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A Conceptual Model of Key Determinants Affecting Supply Chain and Operational Performance in Small and Medium Enterprises

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Abstract: Enhancing the efficiency of Supply Chain Management (SCM) has become a critical factor influencing business performance, particularly for small and medium-sized enterprises (SMEs)—a sector that constitutes the majority and plays a significant role in driving Vietnam's economy. However, these enterprises continue to struggle with substantial challenges in maintaining and improving operational efficiency as well as sustaining their competitiveness in the market. Recognizing these limitations, this study aims to propose a model identifying key factors affecting SCM performance and overall business performance in SMEs. The model comprises five key factors: Leadership, Information and Technology Sharing, Human Resource Management, Sustainable Practices, and Strategic Partnerships.

Keywords: supply chain, supply chain management performance, business performance, small and medium-sized enterprises (SMEs)

INTRODUCTION

The global situation remains highly complex and unpredictable, marked by numerous risks and uncertainties, particularly the escalation of military conflicts and strategic competition among major economies. These developments have created unprecedented challenges for the global economy, leading to supply chain disruptions, rising logistics costs, and fluctuations in raw material prices, which in turn directly impact business production, trade, and investment activities. Small and medium-sized enterprises (SMEs), which inherently have limited resources, are particularly affected due to their lower adaptability compared to large corporations. Supply chain disruptions not only hinder SMEs' access to raw materials but also increase cost pressures, reduce operational efficiency, and negatively affect business performance and market competitiveness. In this context, supply chain management (SCM) practices have become an area of increasing concern and investment for business leaders. An effective SCM system not only enables enterprises to proactively respond to market fluctuations but also enhances adaptability, optimizes resource utilization, and improves operational efficiency.

In Vietnam, small and medium-sized enterprises (SMEs) make significant contributions to economic growth and job creation. According to data from the Ministry of Planning and Investment, as of December 31, 2024, Vietnam had approximately 940,078 active enterprises, representing a 2% increase compared to the same period in 2023. Notably, nearly 98% of these businesses fall into the SME category, contributing substantially to GDP and providing employment for nearly one-third of the workforce. Beyond driving economic growth, SMEs play a crucial role in ensuring the sustainable development of the national economy. However, due to limitations in resources, financial capacity, technology, and management expertise, SMEs often face considerable challenges in establishing and maintaining efficient supply chains. According to the General Statistics Office, only about 5,000 SMEs in Vietnam participate in global supply chains, accounting for merely 0.001% of the total number of enterprises in the country. This statistic highlights that while SMEs are vital to the domestic economy, their integration into global supply chains remains highly limited.

Based on this reality, this study aims to analyze the factors influencing supply chain management performance and business performance of SMEs. By doing so, it seeks to provide strategic recommendations that enable enterprises to optimize their supply chains, enhance operational efficiency, and strengthen their competitiveness in an increasingly dynamic economic environment. A comprehensive understanding and effective utilization of these factors will not only support

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the sustainable development of SMEs but also contribute to the overall growth of Vietnam's economy.

THEORETICAL FRAMEWORK

A) Definition of Supply Chain Management

Supply Chain Management (SCM) emerged in the 1990s, marking a significant transformation in how organizations operate to meet the demands of an increasingly competitive market. According to Chopra and Meindl (2001), SCM involves managing flows across supply chain processes to maximize overall profitability. These flows include products, information, and finances, moving in both directions—upstream (from suppliers to customers) and downstream (from customers to suppliers). Stadtler (2005) defines SCM as the process of sharing physical resources, information, and finances among supply chain entities to meet customer demand and improve overall efficiency. Through this integration, SCM not only provides cost benefits but also enhances performance, increases customer value, and improves customer satisfaction. Houlihan (1988) emphasizes that the success of SCM depends not only on internal operations but also on close coordination and synchronization among supply chain partners. His research identifies four key aspects of SCM. First, the supply chain should be considered as a unified process rather than a fragmented system divided among distinct functional areas such as production, procurement, distribution, or sales. Second, SCM requires strategic decision-making focused on the shared objectives of the supply chain, as it significantly impacts overall costs and market share. Third, inventory management within SCM necessitates a shift in approach, viewing inventory as a balancing mechanism at the final stage rather than at the outset. Finally, SCM demands an integrated system rather than merely linking independent functions.

B) Supply Chain Management Performance

Many studies have emphasized that performance measurement is not only intended to assess the success or failure of a specific task but also to determine the overall productivity and operational efficiency of an organization (Agami *et al.*, 2012). Gunasekaran *et al.* (2004) pointed out that an effective performance evaluation system plays a crucial role in helping supply chain enterprises maintain a competitive advantage and achieve strategic objectives. However, one of the reasons businesses fail to achieve continuous improvement is the lack of clearly defined metrics and indicators from the outset. Beamon's (1999) theoretical framework proposed three main categories of indicators for evaluating SCM performance: resource utilization, output, and flexibility. Supply chain performance measurement primarily focuses on three overlapping and interrelated areas: cost, time, and quality (Zhao *et al.*, 2018). Nevertheless, a standardized measurement system has yet to be established, as different studies employ distinct approaches, such as focusing on cost, delivery reliability, response time, or customer relationships (Vanichchinchai & Igel, 2009). Furthermore, supply chain performance should be considered not only in terms of specific measurement indicators but also in its ability to create sustainable value for the organization and its stakeholders. An effective performance evaluation system must ensure that the outcomes meet or exceed stakeholder expectations while enabling the organization to maintain its market viability.

C) Organizational Performance

Organizational Performance (OP) is a multidimensional and complex concept that plays a crucial role in assessing an organization's operations and management effectiveness (Franco-Santos & Otley, 2018). OP is not only determined by financial indicators but also by non-financial metrics such as managerial quality, customer loyalty, and innovation capability. According to Tomal and Jones (2015), OP is the natural outcome of the management process, evaluated based on inputs and outputs. Dryer and Reeves (1995) categorize OP into key measurement groups, including human resource outcomes such as turnover rate, absenteeism rate, and work efficiency; managerial outcomes such as operational performance and product quality; financial outcomes such as return on assets (ROA), revenue, and net profit; and market outcomes such as stock price, equity value, and return on investment. Several studies (Bendickson & Chandler, 2019; Astuti & Rahayu, 2018) focus on OP measurements related to both financial and non-financial results, including management intensity and nature, consumer loyalty, organizational adaptability, asset utilization, and innovation. OP is a critical indicator measured through financial and non-financial factors. Performance evaluation should be conducted comprehensively, integrating multiple indicators to gain a holistic perspective and optimize organizational effectiveness.

LITERATURE REVIEW

The research team conducted a literature search on Scopus using the keywords "Supply chain management" and "Organizational performance," applying filters based on titles, abstracts, and keywords. A total of 124 open-access English-language documents were collected and analyzed using Microsoft Excel 2021 to examine publication trends. The results indicate a significant increase in research output from 2016, with a peak in 2022 (Figure 2). The study employed bibliometric analysis using VOSviewer software to construct bibliometric maps and analyze relationships among countries, institutions, and keywords (Figure 1). Subsequently, content analysis was applied to identify research trends, particularly in the areas of supply chain management performance and organizational performance. Additionally, the research team reclassified articles from various countries to standardize the dataset and ensure consistency in the analysis.

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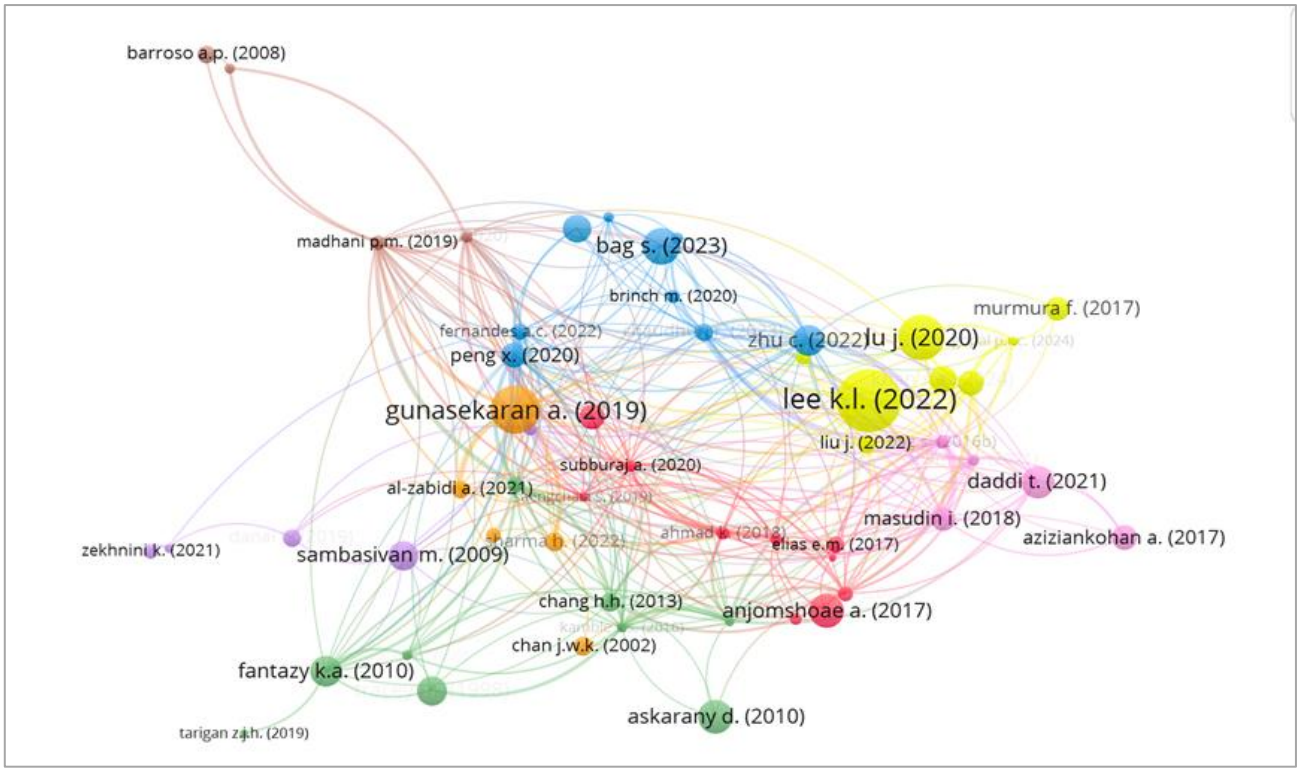

Figure 1: Bibliographic Coupling Map of Authors Studying Supply Chain Performance and Organizational Performance
Source: *Data Analysis Results from Scopus*

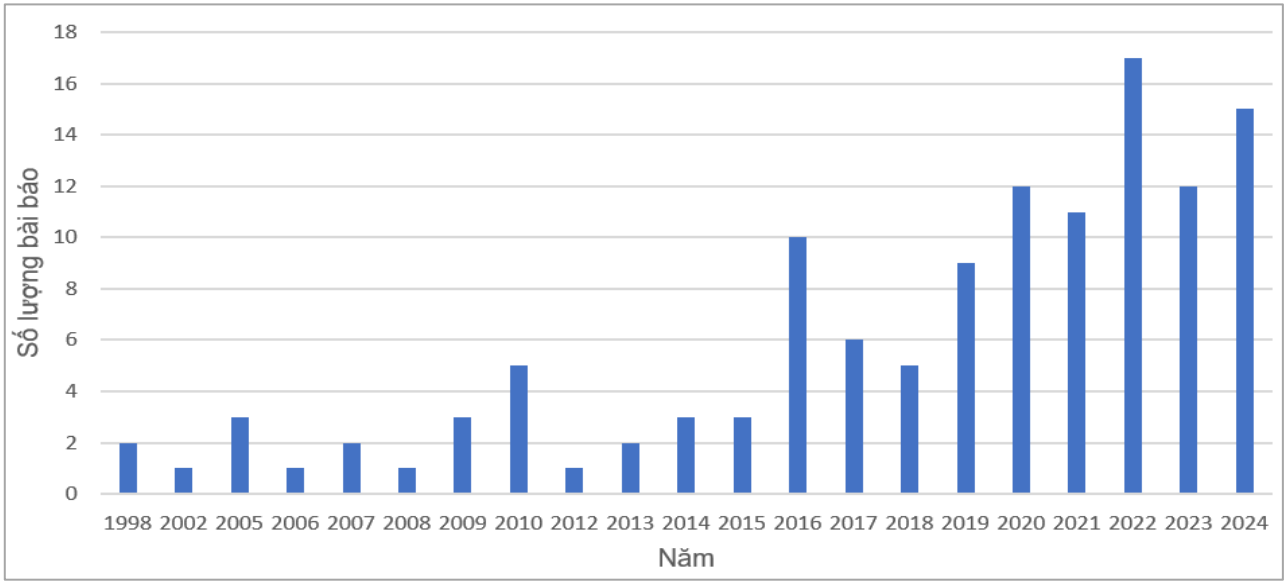

Figure 2: Number of Published Articles from 1998 to 2024
Source: *Data Analysis Results from Scopus*

Based on the results of the bibliometric analysis, the research team classifies the main research trends into eight key directions as follows: (i) Performance measurement frameworks for organizations; (ii) The impact of big data, artificial intelligence, and technological applications on the sustainable development of supply chains and organizational performance; (iii) The relationship between customer engagement, supply chain management, and organizational performance; (iv) Evaluation and measurement methods aimed at streamlining and enhancing the performance of manufacturing enterprises; (v) Establishing criteria for selecting suitable suppliers; (vi) Assessing the impact of digital technology on supply chain management and organizational performance; (vii) Green supply chain management and its effects on organizational performance; (viii) Critical risks and instabilities in supply chain management and their impact on organizational performance.

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Research Model and Proposals

Previous studies have demonstrated that Supply Chain Management (SCM) significantly influences organizational performance. Both SCM outcomes and business performance are affected by various factors, including internal elements such as management strategies, applied technologies, and human resource capabilities, as well as external factors such as the business environment, supplier and customer relationships. The research team has carefully selected the most relevant factors as the foundation for analyzing their impact. In the current context, where environmental, social, and governance (ESG) issues are gaining increasing attention, integrating sustainable practices into SCM is not merely a trend but an essential requirement for businesses to achieve sustainable development and enhance competitiveness. Therefore, the research incorporates the factor of **Sustainable Practices** to align with contemporary trends. Based on practical considerations and a comprehensive review of prior studies, the proposed research model is illustrated in Figure 3.1.

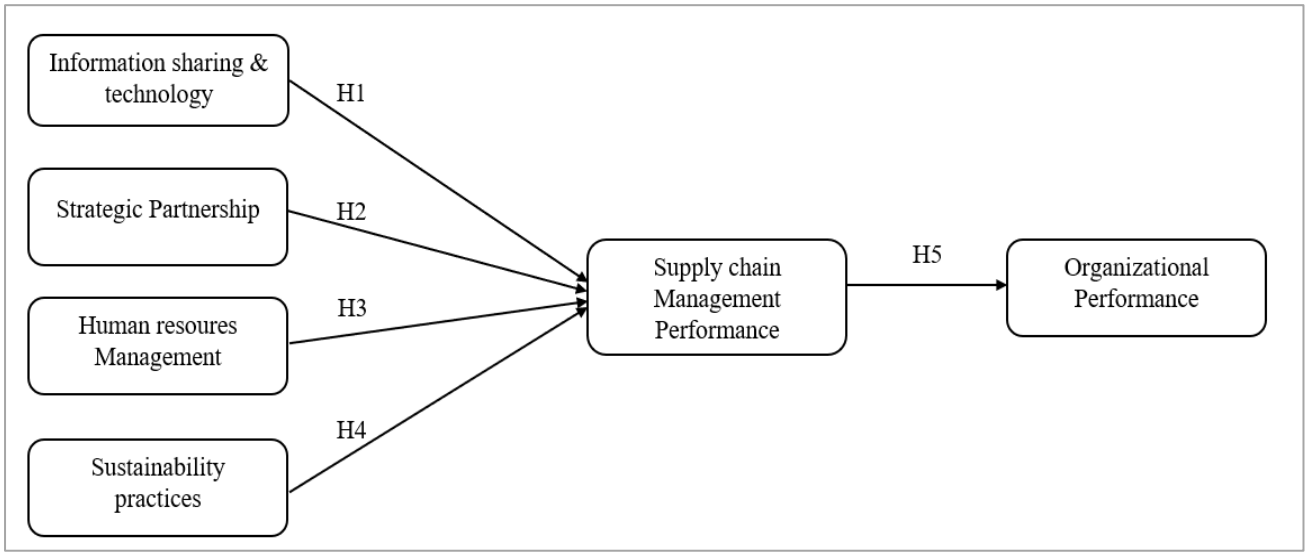

Figure 3: Proposed Model of Factors Affecting Supply Chain Management Performance and Business Performance of Small and Medium Enterprises in Ho Chi Minh City

Source: *Proposed by the Research Team*

H1: Information sharing and technology have a positive impact (+) on the supply chain management (SCM) performance of small and medium-sized enterprises (SMEs). Information sharing refers to the process of exchanging critical information among departments and individuals. Effective information sharing not only provides significant advantages but also optimizes the overall performance of the supply chain (Prakash *et al.*, 2017). Alongside information sharing, the application of information technology (IT) in supply chain management has gained increasing attention in the current era of technological advancement. According to research by Forrester Research, manufacturers in the United States are increasingly leveraging the superior benefits of IT to optimize their supply chains. Specifically, Radjou (2003) highlights the critical role of IT in enhancing supply chain flexibility, reducing production and distribution cycle times, improving overall operational performance, and ensuring timely and accurate product delivery to customers.

H2: Partnerships and strategies have a positive (+) impact on the supply chain management performance of small and medium-sized enterprises. Partnerships and strategies refer to long-term collaborative relationships and commitments between organizations and their suppliers, as well as strategic partners working together toward shared goals of efficiency and mutual benefit (Al-Shboul *et al.*, 2017; Li *et al.*, 2006). This factor plays a crucial role in strengthening the relationship between organizational culture and business philosophy among parties, fostering trust, and expanding cooperation within the supply chain. Leading corporations such as Dell, Hewlett-Packard, Procter & Gamble, and IBM have demonstrated this by establishing sustainable relationships with key suppliers, thereby minimizing transaction costs and reinforcing competitive advantages (Sheu, Yen, & Chae, 2006).

H3: Human Resource Management (HRM) has a positive (+) impact on the supply chain management performance of small and medium-sized enterprises. HRM is a strategic, integrated, and coherent approach to recruiting, developing, and ensuring employee well-being within an organization. According to Armstrong (2010), HRM encompasses all managerial decisions, actions, and policies that directly influence the relationship between employees and employers. A study by MacDuffie (1995) conducted in global automobile assembly plants found that certain HRM practices, such as training and performance evaluation, are significantly associated with productivity and product quality.

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H4: Sustainable Practices Have a Positive (+) Impact on the Supply Chain Management Performance of Small and Medium-Sized Enterprises. Sustainable practices are primarily defined as the intersection of three key factors: economy, environment, and society. Sustainability is not merely a theoretical concept but a practical necessity for modern enterprises. Sustainable development involves meeting present needs without compromising the ability of future generations to meet their own. A critical aspect of sustainable practices is the implementation of sustainable supply chain management (SSCM) activities. The adoption of sustainability initiatives in production, such as sustainable distribution and process improvements, can significantly enhance a company's environmental performance (Green, K.W., 2012).

H5: Supply Chain Management Performance Has a Positive (+) Impact on Organizational Performance. Effective supply chain management (SCM) has emerged as a key strategy for ensuring competitive advantage and improving organizational performance. Tan (2002) examined supply chain managers' concerns and concluded that certain SCM practices have a positive impact on company performance. In a related study, Wisner (2003) developed a theoretical framework for supplier and customer management and demonstrated a positive relationship between SCM and company performance.

CONCLUSION

In the operation and development of enterprises, the supply chain plays an indispensable role and serves as a core component of the business. A well-managed supply chain directly impacts organizational performance. However, SMEs in Vietnam continue to face numerous challenges, particularly in a volatile economic environment. Issues such as capital shortages, limited access to financial resources, and intense market competition exert significant pressure on their market expansion efforts. Moreover, many SMEs lack the resources to invest in technology and digital transformation. This limitation hinders their ability to enhance operational efficiency, optimize the supply chain, and strengthen market competitiveness. Without an appropriate strategy, SMEs may become passive, struggling to maintain stability and achieve sustainable growth. Based on this reality, the author proposes a theoretical research model consisting of four influencing factors: Information and Technology Sharing, Strategic Partnerships, Human Resource Management, Supply Chain Management Performance, and Organizational Performance of SMEs in Vietnam. Based on the proposed model, the author will further measure the impact levels of these factors on supply chain management performance and business outcomes. Through empirical data analysis, the author aims to clarify the relationships between variables, thereby providing managerial implications.

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