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Digital Twin-Enabled Strategic Innovation in Chinese Startups: Pathways to Competitive Advantage

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ABSTRACT

Based on previous research demonstrating how Digital Twins supported operational efficiency in Chinese startups, the present research explored how the ongoing adoption of Digital Twins may shape strategic innovation and, ultimately, competitive advantage. The research used a longitudinal study methodology, with case studies and performance metrics of 12 startups over two years. The research explored how Digital Twins enhance ongoing and dynamic decision-making, accelerate product generation, and promote proactive risk management. The research found that continued Digital Twin use improves operational performance, but equally importantly, digital twin capability significantly impacts innovation capability, market responsiveness, and longevity. The critical enabling factors leading to these outcomes were technological maturity, agility within the organization, and supportive public policy. This research provides a substantial contribution to how emerging economies can use digital twin technology to improve operational efficiency immediately, and subsequently, in a more strategic sense, it can be used for resilient and innovative entrepreneurial ecosystems. The results suggest that Digital Twins can be transformational for the future of entrepreneurial development in China.