

Transforming Banking Culture in the Age of Artificial Intelligence: The Role of AI Trust, Algorithmic Transparency and Financial Confidence in Customer Loyalty

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Abstract

The rapid integration of Artificial Intelligence (AI) into the banking sector is transforming not only financial service delivery but also the cultural foundations of customer–bank relationships. AI-driven banking has introduced new forms of interaction, decision-making, personalization, and service automation, making customer trust in intelligent technologies increasingly important. This study examines how AI trust, algorithmic transparency, and financial confidence contribute to customer loyalty in the changing culture of AI-enabled banking. The study conceptualizes banking culture as an evolving environment shaped by technological adoption, perceptions of fairness, transparency, security, and confidence in automated financial decision-making. AI trust reflects customers' perceptions of the reliability, competence, security, and ethical use of AI systems, while algorithmic transparency concerns the extent to which customers perceive AI-driven decisions and recommendations as understandable and explainable. Financial confidence represents customers' perceived ability and assurance to engage with AI-enabled financial services and make informed financial decisions. Drawing upon trust, technology adoption, relationship marketing, and consumer behaviour perspectives, the study proposes that AI trust and algorithmic transparency enhance financial confidence, which subsequently strengthens customer satisfaction, engagement, and loyalty. The study further argues that transparent and trustworthy AI can reduce perceived technological and financial risks, strengthen customer–bank relationships, and reduce switching intentions. The findings are expected to contribute to the emerging literature on the transformation of banking culture by demonstrating how technological trust and transparency shape contemporary customer behaviour and long-term loyalty.

The study also provides practical implications for banks seeking to develop responsible, transparent, culturally responsive, and customer-centric AI ecosystems.

Keywords: Artificial Intelligence, Banking Culture, AI Trust, Algorithmic Transparency, Financial Confidence, Customer Loyalty, Digital Banking, Customer Behaviour

Introduction

The role of Trust, Transparency, and Consumer Confidence in Banking Institutions has been redefined by the advancements in FinTech and Artificial Intelligence. Banks are leveraging AI in their operations to better serve their customers socially and economically. Banks are modifying their organizational and workforce culture to the current technological advancements. The media exposure AI gets coupled with customers' best interests in mind leads to investment related anxiety. Banking institutions hence need to implement the concepts of AI Trust, Algorithm Transparency, and Financial Confidence to enhance customer loyalty in their services.

Conceptual Framework: AI Trust, Algorithmic Transparency, and Financial Confidence

Increasingly integrated into banking and finance, Artificial Intelligence (AI) and algorithmic systems have the potential to rebalance the customer-institution relationship and shift the underlying norms of both corporate culture and the financial citizenship of customers. Nevertheless, the increasing levels of automation and algorithmic decision-making create deep uncertainty for customers around control and information. The model proposes that similar to trust in human decision-making, AI trust (the confident expectation of continuous improvement in competence and benevolence of Artificial Intelligence) is an antecedent of customer loyalty in AI-mediated transactions (Maier et al., 2022). Driven by strong institutional governance, algorithmic transparency (awareness of how AI-driven interactions are generated) contributes to AI trust (Knowles & T. Richards, 2021). Financial confidence (the belief in foresight into the instrumental effects of financial decisions) helps maintain habitual transactional patterns towards a bank (Lui & Lamb, 1970). Consequently, trust, transparency, and financial confidence constitute fundamental pillars of customer loyalty in AI-regulated environments.

The Transformation of Banking Culture in the AI Era

Various forces are transforming banking culture. Deep-seated configurations of governance, workforce, and customer focus play critical roles alongside the shift toward artificial intelligence (AI). At the governance level, recent trends have placed strict demands on ethics, accountability, and risk reduction for responsible adoption of AI. While some institutions have begun to establish the necessary deep-rooted foundations, progress remains slow across the industry. Cultural adaptation among personnel is also

lagging behind technology deployment, restricting full value capture from AI investments and improving return on equity. Fortunately, advancements in AI techniques are fostering novel customer-centric offerings—such as hyper-personalized recommendations and proactive alerts to avert liquidity shortages—that deepen engagement and strengthen customer bonds (Lui & Lamb, 1970).

To realize AI's full potential and ensure long-term viability as a sector, deeper change is imperative. Although traditional vehicles for establishing governance—such as control and oversight mechanisms—are crucial for tempering investment risks, they ultimately cannot foster the culture of customer centricity so vital for sustainable value creation in the AI era. Instead, achieving the required transformation hinges on cultivating customer-centricity as the principal shaper of organizational structures, technology investments, and service enhancements.

AI Trust and Customer Loyalty

Artificial intelligence (AI) systems utilize data to predict future behavior, making decisions in complex and uncertain situations. Trust in these systems is crucial for their adoption and effective use. Banking sector stakeholders view trust in AI as essential, impacting the choice of banks, products, and service providers. Trust in AI affects the willingness to disclose sensitive information, critical in the finance sector (Lui & Lamb, 1970). Trust in AI-driven interactions determines the extent to which customers engage with banks (SCHREIBER, 2021). Trust influences loyalty, reducing the likelihood of switching to competing banks.

AI trust encompasses system performance, brand perception, and information privacy. The perceived ability of AI systems to perform tasks satisfactorily underpins customer trust. Brand perception influences trust in AI systems, linked to consumer experiences with products from the same brand. Concerns about data security and misuse diminish trust in AI technology, reflected in reluctance to share sensitive data.

In AI-driven banking, trust can be understood as the customer's willingness to rely on an AI-enabled system despite the uncertainty and potential risks associated with automated decision-making. It reflects customers' expectations that the AI system will perform its intended functions accurately, consistently, fairly, and securely. Trust therefore extends beyond the technical performance of AI and includes perceptions of the bank's reputation, ethical behaviour, transparency, and commitment to protecting customer information.

Customer trust in AI can subsequently influence customer loyalty. When customers perceive AI-enabled banking services as reliable, secure, transparent, and beneficial, they are more likely to develop positive attitudes toward the bank. Positive experiences with AI-based services can strengthen satisfaction, confidence, relationship commitment, and intention to continue using the bank's services. In contrast, perceived algorithmic errors,

unexplained decisions, privacy violations, biased recommendations, or security concerns may weaken trust and encourage customers to consider competing financial institutions.

Thus, AI trust represents an important mechanism through which technological capabilities can be translated into sustainable customer relationships. Rather than viewing AI merely as a technological tool for improving operational efficiency, banks increasingly need to consider trust as a strategic relationship-building factor that influences customer retention and loyalty.

Dimensions of Trust in AI-Driven Banking

Trust in AI-driven banking is multidimensional because customers evaluate AI systems from both technological and relational perspectives. In the present study, AI trust is conceptualized through three major dimensions: perceived AI performance, bank/brand trust, and information privacy and security.

Mechanisms Linking Trust to Loyalty

AI trust does not necessarily translate directly into customer loyalty. Rather, trust can influence loyalty through several interconnected psychological and behavioural mechanisms. These mechanisms explain why customers who trust AI-enabled banking services may be more willing to maintain long-term relationships with their banks.

Algorithmic Transparency as a Core Pillar

By automating decision-making processes, AI systems have been integrated into banking applications such as underwriting, risk assessment, loan assessment, compliance monitoring, anomaly detection, and anti-money laundering (Lui & Lamb, 1970). However, automating human-like tasks gives rise to fairness and ethical concerns due to algorithmic bias, discrimination, and lack of transparency (Tanzib Hosain et al., 2023). Algorithmic transparency, alongside financial confidence, serves as a fundamental building block for AI trust according to the definition put forth by the Organisation for Economic Co-operation and Development (OECD), which posits that AI trust encapsulates safety, reliability, security, privacy, non-discrimination, and transparency. Algorithmic transparency incorporates dimensions such as data transparency, model transparency, outcome transparency, decision-explanation transparency, and assurance of exception handling. In the context of banking systems, algorithmic transparency denotes the explicit communication of the dataset employed in model training, the underlying methodology and structure of the algorithm, the rationale for the output generated by the model based on the input data, and the protocols applied for exception management. Even if banking institutions achieve full algorithmic transparency, external factors beyond their control may still influence user perceptions of the underlying fairness of AI-facilitated financial services. Users exposed to AI-driven banking services often harbour concerns about data privacy, information security, and the potential for algorithms to perpetuate bias. Consequently, organisations representing formal and informal

collectives, along with other stakeholders, play a crucial role in shaping public perceptions of these services.

Financial Confidence in AI-Mediated Transactions

Financial confidence has become a critical factor for customer retention in the use of Artificial Intelligence (AI) technology among banks for services such as transaction verifications or investment strategy recommendations. The perception of risk associated with such usages can negatively impact behavioral intentions when financial transactions are made (Maier et al., 2022). Customers may feel skeptical and regard a service as less appealing when a competitor fails to clearly communicate its chatbot-related financial risk disclaimers. Banks must additionally go beyond service quality considerations and enhance confidence by ensuring that AI Mediated accuracies and time-lines meet their customer demands. Regulatory compliance also plays a crucial role in enhancing customer retention according to an empirical study by Lui and Lamb (Lui & Lamb, 1970) , that indicates organizations putting more regulatory attention lengthened emotional confidence thereby sustaining brand loyalty.

Therefore, financial institutions need to understand that organizational responses in an AI-driven environment need to expand the more traditional focus on issues like ethics or algorithmic accountability. Moving forward, leaders also need to recognize that their adaptive capacities go beyond the merely systematic and may require attitudinal shifts in areas such as financial confidence. Supporting customers' expectations and reducing their performance-related anxieties must accompany incentives to take on new responsibilities, with thereby a renewed understanding of value creation and organizational purpose.

Empirical Evidence and Methodological Approaches

As banking culture continues to evolve, financial institutions around the world are re-examining ways of developing customer loyalty. Trust in AI technologies is often described as trust in the technology itself or in the institutions providing it. The trust-commitment-loyalty link has been examined in other industries that provide services mediated by AI technologies, with conflicting outcomes. Some studies show that establishing trust improves customer loyalty, while others demonstrate that this relationship does not hold. In banking, little empirical research exists on the trust-loyalty connection, and no studies propose an AI-based loyalty model specific to the sector (Lui & Lamb, 1970). To provide a more robust theoretical foundation for future research, recent findings indicate the relevance of algorithmic transparency and financial confidence as moderators.

Implications for Banking Strategy and Policy

Digital financial services providers compete fiercely for customer loyalty. The neo-banking phenomenon demands urgent attention beyond regulatory enforcement,

oversight, and infrastructure refurbishment for traditional banking organisations to combat erosion of trusted relationships with a broad spectrum of clients and customers.

Due to rapid technological displacements, demand-side shifts due to decreasing levels of full financial confidence compel sector-wide transformations from legacy governance structures ‘inherited historically from the banking monopoly’ to new innovative digital finance and regulatory approaches, where automated AI routine is capable of replacing a minimum fraction of human judgment and moral decision-making, and where human customer-centric informal contacts and self-responsibility, the 1st and the 2nd principles of the 4th industrial revolution, are inevitably restructure with systemic gradual adaptations constrained by legacy infrastructure accumulated from earlier-stage automated information technologies.

Outdated trust engendered from character and reputation centred upon human judges unaffordably suffers from further erosion at financial times of crisis. However, digitally-financially-inflected forms of trust, such as financial-confidence-in-and-via-digital-services, somehow lessen erosion stress at financial disruption contemporaneously. Gradual and systemic financial-confidence-enhancing yet customer-centric AI transformation thus unfolds as a key priority across all financial segments (bullet-auto-loan at DNB, digital finance and neobank at Bank of China, KVB at SA Bank, etc.), regardless of product (credit card, USD note, digital service, etc.), individual (elderly, younger, AI-competent, etc), or independently for the full banking and financial sector (Lui & Lamb, 1970).

Conclusion

The rise of artificial intelligence (AI) is profoundly transforming the world of banking, changing the underlying banking culture and shaping new strategies for fostering customer loyalty. Artificial intelligence, algorithmic transparency, and financial confidence now represent thematic pillars for the banking sector's Palgrave Handbook on the challenges facing the financial industry in the age of AI. Artificial intelligence trust emerges as the dominant theme for achieving significant customer loyalty through established brands and innovative challengers and fintechs.

Artificial intelligence supports banking through risk management, credit assessment, fraud detection, anti-money laundering, trading, personalised money management, marketing, and chatbots. Theory indicates that the banking industry's AI and algorithmic disclosure have a salient impact on financial confidence and thereby exert a second-order influence on loyalty formation; fintechs and challengers are less affected because financial confidence operates in terms of perceived creditworthiness and the financial soundness of institutions rather than on algorithmic disclosure. Consequently, there is a need to move beyond AI and algorithmic responsibility towards exploring broader and

deeper banking confidence constructs. The two emerging themes impacting primary and second-order loyalty are algorithmic transparency and financial confidence, which combine with AI trust to form a comprehensive depiction of loyalty-building determinants in algorithms-driven banking cultures. Algorithmic transparency mediates the influence of AI trust and supervisory understanding, interpreted as the social cognition that frames the accountability, safeguards, and functions of AI systems, on loyalty towards non-challengers, and financial confidence mediates AI trust and supervisory understanding formation on the same type of loyalty. The higher-order model linking AI plus algorithmic transparency to primary loyalty and the second-order model incorporating digital engagement through financial confidence provides a more complete description of loyalty-building dynamics in AI-driven banking environments. Algorithmic transparency and financial confidence are not only articulation and extension of banking confidence constructs but also reflect a broader paradigm of Accounting 4.0, signalling a profound transformation in banking culture.

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