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The Influence of Managerial Attitudes and Perceptions on Artificial Intelligence Adoption in Pakistan's Banking Industry: The Moderating Role of Technological Infrastructure



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Abstract

Artificial Intelligence (AI) has emerged as a transformative technology in the banking industry, improving operational efficiency, decision-making, fraud detection, and customer service. This study examines the factors influencing AI adoption in Pakistan's banking industry while investigating the moderating effect of technological infrastructure. A quantitative research approach was adopted using a structured questionnaire administered to 199 managers working in commercial and Islamic banks in Islamabad, Lahore, and Karachi. Data were analyzed using SPSS Version 26, employing descriptive statistics, reliability analysis, correlation analysis, multiple regression, hierarchical regression, and an independent-samples t-test. The findings revealed that Managerial Attitudes and Perceptions positively and significantly influenced AI Adoption ($\beta = 0.430$, $p < .001$), while Technological Infrastructure also had a significant positive effect on AI Adoption ($\beta = 0.297$, $p < .001$). The regression model explained 47.4% of the variance in AI Adoption ($R^2 = 0.474$; Adjusted $R^2 = 0.469$; $F = 88.31$; $p < .001$). Furthermore, technological infrastructure significantly moderated the relationship between managerial attitudes and AI adoption, indicating that stronger technological capabilities enhance the effectiveness of managerial support in implementing AI. Comparative analysis also showed that commercial banks possessed stronger managerial support and technological infrastructure than Islamic banks. The study concludes that successful AI adoption in Pakistan's banking industry requires both positive managerial attitudes and robust technological infrastructure. The findings contribute to the Technology Acceptance Model (TAM) and the Technology–Organization–Environment (TOE) framework while providing practical recommendations and an implementation roadmap to support AI adoption in the banking sector.

Keywords: Artificial Intelligence Adoption, Managerial Attitudes and Perceptions, Technological Infrastructure, Banking Industry, Pakistan, Technology Acceptance Model, Technology–Organization–Environment Framework.

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