

Chapter 13

Opportunities, Enablers, and Challenges of Smart Technologies and AI Adoption in SMEs

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ABSTRACT

SMEs play a vital role in global economies, contributing significantly to job creation and economic growth. The rapid evolution of smart technologies and AI presents both opportunities and challenges for SMEs. This chapter provides a comprehensive overview of the key opportunities, challenges, and enablers related to the adoption of smart technologies and AI in SMEs. It explores the landscape of SMEs in the context of adopting these technologies, covering opportunities and challenges. It concludes by discussing potential future prospects for SMEs in the realm of smart technology and AI integration, setting the stage for future research. This guide offers practical implications for SMEs, business leaders, researchers, and policymakers, facilitating their transformation into technology-driven organizations. The findings highlight the significance of addressing challenges proactively and leveraging enablers to harness the full potential of smart technologies and AI for sustainable growth and competitive advantage.

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INTRODUCTION

In the ever-evolving tapestry of global business, the role of technology, particularly Smart Technologies and Artificial Intelligence (AI), has become increasingly prominent (Giuggioli & Pellegrini, 2023; Hossain et al., 2021). This paradigm shift is not only reshaping the strategies of multinational corporations but is also extending a transformative invitation to the often-overlooked players in the business landscape – Small and Medium-sized Enterprises (SMEs) (AlZayani, Hamdan, & Shoaib, 2023). SMEs form the backbone of economies worldwide, contributing significantly to job creation and economic growth (Drydakis, 2022; Lu, Wijayaratna, Huang & Qiu, 2022; Tushar & Sooraksa, 2023). As SMEs stand at the crossroads of tradition and innovation, the decision to integrate smart technologies and AI is not merely a technological choice; it is a strategic imperative that can redefine their operational efficiency, market presence, and overall sustainability (Cousté et al., 2022; Hossain et al., 2021; Hossain et al., 2022; Mohsin et al., 2021).

In recent years, the rapid advancement of smart technologies and artificial intelligence (AI) has presented both opportunities and challenges for SMEs. In general, the integration of smart technologies and AI offers SMEs a wealth of opportunities to enhance their operations, from efficiency gains to data-driven decision-making (Lu et al., 2022; Vuong et al., 2020). The integration of AI technology stands as a pivotal and indispensable remedy in upholding the sustainability of SMEs, particularly in the aftermath of the global pandemic. The incorporation of AI technology not only serves as a critical intervention for SMEs but also positions itself as a transformative force, enabling these enterprises to convert challenges into avenues for enhanced performance and increased survival rates (Dwivedi et al., 2021). Existing research predominantly centers on elucidating the challenges encountered by SMEs and delving into the dynamics of organizational participant interactions amidst crises. This strategic employment of AI emerges as a linchpin for SMEs, offering a multifaceted approach to not only navigate challenges but also to capitalize on emergent opportunities, thereby fortifying their resilience and ensuring sustained viability in the contemporary business landscape.

SMEs must embrace emerging technologies to improve, alter, or potentially revolutionize their business models for sustained competitiveness. However, in contrast, these advantages come hand in hand with a range of challenges, including the financial burden of implementation, a shortage of technical expertise, data security concerns, employee resistance, regulatory complexities, scalability considerations, and ethical dilemmas. In addition, SMEs may face challenges in terms of lacking the essential strategies, knowledge, and resources needed to leverage AI technology. A considerable number of SMEs, particularly those in manufacturing, are actively exploring whether AI technology can offer solutions to their specific needs.

The purpose of this chapter is to provide an overview of the key opportunities, challenges and enablers associated with the adoption of smart technologies and AI in SMEs. This chapter explores the dynamic landscape of SMEs in the context of adopting smart technologies and artificial intelligence (AI). The chapter delves into the multifaceted opportunities these technologies offer, the critical enablers that facilitate their successful integration, and the complex challenges that SMEs encounter in their journey toward becoming technology-driven organizations. The remainder of this chapter is structured as follows. The chapter begins by providing an overview of smart technologies and AI in SMEs. It then systematically categorizes existing literature, deductively partitioning it into two primary sections: a) the opportunities enabled by smart technologies and AI within SMEs, and b) the challenges they face, along with the essential enablers needed for successful adoption. The chapter concludes by delving into

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