Available online www.ejaet.com

European Journal of Advances in Engineering and Technology, 2020, 7(10):113-125

Research Article ISSN: 2394 - 658X

# The Intersection of Supply Chain Performance and Business Success: A Focus on Customer Satisfaction"

**Dilip Kumar Vaka**

Supply Chain SME, Bentonville, Arkansas, US

---

**ABSTRACT**

This study examines the interplay between supply chain management (SCM) efficiency and overall organizational performance, with a particular emphasis on the role customer satisfaction plays as a mediator. Implementing efficient SCM practices is essential for improving operational productivity, cutting costs, and enhancing service quality across businesses. The research explores how strong SCM performance influences key organizational metrics such as profitability and market share. A key aspect of this investigation is the function of customer satisfaction as a vital connector, bridging the gap between SCM success and organizational performance metrics. By ensuring prompt deliveries, reducing inventory expenses, and streamlining distribution networks, SCM plays an important role in fulfilling customer needs and building long-term relationships. The paper also reviews existing literature and draws from empirical data to show how businesses can adopt effective SCM strategies to raise customer satisfaction. Through case studies, it highlights successful SCM implementations that have led to improved organizational outcomes, including higher customer retention and competitive advantages. Challenges within SCM, such as supply chain disruptions, inventory management difficulties, and the need for agility to respond to shifting market demands, are also discussed. The study provides strategies to address these challenges and improve SCM performance, focusing on the importance of incorporating modern technologies and ongoing process improvements. In conclusion, the research emphasizes the essential role of SCM in driving organizational success, with customer satisfaction being the critical intermediary that transforms SCM improvements into measurable business gains. It advocates for strategic investments in SCM capabilities to achieve sustained growth and maintain a competitive edge in today's fast-evolving business environment.

**Keywords:** Supply Chain Management Performance, Customer Satisfaction, Organizational Performance, Myanmar, Heavy Equipment Machinery Industry

---

## INTRODUCTION

The heavy equipment machinery industry was confronting various supply chain management issues. The COVID-19 outbreak has affected global supply networks, resulting in shortage raw material, components, and completed goods, causing manufacturing and delivery delays. Furthermore, the industry was under growing pressure to embrace more sustainable supply chain processes, such as decreasing carbon emissions and supporting ethical material sourcing. The industry has been working toward these objectives by deploying digital technology to increase supply chain visibility and transparency, as well as exploring renewable energy sources (D. Ivanov, 2021). Furthermore, the industry was looking into how to employ technology like 3D printing, automation, and artificial intelligence to simplify and improve supply chain processes (O. Rodrguez-Espndola et al., 2020). Using 3D printing for spare components, for example, can assist to reduce lead times and inventory costs. In Asia, there is a significant gap between infrastructure and heavy equipment machinery requirements. While there is a significant demand for these resources, numerous countries in the region lack of infrastructure and equipment needed to enable their growth. According to ADB projections, developing Asia would need to invest $1.7 trillion in infrastructure every year until 2030 in order to maintain growth progress, conflict poverty, and adapt to climate change. It also looks at the factors that will influence future infrastructure investment and growth. Southeast Asia requires massive infrastructure investment in order to meet its expanding economic and development demands. Between 2016 and 2030, the region's infrastructure investment needs are anticipated to reach over $210 billion per year and Myanmar's

infrastructure investment demands are projected to reach over $170 billion for Investments in transportation, telecommunications, electricity, water, and other significant industries are included. (Meeting Asia's Infrastructure Needs, 2020)

At the same time, Myanmar's heavy equipment industry is still in its infancy. Myanmar's construction industry is mainly reliant on foreign equipment, with limited domestic production. And the Transport infrastructure development is a key issue in Myanmar's Sustainable Development Policy 2018-30 (MarketResearch.com, n.d.). Myanmar's economic growth and development are being limited by a lack of infrastructure and heavy equipment machines. Myanmar may struggle to attract the essential foreign investment to maintain its growth if significant infrastructural investment is not made. Similarly, without adequate heavy equipment machinery, building and development projects may be postponed or cancelled, impeding economic progress even more. Political turbulent conditions and civil unrest had a negative influence on Myanmar's heavy equipment industry. Following the February 2021, the country has witnessed major social and political upheaval, with massive protests and strikes impacting numerous businesses. Furthermore, the United States and the United Kingdom impose economic sanctions on Myanmar, affecting the economy and commerce. It is uncertain how this circumstance would affect the country's heavy equipment machinery industry, in the future (Burma Sanctions - United States Department of State, 2023 and Treasury, 2023).

To summarize, Myanmar is experiencing substantial infrastructural and heavy equipment machinery deficiencies, which are slowing economic growth and development. Addressing these gaps would necessitate major infrastructural investment as well as the establishment of a local heavy equipment industry. Myanmar's heavy equipment industry contributes significantly to the country's economic prosperity. The industry is experiencing several challenges and is very competitive within itself. Thus, the effectiveness of supply chain management plays a critical role in determining the success of enterprises operating in this field. It includes managing supplies, inventories, manufacturing, and logistics, all of which have an influence on customer satisfaction. Companies that manage their supply chain operations successfully can enhance their capacity to offer products and services that match the needs and expectations of customers, resulting in higher customer satisfaction, loyalty, and commercial success. Customer satisfaction results from effective supply chain management, which contributes to organizational performance growth and development. In this article, we examined the impact of supply chain management performance on customer satisfaction, the impact of customer satisfaction on organizational performance, and the impact of supply chain management performance on organizational performance directly and through customer satisfaction in Myanmar's heavy equipment machinery industry.

**Objective of the Research**

The objective of this research is to delve into the complex landscape of Myanmar's heavy equipment machinery industry, which faces multifaceted challenges in supply chain management, infrastructure development, and socio-political upheavals. This study aims to:

1) Assess the intricate relationship between supply chain management performance and customer satisfaction within Myanmar's heavy equipment machinery industry, recognizing the pivotal role of effective supply chain operations in meeting customer needs and expectations amidst challenges in supplies, inventories, manufacturing, and logistics.

2) Explore the impact of customer satisfaction on organizational performance within this industry, understanding how a satisfied customer base contributes to the growth and success of enterprises operating within this competitive landscape.

3) Investigate the direct impact of supply chain management performance on organizational performance and, critically, examine the mediating role of customer satisfaction. This analysis aims to uncover how optimized supply chain practices directly influence the overall success and growth of organizations, both independently and through the satisfaction of their customer base.

Through meticulous examination of these interrelated factors, this research endeavors to provide insights and recommendations crucial for the heavy equipment machinery industry in Myanmar, particularly in navigating challenges, enhancing operational efficiency, and fostering sustainable growth amidst a dynamic and demanding business environment.

## LITERATURE REVIEW

**The definition of organizational performance**

The evaluation and assessment of how effectively and efficiently an organization achieves its objectives and goals is referred to as organizational performance. It evaluates the organization's total effectiveness in utilizing its resources, managing its processes, and achieving desired goals. (O. Taouab, & Z. Issor, 2019). The concept of organizational performance may vary according to the organization's context and goals. (Peterson, Gijsbers, & Wilks, 2003 and A. A. Stanciu, et. al., 2019). According to Luo et al. (2012), For measuring organizational performance, many researchers examined economic and operational achievement.

Depending on the company's unique goals and objectives, the organizational performance indicators for a Heavy Equipment Machinery authorized dealer might vary. However, the following are some common performance areas that such an organization may concentrate on: Sales Performance, Customer Satisfaction, Service and Support, Inventory Management, Supplier Relations, Employee Productivity and Training, Financial Health, Market Expansion, Compliance and Regulatory Performance, and Innovation and Adaptability. Heavy Equipment Machinery authorized dealer organizations have to align their performance indicators with their individual goals, objectives, and market conditions. To increase organizational performance in these areas, regular monitoring, analysis, and continuous improvement initiatives are required.

**Supply Chain Management Performance (SCMP) is important for Organizational Performance (OP)**

Here are some of the key reasons why supply chain management effectiveness is critical for organizational performance: meeting Customer Demands: The ability of an organization to effectively manage its supply chain performance is critical in satisfying customer requirements. Customers require things to be delivered on time, at a reasonable cost, and of excellent quality. Effective supply chain management ensures that items are available when and where customers want them, and that they fulfill quality and performance standards (A. Deshpande, 2012). Cost Reduction: The effectiveness of supply chain management is critical in lowering costs related to manufacturing, inventory, transportation, and other supply chain operations. Organizations that manage their supply chain performance successfully can cut costs and increase efficiency (A. Deshpande, 2012). Improved Operational Performance: By optimizing production schedules, decreasing inventory levels, enhancing transportation and logistics, and simplifying supply chain procedures, supply chain management performance may assist firms in boosting operational efficiency. This results in shorter lead times, higher throughput, and better operational flexibility (S. Li, S., et. al., 2006). Competitive Advantage: Organizations that manage their supply chain performance successfully might obtain a competitive advantage by providing better products and services at a reduced cost. This can assist in increasing market share, improving consumer loyalty, and increasing overall profitability (S. Li, S., et. al., 2006). To summarize, effective supply chain management performance is crucial for organizational performance. It assists firms in meeting consumer expectations, reducing costs, improving operational efficiency, and gaining a competitive advantage in the marketplace.

**Customer satisfaction is important in Myanmar HEMI**

Customer satisfaction is becoming increasingly crucial in Myanmar's heavy equipment industry as companies attempt to maintain existing customers and attract new ones. Customers are likely to have little expertise and understanding of the available equipment alternatives because the sector is still in its infancy, making their purchase decisions more reliant on criteria such as product quality, after-sales service, and pricing (A. Amron 2018To meet and surpass customer expectations, businesses must focus on providing high-quality products and services. This involves providing a diverse choice of goods appropriate for various applications, thorough after-sales service to ensure that customers' needs are addressed throughout the equipment lifespan, and reasonable pricing to attract price-sensitive customers (N. Feng, et. al., 2021). Another significant feature of customer satisfaction in the heavy equipment machinery industry is the availability of replacement parts and maintenance services on a consistent and timely basis. Equipment downtime may have a substantial influence on the productivity of construction and infrastructure projects in Myanmar, where infrastructure is still being developed. Companies must have a strong supply chain and maintenance network in place to reduce downtime and assure customer satisfaction (Wicaksono, T., and C. B. Illés, 2022). In addition, as digital technologies become more widely adopted in the heavy equipment machinery industry, companies must consider implementing technology-based solutions to improve customer experience (D. Mourtzis et al., 2022). Digital solutions like as remote monitoring systems, predictive maintenance software, and augmented reality tools can be used to give clients with real-time updates on equipment performance and maintenance requirements (M. Agrawal and colleagues, 2020)

**Supply Chain Management Impact on Customer Satisfaction**

Customer satisfaction is a vital aspect in the success of enterprises in Myanmar's heavy equipment industry. The effectiveness of supply chain management has a direct impact on customer satisfaction since it ensures that products and services are supplied on time, at the correct quality, and at the right price (S. Harini et al., 2020). Companies that can successfully manage their inventory levels, for example, can decrease stock out, resulting in faster and more consistent deliveries and more customer satisfaction. Additionally, businesses that maintain high levels of accuracy in their orders and delivery can create trust with their customers, resulting in repeat business and favorable word-of-mouth (M. Ngoma, M., & Ntale, P. D. 2019). Customers who receive their purchases on time and with great precision are more likely to trust and stick with the supplier (D. T. Nguyen et al., 2020). In brief, the current state of Myanmar's heavy equipment machinery industry gives both possibilities and difficulties for businesses wanting to maintain existing customers and attract new ones. Companies can improve customer satisfaction and gain a competitive advantage in the market by focusing on delivering high-quality products and services, providing comprehensive after-sales support, offering competitive pricing, ensuring reliable and timely supply of spare parts and maintenance services, and incorporating digital technologies.

**Customer satisfaction lead to organization development in Myanmar HEMI**

In Myanmar's heavy equipment industry, customer satisfaction is a vital aspect in driving organizational performance. Companies may boost customer loyalty, retain old customers, and attract new ones by delivering high levels of customer satisfaction (M. Alkhurshan and H. Rjoub, 2020). This, in turn, may generate revenue growth, boost market share, and improve the company's market reputation (A. S. Otto and colleagues, 2020). Aside from the benefits of customer retention and acquisition, a focus on customer satisfaction may lead to product innovation and process changes, which can increase the organization's competitiveness and long-term performance (T. M.
Yeh et al., 2019). Understanding customer requirements and preferences allows organizations to find areas where are able to improve products and services or develop new offers that better align with the market's growing expectations. Furthermore, a high emphasis on customer satisfaction helps foster a customer-centric culture inside the organization (E. Colleoni et al., 2021). This can result in increased employee engagement, improved communication and cooperation, and overall improved organizational performance. In conclusion, by focusing on customer satisfaction first, companies in Myanmar's heavy equipment machinery industry can not only improve their ability to retain existing customers and attract new ones, but also drive organizational development through innovation, process improvements, and a customer-centric culture.

**Supply Chain Management Impact on Organizational Performance Development**

The success of supply chain management has a direct impact on organizational performance growth in Myanmar's heavy equipment machinery industry. Companies that can enhance their revenue and market share through effective supply chain management processes can lead to organizational growth and expansion (C.W. Utami et al., 2019). This can result in the development of new employment, investment in new technology, and other beneficial results for the organization and the economy (K. Lee et al., 2022; S. Glushkova et al., 2019). In addition, by focusing on supply chain management, businesses can identify areas for improvement and execute changes that improve their operations, boost efficiency, and lower costs (M. Alam, 2022). Companies that may decrease their inventory levels, for example, can free up resources and

**Conceptual Framework**

According to the literature research, SCMP is highly significant in every business and has an influence on customer satisfaction and organizational performance. Previous research studies, based on the available literature, have focused on various supply chain management components, the influence of supply chain management performance on organizational performance, and the relationship between supply chain management performance and organizational performance. And the link between supply chain management performance and customer satisfaction. However, no research has been conducted on the impact of supply chain management performance on organizational performance as measured through customer satisfaction in Myanmar HEMI. This has been recognized as the suggested study's research gap. For clarification, an organization or industry must directly or indirectly assess their supply chain management performance, its relationship, and impacts on customer satisfaction and organizational performance.

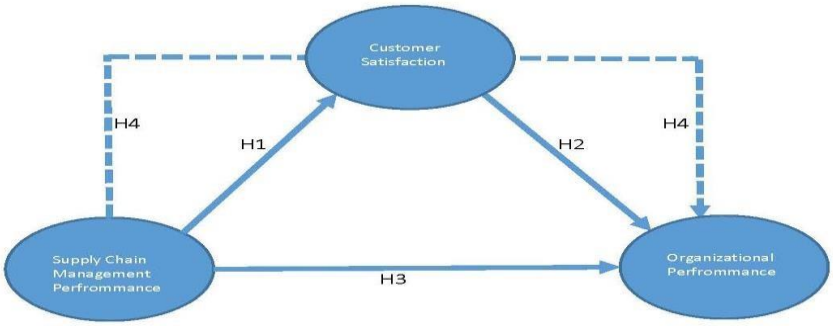



***Figure 1.*** *Conceptual Framework of Supply chain Management Performance (SCMP) impact on Organizational Performance (OP) mediating effect of through Customer Satisfaction (CS)*

**Hypothesis Development**

**H1.** There is a supply chain management performance significantly impact on customer satisfaction in Myanmar HEMI

**H2**. There is a customer satisfaction significantly impact on organizational performance in Myanmar HEMI

**H3.** There is a supply chain management performance significantly impact on organizational performance in Myanmar HEMI

**H4.** There is a supply chain management performance significantly impact on organizational performance through mediating effect of customer satisfaction in
Myanmar HEMI

## METHODOLOGY

**Research design and Method**

**Research Design:**

This study employs a descriptive survey approach to comprehensively investigate the impact of supply chain management performance on Myanmar HEMI's organizational performance through customer satisfaction. The research design integrates both qualitative and quantitative surveys to gather insights from targeted organizations and their end-user customers.

The qualitative phase involves engaging in focus group discussions and conducting face-to-face interviews with the management teams of Myanmar HEMI target organizations. This phase aims to gain an in-depth understanding of the current practices of supply chain management, customer satisfaction, and organizational performance, particularly focusing on customer-centric key performance areas. The Supply Chain Management Performance is assessed based on the Supply Chain Operations Reference model (SCOR 12.0), while Customer Satisfaction is evaluated using the SERVQUAL model. Organizational Performance is discussed and surveyed using the Balanced Scorecard and Total Quality Management models, in this qualitative in-depth interviews.

Building on the qualitative insights, a structured quantitative survey questionnaire is created with a customer-centric view. This questionnaire serves to assess the impact of supply chain management performance on customer satisfaction and organizational performance. It is designed based on the insights gained from the qualitative survey, incorporating elements from SCOR 12.0, SERVQUAL, Balanced Scorecard, and Total Quality Management models.

**Sampling Technique and Population:**

Given the vast and uncountable nature of the end-user population (customers of Myanmar HEMI), a random sampling method is employed to distribute questionnaires to 600 targeted customers of targeted organizations. According to Cochran (1963), recommend for an unknown research population suggests a sample size of 384, ensuring statistical significance. The sample includes end users engaged in transactions with Myanmar HEMI targeted sale and service providers for heavy equipment machines and power generators. The data is collected from customers of wellknown heavy equipment companies (Worldwide Top ten brands, such as CATERPILLAR, KOMATSU, HITACHI, LIBHERR, VOLVO, JCB, JOHN DEERE, DOOSAN, XCMG, SANY), and sales and service providers in Myanmar, specifically authorized dealers of the source suppliers.

**Data Collection:**

Questionnaires are distributed to end users across various locations in Myanmar where heavy equipment and power generators are utilized. The collection is facilitated through authorized dealers', distributors', sales and services providers' head and branch administration offices, ensuring a diverse and representative sample. A total of 600 questionnaires are issued, with 448 respondents providing usable data after coding errors were corrected during the importation process to the Partial Least Squares-Structural Equation Modeling (PLS-SEM).

The methodology employed in this research combines qualitative and quantitative approaches, incorporating established models to assess supply chain management performance, customer satisfaction, and organizational performance. The chosen methods and analyses aim to provide a thorough understanding of the complex dynamics at play in the studied context.

## DATA ANALYSIS

In this research, the SmartPLS 4.0 software serves as the analytical powerhouse, employing Partial Least Squares-Structural Equation Modeling (PLS-SEM) to delve into the intricate connections between supply chain management, customer satisfaction, and organizational performance within the realm of Myanmar HEMI. The analysis kicks off by rigorously testing the reliability, correlation, and conducting regression analyses. Beyond mere surface-level exploration, it extends to investigating direct, indirect, and mediating effects, ensuring a comprehensive understanding of the dynamics at play. SmartPLS 4.0 takes the lead in evaluating the model's factor loading, reliability, and construct validity (both convergent and discriminant). Additionally, it scrutinizes correlations and assesses the model's Goodness of Fits (GOF) as a critical measurement. The focus here lies on determining the average variance explained and ascertaining whether it reflects an adequate global level.

Moving into deeper layers, the response data undergoes scrutiny regarding path coefficient beta and T values. These analyses play a pivotal role in evaluating the structural model and hypotheses proposed in this research framework. Utilizing the PLS bootstrapping algorithm, the study estimates direct, indirect, and total effects, unraveling the nuanced interplay among variables. Specifically, the Variance Accounted For (VAF) becomes a crucial tool in testing the direct and mediating effects of customer satisfaction within the relationship between supply chain management performance and organizational performance.

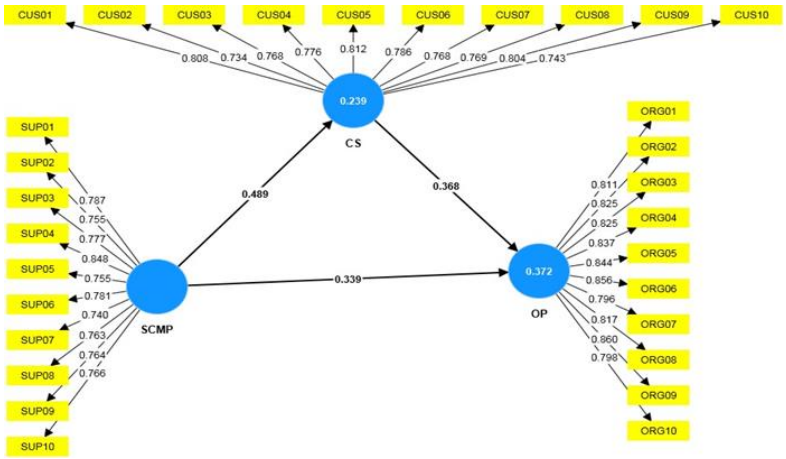
**Testing the Measurement Model**

The first stage in PLS-SEM procedures is to test the measurement model, which is a statistical analysis used to verify the validity and reliability of each construct. The measurement model was tested for SCM performance, customer satisfaction, and organizational performance in this study, and it was evaluated using outer factor loading,

reliability, convergent validity, and discriminant validity (divergent validity). According to Hair et al. (2010), the objective of measuring reliability and validity tests is to determine if the concept of structures is in order to assess.

**Convergent Validity Test**

The Factor Loading, Cronbach's Alpha, CR values, and P value are mostly used to measure in reliability tests (Hair et al., 2014). In this study, loadings to the corresponding construct latent variable are greater than loadings to the other construct latent variables for all of the observe variables' outer factors. And, at the 0.001(99%) level, all of the factor loadings to the respective construct latent variables are significant, with values more than 0.70 (see Table 1). This recommends that the observed variables on their respective constructs support the Construct Validity (D. Barclay et al., 1995; S. L. Sang et al., 2010). Figure 1 depicts the factor loadings for all observable variables to the corresponding construct:




***Firgure 1.*** *The factor loadings for respective construct latent variables*

**Table 1:** Factor Loadings and P Values for Observed Variables to the respective constructs

| **Supply Chain Management Performance (SCMP)** | | |
|---|---|---|
| **Observed Variables** | **Factor Loadings** | **P Value** |
| **SUP01** | 0.787 | 0.000 |
| **SUP02** | 0.755 | 0.000 |
| **SUP03** | 0.777 | 0.000 |
| **SUP04** | 0.848 | 0.000 |
| **SUP05** | 0.755 | 0.000 |
| **SUP06** | 0.781 | 0.000 |
| **SUP07** | 0.740 | 0.000 |
| **SUP08** | 0.763 | 0.000 |
| **SUP09** | 0.764 | 0.000 |
| **SUP10** | 0.766 | 0.000 |

| **Customer Satisfaction (CS)** | | |
|---|---|---|
| **Observed Variables** | **Factor Loadings** | **P Value** |
| **CUS01** | 0.808 | 0.000 |
| **CUS02** | 0.734 | 0.000 |
| **CUS03** | 0.768 | 0.000 |
| **CUS04** | 0.776 | 0.000 |
| **CUS05** | 0.812 | 0.000 |
| **CUS06** | 0.786 | 0.000 |
| **CUS07** | 0.768 | 0.000 |
| **CUS08** | 0.769 | 0.000 |
| **CUS09** | 0.804 | 0.000 |
| **CUS10** | 0.743 | 0.000 |

| **Organizational Performance (OP)** | | |
|---|---|---|
| **Observed Variables** | **Factor Loadings** | **P Value** |
| **ORG01** | 0.811 | 0.000 |
| **ORG02** | 0.825 | 0.000 |
| **ORG03** | 0.825 | 0.000 |
| **ORG04** | 0.837 | 0.000 |
| **ORG05** | 0.844 | 0.000 |
| **ORG06** | 0.856 | 0.000 |
| **ORG07** | 0.796 | 0.000 |
| **ORG08** | 0.817 | 0.000 |
| **ORG09** | 0.860 | 0.000 |
| **ORG10** | 0.798 | 0.000 |

For the **reliability test,** the Cronbach's Alpha values and the CR values for each of the constructs are greater than 0.70, indicating that the constructs have sufficient internal consistency and reliability (Salles et al., 2010, K. Ebrahim and R. Mahmoud, 2014, F. S. Fararah et al., 2014, Hair et al., 2017, S. M. Dam & T. C. Dam 2021). For the convergent validity test, the Average Variance Extracted (AVE) values and significance of constructs (P value) are assessed once again. Again, the test results indicated that all of the Average Variance Extracted values (AVE) are greater than 0.50, and the P value is less than 0.001 at the 99% confidence level. It is also recommended to accept to convergent validity test (Bagozzi & Yi, 1988; Hair et al., 2017, S. M. Dam & T. C. Dam 2021). Table 2 shows the results of the Reliability and Convergent Validity tests performed on the measurement model in this study.

**Table 2:** Reliability and Convergent Validity Test Results

| Construct | Cronbach's Alpha | Composite Reliability (rho_a) | Composite Reliability (rho_c) | Average Variance Extracted (AVE) | Significant (P Value) |
|---|---|---|---|---|---|
| CS | 0.927 | 0.927 | 0.938 | 0.604 | 0.000 |
| OP | 0.949 | 0.949 | 0.956 | 0.684 | 0.000 |
| SCMP | 0.926 | 0.933 | 0.937 | 0.599 | 0.000 |

**Discriminant Validity Test**

Measuring discriminant validity is critical in any research that includes latent variables in order to avoid multi-collinearity issues, and measured the Cross loading, heterotrait-monotrait (HTMT) ratio of correlations (Fornell and Larcker, 1981; Henseler et al., 2015; Hair et al., 2014).

The discriminant validity of each concept was evaluated, and the findings revealed that all of its square root of AVE values are greater than its correlation with other constructs. It is acceptable for discriminant test findings, according to the Fornell-Larcker criteria. (Hair et al., 2017, S. M. Dam & T. C. Dam 2021; Fornell & Larcker, 1981). **The cross-loading** test: the findings of this study show that the factor loading indicators on the respective construct are higher than all loading indicators on other constructs, and that each factor loading is greater than 0.70 and significant as per the aforementioned, which is assessed for one of the discriminant validity tests (Hair et. al.,2014). And given that **the HTMT** findings reveal that all of the values are less than the threshold value of 0.90 in this study, it is recommended that discriminant validity is sufficient and acceptable. (Henseler et al., 2015)

Table 3.1 Fornell-Larcker criterion indicated that AVE's square root of each reflective construct was higher than the correlations of corresponding latent constructs. Table 3.2 indicated that the Cross Factor Loadings and Significant of factor loadings (P value), and Table 3.3 indicated that Heterotrait-monotrait ratio (HTMT) values for Discriminant Validity test results for this research, where as Supply Chain Management Performance (SCMP), Customer Satisfaction (CS), and Oganizational Performance (OP).

**Table 3:** Discriminant Validity Test Results

**Table 3.1:** Fornell-Larcker criterion

| Construct | CS | OP | SCMP |
|---|---|---|---|
| **CS** | **0.777** | | |
| **OP** | 0.533 | **0.827** | |
| **SCMP** | 0.489 | 0.519 | **0.774** |

**Table 3.2:** The Cross Factor Loading and Significant (P value) Test Results

| Variables | CS | OP | SCMP | P Value |
|---|---|---|---|---|
| CUS01 | **0.808** | 0.476 | 0.354 | 0.000 |
| CUS02 | **0.734** | 0.410 | 0.325 | 0.000 |
| CUS03 | **0.768** | 0.369 | 0.421 | 0.000 |
| CUS04 | **0.776** | 0.427 | 0.355 | 0.000 |
| CUS05 | **0.812** | 0.416 | 0.321 | 0.000 |
| CUS06 | **0.786** | 0.399 | 0.393 | 0.000 |
| CUS07 | **0.768** | 0.406 | 0.364 | 0.000 |
| CUS08 | **0.769** | 0.415 | 0.425 | 0.000 |
| CUS09 | **0.804** | 0.409 | 0.415 | 0.000 |
| CUS10 | **0.743** | 0.413 | 0.411 | 0.000 |
| ORG01 | 0.447 | **0.811** | 0.458 | 0.000 |
| ORG02 | 0.450 | **0.825** | 0.406 | 0.000 |
| ORG03 | 0.423 | **0.825** | 0.422 | 0.000 |
| ORG04 | 0.448 | **0.837** | 0.428 | 0.000 |
| ORG05 | 0.424 | **0.844** | 0.411 | 0.000 |
| ORG06 | 0.475 | **0.856** | 0.474 | 0.000 |
| ORG07 | 0.426 | **0.796** | 0.390 | 0.000 |
| ORG08 | 0.417 | **0.817** | 0.433 | 0.000 |
| ORG09 | 0.437 | **0.860** | 0.426 | 0.000 |
| ORG10 | 0.458 | **0.798** | 0.433 | 0.000 |

| | | | | |
|---|---|---|---|---|
| SUP01 | 0.334 | 0.527 | **0.787** | 0.000 |
| SUP02 | 0.323 | 0.382 | **0.755** | 0.000 |
| SUP03 | 0.382 | 0.319 | **0.777** | 0.000 |
| SUP04 | 0.454 | 0.496 | **0.848** | 0.000 |
| SUP05 | 0.263 | 0.310 | **0.755** | 0.000 |
| SUP06 | 0.407 | 0.383 | **0.781** | 0.000 |
| SUP07 | 0.245 | 0.342 | **0.740** | 0.000 |
| SUP08 | 0.371 | 0.372 | **0.763** | 0.000 |
| SUP09 | 0.532 | 0.407 | **0.764** | 0.000 |
| SUP10 | 0.373 | 0.406 | **0.766** | 0.000 |

**Table 3.3:** Heterotrait-monotrait ratio (HTMT)

| Construct | CS | OP | SCMP |
|---|---|---|---|
| **CS** | | | |
| **OP** | 0.568 | | |
| **SCMP** | 0.512 | 0.542 | |

**Model Fit**

When applying a reflecting measurement model in a PLS path model, model fit testing is critical for measuring the constructs. To fit the model in SmartPLS, the SRMR, Exact fit criterion d_ULS and d_G, NFI, and Chi2 were calculated. To assess the model's approximate fit, simply look at the Standardized Root Mean square Residual (SRMR) and Normed Fit Index (NFI) findings Henseler et al. (2015) suggested the SRMR as a quality of fit statistic for PLS-SEM that might be used in order to prevent model misspecification. A good fit is defined as an SRMR value less than 0.08 (Hu and Bentler, 1999). Lohmöller (1989) and Bentler and Bonett (1980) presented thorough information on PLS path model NFI calculation. A NFI has a value between 0 and 1, and a value near to 1 indicates that the model is well-fitting. Table 4 reveals that the Model Fit in this research's PLS-SEM test results and SRMR and NFI values are within acceptable limits, and the model has goodness of fit.

**Table 4:** Model Fit Test Results

| Desription | Saturated model | Estimated model |
|---|---|---|
| **SRMR** | **0.056** | **0.056** |
| **d_ULS** | **1.461** | **1.461** |
| **d_G** | **0.578** | **0.578** |
| **Chi-square** | **1268.826** | **1268.826** |
| **NFI** | **0.861** | **0.861** |

**The Structural Model and Hypothesis Test Results**

Following the establishment of the measuring model, the next stage was to validate the study's hypotheses by performing PLS Bootstrapping in SmartPLS 4.0 to determine the PLS Bootstrapping-Path coefficient Beta value and T value, with 408 cases and 5000 samples created. The findings are shown in Figure 2.

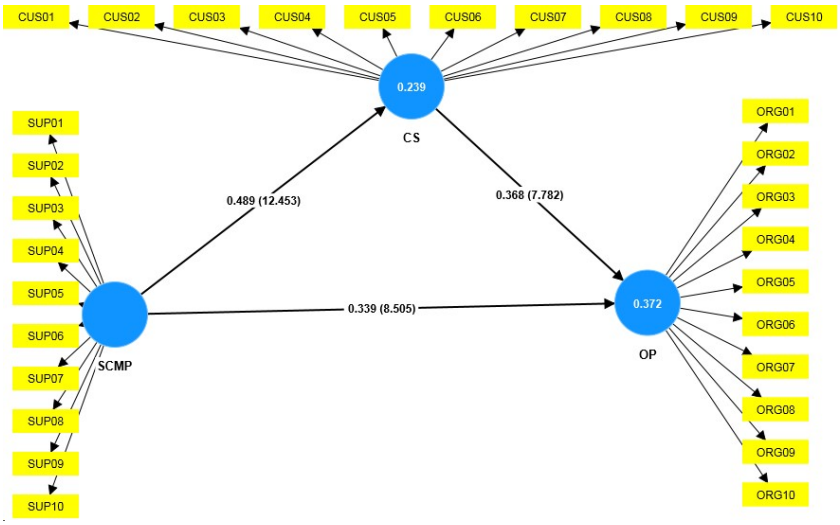



***Figure 4.*** *Path Coefficients Beta Value and T values*
*(SCMP: Supply Chain Management Performance, CS: Customer Satisfaction, OP: Organizational Performance)*

**Hypothesis testing for Direct Effects (H1, H2, and H3)**

SCM Performance has a positive and significant impact on Customer satisfaction (H1) at the 0.001 level of significance, as shown in Figures 2 and Table 5 (β = 0.489, T=12.453, p<0.001). And Customer Satisfaction also has a positive and significant impact on Organizational Performance (H2) at the 0.001 level of significance (β =0.368, T=7.782, p<0.001). Similarly, at the 0.001 level of significance, SCM Performance has a positive and significant impact on Organizational Performance (H3) (β =0.339, T= 8.505, p<0.001). As a consequence, the findings validated the study's hypotheses H1, H2, and H3. The findings are shown in Table 5.

**Table 5:** Hypothesis testing for Direct Effects (H1, H2, and H3)

| Hypothesis No. | Hypothesis Name | Path Coefficient | Standard deviation | T values | P values |
|---|---|---|---|---|---|
| **H1** | **SCM Perormance -> Customer Satisfaction** | 0.489 | 0.039 | 12.453 | 0.000 |
| **H2** | **Customer Satisfaction -> Organizational Performance** | 0.368 | 0.047 | 7.782 | 0.000 |
| **H3** | **SCM Performance -> Organizational Performance** | 0.339 | 0.040 | 8.505 | 0.000 |

**Customer Satisfaction Mediating Effect (H4) Test Result**

To test the mediating effect of customer satisfaction on the relationship between SCM performance and organizational performance, Preacher and Hayes (2004) implemented the PLS bootstrapping algorithm in PLS-SEM to estimate direct effect without mediator, direct effect with mediator, indirect effect, total effect, confident levels at 2.5% and 97.5% (Lower Confident Level-LCL and Upper Confident Level-UCL), and calculated the Variance Accounted For (VAF) among the proposed research framework's construct variables. The results obtained as illustrated in Table 6, Table 7, and Table 8 that the SCM performance direct effect without mediator, direct effect with mediator and indirectly effect on the Oganizational Performance at the 0.001 level of significance with indicators (β=0.522, T=15.155, p<0.001), (β=0.339, T=8.505, p<0.001) and (β=0.180, T= 7.031, p<0.001), respectively. And Lower Confident Level (LCL) and Upper Confident Level (UCL) shows 0.133 and 0.233 for indirect effect. The total effect also significantly impact from the SCM performance to Organizational Performance at 0.001, 99% confident level with indicators (β=0.519, T=14.500, p<0.001) in Tabel 9. And total effect's LCL and UCL indicated 0.448 and 0.589, respectively. All the LCL and UCL values of indirect and total effects are shown positive numbers, it means positive impact from SCM Performance to Organizational Performance is existing with mediation effect. And then finally, testing the Variance Accounted For (VAF) value which is Indirect effect beta value divided by Total effect beta value, found that VAF value is 35%, it means SCM Performance influenced 35% on OP when customer satisfaction is mediating. As per finding results in Table 6, 7, 8, 9 and 10, it can be concluded that customer satisfaction is a partial mediator between SCM performance and Organizational Performance carrying out a 35%, as a Variance Accounted For (VAF). According to Hair et. al., (2017), Table 10 shows that results also

supported the H4, the mediating effect of the Customer Satisfaction between SCM Performance and Organizational Performance.

**Table 6:** Direct effect without mediation testing and result

| | Beta Value | Standard deviation | T Value | P values | LCL 2.5% | UCL 97.5% |
|---|---|---|---|---|---|---|
| **SCMP -> OP** | 0.522 | 0.034 | 15.155 | 0.000 | 0.456 | 0.592 |

**Table 7:** Direct effect with Mediation testing and result

| | Beta Value | Standard deviation | T Value | P values | LCL 2.5% | UCL 97.5% |
|---|---|---|---|---|---|---|
| **SCMP -> OP** | 0.339 | 0.040 | 8.505 | 0.000 | 0.262 | 0.417 |

**Table 8:** Indirect effect testing and result

| | Beta Value | Standard deviation | T Value | P values | LCL 2.5% | UCL 97.5% |
|---|---|---|---|---|---|---|
| **SCMP -> CS -> OP** | 0.180 | 0.026 | 7.031 | 0.000 | 0.133 | 0.233 |

**Table 9:** Total effect testing and result

| Beta Value | Standard deviation | T Value | P values | LCL 2.5% | UCL 97.5% | |
|---|---|---|---|---|---|---|
| **SCMP -> CS -> OP** | 0.519 | 0.036 | 14.500 | 0.000 | 0.448 | 0.589 |

**Table 10:** Mediation Analysis testing and result

| | Direct Effect Without Mediator | Direct Effect With Mediator | Indirect Effect | Total Effect | VAF | Mediation |
|---|---|---|---|---|---|---|
| **SCMP -> CS -> OP** | 0.522*** | 0.339*** | 0.180*** | 0.519*** | 35% | Partial |

## CONCLUSIONS

The purposes of this research are to investigate into the effects of Myanmar HEMI's SCM Performance on Customer Satisfaction and Organizational Performance. Furthermore, the level of mediation effect of Customer Satisfaction between SCM Performance and Organizational Performance was analyzed. According to the findings, Myanmar HEMI's current SCM Performance is sufficient for Customer Satisfaction and Organizational Performance, however some areas still require development and improvement in order to achieve more effective SCM Performances. In this research, the coefficient of determination R2 value is 0.239 (23.9%) and 0.372 (37.2%), indicating that SCM Performance can be explained partially by Customer Satisfaction and Organizational Performance, respectively. R2 values are slightly lower than the standard value of equal to or more than 0.500 (50%), the perfect value for R2 is 1 (Turney, 2022). Customer Satisfaction was found to be partially mediated and adequate.

According to the findings of this study, excellent supply chain management performance is critical for Myanmar HEMI in enhancing customer satisfaction and organizational performance success. Companies that manage their supply chains efficiently can fulfill consumer wants and expectations, which leads to increased customer satisfaction, loyalty, and business success. This, in turn, can generate revenue and market share growth, contributing in increased organizational performance and development. Companies that focus on supply chain management performance can identify areas for improvement and implement changes that improve their SCM practices, performances, operations, increase efficiency, and reduce costs, leading to long-term organizational success and industry growth through customer satisfaction. Overall **suggestion** is: the heavy equipment machinery industry keeps upgrading its supply chain practices and performance achievements to meet changing customer demands, improve efficiency, and reduce environmental effect. It is crucial to remember, however, that supply chain challenges can vary depending on geography, market, and individual business practices. **Future research** should include other variables such as customer loyalty and competitive advantage as mediating effects between SCM

Performance and Organizational Performance, as there are many mediating effects available, and the location should be any specific organization or any country.

**REFERENCES**


[1]. Ivanov, D. (2021). Digital supply chain management and technology to enhance resilience by building and using end-to-end visibility during the COVID-19 pandemic. IEEE Transactions on Engineering Management.

[2]. Rodríguez-Espíndola, O., Chowdhury, S., Beltagui, A., & Albores, P. (2020). The potential of emergent disruptive technologies for humanitarian supply chains: the integration of blockchain, Artificial Intelligence and 3D printing. International Journal of Production Research, 58(15), 4610-4630.

[3]. Meeting Asia's Infrastructure Needs. (2020, July 22). Asian Development Bank. https://www.adb.org/publications/asia-infrastructure-needs

[4]. 4. MarketResearch.com. (n.d.). https://www.marketresearch.com/Mordor-IntelligenceLLP-v4018/Myanmar-Freight-Logistics-Growth-Trends-33932581/

[5]. Marking Two Years Since the Military Coup in Burma - United States Department of

a. State. (2023, February 7). United States Department of

[6]. State. https://www.state.gov/marking-two-years-since-the-military-coup-in burma/#:~:text=Since%20the%20military%27s%20coup%20on,more%20than%201. 5%20million%20displaced.

[7]. Burma Sanctions - United States Department of State. (2023, March 24). United States Department of State. https://www.state.gov/burma-sanctions/

[8]. Treasury, H. (2023). Financial sanctions, Myanmar. GOV.UK. https://www.gov.uk/government/publications/financial-sanctions-burma#fullpublication-update-history

[9]. Taouab, O., & Issor, Z. (2019). Firm performance: Definition and measurement models. European Scientific Journal, 15(1), 93-106.

[10]. Peterson, W., Gijsbers, G., Wilks, M. (2003). An organizational performance assessment system for agricultural research organizations: concepts, methods, and procedures. ISNAR Research Management Guidelines

[11]. Stanciu, A. A., Stoica, D. A., Surgun, M. B., Traistaru, N. I., & Vranceanu, A. (2019). Measuring the Organizational Performance: A Theoretical Overview. Academic Journal of Economic Studies, 5(1), 160-163.

[12]. Luo, Y., Huang, Y., & Wang, S. L. (2012). Guanxi and organizational performance: A meta-analysis. Management and Organization Review, 8(1), 139-172.

[13]. Deshpande, A. (2012). Supply chain management dimensions, supply chain performance and organizational performance: An integrated framework. International Journal of Business and Management, 7(8), 2.

[14]. Li, S., Ragu-Nathan, B., Ragu-Nathan, T. S., & Rao, S. S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance. Omega, 34(2), 107-124.

[15]. Amron, A. (2018). The influence of brand image, brand trust, product quality, and price on the consumer's buying decision of MPV cars. European Scientific Journal, ESJ, 14(13), 228.

[16]. Feng, N., Chen, J., Feng, H., & Li, M. (2021). Promotional pricing strategies for platform vendors: Competition between first-and third-party products. Decision Support Systems, 151, 113627.

[17]. Wicaksono, T., & Illés, C. B. (2022). From resilience to satisfaction: Defining supply chain solutions for agri-food SMEs through quality approach. Plos one, 17(2), e0263393.

[18]. Mourtzis, D., Angelopoulos, J., & Panopoulos, N. (2022). A Literature Review of the Challenges and Opportunities of the Transition from Industry 4.0 to Society 5.0. Energies, 15(17), 6276.

[19]. Agrawal, M., Eloot, K., Mancini, M., & Patel, A. (2020). Industry 4.0: Reimagining manufacturing operations after COVID-19. McKinsey & Company, 1-11.

[20]. Harini, S., Hamidah, H., Luddin, M. R., & Ali, H. (2020). Analysis supply chain management factors of lecturer's turnover phenomenon. International Journal of Supply Chain Management.

[21]. Ngoma, M., & Ntale, P. D. (2019). Word of mouth communication: A mediator of relationship marketing and customer loyalty. Cogent Business & Management.

[22]. NGUYEN, D. T., PHAM, V. T., TRAN, D. M., & PHAM, D. B. T. (2020). Impact of service quality, customer satisfaction and switching costs on customer loyalty. The Journal of Asian Finance, Economics and Business, 7(8), 395-405.

[23]. Alkhurshan, M., & Rjoub, H. (2020). The scope of an integrated analysis of trust switching barriers, customer satisfaction and loyalty. Journal of

[24]. Competitiveness, 12(2), 5.

[25]. Otto, A. S., Szymanski, D. M., & Varadarajan, R. (2020). Customer satisfaction and firm performance: insights from over a quarter century of empirical research. Journal of the Academy of Marketing science, 48, 543-564.
[26]. Yeh, T. M., Chen, S. H., & Chen, T. F. (2019). The relationships among experiential marketing, service innovation, and customer satisfaction—A case study of tourism factories in Taiwan. Sustainability, 11(4), 1041.
[27]. Colleoni, E., Bonaiuto, F., Illia, L., & Bonaiuto, M. (2021). Computer-assisted concept analysis of Customer Centricity: A review of the literature on employee engagement, culture, leadership, and identity co-creation. Sustainability, 13(9), 5157.
[28]. Utami, C. W., Sumaji, Y. M. P., Susanto, H., Septina, F., & Pratama, I. (2019). Effect of supply chain management practices on financial and economic sustainable performance of Indonesian SMEs.
[29]. Lee, K., Romzi, P., Hanaysha, J., Alzoubi, H., & Alshurideh, M. (2022). Investigating the impact of benefits and challenges of IOT adoption on supply chain performance and organizational performance: An empirical study in Malaysia. Uncertain Supply Chain Management, 10(2), 537-550.
[30]. Glushkova, S., Lomakina, O., & Sakulyeva, T. (2019). The economy of developing countries in the context of globalization: Global supply chain
[31]. management. International Journal of Supply Chain Management, 8(1), 876-884
[32]. Alam, M. (2022). Supply Chain Management Practices and Organizational Performance in Manufacturing Industry: SCM and Organizational Performance. South Asian Journal of Social Review (ISSN: 2958-2490), 1(1), 42-52.
[33]. Cochran, W. G. (1963). Sampling Techniques, 2nd Ed., p. 75. New York: John Wiley and Sons, Inc.
[34]. Hair, J. F., Anderson, R. E., Tatham, R. L. & Black, W. C. (2010). Multivariate Data Analysis. 7th Ed. Prentice Hall: USA.
[35]. Hair, J. F., Hult, G. T. M., and Calantone, R. J. 2014. Common Beliefs and Reality about Partial Least Squares: Comments on Rönkkö & Evermann
[36]. (2013), Organizational Research Methods, 17(2): 182-209.
[37]. Hair, J. F., Hollingsworth, C. L., Randolph, A. B., and Chong, A. Y. L. An Updated and Expanded Assessment of PLS-SEM in Information Systems Research. Industrial Management & Data Systems, Volume 117(2017), Issue 3, pp. 442-458.
[38]. Barclay D, Higgins C, Thompson R 1995 Technology Studies. 2 285-309
[39]. Sang S L, Lee JD, Lee J 2010 E-government adoption in Cambodia: A partial least squares approach Transforming government: People, Process and Policy. 4 138-57).
[40]. Salles, J.A.A., Vieira, M., Jr., Vaz, R.R., & Vanalle, R.M. (2010). Manufacturing strategies in the auto industry in Brazil and Spain. International Conference on Industrial Engineering and Engineering Management1, Np :661-1665, 567-592.].
[41]. Ebrahim KARIMI and Mahmoud RAFIEE (2014). Analyzing the Impact of Supply Chain Management Practices on Organizational Performance through Competitive
[42]. Priorities (Case Study: Iran Pumps Company), International Journal of Academic
[43]. Research in Accounting, Finance and Management Sciences Vol. 4, No.1, January 2014, pp. 1–15.
[44]. Fararah, F. S., & Al-Swidi, A. K. (2013). The Role of the Perceived Benefits on the Relationship between the Service Quality and Satisfaction: A Study on the Islamic
[45]. Microfinance in Yemen Using PLS Approach. Asian Social Science 9(9), 1-25. Retrieved from http://www.ccsenet.org/journal/index.php/ass/article/view/29398.
[46]. Dam, S. M., & Dam, T. C. (2021). Relationships between service quality, brand image, customer satisfaction, and customer loyalty. The Journal of Asian Finance, Economics and Business, 8(3), 585-593.
[47]. Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. Journal of the academy of Marketing Science, 16(1), 74-94. Retrieved from http://link.springer.com/article/10.1007/BF02723327#close.
[48]. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 39-50. Retrievedfrom http://www.jstor.org/discover/10.2307/3151312?uid=3738672&uid=2&uid=4&sid=2 1103145604807.
[49]. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), 115-135
[50]. Hu, L.-t., and Bentler, P. M. (1998). Fit Indices in Covariance Structure Modeling: Sensitivity to Underparameterized Model
[51]. Lohmöller, J.-B. (1989). Latent Variable Path Modeling with Partial Least Squares, Physica: Heidelberg.
[52]. Bentler, P. M., & Bonett, D. G. (1980). Significance Tests and Goodness-of-Fit in the Analysis of Covariance Structures, Psychological Bulletin, 88: 588-600.

[53]. Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. Behavior research methods, instruments, & computers, 36, 717-731.
[54]. Turney, S. (2022, September 14). Coefficient of Determination ($R^2$) | Calculation & Interpretation. Scribbr. Retrieved June 18, 2023, from
[55]. https://www.scribbr.com/statistics/coefficient-of-determination/