation of digital purchase behaviour. Paper I models the technology-governance route through capability, usefulness, privacy calculus, trust, and satisfaction. Paper II models the social-persuasion route through influencer cues, e-WOM, credibility, diagnosticity, and social trust. The routes intersect through platform trust, AI-curated exposure, and agreement or conflict between algorithmic and social recommendations.

5. Implications, Future Research, and Limitations

Theoretical implications. Theoretically, the review shifts attention from AI adoption to calibrated reliance. It integrates technology acceptance with privacy calculus and trust, explaining why similar personalization interventions can produce supportive, null, or adverse consumer responses.

Managerial implications. For managers, the unit of evaluation should be the consumer decision rather than the AI feature. Firms should match automation to the task, expose understandable reasons, permit correction, minimize unnecessary data, provide human escalation, and measure task completion, trust, privacy comfort, satisfaction, complaints, returns, and repeat purchase—not conversion alone.

Future research agenda. Future research should use experiments, longitudinal service-recovery studies, and field data to test explanation timing, uncertainty disclosure, trust repair, cross-context personalization, and actual purchase outcomes. Cross-cultural research should validate measures in emerging markets and test how digital literacy, language, product type, and infrastructure condition the dual-route model.

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Limitations. This integrative review does not estimate a pooled causal effect. Its evidence is weighted toward self-reported intentions and technology-active consumers, while rapid platform change can limit the durability of context-specific findings.

6. Conclusion

AI-enabled personalization improves consumer decision-making only when capability and governance jointly justify reliance. Accuracy and relevance create potential value; transparency, control, privacy appropriateness, fairness, and recourse convert it into calibrated trust. Trust and satisfaction then connect AI-supported decisions with purchase and loyalty, while the companion social route explains how influencer and e-WOM signals reinforce or challenge algorithmic recommendations.

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

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