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Technology Adoption In Developing Economies: Drivers And Barriers

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Introduction

The adoption of digital technologies is a critical aspect of modern business, particularly for small and medium-sized enterprises (SMEs) in developing economies. These organizations face unique challenges and opportunities as they navigate the digital landscape. This research examines the multifaceted factors influencing how SMEs embrace new digital tools and strategies, aiming to foster innovation and enhance competitiveness [1].

Entrepreneurial firms are constantly seeking ways to gain a competitive edge, and leveraging technology effectively is paramount. The dynamic capabilities framework provides a lens through which to understand how firms can sense, seize, and reconfigure resources to adapt to technological advancements and integrate new technologies into their business models [2].

The broader context of the entrepreneurial ecosystem plays a significant role in technology adoption within new ventures. Access to essential resources such as funding, skilled talent, and supportive policies within an ecosystem can profoundly impact a startup's capacity and inclination to adopt innovative technologies, underscoring the need for holistic ecosystem development to accelerate technology diffusion [3].

Cloud computing has emerged as a transformative technology for entrepreneurial businesses. Factors such as perceived advantages like cost savings and scalability, alongside organizational readiness and risk assessment, are key determinants of its adoption. Leadership commitment and employee training are also crucial for successful implementation [4].

Digital transformation is reshaping the innovation capabilities of entrepreneurial firms. The adoption of digital tools and strategies can significantly boost a firm's ability to develop novel products, services, and business models, with organizational learning and adaptability acting as key mediators in this process [5].

Artificial intelligence (AI) presents both significant challenges and opportunities for entrepreneurial businesses. While hurdles such as the need for specialized skills, ethical considerations, and substantial investment exist, AI offers immense potential for process automation, improved decision-making, and the creation of new market avenues [6].

The characteristics of entrepreneurial teams themselves are influential in the adoption of new technologies. Teams possessing strong technological expertise and a higher tolerance for risk are more inclined to embrace innovative solutions, ultimately leading to enhanced firm performance [7].

Government support and well-designed policies are instrumental in facilitating technology adoption among entrepreneurial businesses. Measures such as grants, tax incentives, and the development of digital infrastructure can create a more favorable environment for innovation and technology uptake, helping to overcome market failures [8].

External knowledge acquisition is another vital component of technology adoption strategies for entrepreneurial firms. Actively seeking and integrating knowledge from external sources, including universities and industry partners, substantially improves a firm's capacity to identify, evaluate, and adopt relevant technologies, highlighting the importance of open innovation practices [9].

Finally, entrepreneurial orientation, characterized by innovativeness, proactiveness, and risk-taking, is strongly linked to the adoption of disruptive technologies. Firms with a robust entrepreneurial spirit are better positioned to embrace and benefit from technological shifts, emphasizing the need to cultivate an entrepreneurial culture [10].

Description

This review highlights the critical role of entrepreneurial orientation in driving technology adoption within entrepreneurial firms, particularly in the context of disruptive technologies. A strong entrepreneurial spirit, marked by innovativeness, proactiveness, and a willingness to take risks, enables businesses to effectively embrace and leverage transformative technological advancements, thus navigating shifts in the market landscape [1].

Furthermore, the research underscores the importance of dynamic capabilities for entrepreneurial firms aiming to achieve competitive advantage through technology. The ability to sense opportunities, seize them through strategic action, and reconfigure resources in response to technological evolution is crucial for firms seeking to integrate new technologies and adapt their business models effectively [2].

The influence of the entrepreneurial ecosystem on technology adoption in new ventures cannot be overstated. Access to funding, a skilled talent pool, and supportive policies within an ecosystem are significant factors that enhance a startup's capacity and willingness to adopt innovative technologies, suggesting that a holistic approach to ecosystem development can accelerate technology diffusion [3].

Cloud computing adoption by entrepreneurial businesses is influenced by a combination of factors. Perceived advantages such as cost reduction and scalability, coupled with organizational readiness and a thorough assessment of risks, are key determinants. The study also emphasizes the critical role of leadership commitment and comprehensive employee training in ensuring successful cloud adoption [4].

Digital transformation profoundly impacts the innovation capabilities of entrepreneurial firms. The integration of digital tools and strategies can significantly enhance a firm's capacity for developing new products, services, and business models. Organizational learning and adaptability are identified as crucial mediating factors in this transformative process [5].

Artificial intelligence (AI) presents a complex landscape of challenges and opportunities for entrepreneurial ventures. While barriers such as the requirement for specialized skills, ethical considerations, and significant financial investment are acknowledged, AI's potential to automate operations, improve decision-making, and generate new market opportunities is substantial [6].

The characteristics of entrepreneurial teams are directly linked to their propensity for technology adoption. Teams that possess a high level of technological expertise and a greater tolerance for risk are more likely to embrace innovative technologies, which in turn contributes to enhanced firm performance [7].

Government support and strategic policies are vital facilitators of technology adoption in entrepreneurial businesses. Initiatives like grants, tax incentives, and investments in digital infrastructure create a more favorable environment for innovation and technology uptake. Effective government intervention is crucial for overcoming market inefficiencies and stimulating investment in new technologies [8].

Acquiring knowledge from external sources significantly shapes the technology adoption strategies of entrepreneurial firms. Proactively seeking and integrating knowledge from entities such as universities and industry partners enhances a firm's ability to identify, evaluate, and adopt relevant technologies, underscoring the benefits of open innovation practices [9].

Finally, the inherent entrepreneurial orientation of a firm is a strong predictor of its engagement with disruptive technologies. Businesses characterized by innovation, proactiveness, and risk-taking are more adept at embracing and benefiting from disruptive technological changes, emphasizing the importance of nurturing an entrepreneurial culture to adapt to technological evolution [10].

Conclusion

This research explores the drivers and barriers of technology adoption in entrepreneurial firms and SMEs, with a particular focus on developing economies. Key factors influencing adoption include entrepreneurial orientation, perceived benefits, top management support, dynamic capabilities, and the entrepreneurial ecosystem. Common barriers such as cost, lack of skills, and inadequate infrastructure are identified. The studies highlight the importance of cloud computing, artificial intelligence, and digital transformation, emphasizing the roles of leadership, employee training, and government policies. Entrepreneurial team characteristics and external knowledge acquisition also play crucial roles in facilitating technology uptake and fostering innovation.

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Conflict of Interest

None.

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