


Chapter 12

The Role of AIS in Enhancing Small Business Agility and Sustainability in Industry 5.0

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ABSTRACT

This study explores the impact of AIS on improving the Agility and sustainability of small businesses in the context of Industry 5.0. This chapter highlights how AIS enables real-time data tracking, cost management, and resource optimization, enhancing decision-making and operational efficiency to promote SMEs' Agility and sustainability. Through the integration of AIS, small businesses can enhance their ability to effectively manage supplier data, monitor sustainability metrics, and optimize supply chain processes. The study reveals that AIS greatly enhances small business agility by facilitating rapid responses to market changes and optimizing resource utilization. Additionally, it promotes sustainability by reducing waste and improving resource management efficiency. The practical implications of this research encompass improved decision-making, effective cost control, and increased

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employee engagement. Theoretical contributions emphasize the importance of AIS in achieving strategic and sustainable business outcomes in Industry 5.0, aligning with dynamic capabilities

1. INTRODUCTION

Industry 5.0 is a paradigm shift that combines advanced technologies with human intelligence to create more resilient, sustainable, and human-centric industries. This transformation presents challenges and opportunities for small businesses, which need Agility and sustainability for success (Aheleroff et al., 2022; Engelbrecht et al., 2024; Mourtzis et al., 2022). Accounting Information Systems (AIS) play a crucial role in this context, providing tools and processes to collect, store, manage, process, retrieve, and report financial data (Aladwan & Al-Adwan, 2023; Al-Hattami et al., 2024; Koundal et al., 2023). Modern AIS incorporates advanced technologies like AI, blockchain, cloud computing, and big data analytics, enabling businesses to gain deeper insights, enhance decision-making, streamline operations, and maintain regulatory compliance (Ajayi-Nifise et al., 2024; Bose et al., 2023; Prasetyaningrum & Sonjaya, 2024).

Small businesses drive industrial development, innovation, and economic growth through Agility, entrepreneurial spirit, and rapid technological adaptation, ensuring continuous evolution and competitiveness in the industrial landscape (Hasan et al., 2024; Khan, 2023). Agility is crucial for small businesses, as they often operate with limited resources and face intense competition (Chan et al., 2019; Gerald et al., 2020). AIS enhances Agility by providing real-time financial insights, facilitating strategic planning, and enabling efficient resource allocation (Al-Hattami et al., 2022). Sustainability involves adopting practices that ensure long-term economic viability, social responsibility, and environmental stewardship (Dagilene & Štutienė, 2019). AIS promotes transparent and ethical financial practices, improves resource management, and supports sustainability reporting, aligning operations with sustainable development goals (SDGs) enhancing reputation and competitive edge (Watson et al., 2021).

In the context of Industry 5.0, small businesses are increasingly recognizing the need to leverage AIS as a financial tool and a strategic asset. Accounting information systems (AIS) are becoming a crucial tool for small businesses in the era of Industry 5.0 (Andriawan et al., 2024; Olsen, 2023). Technological advancements like AI, Machine Learning, Blockchain, Cloud Computing, and Big Data Analytics are driving transformation in small businesses, improving predictive capabilities and resource allocation (Lee & Shin, 2020; Ramírez, 2023). Blockchain technology ensures data integrity, reduces fraud, and simplifies auditing processes (Fullana &

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