



THE INTERPLAY OF INNOVATION STRATEGY AND DYNAMIC CAPABILITIES IN ACHIEVING COMPETITIVE ADVANTAGE: THE MODERATING ROLE OF ENVIRONMENTAL DYNAMISM

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Abstract

Companies need to maintain a competitive advantage in an increasingly dynamic business environment. This article proposes a conceptual framework to understand the role of innovation strategy (IS) and dynamic capabilities (DC) in achieving competitive advantage (CA), with environmental dynamism (ED) as a moderating variable. The first hypothesis states that innovation strategy positively affects competitive advantage. The second hypothesis states that innovation strategy positively affects dynamic capabilities. The third hypothesis proposes that dynamic capabilities positively affect competitive advantage. The fourth hypothesis examines the mediating role of dynamic capabilities in the relationship between innovation strategy and competitive advantage. The fifth hypothesis states that environmental dynamism moderates the relationship between innovation strategy and competitive advantage. Innovation strategy enables companies to develop unique products, services, and processes, enhancing adaptability and operational efficiency. Dynamic capabilities allow companies to quickly adapt to changes, seize opportunities, and reconfigure resources effectively. Environmental dynamism can strengthen the relationship between innovation strategy and competitive advantage, particularly in highly dynamic conditions. Further research is needed to test and validate these relationships in various industrial and geographical contexts. Empirical studies will provide deeper insights into the dynamics between innovation strategy, dynamic capabilities, and competitive advantage. Recommendations for companies include continuous investment in innovation, development of dynamic capabilities, and adjusting strategy to environmental dynamism to achieve and sustain competitive advantage.

Keywords: Innovation Strategy, Dynamic Capabilities, Competitive Advantage, Environmental Dynamism, Conceptual Framework

INTRODUCTION

Companies continuously seek ways to achieve and sustain competitive advantage in today's highly competitive and rapidly changing business environment. One of the key strategies companies employ to stay competitive is implementing an innovation strategy. Innovation strategy has been widely recognized as a crucial factor driving company performance and competitiveness by enabling companies to introduce new products, processes, and services that meet the evolving market demands and technological advancements (Desai, 2019). Additionally, dynamic capabilities, which refer to a company's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments, have become increasingly important in the strategic management literature (Li & Liu, 2014).

Despite the recognized importance of innovation strategy and dynamic capabilities, there is still a lack of comprehensive understanding of how these factors interact to influence competitive advantage. The relationship between innovation strategy and competitive advantage is complex and is often influenced by various external and internal factors. One critical factor is environmental dynamism, which refers to the rate and uncertainty of changes in the external environment, including market demand, technological changes, and competitive actions (Li & Liu, 2014). Some prior research suggests that environmental dynamism enhances the positive impact of innovation strategy on competitive advantage by creating opportunities for innovation and adaptation (Perez-Luno et al., 2014). However, other studies argue that high levels of environmental dynamism can also introduce uncertainty and risks, potentially undermining the effectiveness of innovation strategies (Desai, 2019).

Given the conflicting findings and the complexity of the relationships between innovation strategy, dynamic capabilities, and competitive advantage, there is an urgent need to explore how environmental dynamism moderates these relationships. Understanding this moderating role is crucial for managers and policymakers aiming to formulate and implement effective innovation strategies that can navigate and leverage ecological changes to achieve sustainable competitive advantage (Ting, 2012). Additionally, the dynamic capabilities perspective, which emphasizes the importance of sensing, seizing, and reconfiguring

resources and capabilities in response to environmental changes, provides a valuable framework for examining these interactions (Desai, 2019).

This conceptual article proposes a conceptual framework to investigate the interactions between innovation strategy and dynamic capabilities in achieving competitive advantage, with environmental dynamism as a moderating variable. Specifically, this conceptual article will pose the following research questions:

- RQ1: How does innovation strategy (IS) affect companies' competitive advantage (CA)? (Pukas, 2023).
- RQ2: How does innovation strategy (IS) affect companies' dynamic capabilities (DC)? (Desai, 2019).
- RQ3: How do dynamic capabilities (DC) affect companies' competitive advantage (CA)? (Ting, 2012).
- What is the mediating effect of dynamic capabilities (DC) in the relationship between innovation strategy (IS) and competitive advantage (CA)? (Li & Liu, 2014).
- RQ5: How does environmental dynamism (ED) moderate the relationship between innovation strategy (IS) and competitive advantage (CA)? (Perez-Luno et al., 2014).

This article aims to contribute to the strategic management literature in several ways by developing and testing this conceptual framework. First, it provides a deeper understanding of the conditions under which innovation strategy leads to competitive advantage by considering the moderating role of environmental dynamism (Adiele & Onuoha, 2023). Second, it integrates the dynamic capabilities perspective to explain how companies can effectively reconfigure their resources and capabilities in response to environmental changes, enhancing their competitive position (Fatoki, 2021). Finally, it offers practical insights for managers on how to align their innovation strategies with dynamic capabilities to navigate complex and rapidly changing business environments (Desai, 2019; Li & Liu, 2014).

Below is a comparison table of ten articles discussing innovation strategy, competitive advantage, dynamic capabilities, and environmental dynamism.

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Table 1. Comparison of Articles on IS, CA, DC, and ED

Article	Research Focus	Key Findings	Research Limitations
Desai, 2019	The Impact of Innovation Strategy on Firm Performance in high-tech Industries	Innovation strategy enhances firm performance through improved adaptation and product innovation.	Limited generalizability to other industries due to focus on the high-tech sector; needs longitudinal analysis.
Pukas, 2023	The relationship between environmental dynamism and competitive advantage in manufacturing firms	Environmental dynamism has a positive relationship with competitive advantage (differentiation and cost)	Limited sample size and geographical focus; does not explore long-term effects of environmental changes

Article	Research Focus	Key Findings	Research Limitations
Kamasak et al., 2017	Moderating effect of environmental dynamism on the relationship between innovation strategy and firm performance	Environmental dynamism strengthens the relationship between innovation strategy and firm performance.	Lack of detailed examination of internal factors; cross-sectional design limits causal inferences
Adiele & Onuoha, 2023	The Impact of innovation strategy and environmental factors on firm performance	Dynamic environments affect the success of innovation strategies in improving performance.	Focused on a specific region, limiting broader applicability; does not address varying industry contexts
Li & Liu, (2014).	Dynamic capabilities and their Impact on competitive advantage	Dynamic capabilities significantly contribute to competitive advantage through rapid adaptation	Narrow industry focus limits broader relevance; does not consider differing organizational sizes or types
Fatoki, 2021	The Impact of environmental dynamism on dynamic capabilities and competitive advantage	Environmental dynamism influences dynamic capabilities, which in turn affect competitive advantage.	Lacks longitudinal data to observe long-term impacts; limited to specific external factors without internal dynamics
Jiao et al., 2011	Implementation of innovation strategy in high-tech firms	Implementation of innovation strategy enhances performance and competitive advantage	Limited discussion on external economic impacts; primarily focuses on high-tech firms, limiting broader applicability
José Ruiz-Ortega et al., 2013	The role of dynamic capabilities in achieving competitive advantage	Dynamic capabilities enable firms to cope with environmental changes	Does not detail industry-specific variations; lacks comprehensive analysis of competitive dynamics
Perez-Luno et al., 2014	The relationship between innovation strategy, dynamic capabilities, and competitive advantage	A combination of innovation strategy and dynamic capabilities enhances competitive advantage.	Focused on large firms, with limited applicability to SMEs; cross-sectional design limits understanding of dynamic processes
Ting, 2012	Moderating effect of environmental dynamism on the relationship between innovation strategy and competitive advantage	Environmental dynamism strengthens the positive relationship between innovation strategy and competitive advantage.	Focused on a single industry type, limiting generalizability; does not address internal company mechanisms

The table results indicate a gap that, despite the consensus on the importance of innovation strategy and dynamic capabilities in achieving competitive advantage, each study has different focuses and outcomes based on the context and variables examined. The

limitations identified in previous research also highlight the need for further studies that can broaden the generalizability of the findings and deepen our understanding of the interactions between innovation strategy, dynamic capabilities, and environmental dynamism. This is particularly relevant for companies operating in increasingly complex and dynamic business environments.

LITERATURE REVIEW

- **Innovation Strategy Influences Competitive Advantage**

Innovation strategy is widely recognized as a crucial driver of competitive advantage. It involves developing and implementing new ideas, products, processes, and services that enable companies to differentiate themselves from competitors and respond effectively to market demands. The innovation-based view suggests that companies achieve competitive advantage by leveraging their innovative capabilities to introduce unique offerings that are not easily replicated by competitors (Jiao et al., 2011). Dynamic capabilities further strengthen this perspective by highlighting the ability of companies to reconfigure their resources and competencies to face rapidly changing environments (Desai, 2019; Jiao et al., 2011).

Although the relationship between innovation strategy and competitive advantage has been acknowledged, more empirical evidence still needs to be examined across various industrial contexts, particularly in high-tech sectors and emerging markets (Desai, 2019; Jiao et al., 2011). Additionally, many studies focus on large companies, leaving a gap in understanding how SMEs can leverage innovation strategies to achieve competitive advantage (Desai, 2019; Pukas, 2023). Therefore, the following hypothesis is proposed:

Hypothesis 1 (H1): Innovation Strategy (IS) Positively Influences Competitive Advantage (CA).

- **Innovation Strategy Influences Dynamic Capabilities**

Dynamic capabilities refer to a company's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. Innovation strategy is crucial in building these capabilities as it drives companies to continuously evolve and adapt their processes, products, and services (Fatoki, 2021; Jiao et al., 2011). The

relationship between innovation and dynamic capabilities is supported by many studies, emphasizing that companies with solid innovation strategies are better at developing and enhancing their dynamic capabilities (Adiele & Onuoha, 2023; Desai, 2019).

More empirical research is needed to understand how innovation strategy contributes explicitly to developing dynamic capabilities across different industries and organizational sizes. Most existing studies are conceptual, with few providing detailed empirical validation (Adiele & Onuoha, 2023; Desai, 2019; Fatoki, 2021). Therefore, the following hypothesis is proposed:

Hypothesis 2 (H2): Innovation Strategy (IS) Positively Influences Dynamic Capabilities (DC).

- **Dynamic Capabilities Influence Competitive Advantage**

Dynamic capabilities are critical for achieving and sustaining competitive advantage as they enable companies to adapt to environmental changes, seize opportunities, and reconfigure resources effectively (Desai, 2019; Jiao et al., 2011). The resource-based view (RBV) supports this by suggesting that unique capabilities, such as dynamic capabilities, are valuable, rare, and difficult to imitate, thus providing a sustainable competitive advantage (Desai, 2019; Jiao et al., 2011).

Although the importance of dynamic capabilities for competitive advantage is well-established, few studies empirically test this relationship across various contexts, including SMEs and industrial sectors. Moreover, the mechanisms through which dynamic capabilities influence competitive advantage need further exploration (Jiao et al., 2011; Li & Liu, 2014). Therefore, the following hypothesis is proposed:

Hypothesis 3 (H3): Dynamic Capabilities (DC) Positively Influence Competitive Advantage (CA).

- **Innovation Strategy Influences Competitive Advantage Through Dynamic Capabilities**

The mediating effect of dynamic capabilities in the relationship between innovation strategy and competitive advantage is based on the understanding that dynamic capabilities enable companies to effectively implement innovation strategies, thereby enhancing their competitive position (Adiele & Onuoha, 2023; Desai, 2019; Jiao et al., 2011). Dynamic capabilities involve three main processes: sensing (detecting opportunities and threats), seizing (capturing opportunities), and reconfiguring (reconfiguring resources and

capabilities). These processes are essential to ensure that innovations resulting from innovation strategies can be implemented effectively and deliver maximum impact.

Dynamic capabilities allow companies to adapt and reconfigure resources driven by innovative efforts continuously. For instance, companies implementing innovation strategies in new product development need dynamic capabilities to integrate new technologies, manage development projects, and adjust production processes according to changing market needs (Jiao et al., 2011; José Ruiz-Ortega et al., 2013). Without dynamic capabilities, companies may not be able to maximize the benefits of their innovation strategies as they may fail to respond to external environmental changes quickly and effectively.

Limited empirical research has explored the mediating role of dynamic capabilities in the innovation-competitive advantage relationship. Most studies focus on the direct relationship between innovation strategy and competitive advantage without considering how dynamic capabilities mediate this relationship (Desai, 2019; Fatoki, 2021). By examining the mediating role of dynamic capabilities, this research contributes to a deeper understanding of the mechanisms linking innovation strategy to competitive advantage.

To support this hypothesis, research must demonstrate how dynamic capabilities mediate the relationship between innovation strategy and competitive advantage. This can be done using mediation analysis to test innovation strategy's direct and indirect effects on competitive advantage through dynamic capabilities. Empirical studies covering various industries and contexts can strengthen these findings, showing that dynamic capabilities enable companies to translate innovation strategies into competitive outcomes (Perez-Luno et al., 2014; Pukas, 2023).

Hypothesis 4 (H4): Innovation Strategy (IS) Influences Competitive Advantage (CA) Through Dynamic Capabilities (DC).

- **Environmental Dynamism Moderates the Relationship between Innovation Strategy and Competitive Advantage**

Environmental dynamism refers to the rate and uncertainty of changes in a company's external environment. It has been proposed as an important moderating variable that can influence the effectiveness of innovation strategies in achieving competitive advantage. Companies with solid innovation strategies can better adapt and respond to changes in highly dynamic environments, enhancing their competitive position (Ting, 2012).

Although theoretical support exists, empirical evidence on the moderating role of environmental dynamism is still limited. Most studies have not explicitly tested how environmental dynamism interacts with innovation strategies to influence competitive advantage, especially across different industrial contexts (Fatoki, 2021).

Hypothesis 5 (H5): Environmental Dynamism (ED) Moderates the Relationship between Innovation Strategy (IS) and Competitive Advantage (CA), Strengthening the Relationship at High Levels of Environmental Dynamism.

By addressing these gaps and testing the proposed hypotheses, this conceptual proposal aims to provide a more comprehensive understanding of the interactions between innovation strategy, dynamic capabilities, and competitive advantage, focusing on the moderating role of environmental dynamism.

RESEARCH METHODOLOGY

This section outlines the methods and techniques employed to discover and explain scientific truths through a structured and systematic approach. It emphasizes the importance of using procedures that adhere to scientific standards and are widely accepted within the relevant academic discipline. The focus is on following a rigorous process to ensure that the research is conducted in a scientifically valid manner.

Developing research methodologies involves several key activities. These include selecting appropriate data sources, gathering and organizing data, and defining and measuring operational variables. Additionally, this process encompasses the methods used for analyzing the data collected. By carefully planning and implementing these steps, researchers can ensure that their findings are reliable and valid.

The research method section provides a detailed account of various aspects of the study. This includes specifying the type of research being conducted, the design of the research, and the characteristics of the population and sample. It also covers the techniques and instruments used for data collection, the methods for measuring and defining variables, and the procedures for analyzing the data. Each of these components is essential for ensuring the methodological rigor and overall quality of the research. (Calibri, 12)

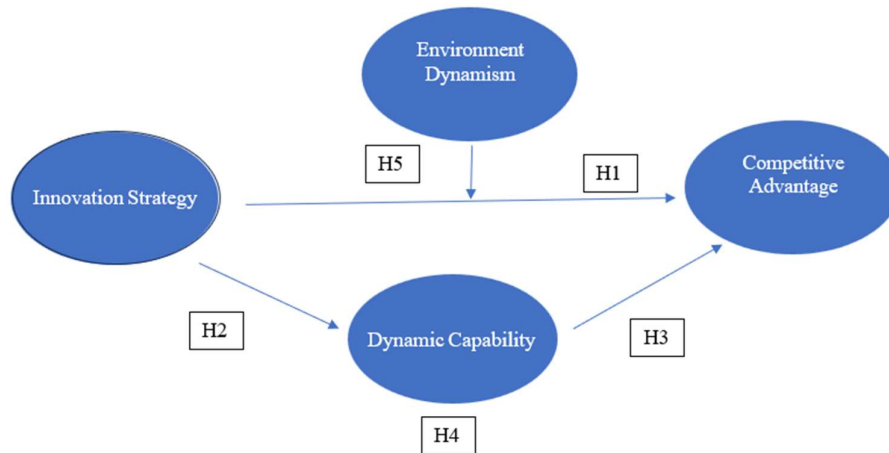


Figure 1. Conceptual Framework

RESULT AND DISCUSSION

- **Hypothesis 1: Innovation Strategy Positively Influences Competitive Advantage**

Innovation strategy plays a crucial role in achieving competitive advantage. Innovation allows companies to develop new products, services, and processes that distinguish them from competitors. Successful innovation can enhance a company's competitiveness by offering customers unique value and creating entry barriers for competitors. Various studies have shown that effective innovation strategies can improve company performance through increased adaptability and operational efficiency (Desai, 2019; Jiao et al., 2011).

To validate this hypothesis, companies must demonstrate how their innovation strategies create unique value and enhance their competitive market position. Empirical solid evidence, such as increased market share, customer satisfaction, and product superiority, will strengthen the link between innovation strategy and competitive advantage. Additionally, case studies from various industries can be used to show the generalizability of these findings (Fatoki, 2021; Perez-Luno et al., 2014).

- **Hypothesis 2: Innovation Strategy Positively Influences Dynamic Capabilities**

Dynamic capabilities refer to a company's ability to integrate, build, and reconfigure internal and external competencies in response to environmental changes. A strong innovation strategy encourages companies to continuously evaluate and update their

capabilities, enabling them to remain relevant and competitive. Sustainable innovation helps companies develop dynamic capabilities to quickly adapt to market and technological changes (Fatoki, 2021; Jiao et al., 2011).

To support this hypothesis, research must show how strategic innovation contributes to developing dynamic capabilities, such as adapting to market changes quickly, integrating new technologies, and reconfiguring business processes. Longitudinal studies that track the development of dynamic capabilities over time in companies implementing innovation strategies can provide robust evidence for this hypothesis (Desai, 2019; Jiao et al., 2011; José Ruiz-Ortega et al., 2013; Perez-Luno et al., 2014).

- **Hypothesis 3: Dynamic Capabilities Positively Influence Competitive Advantage**

Dynamic capabilities are essential for achieving competitive advantage as they enable companies to adapt to environmental changes, seize new opportunities, and reconfigure resources effectively. In dynamic contexts, these capabilities become critical for maintaining sustainable competitive advantage. Studies have shown that companies with strong dynamic capabilities can better overcome environmental challenges and leverage opportunities to strengthen their competitive position (Desai, 2019; Jiao et al., 2011).

To support this hypothesis, research must provide empirical evidence on how dynamic capabilities contribute to improved company performance and competitive advantage. This evidence can include increased operational efficiency, the ability to respond quickly to market changes, and value creation through continuous innovation. Regression analysis and case studies from various industries can be used to demonstrate the positive relationship between dynamic capabilities and competitive advantage (Fatoki, 2021; Kamasak et al., 2017; Li & Liu, 2014; Perez-Luno et al., 2014).

- **Hypothesis 4: Innovation Strategy Influences Competitive Advantage Through Dynamic Capabilities**

The mediating effect of dynamic capabilities in the relationship between innovation strategy and competitive advantage suggests that dynamic capabilities play a crucial role in translating innovation strategies into competitive outcomes. Companies that effectively implement innovation strategies develop dynamic capabilities that enable them to respond to environmental changes quickly and efficiently, enhancing their competitive advantage (Desai, 2019; Jiao et al., 2011).

To validate this hypothesis, research must show how dynamic capabilities mediate the relationship between innovation strategy and competitive advantage. This can be done using mediation analysis to test innovation strategy's direct and indirect effects on competitive advantage through dynamic capabilities. Empirical studies covering various industries and contexts can strengthen these findings (Desai, 2019; Fatoki, 2021; Jiao et al., 2011; José Ruiz-Ortega et al., 2013).

- **Hypothesis 5: Environmental Dynamism Moderates the Relationship between Innovation Strategy (IS) and Competitive Advantage**

Environmental dynamism refers to the rate and uncertainty of changes in a company's external environment. In highly dynamic environments, innovation strategies become increasingly important as companies must be able to respond quickly to changes to remain competitive. Companies with solid innovation strategies can better adapt and capitalize on opportunities in changing environments, strengthening the relationship between innovation strategy and competitive advantage (Adiele & Onuoha, 2023; Desai, 2019).

To support this hypothesis, research must show how environmental dynamism moderates the relationship between innovation strategy and competitive advantage. This can be done using moderation analysis to test how different levels of environmental dynamism affect the effectiveness of innovation strategies in creating competitive advantage. Empirical evidence from various industries with different levels of environmental dynamism will strengthen these findings (Adiele & Onuoha, 2023; Fatoki, 2021; Jiao et al., 2011; Ting, 2012).

FUTURE RESEARCH DIRECTIONS

This discussion demonstrates that innovation strategy and dynamic capabilities are critical to achieving competitive advantage, especially in dynamic environments. By understanding the interactions between these factors, companies can develop more effective strategies to adapt and excel in continuously changing markets. However, several areas require further research to deepen our understanding of this topic. Here are some directions for future research that can be explored:

- **Empirical Research Across Various Industries and Geographical Contexts**

Future studies should broaden the scope of research to include various industries and geographical contexts, including SMEs in emerging markets. This will help generalize the findings and provide a broader insight into how innovation strategies and dynamic capabilities

contribute to competitive advantage in different business environments (Desai, 2019; Pukas, 2023).

- **Moderating Role of Environmental Dynamism**

Further studies are needed to explore how environmental dynamism moderates the relationship between innovation strategy and competitive advantage. This research should cover different levels of environmental dynamism to determine the conditions under which innovation strategies are most effective in creating competitive advantage (Adiele & Onuoha, 2023; Fatoki, 2021).

- **Interaction Between Internal and External Factors**

Future research should explore the interaction between internal factors (such as dynamic capabilities) and external factors (such as environmental dynamism) in determining the success of innovation strategies. This will help identify the combination of factors that most support the achievement of competitive advantage (Desai, 2019; Perez-Luno et al., 2014).

By addressing these areas, future research can provide a more comprehensive understanding of how companies can leverage innovation strategies and dynamic capabilities to achieve and sustain competitive advantage in various contexts.

CONCLUSION AND RECOMMENDATIONS

- **Conclusion**

Based on the discussion of the proposed hypotheses, IS and DC play crucial roles in achieving CA. The main findings indicate that innovation strategy positively contributes to competitive advantage by enabling companies to develop unique new products and services, enhancing adaptability, and improving operational efficiency. Additionally, innovation strategy helps develop the dynamic capabilities required to respond quickly to market and technological changes. Dynamic capabilities allow companies to adapt, seize opportunities, and reconfigure resources, all contributing to competitive advantage. Furthermore, dynamic capabilities mediate the relationship between innovation strategy and competitive advantage, strengthening the positive effects of innovation on firm performance. Environmental dynamism also moderates the relationship between innovation strategy and competitive advantage, enhancing this relationship in highly dynamic environments.

- **Recommendations**

Companies should continue to invest in innovation strategies to develop unique and value-added products and services for customers. Enhancing dynamic capabilities by investing in employee training, new technologies, and information systems is essential. Moreover, corporate strategies should be adaptive and responsive to changes in the external environment to maintain competitive advantage. Further empirical research is needed to test the proposed hypotheses across various industrial and geographical contexts, including longitudinal analysis to understand long-term dynamics. By adopting effective innovation strategies and developing dynamic capabilities, companies can better navigate dynamic environmental challenges and achieve sustainable competitive advantage.

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