


# Chapter 2

## Measuring FinTech Adoption in Banks: Construction of a Composite Index and Its Impact on Financial Performance and Stability

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### **ABSTRACT**

*The chapter explores the infiltration of FinTech into the banking sector by coming up with a multifaceted, bank-level composite index, as well as evaluating the consequences on financial performance and stability. Leaving behind uncomplicated*

DOI: 10.4018/979-8-3373-6244-1.ch002

*single-proxy indicators, the paper describes FinTech adoption as a combined process that includes the uptake of digital services, data analytics, platform integration, regulatory technology, and systems of governance. The findings of the panel based empirical research indicate that the adoption of FinTech has a positive impact on the financial performance of banks, but its results on stability are inconsistent and depend on the quality of governance and sustainability oriented position. The results highlight the mediating role of the ESG performance, and support the need to have responsible and well-managed digital transformation in order to achieve sustainable and resilient banking results.*

## **1. INTRODUCTION**

The financial technology (FinTech) is a wave of transformation in the banking sector around the entire world, emerging due to the blistering spread of the digital payment systems, artificial intelligence-supported analytics, mobile banking solutions, big data solutions, and regulatory technologies. These technologies have not only advanced past periphery service upgrades, but now have integrated into the mainstream banking services. Consequently, the use of FinTech has essentially changed the way banks provide financial products and services, risk management, resource allocation, and retaining competitive edge in a more digitized financial ecosystem. Something that was seen as an optional or peripheral innovation, has now become a strategic requirement to banks that are eager to improve performance in a way that does not compromise financial stability. Empirical studies on the developed and developing economies show that the use of FinTech is often linked to better profitability, cost-effectiveness, and operational performance, which are often linked to a reduction in transaction expenses and improved information-processing capacity (Singh et al., 2021; Baker et al., 2023; Kaddumi et al., 2023). Yet these advantages are not unconditional or even homogenous. Previous researchers emphasize that the performance results of FinTech adoption are significantly different based on the regulatory settings, competitive factors, and the internal institutional abilities (Nguyen et al., 2022; Kayed et al., 2025). These results imply that FinTech is seen as a performance-enhancing mechanism that can only be effectively implemented in more extensive banking processes and governance structures. In addition to the performance outcomes, an emerging body of literature has discussed the consequences of FinTech on financial stability. A number of studies report that the insolvency risk mitigation and better bank resilience with the assistance of FinTech can be done through data-driven decision-making (Stankevičienė and Kabulova, 2022; Ahmad et al., 2025). Simultaneously, the issues about unintended consequences of the fast digitalization have been raised. Enhanced exposure to cyber threats, operational risks,

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