


# Chapter 6


## Measuring FinTech Adoption in Banking: Constructing Indices and Assessing Impacts on Profitability, Stability, and Institutional Diversity

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### **ABSTRACT**

*The chapter explores the measurement and impact of FinTech adoption within the banking industry, presenting a structured methodology for constructing a FinTech Adoption Index (FAI) that integrates multiple dimensions such as digital presence, automation, open APIs, artificial intelligence, and FinTech partnerships. It examines how these digital innovations influence banks' profitability, operational stability, and institutional diversity across conventional, Islamic, foreign, and digital-only models. Empirical results demonstrate that higher FinTech maturity enhances efficiency and competitiveness but introduces governance and cybersecurity challenges. Through real-world cases from DBS Bank and the State Bank of India, the study validates the transformative potential of data-driven innovation in achieving sustainable financial performance and inclusive digital growth.*

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## 1. INTRODUCTION

Financial Technology (FinTech) represents an extreme transformation that is rocking the banking sector redefining the process of delivering, receiving, and experiencing financial services. Digitalization of banking, automation, Artificial Intelligence (AI), and blockchain technology have revolutionized the traditional banking mode to lead to the greater efficiency, transparency, and customer-centric innovation. It has brought its own set of complications to the task of defining the level and quality of FinTech implementation in different banking organizations as well (Shmuratko and S. A. Sheludko, 2021). This chapter aims at the creation of a comprehensive analytical model of evaluating the magnitude of FinTech acceptance, its connection with the profitability and stability of banks and its connection with institutional variety. It comes up with technological innovation, digital engagement, and operational automation indices, which enable comparative and empirical observation in the banking segments. The theoretical and data-driven knowledge expressed by the study is added to the process of understanding the role of the digital transformation in the financial performance, market position, and the resilience (Darji et al., 2025). This chapter is a roadmap that may be applied by policy makers and other interested practitioners to evidence-based approaches to assessing and optimizing plans to adopt FinTech.

### 1.1. Evolution of FinTech in the Banking Landscape

FinTech is not in the margins of the financial system anymore, but a component of the banking system. The first steps in ele-transactions and online banking have aided to bring new hi-tech necessities such as artificial intelligence credit ratings, blockchain settlement systems, and fully online neobanks. Convergent trend that takes place between technology and finance also marks this transformation that redefines what is expected by the customers and the market competition. To produce real-time analytics and make auto decisions, banks have left their ancient systems to develop agile and data-driven systems (Le et al., 2024). In addition, the co-innovation culture has been established through FinTech partnerships, such as open banking APIs, strategic alliances, and regulatory sandboxes. Mobile usage and the application of digital wallets is one of the fast-growing adoptions of technologies that transform access to financial services into a democratic one. FinTech innovation is, hence, a structural change, rather than a technological change, which has impacted the governance, business models, and risk structures. This evolution needs to be known in order to place the reasoning on which the strength of adoption is gauged among banks and what it means in the financial performance (Basdekis et al., 2022). The figure 1 demonstrates the aspect of FinTech adoption dimensions

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