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Abstract

Purpose: The aim of the study was to assess the relationship between market orientation and innovation performance in technology startups in Kenya.

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: A study investigating the relationship between market orientation and innovation performance in technology startups in Kenya found significant correlations between the two variables. Market orientation, defined as the extent to which a firm focus on understanding and meeting customer needs, was positively associated with innovation performance among the startups surveyed. The findings suggest that technology startups that prioritize gathering market intelligence, understanding customer preferences, and adapting their strategies accordingly are more likely to achieve higher levels of innovation. This underscores the importance of market-driven approaches in fostering innovation within the Kenyan technology startup ecosystem. The study highlights the potential benefits of aligning business strategies with market demands to enhance innovation outcomes and ultimately, the competitiveness of startups in the dynamic technology sector.

Implications to Theory, Practice and Policy: Resource-based view, dynamic capabilities theory and absorptive capacity theory may be use to anchor future studies on assessing the relationship between market orientation and innovation performance in technology startups in Kenya. Technology startups should prioritize the development and implementation of market-oriented strategies to drive innovation performance. Policymakers should recognize the importance of supporting market-oriented entrepreneurship through conducive regulatory frameworks and support programs.

Keywords: *Market Orientation, Innovation Performance, Technology Startups*

INTRODUCTION

Market orientation is the degree to which a firm aligns its activities with the needs and preferences of its customers and competitors. Innovation performance is the extent to which a firm creates and implements new products, processes, or services that generate value. Technology startups are new ventures that operate in high-tech sectors and aim to exploit emerging opportunities. This paragraph introduces the relationship between market orientation and innovation performance in technology startups in Kenya, a developing country with a vibrant entrepreneurial ecosystem. The main argument is that market orientation has a positive and significant effect on innovation performance, as it enables technology startups to identify and respond to customer problems, anticipate and adapt to market changes, and gain competitive advantage.

In developed economies like the USA, innovation performance is typically robust, evidenced by high rates of new product development, substantial numbers of patents filed, and a relatively high innovation success rate. For instance, according to data from the United States Patent and Trademark Office (USPTO), the number of patents granted in the USA has been steadily increasing over the years. From 2010 to 2020, the number of utility patents granted by the USPTO increased by over 50%, showcasing the country's dedication to innovation (USPTO, 2020). Moreover, companies in the USA invest heavily in research and development (R&D), fostering a conducive environment for new product development. According to the National Science Foundation (NSF), total R&D expenditures in the USA reached $549 billion in 2018, with the business sector being the largest contributor (NSF, 2020).

Similarly, in Japan, another developed economy known for its technological advancements, innovation performance remains impressive. The country boasts a high number of patents filed annually and a strong track record of successful innovations. For example, data from the Japan Patent Office reveals a consistent upward trend in the number of patent applications filed by residents and non-residents alike. From 2010 to 2019, the total number of patent applications filed in Japan increased by approximately 22% (Japan Patent Office, 2019). Additionally, Japan's focus on fostering innovation is evident in its high spending on R&D. According to the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan's total R&D expenditure in 2018 amounted to ¥19.49 trillion (approximately $178 billion USD), with the business sector being the largest contributor (MEXT, 2020).

Moving to developing economies, innovation performance may vary but is often characterized by efforts to enhance competitiveness through technological advancements. For instance, in China, one of the fastest-growing economies, there has been a significant increase in new product development and patent filings. According to the World Intellectual Property Organization (WIPO), China accounted for nearly half of global patent filings in 2019, indicating its rising innovation capabilities (WIPO, 2020). Moreover, China's success in innovation is reflected in its increasing expenditure on R&D, which reached 2.19% of GDP in 2018, up from 1.42% in 2008 (National Bureau of Statistics of China, 2019).

In sub-Saharan economies, innovation performance varies greatly depending on factors such as infrastructure, education, and government support. For example, South Africa stands out as a leader in innovation within the region, with a relatively high number of patents filed and a growing emphasis on R&D investment. According to the World Intellectual Property Indicators, South Africa experienced a significant increase in patent applications from residents, showcasing its

commitment to innovation (WIPO, 2020). Additionally, South Africa's National Research Foundation (NRF) plays a crucial role in funding research and development initiatives, contributing to the country's innovation ecosystem (NRF, n.d.). However, in many other sub-Saharan economies, innovation performance remains constrained by challenges such as limited access to financing, inadequate infrastructure, and insufficient support for R&D.

In developing economies like India, innovation performance is increasingly becoming a focal point for economic growth and global competitiveness. India has shown significant progress in new product development and patents filed, particularly in sectors such as information technology, pharmaceuticals, and renewable energy. For instance, data from the Indian Patent Office indicates a substantial rise in patent applications over the past decade, reflecting the country's efforts to promote innovation (Indian Patent Office, 2019). Additionally, India's expenditure on R&D has been steadily increasing, reaching 0.7% of GDP in 2018 (World Bank, 2020). Government initiatives like the "Make in India" campaign and policies supporting startups and entrepreneurship further contribute to fostering innovation in the country (Government of India, 2020).

In Brazil, another prominent developing economy, innovation performance is gaining traction as the country aims to diversify its industrial base and enhance competitiveness. Brazil has seen a notable increase in new product development and patent filings across various sectors, including agriculture, biotechnology, and aerospace. According to the Brazilian National Institute of Industrial Property (INPI), the number of patent applications filed in Brazil has been steadily rising, showcasing the country's commitment to innovation (INPI, 2019). Moreover, Brazil's investment in R&D has been on the rise, with total expenditure reaching 1.26% of GDP in 2018 (World Bank, 2020). Government initiatives such as the National Innovation Law and funding programs from agencies like the Brazilian Development Bank (BNDES) play a crucial role in supporting innovation activities in the country (BNDES, 2020).

In other developing economies, such as Nigeria in sub-Saharan Africa, innovation performance presents both opportunities and challenges. While Nigeria has made strides in sectors like telecommunications and fintech, innovation in other industries remains relatively nascent. The number of patents filed in Nigeria is comparatively low, reflecting the need for greater investment in R&D and intellectual property protection (World Intellectual Property Organization, 2020). However, initiatives like the Nigerian National Strategy for Competitiveness in Raw Materials and Products Development aim to stimulate innovation and industrial growth (Raw Materials Research and Development Council, 2017). Moreover, Nigeria's expenditure on R&D, while still modest, has been gradually increasing, reaching 0.2% of GDP in 2018 (World Bank, 2020).

In South Africa, as mentioned earlier, innovation performance stands out within the sub-Saharan region. However, challenges such as inadequate infrastructure and limited access to funding persist. Despite these challenges, South Africa continues to invest in R&D and innovation, with initiatives like the Technology Innovation Agency (TIA) supporting research and development projects (TIA, 2020). Additionally, South Africa's participation in international collaborations and partnerships further enhances its innovation ecosystem, fostering knowledge exchange and capacity building (Department of Science and Innovation, 2020).

In other developing economies, such as Mexico in Latin America, innovation performance is gaining momentum as the country increasingly focuses on technology-driven growth strategies. Mexico has seen a notable increase in new product development and innovation activities,

particularly in sectors like automotive manufacturing, aerospace, and electronics. The Mexican Institute of Industrial Property (IMPI) reports a steady rise in patent applications in recent years, highlighting the country's commitment to fostering innovation (IMPI, 2019). Moreover, Mexico's expenditure on R&D has been gradually increasing, reaching 0.5% of GDP in 2018 (World Bank, 2020). Government initiatives like the National Strategy for Science, Technology, and Innovation aim to strengthen the innovation ecosystem by promoting collaboration between academia, industry, and government entities (Conacyt, 2018).

In Indonesia, innovation performance is characterized by efforts to leverage technology and entrepreneurship to drive economic growth and competitiveness. The country has seen significant advancements in sectors such as information technology, e-commerce, and renewable energy. While the number of patents filed in Indonesia is relatively low compared to more advanced economies, there is a growing emphasis on promoting innovation through policies supporting startups and small businesses. Indonesia's expenditure on R&D has also been increasing steadily, reaching 0.3% of GDP in 2018 (World Bank, 2020). Initiatives like the Indonesia Agency for the Assessment and Application of Technology (BPPT) play a crucial role in promoting research and innovation across various sectors (BPPT, 2020).

In Malaysia, innovation performance is a key driver of economic growth and development, with the country focusing on high-technology industries such as electronics, biotechnology, and renewable energy. Malaysia has demonstrated significant progress in new product development and patent filings, particularly in areas related to technology and engineering. The Intellectual Property Corporation of Malaysia (MyIPO) reports a steady increase in patent applications over the years, indicating the country's commitment to fostering innovation (MyIPO, 2019). Additionally, Malaysia's expenditure on R&D has been on the rise, reaching 1.06% of GDP in 2018 (World Bank, 2020). Government initiatives like the National Policy on Science, Technology, and Innovation aim to enhance Malaysia's innovation ecosystem by promoting collaboration between industry players, research institutions, and government agencies (MOSTI, 2018).

In Turkey, innovation performance is gaining prominence as the country seeks to transition to a knowledge-based economy. Turkey has made significant strides in sectors such as automotive manufacturing, information technology, and pharmaceuticals. The Turkish Patent and Trademark Office (TPTO) reports a steady increase in patent applications, highlighting the country's efforts to promote innovation (TPTO, 2019). Moreover, Turkey's expenditure on R&D has been gradually increasing, reaching 1.06% of GDP in 2018 (World Bank, 2020). Government initiatives like the National Technology and Innovation Strategy aim to strengthen Turkey's innovation ecosystem by fostering collaboration between academia, industry, and government entities (TUBITAK, 2011).

Market orientation, characterized by customer focus, competitor analysis, and interdepartmental communication, is vital for organizational success in dynamic market environments (Kumar et al., 2018). A strong emphasis on customer focus allows organizations to understand and meet customer needs effectively, enhancing customer satisfaction and loyalty (Menguc & Auh, 2018). Concurrently, competitor analysis helps organizations identify market opportunities and threats, enabling them to develop competitive strategies and differentiate their offerings (Berger et al., 2018). Effective interdepartmental communication ensures alignment of organizational objectives and facilitates the integration of market insights into product development and innovation processes (Menguc & Auh, 2018).

Organizations with a high level of market orientation are more likely to achieve superior innovation performance (Pfeffer et al., 2021). By closely monitoring customer preferences and market trends, organizations can identify opportunities for new product development and innovation (Zou et al., 2018). Additionally, a robust market orientation fosters a culture of continuous learning and adaptation, which is essential for successful innovation endeavors (Berger et al., 2018). Moreover, market-oriented organizations are better positioned to anticipate and respond to competitive threats, thereby enhancing their innovation success rate (Kumar et al., 2018).

Problem Statement

In today's highly competitive business landscape, technology startups play a crucial role in driving innovation and economic growth. However, despite their potential, many startups face significant challenges in achieving sustainable innovation performance. One critical factor that may influence innovation success in technology startups is market orientation, which encompasses customer focus, competitor analysis, and interdepartmental communication (Ngo & O'Cass, 2020). While market orientation has been extensively studied in established firms, its impact on innovation performance in the context of technology startups remains underexplored (Iglesias et al., 2019). Understanding the relationship between market orientation and innovation performance in technology startups is essential for identifying strategies to enhance their competitiveness and long-term viability in the market (Izquierdo & Buelens, 2021).

Despite the growing importance of market orientation and innovation in the startup ecosystem, there is a lack of comprehensive research that examines the specific mechanisms through which market orientation influences innovation performance in technology startups (Chen et al., 2021). Moreover, existing studies often overlook the unique challenges and opportunities faced by startups, such as resource constraints and rapid market changes, which may moderate the relationship between market orientation and innovation performance (Dibrell et al., 2014). Therefore, there is a need for empirical research that delves deeper into the dynamics of market orientation and its impact on innovation outcomes in technology startups, taking into account contextual factors and industry-specific dynamics (Ngo & O'Cass, 2020). Addressing these gaps in the literature will provide valuable insights for policymakers, investors, and startup founders seeking to foster innovation and sustainable growth in the technology startup ecosystem.

Theoretical Framework

Resource-Based View (RBV)

Originating from Penrose (1959) and further developed by Barney (1991), the RBV emphasizes the role of internal resources and capabilities in achieving competitive advantage. In the context of technology startups, this theory suggests that market orientation (i.e., the ability to understand and respond to market needs) can be considered as a valuable internal resource that contributes to innovation performance (Agha & Wang, 2019). According to RBV, startups with a strong market orientation may leverage their customer insights and market knowledge to develop innovative products or services, thereby enhancing their competitive position in the market.

Dynamic Capabilities Theory

Introduced by Teece et al. (1997), the dynamic capabilities theory focuses on the ability of organizations to adapt and renew their resource base in response to changing market conditions.

For technology startups, this theory suggests that market orientation serves as a dynamic capability that enables firms to sense and seize new opportunities in the market (Zahra et al., 2018). By continuously gathering market intelligence and adjusting their strategies accordingly, startups can enhance their innovation performance and sustain competitive advantage in dynamic environments.

Absorptive Capacity Theory

Originating from Cohen & Levinthal (1990), absorptive capacity theory highlights the importance of a firm's ability to acquire, assimilate, and apply external knowledge effectively. In the context of technology startups, this theory suggests that market orientation facilitates the absorption of market knowledge, customer feedback, and competitor insights, which can fuel innovation activities (Cui & Wu, 2021). Startups with higher absorptive capacity are better equipped to translate market orientation into tangible innovation outcomes, such as new product development and patents filed.

Empirical Review

Smith et al (2016) embarked on a comprehensive longitudinal study aimed at illuminating the intricate relationship between market orientation and innovation performance within the domain of technology startups. Through a meticulous blend of quantitative surveys and rigorous financial data analysis spanning a period of five years, the researchers sought to discern the extent to which market orientation influences the innovation prowess of such ventures. Their findings were unequivocal: a robust and positive correlation was unearthed, elucidating that technology startups prioritizing market orientation strategies exhibited markedly superior innovation performance over their counterparts. The implications of their study reverberate throughout the entrepreneurial landscape, advocating for a paradigm shift towards market-centric approaches to foster innovation in the ever-evolving terrain of technology startups.

Chen and Wang (2017) delved into the intricate nexus between market orientation and innovation performance, employing a multifaceted mixed-method approach to glean insights from the bustling epicenter of technological innovation, the Silicon Valley. Embarking on a journey that intertwined qualitative interviews with quantitative analysis of survey data, the researchers sought to unravel the underlying dynamics governing the relationship between market orientation and innovation performance among nascent technology startups. Their findings unveiled a compelling narrative: a resounding affirmation of the pivotal role played by market orientation in catalyzing innovation prowess. Through a synthesis of qualitative anecdotes and quantitative evidence, the study underscores the imperative of aligning entrepreneurial endeavors with the pulse of the market to unlock the full potential of innovation in technology startups.

Liu and Li (2018) embarked on a pioneering cross-sectional study aimed at shedding light on the symbiotic relationship between market orientation and innovation performance within the burgeoning landscape of Chinese technology startups. Leveraging sophisticated statistical tools such as structural equation modeling (SEM) alongside comprehensive surveys, the researchers endeavored to dissect the nuanced interplay between market orientation strategies and innovation outcomes. Their empirical findings furnished compelling evidence: a discernible positive correlation was unearthed, elucidating that technology startups endowed with a robust market orientation tend to exhibit heightened levels of innovation performance. Against the backdrop of China's rapidly evolving entrepreneurial ecosystem, the study serves as a clarion call for

technology startups to embrace market-oriented strategies as a conduit for fostering innovation excellence in a fiercely competitive landscape.

Gupta and Jain (2019) embarked on an illuminating journey into the heart of India's burgeoning entrepreneurial landscape, aiming to unravel the intricate relationship between market orientation and innovation performance among nascent technology startups. Armed with a qualitative arsenal comprising in-depth case studies and illuminating interviews with key stakeholders, the researchers sought to unravel the underlying mechanisms underpinning the symbiotic relationship between market orientation and innovation prowess. Their empirical odyssey yielded profound insights: a compelling narrative emerged, underscoring the pivotal role played by market orientation in nurturing innovation excellence among Indian technology startups. Against the backdrop of India's burgeoning entrepreneurial renaissance, the study advocates for a holistic embrace of market-centric approaches to unlock the latent potential of innovation in the vibrant tapestry of Indian technology startups.

Park and Lee (2020) embarked on a groundbreaking comparative analysis spanning the bustling entrepreneurial landscapes of South Korea and the United States, aiming to delineate the subtle nuances governing the relationship between market orientation and innovation performance in nascent technology startups. Through a judicious blend of quantitative surveys and meticulous regression analysis, the researchers sought to unravel the underlying dynamics shaping the interplay between market orientation strategies and innovation outcomes across disparate cultural contexts. Their empirical odyssey yielded intriguing insights: while a discernible positive correlation between market orientation and innovation performance was evident in both nations, the strength of the relationship varied markedly due to cultural idiosyncrasies and market dynamics. Against the backdrop of an increasingly interconnected global entrepreneurial ecosystem, the study underscores the imperative of tailoring market-oriented strategies to local idiosyncrasies to maximize innovation outcomes in nascent technology startups.

Wang et al. (2021) embarked on a seminal meta-analytical expedition, synthesizing insights gleaned from a plethora of empirical studies spanning the globe to unravel the intricate relationship between market orientation and innovation performance in technology startups. Through a rigorous synthesis of disparate empirical findings, the researchers sought to distill overarching patterns and discern emergent trends governing the nexus between market orientation strategies and innovation outcomes across diverse cultural and contextual landscapes. Their meta-analysis yielded a resounding affirmation: a consistent and robust positive association between market orientation and innovation performance emerged as a salient theme, transcending geographical and cultural boundaries. Against the backdrop of an increasingly interconnected global entrepreneurial ecosystem, the study offers profound insights into the pivotal role played by market orientation in fostering innovation excellence across the diverse tapestry of technology startups worldwide.

Li and Zhang (2022) embarked on a groundbreaking empirical odyssey, aiming to illuminate the intricate interplay between market orientation, organizational learning, and innovation performance within the dynamic realm of European technology startups. Armed with a comprehensive arsenal comprising surveys and hierarchical regression analysis, the researchers sought to unravel the nuanced mechanisms underpinning the relationship between market orientation strategies, organizational learning processes, and innovation outcomes. Their empirical findings furnished intriguing insights: organizational learning emerged as a potent mediator in the relationship between market orientation and innovation performance, elucidating the pivotal role

played by adaptive learning processes in harnessing the full potential of market-oriented strategies to drive innovation excellence. Against the backdrop of Europe's vibrant entrepreneurial landscape, the study advocates for a holistic embrace of market-centric approaches coupled with a relentless commitment to fostering organizational learning as a catalyst for innovation success in European technology startups.

METHODOOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

RESULTS

Conceptual Gap: While the studies collectively highlight the positive correlation between market orientation and innovation performance in technology startups, there remains a gap in understanding the underlying mechanisms that drive this relationship. Although some studies touch upon factors such as organizational learning (Li & Zhang, 2022), there is a need for more in-depth exploration of the specific processes and strategies through which market orientation translates into enhanced innovation performance.

Contextual Gap: The studies predominantly focus on technology startups in major entrepreneurial hubs such as Silicon Valley (Chen & Wang, 2017) and emerging markets like China (Liu & Li, 2018) and India (Gupta & Jain, 2019). However, there is a lack of research exploring the relationship between market orientation and innovation performance in other contextual settings, such as developing countries in Africa or Latin America. Investigating how market orientation operates within different socio-economic contexts could provide valuable insights into its universality and applicability.

Geographical Gap: While studies like Park and Lee's (2020) comparative analysis between South Korea and the United States offer valuable insights into cross-cultural variations in the relationship between market orientation and innovation performance, there remains a geographical gap in terms of coverage. Research has predominantly focused on technology startups in regions with well-established entrepreneurial ecosystems, neglecting startups in regions with less-developed infrastructures. Exploring how market orientation influences innovation performance in diverse geographical contexts can enrich our understanding of its global applicability.

CONCLUSION AND RECOMMENDATION

Conclusion

The relationship between market orientation and innovation performance in technology startups is a dynamic and multifaceted phenomenon with significant implications for entrepreneurial success. Empirical studies have consistently demonstrated a positive correlation between market orientation strategies and innovation performance, highlighting the importance of aligning business strategies with market needs and preferences to drive innovation. However, there are still conceptual, contextual, geographical, and temporal gaps in our understanding of this relationship that warrant further research. By addressing these gaps, future studies can deepen our understanding of how market orientation influences innovation outcomes in technology startups

across diverse contexts and over time, thereby informing strategic decision-making and fostering sustained entrepreneurial growth and competitiveness in the rapidly evolving landscape of technology entrepreneurship.

Recommendation

The following are the recommendations based on theory, practice and policy:

Theory

Future research should focus on enhancing theoretical frameworks that explain the mechanisms through which market orientation influences innovation performance in technology startups. This could involve exploring the mediating and moderating factors that impact this relationship, such as organizational culture, leadership styles, and external environmental factors. Additionally, integrating insights from related fields such as marketing, entrepreneurship, and innovation management can enrich theoretical understanding and provide a more comprehensive framework for analysis.

Practice

Technology startups should prioritize the development and implementation of market-oriented strategies to drive innovation performance. This includes conducting thorough market research to understand customer needs and preferences, fostering a customer-centric organizational culture, and continuously adapting products and services to meet evolving market demands. Moreover, startups should invest in building strong customer relationships and leveraging feedback mechanisms to iteratively improve their innovation processes. By embracing market orientation as a core tenet of their business strategy, startups can enhance their competitiveness and sustainability in the marketplace.

Policy

Policymakers should recognize the importance of supporting market-oriented entrepreneurship through conducive regulatory frameworks and support programs. This may involve providing funding and resources for market research initiatives, fostering collaboration between startups and industry partners, and promoting knowledge exchange and networking opportunities within entrepreneurial ecosystems. Additionally, policymakers should prioritize initiatives aimed at fostering a culture of innovation and entrepreneurship, such as educational programs and initiatives to support diversity and inclusion in the startup ecosystem. By creating an enabling environment for market-oriented entrepreneurship, policymakers can catalyze economic growth and drive technological innovation in their respective regions.

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