

CONSUMERS TRUST IN AI-POWERED SERVICES: DETERMINANTS AND FUTURE PERSPECTIVE

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Abstract

Artificial intelligence (AI) is becoming an increasingly visible component of consumer services, ranging from conversational agents and recommendation systems to banking, retail, healthcare, travel and public services. As AI moves from a background technological infrastructure to a direct interface between firms and consumers, trust becomes a central condition for adoption, continued use, data disclosure and willingness to delegate decisions. This paper examines the principal determinants of consumer trust in AI-powered services and discusses the future development of trustworthy AI from a consumer perspective. The study uses a structured literature review and thematic synthesis of research on trust in AI, consumer behaviour, explainability, privacy, perceived risk, service quality and AI autonomy. The analysis indicates that consumer trust is multidimensional and emerges from the interaction of system-level attributes, firm-level signals and individual consumer characteristics. Perceived competence, reliability, transparency, explainability, privacy protection, security, controllability, personalization and the reputation of the service provider are repeatedly identified as relevant drivers, while perceived risk, opacity, lack of human oversight and concerns about misuse of personal data can reduce trust. The literature also shows that trust is not synonymous with acceptance: consumers may appreciate the usefulness of AI while simultaneously resisting high levels of autonomy. Future research should therefore move from static measures of trust toward dynamic and context-sensitive models that examine calibration, cultural differences, human-AI collaboration, generative AI and the long-term consequences of automated service encounters.

Keywords: consumer trust; artificial intelligence; AI-powered services; explainability; transparency; privacy; perceived risk; personalization; AI autonomy; consumer behaviour

Clasificare JEL : M31, O33, D12, L86, C89

1. Introduction and context of the study

Artificial intelligence is rapidly changing the way consumers search for information, communicate with firms, evaluate alternatives and receive services. AI-powered applications are now embedded in customer support, digital banking, online retail, healthcare, travel, entertainment and public administration. The transformation is important not only because AI can automate tasks, but also because it changes the nature of the service encounter. In many situations, the consumer no longer interacts only with an employee or a conventional software interface, but with a system that predicts, recommends, generates content or makes decisions with varying degrees of autonomy.

This evolution places trust at the centre of the consumer-AI relationship. Trust is particularly important when the service requires consumers to disclose personal information, accept recommendations, delegate decisions or rely on outputs that cannot be fully understood. Research on human trust in AI shows that trust is influenced by both the characteristics of the technology and the social context in which it is used (Glikson & Woolley, 2020). In consumer markets, these factors are

supplemented by brand reputation, perceived service quality, privacy expectations and the perceived fairness of the interaction.

The relevance of trust becomes even stronger as AI services become more autonomous. Research on consumer adoption of AI services indicates that trust in the company can encourage adoption, while higher AI autonomy may weaken the positive relationship between company trust and willingness to use an AI service (In companies we trust, 2022). Consumers can therefore distinguish between trusting a firm and trusting the AI system acting on behalf of that firm. This distinction is particularly relevant for financial, healthcare and other high-consequence services where errors can create substantial personal or economic costs.

At the same time, trust should not be interpreted as unconditional acceptance. Consumers may perceive an AI service as useful and efficient while remaining concerned about surveillance, privacy, manipulation, bias or the loss of human control. Studies in healthcare, for example, demonstrate that consumers may resist AI even when its performance is strong because they fear that an algorithm cannot adequately account for the uniqueness of their individual circumstances (Longoni, Bonezzi, & Morewedge, 2019). Such findings suggest that technical performance alone is insufficient to generate consumer trust.

The objective of this paper is therefore to examine the main determinants of consumer trust in AI-powered services and to identify the directions in which research and managerial practice are likely to evolve. Particular attention is given to competence and reliability, transparency and explainability, privacy and perceived risk, human oversight, personalization, provider reputation and individual differences. The paper also discusses future perspectives associated with generative AI, autonomous services, regulatory requirements and the need for calibrated rather than blind trust.

2. Literature review

Trust in AI has developed into a multidisciplinary research field that connects information systems, marketing, psychology, human-computer interaction and management. A major review by Glikson and Woolley (2020) shows that trust in AI differs from trust in conventional technologies because AI systems can act with a degree of autonomy, adapt to data and produce outcomes that may be difficult for users to interpret. More recent bibliometric evidence confirms that empirical research on trust in AI has expanded substantially and remains fragmented across disciplines and application contexts (Benk et al., 2025).

One of the most consistent groups of determinants concerns perceived competence, reliability and performance. Consumers are more willing to trust an AI service when they believe that it can perform its task accurately, consistently and efficiently. Expertise and responsiveness are particularly important in conversational services, while perceived usefulness connects technical performance with the consumer's evaluation of the service outcome. Research on AI chatbots identifies expertise, responsiveness and anthropomorphism as positive determinants of trust, while perceived risk acts in the opposite direction (Determinants Affecting Consumer Trust in Communication With AI Chatbots, 2023).

Transparency and explainability constitute a second major determinant. Consumers often face a black-box problem: they can observe the recommendation or decision but not the reasoning behind it. Explainable AI attempts to reduce this gap by providing information that helps users understand why an outcome was produced. Research on explainability shows that explanatory cues can influence trust and users' perceptions of AI performance, but it also emphasizes that explanations are useful only when users can meaningfully understand and evaluate them (Hoffman et al., 2023). Therefore, transparency should not be reduced to displaying technical information. It should involve communication that is relevant, comprehensible and proportionate to the decision at stake.

Privacy and perceived risk represent another central dimension of consumer trust. AI-powered services often require extensive data collection in order to personalize recommendations or automate service processes. This produces a tension between convenience and privacy. Consumers may value

personalization while simultaneously worrying about how their data are collected, combined, stored and reused. Recent research on generative AI further indicates that trustworthiness dimensions are linked to willingness to disclose information, suggesting that trust can become a mechanism through which consumers decide how much personal information to share with AI systems.

Provider-level trust is also important. Consumers do not evaluate an AI service in isolation; they frequently transfer expectations from the company, platform or brand to the AI interface. A well-established brand can reduce uncertainty surrounding a new AI service, whereas weak corporate reputation can amplify concerns about automated decision-making. This is especially relevant where AI operates behind the scenes, such as in fraud detection, credit scoring, insurance or recommendation systems. In such settings, the organization remains responsible in the consumer's perception even when the immediate decision is produced by an algorithm.

Human involvement is a further determinant. Consumers may be more comfortable when AI supports rather than replaces human decision-makers. The literature on medical AI is illustrative: resistance can decrease when AI is framed as personalized or when it assists a human professional instead of completely replacing that professional (Longoni et al., 2019). Human oversight can therefore operate as a form of structural assurance, reducing the perceived consequences of an incorrect automated decision.

Individual differences and contextual characteristics further complicate trust formation. Prior experience with technology, AI literacy, perceived control, personal innovativeness, risk tolerance and cultural context can change how consumers interpret the same AI feature. A recent systematic review identifies AI capability, anthropomorphism, individual factors and explainability among the main antecedents of trust, while also highlighting cultural differences in the relative importance of transparency, capability and anthropomorphism (Dang & Li, 2026). Trust should consequently be viewed as contextual rather than universal.

3. Research methodology

The study employs a structured literature review combining qualitative thematic synthesis with conceptual mapping of the determinants of consumer trust in AI-powered services. The methodological approach follows the logic of transparent literature identification, classification of recurring constructs and comparison of findings across service contexts. The purpose is not to estimate a single statistical effect, but to integrate evidence from marketing, information systems, human-computer interaction and AI research into a coherent consumer-oriented framework.

The literature was organized around four analytical dimensions. The first dimension concerns AI system attributes, including competence, reliability, accuracy, responsiveness, autonomy and explainability. The second concerns consumer perceptions, such as usefulness, perceived value, privacy concerns, perceived risk, perceived control and AI literacy. The third concerns the organization and service context, including brand trust, reputation, human support, accountability and the perceived fairness of the service. The fourth dimension concerns interaction and outcomes, including satisfaction, continued use, recommendation acceptance, disclosure intention and willingness to delegate decisions.

The synthesis gives particular attention to recent literature because AI-powered services are evolving quickly and because generative AI has changed consumer interaction with automated systems. Foundational studies are retained where they provide concepts that continue to structure the field, while recent reviews and empirical studies are used to identify emerging determinants and future research directions. This approach is consistent with the observation that the trust-in-AI literature has grown rapidly but still requires stronger contextualization and more comparable empirical measures (Benk et al., 2025).

The resulting framework treats trust as a dynamic outcome rather than as a fixed consumer attitude. A consumer may initially trust a service because of brand reputation or perceived usefulness, but that trust can increase or decline after repeated encounters with the AI. In this sense, trust formation

involves an initial stage and a continuous development stage, a distinction also emphasized in the literature on building trust in AI systems (Siau & Wang, 2018).

4. Results and discussion

The literature synthesis indicates that consumer trust in AI-powered services is best understood as a multidimensional construct. No single technical characteristic is sufficient to explain why consumers trust one AI service and reject another. Instead, trust emerges from the interaction between what the AI can do, how the service communicates what it is doing, how much control the consumer retains and whether the organization behind the service is perceived as responsible and credible.

A first major determinant is perceived competence and reliability. Consumers need evidence that an AI service can deliver accurate and useful outcomes. In low-risk environments, convenience and speed may compensate for occasional imperfections. In high-risk contexts, however, consumers expect substantially stronger evidence of accuracy and accountability. This creates a threshold effect: as the consequences of failure increase, technical competence becomes necessary but not sufficient, because consumers also require assurance concerning responsibility and recourse.

A second determinant is transparency and explainability. Transparent AI can reduce uncertainty by clarifying what data are used, what the system is designed to do and when a consumer is interacting with AI. Explainability adds another layer by providing reasons for specific outputs. Yet the literature suggests that more explanation does not automatically produce better trust. Poorly designed explanations can overwhelm users or create an unjustified impression that a system is fully understood. The appropriate goal is therefore meaningful transparency, in which the level of explanation matches the consumer's needs and the stakes of the decision.

A third determinant is privacy and perceived risk. Consumers often evaluate AI services through a benefit-risk calculation. Personalization, speed and convenience generate benefits, while data collection, profiling, security failures and opaque secondary uses of information generate risks. The future of consumer trust will therefore depend strongly on whether organizations can demonstrate data minimization, meaningful consent, security and user control. Privacy cannot remain a legal footnote; it is increasingly part of the perceived quality of the AI service itself.

A fourth determinant is control and autonomy. High autonomy can make services efficient, but it can also reduce consumers' feeling that they remain the final decision-makers. Research on AI service adoption shows that higher AI autonomy may weaken the positive effect of company trust on adoption intentions. This finding suggests that consumers do not simply ask whether they trust the organization. They also ask how much authority the organization has given the AI and how much authority the consumer is expected to surrender.

A fifth determinant is personalization. AI services can become more valuable when they adapt to the consumer's preferences and circumstances. However, personalization has a dual character. When it is perceived as helpful and controlled by the user, it can strengthen trust and service satisfaction. When it appears intrusive, manipulative or excessively data-intensive, it can produce discomfort and reduce trust. The literature on AI-driven retail increasingly describes this as a personalization-privacy tension, in which consumers want relevance without feeling that the system knows too much about them.

A sixth determinant is the social and relational character of the service encounter. Anthropomorphic features, conversational language and responsiveness can make an AI service easier to interact with. Nevertheless, human-like presentation is not a universal solution. Anthropomorphism may increase perceived warmth and social presence, but if the system subsequently behaves inconsistently, the discrepancy between appearance and performance can damage trust. Consumers may also prefer a clearly identified AI system over an artificial human imitation when transparency is considered important.

The results also point to the importance of calibrated trust. Excessive distrust can prevent consumers from benefiting from useful AI services, while excessive trust can lead to over-reliance and poor decisions. The objective for service providers should therefore be neither maximal trust nor

unconditional acceptance. Instead, AI systems should support appropriate trust, meaning that the consumer's confidence corresponds reasonably well to the system's actual capabilities, limitations and risk profile. This perspective is increasingly important in generative AI, where fluent language and convincing outputs can create an impression of competence that is not always matched by factual reliability.

From a managerial perspective, the findings suggest that organizations should design trust as part of the service architecture. Clear disclosure that an interaction is AI-mediated, understandable explanations, accessible human escalation, visible privacy controls, error correction mechanisms and explicit responsibility for AI outcomes can reinforce trust. Organizations should also monitor trust longitudinally rather than measuring it only at the moment of adoption. A service can receive high initial acceptance and still lose trust after repeated errors, intrusive personalization or unexplained decisions.

From a research perspective, the evidence indicates several unresolved issues. First, trust is often measured as a general attitude even though consumers may trust some functions of an AI service and distrust others. Second, many studies are cross-sectional, making it difficult to understand how trust changes through repeated use. Third, research remains geographically uneven, with comparatively limited evidence from some regions and cultural contexts. Fourth, generative AI introduces new forms of interaction in which consumers evaluate not only recommendations and decisions but also AI-generated language, images and advice. These developments require more dynamic, service-specific and culturally sensitive models of trust.

5. Conclusions

AI-powered services are becoming a normal component of consumer markets, but technological availability does not automatically translate into consumer acceptance. Trust remains one of the key mechanisms through which consumers decide whether to use an AI service, disclose information, follow recommendations or delegate decisions. The literature reviewed in this paper indicates that trust is shaped by a combination of system, organizational and consumer-level determinants.

Perceived competence, reliability, responsiveness and usefulness form the functional foundation of trust. Transparency and explainability help consumers understand the role and limits of AI, while privacy protection, security and user control reduce perceived risk. Brand reputation, accountability and human support provide organizational assurance, especially when AI operates with high autonomy or in high-stakes contexts. Personalization can create value, but only when consumers perceive it as relevant rather than intrusive. Finally, individual characteristics and cultural context influence how these determinants are interpreted.

The future perspective is likely to move from the question of whether consumers trust AI to the more precise question of whether consumers trust AI appropriately. This shift is important because both under-trust and over-trust can create costs. Under-trust can prevent beneficial adoption, while over-trust can encourage consumers to rely on systems beyond their demonstrated capabilities. Future AI-powered services should therefore prioritize calibrated trust, human oversight, transparency, privacy and meaningful consumer control.

Generative AI and increasingly autonomous service agents will make these issues even more important. As AI systems begin to negotiate, recommend, purchase, advise and act on behalf of consumers, trust will become linked not only to the quality of an answer but also to the authority to act. Future research should examine trust dynamically, across repeated interactions and different levels of autonomy, while paying greater attention to cultural differences, vulnerable consumers and high-impact service contexts. In conclusion, consumer trust should be treated not as a marketing outcome that can be maximized, but as a relationship that must be earned, calibrated and continuously maintained.

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