

## THE INCREASED EXPORT PERFORMANCE OF DURIAN EXPORT IN THAILAND

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### Abstract

This research is volume research. The research is 400 entrepreneurs of durian export registered with Ministry of Commerce using 20 times criteria, specific variables, data collection, questionnaire data and data analysis. Acceptable levels of consistent model with index values  $\chi^2 = 52.428$ ,  $df = 57$ ,  $p\text{-value} = 0.647$ ,  $\chi^2 / df = 0.920$ ,  $AGFI = .959$ ,  $GFI = 0.985$ ,  $CFI = 1.000$ ,  $RMSEA = 0.000$  and  $RMR = 0.005$ . The most effective influence on exports of durian in Thailand is that supply chain operations have a direct, positive, and even positive influence of 0.254 are external factors. Positive direct influence of 0.212 and competitive factors have significant positive, direct, positive, 0.212 influence on a level 0.05; external factors are also found to be external. There is a significant positive 0.216 indirect influence on a level 0.05 with supply chain operations and competitive advantage as a barrier to increasing export performance in Thailand. Therefore, increasing export efficiency will be important to supply chain operations and external factors. Development, improvement, and competitive advantage should be developed, especially by bringing technology innovation to a different level of cost, service, management, flexibility to manage the entire supply chain of exports to enhance the export performance of the country's durian.

**Keywords:** Durian Export, Supply Chain Operations Reference, Export Performance

### Introduction

Durian is an important economic fruit of Thailand, generating income and employment for farmers, producers, and exporters with a significant market value. Due to its high consumption demand both domestically and internationally, durian has strong market potential. Thailand is one of the world's largest producers and exporters of durian. The primary export market for Thailand is the People's Republic of China, with over 90% of durians exported in fresh form.

Thailand is a leading global exporter of durians, primarily in fresh form, with major export markets including Vietnam and Hong Kong. In 2019, Thailand exported a total of 720,015.27 tons of fresh durian and related products, an increase from 559,224.11 tons in 2018, representing a 29.91% growth. Meanwhile, the export value increased by 1,714.19 million USD, up from 1,177.05 million USD in 2018, reflecting a 45.63% rise. This growth was driven by a continuous increase in foreign market demand and government policies promoting fruit exports, ensuring high export prices and increased trade value.

In 2020, it was initially expected that fresh durian and related product exports would reach approximately 784,699 tons due to the rising demand in international markets,

particularly China. Additionally, the development of China’s logistics and transportation systems facilitated easier and faster distribution of durians to consumers across various provinces. Furthermore, Thailand exports both fresh and frozen durians to other markets, including the United States, South Korea, and Taiwan, further increasing the overall export volume.

However, the outbreak of COVID-19 negatively impacted consumer demand and purchasing power in foreign markets. Chinese consumers avoided public places, reducing direct shopping for fresh fruit. Additionally, domestic logistics issues in China led importers to delay orders and wait for the pandemic situation to stabilize (Department of Trade Negotiations, 2020).

Despite the decline in new COVID-19 cases in China, market uncertainty remains if conditions do not return to normal. Exporters should reduce reliance on the Chinese market and seek alternative markets. The government should also implement policies to stimulate domestic consumption and promote fruit processing to extend product shelf life, helping to mitigate declining demand. Once the COVID-19 situation improves, promotional efforts should be intensified to restore the market quickly.

Additionally, exporters should adapt to take advantage of online trade opportunities by enhancing their capacity to export Thai durians. So far, there has been little research on applying supply chain management concepts to durian exports. Studying this aspect could benefit the planning of durian production for export by government agencies and help expand distribution channels for exporters. Hence, this study focuses on enhancing Thailand’s durian export capabilities through supply chain management practices.

### **Research Objectives**

To develop and examine a causal relationship model of supply chain operations, competitive advantage, and external factors influencing the efficiency of Thai durian exports, with competitive advantage as a mediating variable.

#### **Research Framework**

Based on a literature review and the application of relevant theories and studies, the research framework is developed from the following key concepts:

1. Supply Chain Operations (Peerasak Sakhong & Wichayut Ngamsaad, 2021; Supply Chain Council, 2012; Alimo, P. K., 2021)
2. Competitive Advantage (Porter, 1985; Barney, 1991; Healy, Serafeim, Srinivasan, & Yu, 2014; Dubey, Gunasekaran, & Childe, 2018)
3. Export Performance (Kolbe, D., Frasquet, M., & Calderon, H., 2021; Chelliah, S., & Lee, M. H., 2020)

These elements form the foundation of the research framework, as illustrated in Figure 2.

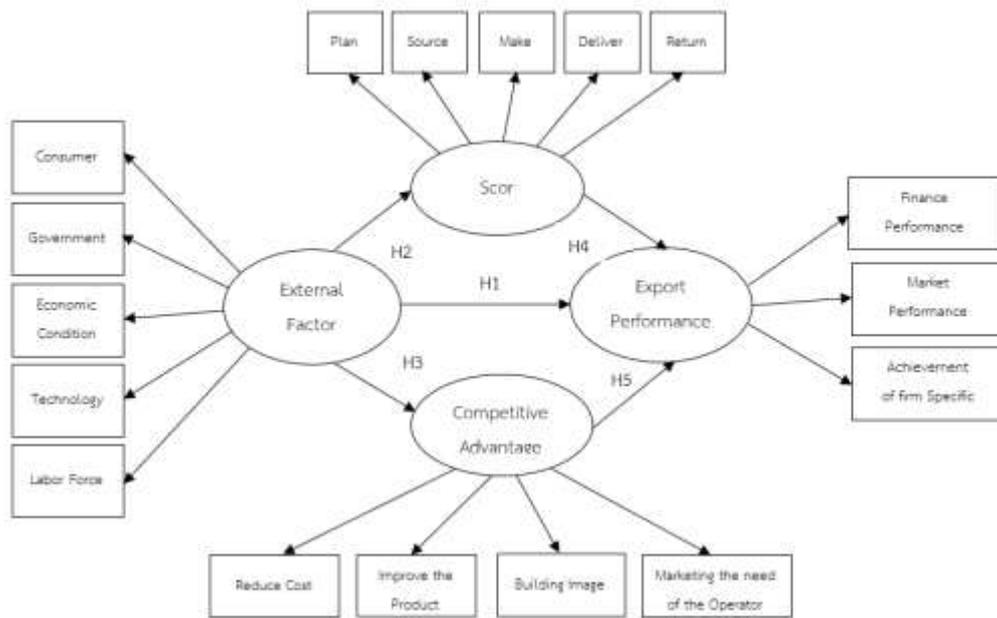


Figure 1: Research Conceptual Framework

## Literature Review

### Supply Chain Operations

The Supply Chain Council (2012) introduced the Supply Chain Operation Reference Model (SCOR Model) as a tool to initiate and improve supply chain development. The SCOR Model was designed to describe and illustrate business activities within the supply chain that contribute to customer satisfaction. It serves as a framework for analyzing and refining supply chain management.

The SCOR Model consists of five key components:

1. Plan – Strategic planning of supply chain processes
2. Source – Procurement of raw materials
3. Make – Production and manufacturing processes
4. Deliver – Distribution and logistics management
5. Return – Handling of returned goods

To ensure effective implementation, the SCOR Model defines a four-stage development process:

1. Analyzing internal and external business competition factors
2. Defining core business processes, including planning, procurement, production, and delivery
3. Detailing the specific procedures within each process
4. Implementing the planned processes according to the designated framework

Alimo (2021) applied the SCOR Model to reduce post-harvest losses in fruits and vegetables by assessing supply chain efficiency. The study found that reliability, responsiveness, and flexibility in the supply chain were critical factors in minimizing losses, both quantitatively and qualitatively. Additionally, the ability to fulfill customer orders on time significantly impacted return on assets (ROA) and supply chain performance.

Similarly, Peerasak Sakhong and Wichayut Ngamsaad (2021) examined durian supply chain management in Thailand using the SCOR Model. Their research highlighted that implementing quality control measures aligned with GMP (Good Manufacturing Practice) and

GAP (Good Agricultural Practice) standards led to improved efficiency. The study found that by optimizing communication between durian farmers and processing facilities, sorting times were reduced to approximately 56 minutes per 1,000 kilograms. These findings demonstrate that a well-integrated supply chain approach, covering internal and external factors, core business processes, and detailed operational strategies, enhances overall efficiency and seamless operations.

#### Competitive Advantage

Businesses that successfully create competitive advantage gain differentiation from their competitors. According to Porter (1985) and Barney (1991), companies can achieve competitive advantage through four key strategies:

1. Differentiation – Developing unique products and services
2. Cost Leadership – Maximizing resource efficiency to minimize costs
3. Niche Market Focus – Targeting specific market segments through tailored marketing strategies
4. Quick Response – Adapting rapidly to consumer needs and market changes

Healy, Serafeim, Srinivasan, and Yu (2014) further emphasized that organizations could enhance competitiveness through these four factors.

Dubey, Gunasekaran, and Childe (2018) studied the Indian automotive parts industry, examining the role of organizational flexibility and supply chain agility in improving company performance. Their research revealed that competitive advantage plays a crucial role in shaping business models that align with product differentiation, cost advantages, niche market positioning, and rapid response to market shifts. The study further demonstrated that efficient supply chain management at all stages—from raw materials (upstream) to production (midstream) and distribution (downstream)—is essential for maintaining competitiveness.

#### Export Performance

Sukanya Siripichit (2002) described exports as a key driver of economic growth, providing a crucial source of foreign currency for purchasing raw materials and supporting overall economic development. As globalization intensifies trade competition, businesses must ensure readiness in several areas, including financial stability, technology adoption, and product quality.

Kolbe, Frassetto, and Calderon (2021) explored the impact of market orientation and innovation capabilities on export performance in Latin American SMEs. Their research found that efficient workforce management, innovation, and government support were vital in enhancing export efficiency.

Similarly, Chelliah and Lee (2020) examined the moderating role of government support in the food processing industry, highlighting how state policies influence SME export performance.

Chanchai Pitakarnop (2015) analyzed the export success of Thai SMEs, identifying both financial and non-financial performance indicators as critical success factors. These included government policies, innovation, technology, financial management, and marketing strategies. The study concluded that businesses with strong export performance could establish long-term consumer trust and brand loyalty.

## Research Methodology

### Research Design

This study employs a quantitative research approach, collecting data from durian export entrepreneurs who are legally registered with the Ministry of Commerce.

### Population and Sample

The population for this study consists of durian export entrepreneurs registered as legal entities under the Ministry of Commerce.

The sample size was determined based on recommendations by Hair et al. (1995) and Comrey & Lee (1992), who suggested an appropriate sample size of 200–300 respondents. Additionally, Hair et al. (2010) recommended that the sample size should be 10–20 times the number of observed variables in the study. Given that this research involves 17 observed variables, the minimum required sample size was calculated as:

To account for potential non-responses or incomplete survey returns, an additional 20% was added, resulting in a final sample size of 400 respondents.

This sample size meets the requirements for Structural Equation Modeling (SEM) analysis, which is the primary data analysis technique used in this study. To ensure the study meets its research objectives, a purposive sampling method was employed, selecting 400 respondents who met the study criteria.

### Data Collection and Analysis

Data collection was conducted through online questionnaires and telephone interviews with selected respondents. Appointments were scheduled to ensure complete data collection, resulting in 400 fully complete survey responses for analysis.

## Conclusion and Discussion

Application of the SCOR Model for Enhancing Durian Export Efficiency in Thailand. This study aimed to develop and examine the causal relationship model between supply chain operations, competitive advantage, and external factors influencing Thailand’s durian export efficiency, with competitive advantage as a mediating variable.

The findings indicate that supply chain operations (SCOR model) have the most significant impact on enhancing Thailand’s durian export performance. The key components of effective supply chain management include:

- Planning
- Sourcing high-quality raw materials
- Efficient production processes
- Flexible distribution systems
- Effective return management

Optimizing supply chain operations from upstream (raw materials), midstream (processing), to downstream (distribution and returns) ensures overall business efficiency and competitiveness. This aligns with Bolstorff & Rosenbaum (2003), who highlighted the benefits of implementing the SCOR model in business, including cost reduction and improved customer service. Their research found that technology-driven supply chain improvements led to a 1-3% increase in profitability per year through enhanced financial decision-making and standardization.

Similarly, Fernandes et al. (2017) found that effective supply chain management significantly influences organizational performance. Their study emphasized that high-level management support is crucial for ensuring efficient supply chain operations.

The second most influential factor in improving durian export efficiency is external factors, including:

- Consumer market trends
- Economic conditions
- Technological advancements
- Government policies

- Labor force availability

These factors have both direct and indirect impacts on export efficiency. The study highlights the necessity for clear government policies and export-support initiatives to sustain and expand Thailand’s durian export market. Furthermore, the integration of technology in supply chain operations enhances operational speed and quality, aligning with Porter’s Diamond Model (1990). Porter’s model emphasizes the importance of international business management strategies, including:

1. Leveraging competitive production factors
2. Establishing international partnerships
3. Continuous government support and trade promotion

Similarly, Escandon-Barbosa et al. (2019) identified key drivers of export competitiveness, including innovation, market dynamics, and the global trade environment.

Among all the factors examined, competitive advantage was found to have the least direct impact on export efficiency. Key competitive advantage factors include:

- Cost reduction
- Production quality
- Product branding and image
- Marketing and operational strategies

The study revealed that Thai durian farmers still face challenges in adopting advanced production technologies, which limits cost efficiency. Additionally, branding and marketing efforts remain underdeveloped, particularly in the wake of global disruptions such as the COVID-19 pandemic. The pandemic impacted export logistics, leading to delays in shipments and a decline in durian quality, which further weakened Thailand’s competitive advantage. These findings align with Chanchai Pitakarnop (2015), who suggested that Thai SMEs should focus on innovation, proactive market strategies, and overcoming barriers related to information access, resources, and market entry.

Furthermore, Joo & Shin (2020) conducted an empirical study on the impact of entrepreneurial strategies on export performance, emphasizing the mediating role of technological capabilities and government support. Their research confirmed that market orientation, technological innovation, and social capital directly influence export performance.

#### Key Takeaways

This study confirms that applying the SCOR Model to Thailand’s durian export sector—alongside external factors, competitive advantage, and overall export efficiency—establishes empirical causal relationships that drive export performance. Each of these factors plays a significant role, and their integrated implementation is essential for optimizing durian exports.

To enhance Thailand’s durian export performance, businesses must:

- Incorporate innovation and advanced technology in production and supply chain operations
- Strengthen government support policies for export facilitation
- Develop proactive marketing strategies to improve Thailand’s competitive position
- Ensure supply chain flexibility to mitigate disruptions and improve efficiency

During global crises like the COVID-19 pandemic, these strategies become even more critical. The findings emphasize the need for continuous integration of supply chain management, technological advancements, and strategic market expansion to maintain Thailand’s position as a leading global durian exporter.

## Research Suggestions

To make export capabilities more effective, it is important to focus on introducing production innovations to create differences in cost reduction and service, and to work proactively within the organization, such as seeking new export markets to create more sales opportunities. In addition, research and development play a very important role in developing export efficiency to create competitive advantages in foreign markets.

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