THE MEDIATING ROLE OF INNOVATION ON THE RELATIONSHIP BETWEEN SUPPLY CHAIN MANAGEMENT AND COMPANY PERFORMANCE IN THE KINGDOM OF BAHRAIN

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Abstract

This research focuses on critical independent variables, including information quantity and quality sharing, and the adoption of lean practices within companies. It examines these variables to understand their effects on corporate performance using innovation as a mediator. Data from registered non-financial businesses in Bahrain are utilized, and Smart PLS is recommended for analysis. The study aims to unravel the intricate relationships among these variables in Bahrain's nonfinancial sector. Conceptually, it contributes to a deeper understanding of the interplay between information sharing, lean methods, innovation, and firm performance, with a focus on the mediating role of innovation. Practically, it offers insights for business leaders, policymakers, and professionals, enhancing awareness of information sharing, quality, and lean methods, thereby enabling informed decisions to improve corporate performance and foster innovation-driven growth. The uniqueness of this research lies in its holistic approach, examining the interconnectedness of information sharing, lean practices, innovation, and firm performance. Unlike previous studies that explored these aspects in isolation, this research integrates them into a comprehensive framework, enhancing its value to the field and potential impact on business operations. It serves as a valuable resource for academics, researchers, corporate executives, employees, and regulators. Academics and researchers benefit from its conceptual and empirical contributions, while corporate stakeholders gain practical insights for enhancing performance and promoting innovation. Regulators can leverage the findings to develop legislative structures that facilitate information sharing, quality, and lean practices in Bahrain's nonfinancial sector.

Keywords: Bahrain, Company Performance, Information Sharing, Innovation, Lean Practices

1. INTRODUCTION

Innovation is seen as one of the key elements for maintaining and expanding within a company, encompassing goods, procedures, promotional activities, and managerial creativity. Evaluating an organization's entire innovation is crucial to comprehending how innovation affects company performance since these innovative activities give successful firms value and competitive benefits. In today's highly competitive global market, the efficient delivery of goods and services at reduced costs has become an imperative, particularly in the aftermath of the recent global crisis, the COVID-19 pandemic. Scholarly investigations have underscored the significance of various factors that organizations need to address, such as the level of information sharing, quality of information sharing, and the incorporation of lean practices. These aspects play a pivotal role in shaping companies' operational strategies and ultimately influencing their performance outcomes (Martínez-Peláez et al., 2023). Emerging from this context,
several research endeavors emphasize that the careful management of these factors can significantly augment company performance and enhance overall firm value (Lai, et al., 2022; Alabdullah & Zubon, 2023; Oesterreich et al., 2022).

While numerous studies have been dedicated to the exploration of some of important factors such as level of information sharing, quality of information sharing, and the incorporation of lean practices and their impact on company performance (CP), the intricate linkages between these variables continue to be a focus of investigation. Prior research endeavors have leveraged such variables to bolster company performance, as evidenced by a body of work including studies by NTI (2022), Wainaina & Odari (2013), Otieno et al. (2022). Information sharing, quality of information sharing, and the incorporation of lean practices to bolster company performance and the outcomes were mixed in their impact on company performance. This study contributes to the existing body of knowledge by testing the independent variables and their impact on financial performance in nonfinancial listed companies in Bahrain. Especially in developing countries, nonfinancial companies play a vital role in enhancing also the growth of the company (Mansour et al., 2022).

Given such importance and impact, nonfinancial companies represent building blocks of economic development in developing countries (Abebe & Kegne (2023). The current study looks at having a new contribution especially in Bahrain context via testing a mediating role of innovation between level of information sharing, quality of information sharing, and the incorporation of lean practices and company performance. Such a framework is represented a new conceptual framework to be tested in Bahrain context and represent as a filling the gap that appeared in the previous studies that dealt with nonfinancial companies listed in Bahraini context. In that, this research endeavors to address this gap and shed light on the intricate interrelationship among these variables. By investigating the mediating impact of innovation, this study aims to provide a more comprehensive understanding of how the level of information sharing, quality of information sharing, and implementation of lean practices collectively impact company performance. This research aspires to offer valuable insights for organizations striving to enhance their operational strategies and overall performance.

Bahrain stands out as a hub of innovation, strategic location, and economic growth in the vibrant Gulf Cooperation Council (GCC) region. Bahrain's strategic location at the intersection of the Arabian Gulf has given it a key position in international trade, banking, and business. The nation of Bahrain has distinguished itself among the GCC countries as being dynamic and forward-thinking, featuring a highly active non-financial industry that greatly boosts the economic health of the whole region (Ahamed & Shukla, 2023). A lot of positive matters have been told about the by business opportunities -building the creative economies in the GCC (2023) regarding Bahrain's unique position within the GCC that is emphasized by its long history as a commercial center that fostered ties between the East and West. This heritage has fostered a climate that is welcoming to business and encourages innovation, entrepreneurship, and global cooperation. The free-market and diverse economy of the nation offers a favorable environment for non-financial businesses to prosper, spurring economic development not only within its borders but also across the Gulf region as a whole.

The GCC's economic growth is greatly aided by Bahrain's non-financial businesses' active engagement in the region. Bahrain is a prime example of an all-encompassing strategy for diversifying the economy because it excels in industries other than finance,
such manufacturing, telecommunications, constructing, and innovation. In the context of the GCC’s attempts to shift from economies that are reliant on oil to one that are more environmentally friendly and have a variety of revenue streams, this change is especially important. The vibrant non-financial sector of Bahrain serves as an example for surrounding nations attempting to diversify their economies. Additionally, Bahrain’s active non-financial businesses support jobs in the area. As these businesses expand they create a variety of work options, encouraging population expansion in terms of employment and improvement of skills. This has an impact on the GCC’s social structure, fostering growth and security for its people. Bahrain's thriving non-financial industry is crucial to fostering trade linkages, business collaborations, and information sharing in the larger context of the GCC’s economic interdependence.

The collaboration between Bahrain’s innovative businesses and those located in other GCC countries fosters the region's overall expansion. Bahrain offers an example that promotes business competitiveness across the GCC by demonstrating optimal procedures, promoting intra-GCC cooperation, and taking a leading role in technology innovation. Bahrain's non-financial businesses open the door for ground-breaking innovations as the country portrays itself as a magnet for innovative thinking and entrepreneurship. These businesses promote technological advancement, R&D, and the academic economy, increasing the international competitiveness of the GCC as a whole. In conclusion, Bahrain has solidly established itself as a key participant within the GCC thanks to its unique geographical position, historical relevance, and forward-thinking policies. The nation's non-financial businesses not only support its own economic growth but additionally contain an essential to the whole Gulf region's unrealized potential. Bahrain's vibrant non-financial industry exemplifies the strength of shared progress in the GCC countries' road for sustainable prosperity through supporting innovation, diversification of the economy, and increased employment.

In the context of today's competitive global market, the efficient delivery of goods and services at reduced costs is paramount, particularly in the aftermath of the COVID-19 pandemic. Previous research has highlighted the significance of these factors in shaping operational strategies and performance outcomes. However, their intricate linkages and the mediating role of innovation remain areas of investigation. This research aims to bridge these gaps by testing the independent variables' impact on financial performance in Bahrain's non-financial listed companies. As non-financial companies play a vital role in economic development, particularly in developing countries, this study seeks to contribute valuable insights.

2. LITERATURE REVIEW

Lean techniques interact with corporate governance, company growth, information sharing quality, Islamic sukuk, and company performance in a complicated manner that highlights the complexity of contemporary company operations. Lean practices, focused on reducing squander and maximizing performance, have been shown to affect different aspects of a company's performance (Chechan et al., 2020; Alabdullah, 2017; Alabdullah et al., 2014; Alabdullah et al., 2023; Alabdullah et al., 2023; Alabdullah et al., 2023; Housian et al., 2023; Ahmed et al., 2023; Alabdullah and Housian, 2023; Alabdullah and Zobun, 2023). The effectiveness of sharing knowledge throughout many divisions and roles within a business is a crucial factor impacting the effective execution of lean
strategies. Sharing information effectively promotes real-time decision-making, harmonizes processes, and improves interaction, all of which are essential for lean methods to be effective. Additionally, the effectiveness of information exchange can have a big impact on how an organization is governed.

The concepts of accountability and ethical behavior are strengthened when there is an open and efficient exchange of data which allows the audit committee as well as the board of directors in making sound strategic choices. Lean methodologies, information exchange, and business performance are intricately intertwined. Sharing excellent data helps an organization's many departments use lean concepts, promoting an atmosphere of constant enhancement. This results in increased operational effectiveness, lower costs, and higher-quality goods and services, all of which boost the success of the company. A positive feedback loop develops, whereby lean techniques support operational information sharing, that, in turn, strengthens company performance via simplified procedures and the recognition of possibilities for creativity and expansion (Almashhadani & Almashhadani, 2022; Alabdullah, 2023; Almashhadani, 2020; Al-fakhri & Alabdullah, 2021; Chechan et al., 2021; Alfaxdal & Alabdullah, 2016; Alfaxdal & Alabdullah, 2013; Alabdullah, 2023; Ahmadian et al., 2023).

The relationship between lean techniques, information exchange, corporate governance, business performance, and Islamic sukuk is even more clear in the context of Islamic finance. Islamic sukuk, or Islamic-compliant financial products, are distinguished by a stringent adherence to moral and sharia-compliant procedures. The efficacy of information sharing gets crucial in ensuring openness for shareholders and other interested parties as companies attempt to publish Islamic sukuk. Alabdullah, 2023; Ahmadian et al., 2023; Alfaxdal & Alabdullah, 2016; Alfaxdal & Alabdullah, 2013; Alabdullah, 2023; Strong corporate governance standards guarantee that the issuing and management of sukuk are in accordance with Islamic principles. Lean processes that facilitate information sharing have a favorable effect on a company's performance, and this is especially true in the context of Islamic sukuk, where adherence to moral standards and effective resource management are crucial. Finally, the connection between lean methods, information sharing, corporate governance, firm performance, and Islamic sukuk highlights the complex web of interconnections that influence contemporary business dynamics.

Effective information exchange accelerates the adoption of lean techniques, fostering operational excellence and enhancing company performance. Additionally, these components come together in the context of Islamic sukuk, wherein adherence to moral standards, effective management, and effective operations produce a comprehensive framework that is consistent with both conventional business principles and Islamic finance standards. Understanding and maximizing these interrelated variables becomes crucial for profitable development, moral behavior, and value development as companies navigate the complexity of the worldwide economic landscape (Almashhadani & Almashhadani, 2022; Al-fakhri & Alabdullah, 2021; Chechan et al., 2021; Alabdullah, 2023; Almashhadani, 2020; Chechan et al., 2020).

Researchers looking to understand the factors that underpin organizational performance have focused on the complex link between information exchange, lean methods, and innovation. These factors are interrelated; each affects and is affected by all of them. It has been demonstrated that the degree of information sharing inside firms has an important influence on innovation. Understanding moves more easily as businesses
actively communicate information within divisions and with outside partners, establishing a climate that encourages original thought and idea production (Holsapple & Singh, 2001). According to a study by Hong et al. (2019), there is a correlation between information sharing and innovation performance that is favorable, demonstrating the importance of common insights in the development of creative solutions.

The standard of information exchange further increases the possibility for innovation. The accuracy, relevance, and usability of the data sent are guaranteed through high-quality information sharing. Teams are less likely to produce unsuccessful ideas when they have access to trustworthy information (Gosain et al., 2004). Sharing high-quality information helps to create important insights that act as the foundation for creative projects (Jin et al., 2020). With their focus on effectiveness and eliminating waste, lean methods create an environment that is conducive to innovation.

Lean approaches free up time and assets that may be diverted to creative initiatives by streamlining procedures and eliminating non-value-adding tasks (Moore, 2012). The social finance and social innovation nexus (Savolainen et al., 2017) Lean thinking’s tradition of constant enhancement fosters an openness to experimentation and new ideas (Madanhire & Mbohwa, 2016). Through a number of processes, information exchange has been associated with enhanced company performance. According to Ye et al. (2022), information sharing increases demand forecasting precision, shortens lead times, and increases supply chain visibility. Information sharing improves supply chain efficiency by facilitating better coordination and collaboration, which eventually results in enhanced overall business performance (Choi & Krause, 2006).

The quality of information exchange influences making choices, that in turn affects the performance of businesses. Effective forecasting and evaluation of risks are made possible by excellent data, allowing firms to make sound strategic choices (Curtis, 2012). Quality information facilitates effective decision-making, which has a beneficial impact on organizational performance indicators including efficiency and share of the market (Dhar et al., 2019). Lean practices integration is linked to enhanced company performance on a number of levels. Costs are decreased by lean procedures, and customer satisfaction is increased as a result (Sohal & Singh, 2018). Lean approaches improve operational efficiency, a crucial factor in company performance, by removing waste and streamlining operations (Goshime, 2019).

The research emphasizes the interaction between the quantity and quality of information shared, lean business practices, and their combined effects on both innovation and firm performance. By building an atmosphere that encourages innovation, effectiveness, and strategic decision-making, organizations that effectively manage all of these factors stand to gain competitive edge. The empirical investigation of these interactions within the framework of Bahrain's non-financial sector is explored in the following sections of this paper, illuminating its significance for company performance.

**Hypotheses:**
- H1: The frequency of information sharing and innovation is correlated. Higher levels of information exchange will result in more innovative behavior from organizations, thereby promoting performance.
- H2: Suggests that there is a link between innovation and the quality of information exchange. High-quality sharing of data will produce better results for innovation in organizations and promote performance.
- H3: Indicates that lean operations and innovation are positively correlated. Businesses that use lean techniques to increase operational effectiveness will also create an atmosphere that encourages creativity, thereby promoting performance.

3. RESEARCH METHODS

The research methodology applied in this study adopts a quantitative approach that involves both data collection and subsequent analysis. Data will be gathered from non-financial companies listed in Bahrain to evaluate how independent variables such as information sharing, the quality of information sharing, and the implementation of lean practices impact financial performance. The process of data collection will entail obtaining relevant financial data and information from these companies, with a particular focus on key performance indicators and metrics.

In order to systematically investigate and validate the research hypotheses, Smart PLS will be utilized as the primary analytical method. Smart PLS is a robust statistical tool that enables structural equation modeling, making it well-suited for examining the complex relationships among multiple variables. In summary, this research method combines the collection of quantitative data with advanced statistical analysis to explore the intricate connections between the identified variables and their combined influence on the performance of companies in Bahrain's non-financial sector.

4. RESULTS AND DISCUSSION

The challenge of discerning causal relationships and documenting rapid changes over time can be effectively addressed through the use of a longitudinal research approach. This method allows researchers to trace historical connections between information sharing, lean practices, innovation, and a company's success by collecting data at multiple time points. By doing so, the research outcomes can achieve greater depth, offering a more comprehensive understanding of how these factors interact and evolve over time. To gain a richer insight into the intricate environmental factors and processes influencing the studied correlations, a combination of qualitative and quantitative methodologies may be employed.

Incorporating qualitative research can help pinpoint specific strategies and procedures that facilitate the exchange of knowledge and the implementation of lean practices, thereby enhancing innovation and business performance. To delve deeper into the mediating role of innovation in the relationships between independent variables and company performance, advanced statistical tools such as structural equation modeling can be utilized. Furthermore, to ensure the robustness and reliability of the proposed mediation pathways, sensitivity analysis and robustness tests should be conducted.

While the primary focus of the research lies in Bahrain's nonfinancial sector, conducting comparative studies across different sectors, businesses, and nations can shed light on the generalizability and transferability of the findings. Exploring how innovation, lean methodologies, and information sharing impact business success in diverse contexts may reveal both universal principles and context-specific factors. Recognizing that firm-level variables are nested within larger industry and market contexts, employing multilevel analysis can yield valuable insights into the complex interplay between micro and macro dynamics.
To establish causality more convincingly, scientists may design experiments that encourage information exchange and the adoption of lean practices. By monitoring changes in innovation and company performance before and after implementing these measures, researchers can isolate the effects of independent variables, leading to more reliable conclusions. Additionally, further studies can provide detailed guidance and recommendations for company leaders, policymakers, and experts in Bahrain's nonfinancial sector, building upon the practical applications outlined in the abstract. These recommendations can offer actionable strategies for facilitating information sharing, improving lean processes, and fostering innovation-driven growth.

Insights derived from this study can also inform the development of rules and policies aimed at promoting communication among employees and the adoption of lean manufacturing techniques in Bahrain's nonfinancial industry. Regulators can utilize the research findings to design programs that incentivize businesses to implement practices that enhance creativity and overall performance. Collaborative relationships with industry leaders can amplify the impact of the research, as researchers can work directly with businesses, industry associations, and professional organizations to apply the study's discoveries in practical settings.

Moreover, this research lays the foundation for further endeavors that have the potential to significantly advance both academic knowledge and real-world applications. It addresses its limitations and provides opportunities for researchers to refine their methods, deepen their understanding of the subject matter, and offer actionable recommendations that can benefit Bahrain's nonfinancial industry while also having broader applicability. As scholars continue to explore the intricacies of information sharing, lean practices, innovation, and business success, there remains a high potential for making substantial contributions to the field.

The research presented in the abstract offers a comprehensive exploration of the interplay between information sharing, lean practices, innovation, and firm performance within Bahrain's nonfinancial industry. However, it is imperative to acknowledge and address several limitations that could impact the research's outcomes and implications. These limitations encompass:

a. Sample Selection and Generalizability: The study's reliance on a small sample of Bahrain's listed nonfinancial firms raises questions about the generalizability of its findings to other markets, sectors, or regions worldwide. The unique characteristics of the nonfinancial sector may limit the applicability of the conclusions to a broader context.

b. Data Accuracy and Reliability: The research hinges on the accuracy and reliability of data obtained from Bahrain's nonfinancial firms. Outdated or inconsistent data sources could undermine the trustworthiness of the study's findings. Additionally, inherent biases or inaccuracies in the data could introduce confounding variables that affect the investigated correlations.

c. Mediation Model Complexity: The proposed mediation model involving innovation as a mediator variable between information sharing, lean practices, and business performance is intricate. It is imperative to ensure that this model accurately reflects the complexities of these relationships without oversimplification, as mediation analysis requires a comprehensive examination of temporal and causal connections.
d. Precise Measurement: To maintain the validity of the research's measurements of information exchange, lean practices, innovation, and firm performance, it is crucial to develop precise definitions and implementations for these factors. The soundness and reliability of the assessment tools are paramount to the credibility of the study's conclusions.

e. Endogeneity and Reverse Causality: The research aims to establish causal links between information exchange, lean manufacturing, innovation, and business performance. However, endogeneity, where different factors interact, can pose challenges. It is possible that companies with superior performance are more inclined to adopt new techniques, reversing causation. Advanced statistical methods are necessary to address potential reverse causation and endogeneity.

f. Cross-Sectional Nature of Data: The use of cross-sectional data to examine the effects of independent variables on business performance through innovation as a mediator can make it difficult to conclusively demonstrate causal relationships. Longitudinal data would be preferable for tracking changes over time and unraveling dynamic correlations between factors.

g. Outside Factors and Contextual Phenomena: The study's focus on innovation, lean practices, information exchange, and business performance may not account for all external and contextual variables that can influence outcomes. Economic, social, political, and technological factors could interact with the variables under consideration, leading to confounding effects.

h. Resource Restraints: The research plans to utilize Smart PLS as an analytical technique, which demands specialized expertise and resources. Resource limitations may hinder the full utilization of these techniques, potentially affecting the rigor and accuracy of the analysis.

While the research presented in the abstract holds significant promise for advancing our understanding of the intricate relationships among information sharing, lean manufacturing, innovation, and company performance in Bahrain's nonfinancial industry, it is essential to acknowledge and mitigate the aforementioned limitations. Addressing these limitations will enhance the reliability and validity of the study's findings, contributing to both academic knowledge and practical applications in the business world and regulatory landscape.

5. CONCLUSION

The research disentangles complex connections in Bahrain's nonfinancial industry, focusing on information exchange, lean practices, innovation, and business performance. It highlights possibilities and constraints, offering insights for scholarly growth and practical implementation. By examining the influence of information sharing, lean techniques, and innovation, the study aims to lay the foundation for long-term progress and investigates causal relationships, considering innovation's role as a mediator. However, the study acknowledges limitations, such as a small sample size, data validity, and reliability issues. To address these, data validation and cleansing are crucial, and the research sets the stage for future investigations, suggesting a longitudinal approach and qualitative methods for deeper insights.
Furthermore, the research offers valuable direction to leaders, policymakers, and specialists in Bahrain's non-financial sector by encouraging the cultivation of a culture centered on information sharing, the adoption of lean methodologies, and the pursuit of growth fueled by innovation. It also proves advantageous for researchers, corporate executives, employees, and regulatory authorities who play pivotal roles in fostering competitiveness within the economy. This comprehensive investigation unveils previously unexplored domains of knowledge, thereby fostering the expansion of Bahrain's non-financial sector and raising international recognition of corporate accomplishments.

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