


Chapter 5

FinTech Innovations for Climate Transition in Oman: The Role of Technology, Policy, and Disruptive Models in Sustainable Development

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ABSTRACT

This chapter explores the evolving role of Financial Technology (FinTech) in supporting climate transition, focusing on its influence on sustainable development, environmental conservation, and socio-economic dynamics. It examines the interplay between FinTech innovations and climate goals, highlighting the opportunities and challenges in utilizing FinTech for sustainable urbanization, financial inclusion, and resource management. The chapter discusses the impact of independent variables such as FinTech development, environmental transition, research and development (R&D), and policy frameworks on the achievement of climate transition goals. The findings reveal significant correlations between FinTech indicators and environmental

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factors, demonstrating FinTech's potential in driving sustainable investments and mitigating environmental risks. Additionally, the chapter offers insights into aligning FinTech growth with sustainability objectives and provides recommendations for integrating FinTech into sustainability strategies.

INTRODUCTION

The FinTech ecosystem, as depicted by Alt et al. (2018) and Lee & Shin (2018), is a dynamic and interconnected network of FinTech startups, investors, regulators, and traditional financial institutions. These stakeholders collaborate to drive innovation, enhance financial services, and provide greater accessibility. FinTech startups, with their agile and technology-driven solutions, disrupt conventional banking practices by offering services such as digital payments, peer-to-peer lending, and blockchain-based financial tools. Regulatory bodies, often adapting to the evolving ecosystem, create frameworks that support innovation while ensuring financial stability. Traditional financial institutions, realizing the potential of FinTech, are engaging in strategic partnerships with these startups to modernize their services, enhance customer experience, and stay competitive (Anagnostopoulos, 2018).

This collaboration has led to the rise of innovative financial products such as robo-advisors, which have redefined asset management by utilizing algorithms to provide automated investment advice. This shift towards automation and data-driven decision-making is reshaping the financial services industry (Gabor & Brooks, 2017; Goldstein et al., 2019). Moreover, as FinTech grows, it is increasingly being linked with sustainability goals, giving rise to the concept of “green FinTech.” Green FinTech refers to the use of financial technology to support environmentally sustainable practices and promote investments that drive climate resilience (UNFCCC, 2015). The fusion of financial technology and sustainability provides solutions for addressing climate-related risks, such as carbon trading platforms using blockchain for transparency and efficiency, and ESG (Environmental, Social, and Governance) investing, where FinTech platforms enable investors to direct funds toward environmentally conscious ventures (Tao et al., 2022).

Sustainability itself, originating from the Brundtland Report of 1987, encompasses social, economic, and environmental dimensions. Over time, the concept has been interpreted in various ways, often blurring the lines between long-term environmental sustainability and short-term welfare gains (Brundtland, 1987). However, the growing understanding of sustainability highlights the critical need to balance economic growth with resource conservation and social equity. Financial institutions are increasingly integrating sustainability into their operations and decision-making processes, with initiatives like the United Nations Principles for

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