

# Digital Transformation and Competitiveness of SMEs in the UAE: A Review Paper on Challenges and Strategic Responses

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## Abstract

Small and Medium Enterprises (SMEs) are vital engines of economic growth, employment, and innovation, yet they continue to face persistent challenges that threaten their long-term sustainability, particularly in the Gulf and UAE context. This review paper highlights that SMEs in the region encounter significant barriers, including market limitations, shortages of digital skills, regulatory hurdles, and modest innovation outcomes. Moreover, although SMEs play a central role in driving non-oil growth, their overall competitiveness is constrained by fragmented resources and limited absorptive capacity. To address these challenges, several strategies emerge as critical: improving access to finance, fostering digital transformation, enhancing human capital, strengthening innovation ecosystems, and supporting internationalization. Together, these approaches have the potential to transform SMEs into resilient and globally competitive players. By situating these strategies within the UAE's distinctive institutional and cultural environment, this paper offers both theoretical insights and practical guidance for policymakers and entrepreneurs.

**Keywords:** Digital, Transformation, SMEs, Challenges, Strategies, UAE

## Introduction

Small and Medium Enterprises (SMEs) have long been regarded as the backbone of economies, valued not only for their sheer numbers but also for their pivotal role in job creation, entrepreneurship, and innovation (Hassan, Nasir, Khairudin, & Adon, 2020). Globally, they represent more than 90% of registered firms and generate over half of total

employment, underscoring their contribution to inclusive growth and economic resilience (World Bank, 2024). In regions such as Europe, SMEs contribute nearly 56% of GDP, positioning them as vital engines of competitiveness and localized innovation (Brodny & Tutak, 2022). Their significance is even greater in emerging economies, where they provide livelihoods, reduce poverty, and strengthen community resilience in areas underserved by large corporations. Beyond their economic weight, SMEs embody entrepreneurship in practice. As Schumpeter (1934) argued, entrepreneurship is the capacity to introduce innovations that reshape industries and societies. Due to their relatively smaller size, SMEs tend to be more agile and adaptive than larger firms, enabling them to experiment, take risks, and respond quickly to market changes (Olmos-Peñuela, García-Granero, Castro-Martínez, & D'Este, 2017). In today's hyper-connected and digitized markets, this agility has become both a survival mechanism and a strategic advantage. Despite their importance, SMEs—particularly in the United Arab Emirates (UAE) face mounting pressures in an era defined by digital transformation. The UAE's vision for economic diversification and non-oil growth positions SMEs as critical drivers of innovation and global competitiveness. Yet, many SMEs struggle with fragmented resources, digital skill shortages, regulatory complexities, and modest innovation outcomes. These challenges not only hinder their competitiveness but also limit their ability to align with national transformation agendas such as UAE Vision 2030 and Centennial 2071. This review paper therefore examines the digital transformation and competitiveness of SMEs in the UAE, highlighting the challenges they encounter and the strategic responses required. By situating these issues within the UAE's unique institutional and cultural context, the study establishes why digital transformation is not merely a technological shift but a strategic imperative. In doing so, it underscores the urgent need for tailored strategies that empower SMEs to overcome barriers, unlock innovation, and position themselves as resilient contributors to the UAE's future economy.

#### *SMEs in the Gulf and UAE Context*

SMEs form the backbone of Gulf Arab economies. Across the region, they represent approximately 90% of all businesses and employ more than 80% of the workforce (Abu Bakar & Ahmad, 2019). Their GDP contributions range between 30–60%, but this figure still falls short of the global average of around 40% in emerging markets (Al Saleh, 2022). Recognizing this gap, governments in the Gulf—including the United Arab Emirates (UAE)—have prioritized SME development as a cornerstone of economic diversification strategies, particularly as they seek to reduce dependence on oil revenues.

In the UAE, SMEs play a pivotal role in driving non-oil growth. They account for more than 50% of GDP and employ over 85% of the private-sector workforce (UAE Ministry of Economy, 2021). Dubai, in particular, is home to more than 200,000 SMEs, many of which operate in trade, services, and manufacturing. Manufacturing SMEs are central to Dubai's *Industrial Strategy 2030*, which envisions building globally competitive industries through digitalization, innovation, and technology adoption.

Despite this strong policy foundation, UAE SMEs face persistent constraints. Access to finance is one of the most pressing challenges: SME lending accounts for less than 5% of total bank loans in the UAE—well below international benchmarks (Al Saleh, 2022). In comparison, in China, fintech-driven platforms such as MYBank have extended over USD 300 billion in loans to SMEs through fast, data-driven lending models (Fang, Hasan, & Zhou, 2021). The UAE's

relatively small domestic market also limits scalability, and while Gulf Cooperation Council (GCC) integration offers growth opportunities, SMEs face barriers in customs harmonization, logistics, and digital infrastructure (PwC, 2020).

The digital skills gap adds to these constraints. While the UAE boasts one of the world's highest rates of smartphone penetration and digital adoption, advanced technical expertise is relatively scarce. Many SMEs lack the in-house competencies needed to strategically deploy IT to support innovation and corporate entrepreneurship (Al-Aali & Teece, 2014). For manufacturing SMEs in Dubai, this gap is particularly concerning, as global competitiveness increasingly depends on leveraging digital manufacturing, AI, and Industry 4.0 practices.

Although SMEs are vital to the UAE economy, their innovation outcomes remain modest. Studies reveal that while Emirati entrepreneurs recognize innovation as essential, fewer than half of SMEs consistently engage in innovative practices, and many struggle to produce offerings that customers perceive as innovative (Sokari et al., 2013; Ozer & Dayan, 2015; Abudaqa et al., 2022). This disconnect raises concerns about the long-term competitiveness and sustainability of the SME sector. While IT capabilities are acknowledged as valuable resources that enhance competitiveness (Chen et al., 2015; Benitez, Arenas, & Castillo, 2022), evidence is fragmented regarding how these capabilities translate into innovation outcomes within SMEs. Many studies focus on larger firms or treat IT adoption as a binary measure, failing to capture the nuanced ways in which SMEs apply technology to foster innovation (Zaidan, 2017). Second, the mediating role of corporate entrepreneurship—through dimensions such as venturing, proactiveness, and self-renewal—is underexplored. Entrepreneurial behaviors may serve as the channels through which IT competencies are converted into tangible innovation and performance outcomes, yet empirical evidence in this area is sparse (Mohammed et al., 2024).

Third, context-specific research from the Gulf, and particularly Dubai's manufacturing SMEs, remains scarce. Most existing SME studies are drawn from Western or Asian contexts, limiting the applicability of insights to the UAE's unique institutional and cultural setting.

Despite their importance, SMEs worldwide and in the UAE face persistent challenges that constrain their growth and competitiveness. One of the most cited obstacles is financial access. Traditional banks often perceive SMEs as high-risk due to limited credit histories and collateral, resulting in restricted lending (Beck & Demirgüç-Kunt, 2006; OECD, 2022). In the UAE, this is compounded by the underdevelopment of venture capital ecosystems and limited adoption of alternative financing models such as crowdfunding.

Another key challenge is market limitations. For SMEs in small domestic markets, scaling operations is inherently difficult. Although Dubai positions itself as a global trade hub, regulatory inconsistencies and logistical inefficiencies across GCC borders hinder seamless SME expansion (Al Saleh, 2022). Moreover, many SMEs struggle to penetrate global value chains, which increasingly demand compliance with international standards, certifications, and sustainability requirements.

Human capital constraints also weigh heavily on SMEs. Many rely on semi-skilled or low-cost labor, which limits their ability to transition to knowledge-intensive and innovation-driven

activities (Muriithi, 2017). The shortage of advanced digital skills, particularly in AI, data analytics, and automation, is a critical bottleneck for SMEs seeking to compete in technology-driven industries (PwC, 2020).

Regulatory and institutional barriers further complicate SME growth. Licensing requirements, administrative costs, and fragmented policy frameworks can burden smaller firms disproportionately compared to larger corporations (Fjose, Grünfeld, & Green, 2010). While the UAE has streamlined many processes, SMEs often cite bureaucratic hurdles and inconsistent policy implementation as obstacles to expansion.

Finally, the rapid pace of digital transformation presents both opportunities and risks. While digitalization enables efficiency and new business models, many SMEs lack the absorptive capacity to integrate new technologies effectively (Moeuf et al., 2018). Cybersecurity risks and data privacy concerns also pose new vulnerabilities, particularly for SMEs that lack robust IT governance structures.

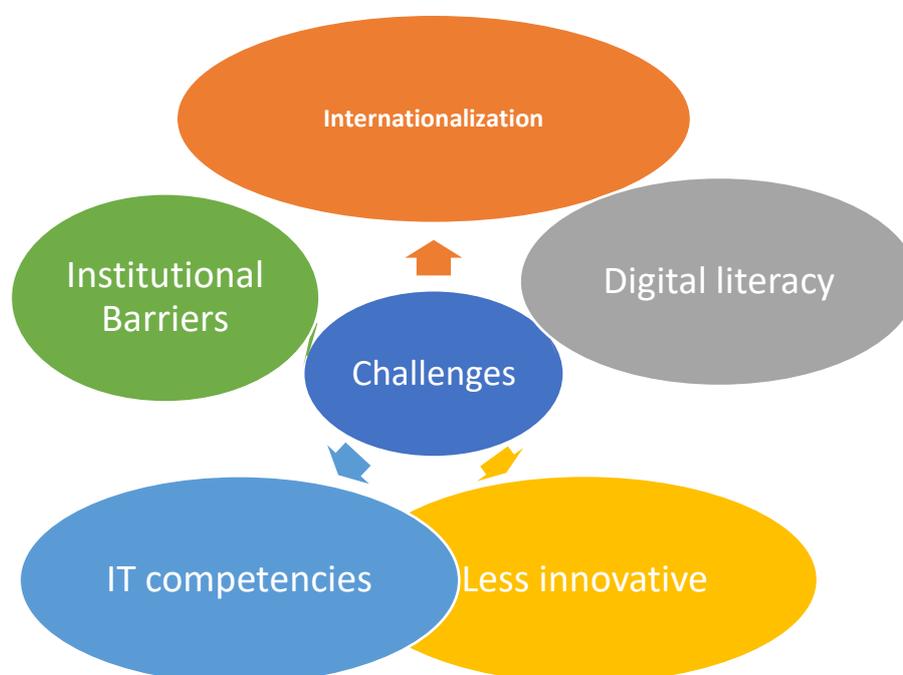


Figure 1: Issues facing SMEs in the UAE

#### *Strategies and Factors to Improve SMEs*

The challenges faced by SMEs, though substantial, have spurred governments, development agencies, and scholars to explore strategies that can improve their performance and long-term sustainability. In both developed and developing contexts, a recurring theme in the literature is that the survival and growth of SMEs depends not only on internal capabilities but also on external support ecosystems that enable access to finance, technology, markets, and talent (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2017). Within the Gulf region, and the UAE in particular, the policy environment has been increasingly geared toward building such an ecosystem—yet success depends on how well SMEs themselves can adopt, adapt, and align these strategies with their unique contexts.

One of the most widely emphasized strategies for SME development is facilitating access to finance. Lack of adequate financing remains the most common barrier for SMEs worldwide, particularly in emerging economies (Beck & Demirgüç-Kunt, 2006; OECD, 2022). In the UAE, where SME lending accounts for less than 5% of total bank loans, this constraint is especially severe (Al Saleh, 2022). To address this, governments and financial institutions have introduced measures such as credit guarantee schemes, fintech-driven micro-lending, and venture capital initiatives. Research shows that technology-enabled financing platforms—exemplified by China’s MYBank, which leverages big data to assess SME creditworthiness—can significantly expand SME access to working capital without increasing default risks (Fang, Hasan, & Zhou, 2021). Adopting similar models in the Gulf could help SMEs overcome structural financing limitations and unlock entrepreneurial growth.

A second key strategy is digital transformation and technology adoption, which enables SMEs to enhance productivity, reduce transaction costs, and expand their market reach. Numerous studies confirm that IT capabilities such as integration, flexibility, and alignment are critical enablers of SME competitiveness (Chen et al., 2015; Benitez, Arenas, & Castillo, 2022). For SMEs in manufacturing, digitalization facilitates automation, predictive analytics, and real-time coordination with suppliers and customers, thereby improving operational efficiency and innovation outcomes (Moeuf, Lamouri, & Pellerin, 2018). In the UAE, policy frameworks like *Dubai Industrial Strategy 2030* emphasize Industry 4.0 adoption among SMEs, but many firms still lack the competencies to implement these technologies strategically (PwC, 2020). Bridging this gap requires not only infrastructure but also training, mentoring, and sector-specific innovation hubs that help SMEs develop the necessary digital skills and absorptive capacity (Ramanathan, Subramanian, & Yu, 2017).

Closely tied to digital transformation is the development of human capital and skills upgrading. SMEs are often constrained by shortages of managerial expertise, technical knowledge, and digital literacy, which undermine their ability to adopt new technologies and innovate (Muriithi, 2017). In the Gulf, where expatriate labor dominates, reliance on low-skilled foreign workers has created structural weaknesses in local SMEs (Al-Aali & Teece, 2014). Enhancing entrepreneurial education, digital skills training, and leadership development is therefore crucial. Empirical studies have shown that SMEs that invest in workforce training and knowledge-sharing practices achieve higher productivity, innovation, and internationalization performance (Nguyen, Ngo, & Ruël, 2019). Governments can support this by incentivizing SMEs to participate in training programs and by embedding digital skills modules into vocational and higher education curricula (World Economic Forum, 2020).

Another critical factor is innovation and corporate entrepreneurship, which allow SMEs to continuously reinvent themselves in competitive markets. Research indicates that SMEs that adopt an entrepreneurial orientation—characterized by proactiveness, risk-taking, and innovativeness—are better able to exploit IT resources and convert them into measurable performance outcomes (Covin & Slevin, 1991; Rehman, Mohamed, & Ayoup, 2020). In the UAE, studies reveal that while many SMEs understand the importance of innovation, their actual engagement in innovative activities remains limited (Abudaqa et al., 2022). Strengthening innovation ecosystems—through incubators, accelerators, and university-industry partnerships—can help SMEs experiment with new business models and technologies. Moreover, embedding a culture of corporate entrepreneurship enables SMEs

to transform IT competencies into entrepreneurial ventures and continuous self-renewal, which are essential for sustaining competitiveness in volatile markets (Nguyen et al., 2024). Internationalization and market expansion also emerge as vital strategies. SMEs in small domestic markets, such as those in the Gulf, must increasingly look outward for growth opportunities. Research suggests that firms engaged in exporting or cross-border collaborations tend to achieve higher growth rates and resilience (Knight & Liesch, 2016). However, barriers such as logistics inefficiencies, regulatory differences, and weak digital ecosystems often hinder SME internationalization in the GCC (Al Saleh, 2022). E-commerce platforms and regional trade agreements can help lower these barriers, while digital logistics and blockchain-based trade facilitation tools can enhance trust and efficiency in cross-border operations (WTO, 2020). For UAE manufacturing SMEs, leveraging Dubai's position as a global logistics hub offers a strategic pathway to integrate into regional and international value chains.

Finally, institutional support and policy frameworks play a pivotal role. Governments that create enabling regulatory environments, streamline licensing processes, and reduce bureaucratic burdens significantly improve SME survival and growth (Beck, 2013). In the UAE, initiatives such as the *National SME Program* and *Mohammed Bin Rashid Fund for SMEs* provide financial, training, and advisory support. However, the effectiveness of these programs depends on awareness, accessibility, and integration across agencies. Studies suggest that fragmented institutional frameworks often dilute impact, whereas coordinated, multi-stakeholder approaches yield stronger results (Fjose, Grünfeld, & Green, 2010). Moreover, policies that support women-owned SMEs, green entrepreneurship, and sustainability practices are increasingly important as SMEs align with global ESG and climate goals (El-Kassar & Singh, 2019).

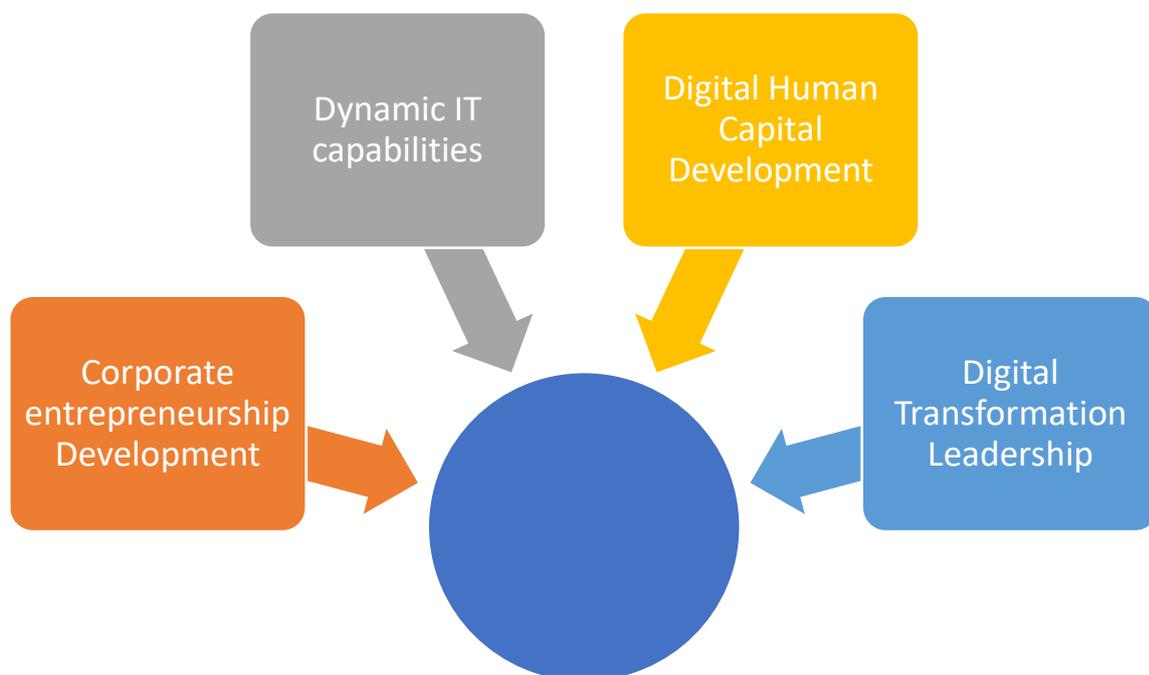


Figure 2: Strategies for transformation SMEs in the Era of Digitalization

*Contribution of the Paper*

This paper makes several meaningful contributions to the understanding of the role and future of SMEs in the UAE and the wider Gulf region. At the most fundamental level, it underscores the critical position SMEs occupy in driving employment, innovation, and economic diversification. At the same time, it sheds light on the real struggles these enterprises encounter ranging from limited access to financing and shortages of digital skills, to difficulties in sustaining innovation and competing globally. Highlighting these issues is particularly important in the UAE, where SMEs are positioned as central to achieving national agendas such as Vision 2030 and Centennial 2071. By focusing on this context, the study brings much-needed balance to a discourse that has been dominated by Western or Asian perspectives, offering insights into how local culture, institutions, and market conditions uniquely shape SME development. In terms of theoretical relevance, this paper moves beyond the conventional “technology adoption” lens and demonstrates how digital capabilities and entrepreneurship must interact to produce real impact. It emphasizes that digital tools alone are insufficient without the entrepreneurial behaviors such as proactiveness, renewal, and venturing that allow SMEs to translate technology into innovation, resilience, and measurable competitiveness. In doing so, the study enriches ongoing debates about how SMEs can build dynamic capabilities in rapidly evolving digital economies. The practical implications of this paper are equally significant. For SME owners and managers, it offers a roadmap for leveraging digital transformation not just to survive but to grow, innovate, and expand into international markets. For policymakers, it provides evidence-based directions on how to strengthen regulatory frameworks, enhance digital skill-building, and facilitate access to finance that truly meets SME needs. For development agencies and investors, it highlights where resources and interventions can be most effective in building sustainable SME ecosystems. Taken together, these insights underline the utility of this research area by showing that targeted strategies in digitalization, skills, and internationalization can produce not only stronger SMEs but also more diversified and competitive Gulf economies.

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