

Original Research Article

The social impact of the application of artificial intelligence in FinTech: Consumer behavior and trust building

Zi Yin Zhou

The University of New South Wales, Sydney NSW, 2033, Australia

Abstract: This study addresses financial technology companies' application of artificial intelligence and its implications for consumer behavior, particularly financial technology companies' maintenance of relationships with consumers through trust establishment. As artificial intelligence technology in financial companies continues to expand at a high velocity, an increasingly high number of companies have started utilizing AI in offerings such as personalized investment advice, credit rating, and fraud analysis. Nevertheless, even with growing efficiency and individuality in service through AI application, information protection and information security concerns have increasingly become a matter for concern for consumers. In this study, case studies of AI application in platforms such as TikTok, Xiaohongshu, Meituan, and Taobao have revealed information protection, transparency in information use, and trust establishment have become key concerns in AI-powered platforms. According to the study, transparency, security, and user experiences have become key factors in shaping trust, and financial technology companies have to build long-term trust through effective establishment of privacy policies, enhancing information protection, and enhancing user experiences. In conclusion, in terms of balancing AI-powered service with trust establishment for consumers, financial technology companies have guidance in this study.

Keywords: Artificial intelligence; Fintech; Consumer behavior; Trust building; Privacy protection

1. Introduction

1.1. Research background and importance

The application of artificial intelligence (AI) in financial technology (FinTech) has experienced significant improvement, most notably in investment guidance, credit rating, fraud, and customer service. AI technology can effectively scan through big data, make predictive analysis, individualise experiences for users, and maximise operational efficiency. With the improvement in machine learning algorithms, such a system can make even more forecasts, simplify complex financial processes, and make real-time decisions^[1]. Despite, nevertheless, efficiency, accuracy, and individuality value that AI technology can deliver in financial operations, trust in such AI-powered financial platforms in terms of efficiency, security, and transparency continues to rank high in terms of widespread acceptance and success in financial operations. Consumer behavior in AI-powered FinTech platforms is guided by a variety of factors, including trust in such platforms' dependability, security, and transparency. Trust, being a key variable in consumer decision-making, plays a key role in guiding consumers' acceptance behavior towards AI-powered financial platforms, and therefore, trust is a key variable in AI financial service acceptance behavior. Trust is not only a psychological variable, but a key variable in financial access and financial inclusion, most notably in terms of an emerging financial ecosystem in an emerging digital economy. Thus, establishment and maintenance of a trustful relation between FinTech companies and consumers is a key variable in long-term maintenance of relations and widespread acceptance of AI financial service platforms^[2].

1.2. Research objectives

The main objective of this study is to explore artificial intelligence in shaping FinTech consumer behavior and understand how trust with consumers is developed and sustained in FinTech companies. There is not much work in current times in such a field in relation to artificial intelligence and its role in shaping consumer decision-making, specifically in FinTech. In an effort to bridge such a divide, therefore, in an attempt to explore in detail trust development strategies in FinTech companies, this study aims to specifically explore trust development strategies in FinTech companies. By researching consumer behavior and attitude, through such behavior and attitude, key factors in trust development will be determined in a study. In its part, meanwhile, such a study will explore transparency, security processes, and general experiences in trust development. Employing case analysis, in its qualitative form, in an attempt to make useful contribution to FinTech companies, such a study aims at leveraging AI-powered offerings and enhancing customer satisfaction in terms of trust delivery to consumers.

2. Literature review

2.1. Summary of existing research

In recent years, artificial intelligence (AI) in financial technology (FinTech) have drawn widespread academic concern^[3]. In specific, AI technology has changed the financial field in terms of investment, credit evaluation, fraud, and personalized financial service in terms of investment, credit evaluation, fraud, and personalized financial service. With big data analysis, machine learning, and language processing, AI can make a more reliable prediction about trends in the market, assesses consumer credit, and automatizes traditional financial service for efficiency and improvement in user experience. In such cases, trust in AI systems is a key role for consumers. According to current studies, not only is trust a basis for AI technology acceptance, but a key driving force for technology continuous use. Trust model establishment tends to care about technology perception of consumers, corporation transparency, security in terms of data, and other factors. In specific, transparency, protection of private information, and security have been considered key factors in terms of trust impact in minds of consumers^[4]. Thus, fintech companies have to establish trust relations through improvement in performance in such factors. Consumer behavior theory can act as a theoretical basis for explaining AI in fintech application, for example, “Technology Acceptance Model” (TAM) and “Diffusion of Innovation Theory” (DOI) have been extensively used in analysis of attitude and behavior of consumers towards emerging technology. These two theories reveal technology ease of use, function, and social impact in terms of impact in consumer decision, and trust is at a basis for supporting such factors.

2.2. Research gaps

Although the application of artificial intelligence in fintech has been studied by many scholars, there are still many research gaps in the specific impact of AI on consumer decision-making. Existing research mainly focuses on the optimization, application effect and operational efficiency of the technology itself, while there is little discussion on how AI changes consumers’ decision-making process, consumption behavior and attitude towards financial services. Especially in the context of personalized financial services, how AI shapes consumers’ trust, choice preferences and investment decisions has not been fully empirically verified. In addition, there are certain limitations in the research on trust building. The current trust model is mostly a single-dimensional framework, lacking a comprehensive analysis of AI trust building. Traditional trust research focuses on the overall trust in

financial institutions, while research on how specific AI applications affect consumers' trust, especially in terms of information transparency, security assurance and service personalization, is relatively scarce. Therefore, building a more comprehensive trust building framework that can combine consumer behavior theory and be specific to the application and technical characteristics of AI is still a key direction for future research.

3. Research methods and case analysis

This study uses a case analysis method to analyze two specific AI-driven platforms - TikTok and Xiaohongshu (social media platform) and Meituan and Taobao (e-commerce platform) to explore the impact of AI on consumer privacy, data use and trust building. Through case analysis, the study will focus on the application of artificial intelligence in these two different fields, revealing their practices and challenges in data protection, privacy issues and trust building.

Case 1: TikTok and Xiaohongshu - the impact of privacy issues and consumer behavior

On social platforms including TikTok and Xiaohongshu, artificial intelligence algorithms scan for user-created contents and its metadata in order to apply personalized recommendations in terms of improving user experiences. Yet, excessive use of such platforms' dependability in terms of data has also generated widespread concern regarding protecting privacy and utilizing data. User behavior, preference for interests and such information is collected by the platform in order to deliver personalized recommendations for contents to its users, but in the process, it is confronted with an issue regarding protecting user privacy and security in terms of data.

Koohang et al. (2021) have argued that security and privacy concerns of social platforms have a direct relation with trust in terms of its users. Empirical studies revealed that social platforms must pay additional care towards feelings of its users about privacy and use proper tools for such feelings' evaluation. In developing trust relations, such platforms must not only provide personalized service, but must make security protocols for protecting privacy in a manner that will not demolish trust in its users^[5]. Di Minin et al. (2021) supplemented that social platforms' information protection protocols are adopted post-factum, such as GDPR laws. Nevertheless, such protocols cannot manage effectively with information abuse and information leak, and platforms must use stricter preventive protocols^[6].

Therefore, in both scenarios of both TikTok and Xiaohongshu, artificial intelligence not only forms the minimum technology for recommendation, but a critical component of trust establishment and protecting privacy. As long as the platform can strike a balance between AI personalized recommendation and protecting users' privacy, it will effectively promote trust establishment and platform stickiness, and then drive increased user activity and contribution.

Case 2: Meituan and Taobao - Privacy Data Leakage and Legal Supervision

E-commerce platforms such as Meituan and Taobao have artificial intelligence recommendation platforms, with an intention to make experiences for users better and make purchase recommendations personalized through big data analysis. Nevertheless, such platforms have a danger of information leak during operations of information collection and recommendation platforms, and hence a loss in trust of consumers in a platform.

Zhu, Srivastava, and Sutanto (2020) stressed that Chinese platforms' privacy policies have poor implementations, and consumers lack trust in such policies^[7]. As per studies, despite high concerns about privacy amongst Chinese consumers, platforms' privacy policies lack transparency and proper implementations. As such, platforms must implement stricter protocols for protecting privacy in an attempt to fill gaps in present privacy

policies. As per Morić et al. (2024), platforms must abide by international protocols for protecting privacy, such as GDPR, in an attempt to gain trust amongst consumers in platforms. By investing in stricter protocols for protecting data, such as data anonymization and technology for enhancing privacy, platforms can avert a leak in privacy and gain trust amongst consumers in platforms^[8].

In the case of Meituan and Taobao, although AI-powered personalized recommendation can promote a better user experience, it brings a risk of information leak and information abuse for both platforms. As such, both platforms have to make a balancing act between personalized recommendation and information protection in a manner that can secure consumers' information, and in the process, establish a strong trust relation with them.

4. Conclusion

This study explores AI application in financial technology, with a view to discussing AI impact on trust and behavior in its widespread use. By taking case studies of platforms such as TikTok, Xiaohongshu, Meituan, and Taobao, it found that AI-powered personalized recommendation platforms make platforms easier for use but raise concerns regarding information protection and securing information. Social platforms (like TikTok and Xiaohongshu) apply AI technology for enriching contents and experiences for use. As much as it has boosted use stickiness, it boosted concerns in terms of information collection and information leakages. E-commerce platforms (like Meituan and Taobao) rely on AI for accuracy in marketing and predicting behavior in terms of use. As much as it enriches use experiences, it suffers from abuse of information and poor performance in protecting information, an issue that has hurt trust in terms of trust in platforms for use by consumers.

Research shows that trust between financial technology and digital platforms and consumers is a key driving force for long-term, healthy development in AI in financial technology and digital platforms. As long as individual privacy can be kept in proper proportion with technology use, develop transparent policies for controlling information, and apply compliance requirements in a stringent manner, it will serve to promote trust between platforms and consumers. In addition, financial technology companies must apply increasingly complex privacy-preserving technology in a manner capable of protecting information security, and make AI system decision processes increasingly transparent for use in an effort to counteract information opacity-related trust crises. Overall, trust establishment must include careful consideration in terms of technology, security, legal supervision, and user perception. Only through protecting the rights and interests of use can artificial intelligence actually contribute to healthy development in the financial technology field.

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