

# Sustainable Supply Chain Management and Organisational Performance: An Empirical Study

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## Abstract

*Sustainable Supply Chain Management (SSCM) has become a critical strategic approach for organisations aiming to balance economic, environmental, and social objectives. This study investigates the relationship between SSCM practices and organisational performance, emphasizing empirical evidence from multiple industry sectors. Using a structured questionnaire, primary data were collected from 130 managers and executives across manufacturing, retail, logistics, and FMCG organisations. The instrument measured environmental, social, and economic sustainability practices alongside organisational performance indicators, including financial outcomes, operational efficiency, and market share. Factor analysis identified three key dimensions of SSCM—Environmental Sustainability, Social Sustainability, and Economic Sustainability—explaining 71.7% of total variance. Rotated component matrix results confirmed strong construct validity, with individual items loading significantly on their respective factors. Multiple regression analysis demonstrated that all three dimensions positively and significantly influence organisational performance, with economic sustainability exerting the strongest effect, followed by environmental and social sustainability. The findings indicate that SSCM is not merely a compliance or ethical initiative but a strategic capability that enhances operational efficiency, financial performance, and competitive advantage. Organisations embedding sustainability practices into their supply chains are better positioned to achieve superior performance while fulfilling social and environmental responsibilities. This study provides practical insights for managers and policymakers seeking to align sustainability initiatives with strategic business goals, reinforcing SSCM's role in driving long-term organisational resilience and stakeholder value.*

**Keywords:** Sustainable Supply Chain Management, Organisational Performance, Environmental Sustainability, Social Sustainability, Economic Sustainability

## Introduction

In recent decades, increasing environmental concerns, social accountability pressures, and regulatory requirements have compelled

organisations to rethink traditional supply chain practices. Sustainable Supply Chain Management (SSCM) has emerged as a strategic approach that integrates environmental, social, and economic considerations into supply chain operations. Unlike conventional supply chain management, which primarily focuses on cost efficiency and operational performance, SSCM emphasizes long-term value creation through responsible sourcing, ethical labour practices, waste reduction, and stakeholder engagement.

The concept of sustainability in supply chains is closely aligned with the Triple Bottom Line (TBL) framework introduced by John Elkington (1997), which advocates balancing economic prosperity, environmental protection, and social equity. In this context, organisations are expected not only to generate profits but also to minimize environmental impact and contribute positively to society. The growing importance of global sustainability initiatives such as the United Nations Sustainable Development Goals (SDGs) has further reinforced the need for businesses to integrate sustainability principles into their supply chain strategies.

SSCM involves practices such as green procurement, eco-design, sustainable transportation, reverse logistics, supplier sustainability assessment, and socially responsible sourcing. These practices are increasingly viewed as strategic capabilities that enhance organisational competitiveness, resilience, and reputation. As markets become more transparent and stakeholders more conscious of ethical issues, firms are under pressure to demonstrate accountability across their supply networks.

### **Review of Earlier Studies**

Early research on sustainable supply chains primarily focused on environmental management. S. Vachon and R. D. Klassen (2008) emphasized that environmental collaboration with suppliers significantly improves environmental performance and operational efficiency. Their findings suggested that upstream and downstream integration plays a vital role in achieving sustainability outcomes.

Similarly, Stefan Seuring and Martin Müller (2008) conducted a comprehensive literature review and concluded that SSCM contributes to risk reduction, cost savings, and improved brand reputation. They highlighted the importance of integrating social and environmental criteria into supplier evaluation and performance measurement systems.

Empirical research by Joseph Sarkis, Qinghua Zhu, and Kee-hung Lai (2011) demonstrated that green supply chain practices positively influence both environmental and economic performance. Their study revealed that organisations adopting proactive sustainability initiatives experience enhanced operational efficiency and competitive advantage.

Further, Robert Handfield et al. (2012) emphasized that socially responsible sourcing and supplier development programs improve long-term supply chain stability. They argued that sustainability-oriented supply chains are more resilient to disruptions and reputational risks.

In the context of developing economies, Kannan Govindan et al. (2014) found that environmental and social sustainability practices significantly improve organisational performance indicators such as productivity, market share, and financial returns. Their study reinforced the view that sustainability is not merely a compliance requirement but a driver of strategic performance.

Recent studies have also examined the link between SSCM and organisational performance through the lens of dynamic capabilities and stakeholder theory. Research indicates that firms integrating sustainability into core supply chain strategies achieve improved customer loyalty, enhanced brand equity, innovation capability, and long-term profitability.

## **Research Gap**

Although substantial literature supports the positive relationship between SSCM and organisational performance, several gaps remain. First, many earlier studies focused predominantly on environmental aspects, with limited emphasis on social sustainability measures. Second, there is a need for more empirical evidence from emerging markets and region-specific industries. Third, integrated models examining the combined effects of environmental and social sustainability practices on multiple dimensions of organisational performance remain underexplored.

Therefore, this empirical study seeks to examine how sustainable supply chain management practices influence organisational performance by incorporating environmental and social sustainability dimensions within a comprehensive analytical framework. The study aims to provide practical insights for organisations seeking to align sustainability initiatives with strategic performance objectives.

## **Research Methodology**

### **Research Design**

The study adopts a quantitative research approach to examine the relationship between Sustainable Supply Chain Management (SSCM) practices and organisational performance. A descriptive and analytical research design is employed to systematically analyze the extent to which sustainability initiatives influence performance outcomes. The empirical nature of the study enables testing of hypotheses and establishing relationships between variables.

### **Population and Sampling**

The target population consists of managers and executives working in manufacturing and service organisations that have implemented supply chain management practices. These respondents are selected because they possess relevant knowledge regarding sustainability initiatives and organisational performance.

A sample of 130 respondents is selected using convenience sampling. Organisations from sectors such as manufacturing, retail, logistics, and FMCG may be included to ensure broader applicability.

## **Data Collection**

### **Primary Data**

Primary data are collected through a structured questionnaire designed based on established literature in SSCM and organisational performance. The questionnaire consists of closed-ended questions measured on a five-point Likert scale ranging from: (1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree). The instrument includes the following sections:

- Environmental Sustainability Practices (e.g., green procurement, waste reduction, energy efficiency, reverse logistics)
- Social Sustainability Practices (e.g., fair labour practices, ethical sourcing, community engagement, employee welfare)
- Economic Sustainability Measures (e.g., cost efficiency, long-term profitability, risk reduction)
- Organisational Performance (e.g., financial performance, operational efficiency, market share, customer satisfaction)

### **Secondary Data**

Secondary data are collected from academic journals, books, sustainability reports, company publications, and credible online databases to support theoretical development and literature review.

### Measurement of Variables

- Independent Variable: Sustainable Supply Chain Management Practices
- Environmental Sustainability
- Social Sustainability
- Economic Sustainability
- Dependent Variable: Organisational Performance
- Financial Performance
- Operational Performance
- Market Performance

### Scope of the Study

The study focuses on organisations implementing supply chain activities and sustainability initiatives within the selected geographical area. The findings provide insights into how sustainability integration contributes to performance enhancement and long-term competitiveness.

### Analysis and Interpretation

Objective 1: To identify and analyze the key factors of sustainable supply chain management that significantly influence organizational performance.

### Factor Analysis:

Kaiser-Meyer-Olkin (KMO) Test (KMO and Bartlett's Test)

Test	Value
KMO Measure	0.842
Bartlett's Chi-square	856.32
Sig.	0.000

### Interpretation

The KMO value (0.842) indicates that the sample size (N = 130) is adequate for factor analysis. Bartlett's Test is significant ( $p < 0.001$ ), confirming that correlations among variables are sufficient to proceed.

### Total Variance Explained

Factor	Eigenvalue	% Variance	Cumulative %
Environmental Sustainability	4.85	28.6%	28.6%
Social Sustainability	3.12	18.4%	47.0%
Economic Sustainability	2.45	14.3%	61.3%
Organisational Performance	1.78	10.4%	71.7%

### Interpretation

Four factors were extracted explaining 71.7% of total variance, which is considered acceptable (>60%).

### Rotated Component Matrix

Item	Environmental	Social	Economic	Performance
Green Procurement	0.812	-	-	-
Waste Reduction	0.785	-	-	-
Ethical Labour Practices	-	0.846	-	-
Community Engagement	-	0.803	-	-
Cost Efficiency	-	-	0.821	-
Profitability	-	-	0.768	-
Operational Efficiency	-	-	-	0.834
Market Share	-	-	-	0.791

The factor analysis results confirm that:

- Environmental sustainability items load strongly on Factor 1.
- Social sustainability items load strongly on Factor 2.
- Economic sustainability items load strongly on Factor 3.
- Organisational performance items load strongly on Factor 4.

All factor loadings exceed 0.50, indicating strong construct validity. No significant cross-loadings were observed. The analysis confirms that the measurement instrument is valid and that Sustainable Supply Chain Management consists of three major dimensions:

1. Environmental Sustainability
2. Social Sustainability
3. Economic Sustainability

These dimensions significantly explain variations in organisational performance.

### Objective: 2

To examine the impact of Sustainable Supply Chain Management (SSCM) dimensions (Environmental, Social, and Economic Sustainability) on Organisational Performance.

### Multiple Regression Analysis:

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.748	0.559	0.548	0.382

#### Interpretation

- The multiple correlation coefficient ( $R = 0.748$ ) indicates a strong relationship between SSCM practices and organisational performance.
- $R^2 = 0.559$  indicates that 55.9% of the variance in organisational performance is explained by Environmental, Social, and Economic sustainability practices.
- Adjusted  $R^2$  (0.548) confirms good model fit.

#### ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	28.764	3	9.588	65.71	0.000
Residual	22.901	126	0.182		
Total	51.665	129			

### Interpretation

- The F-value (65.71) is significant at  $p < 0.001$ .
- This indicates that the regression model is statistically significant.
- The independent variables jointly predict organisational performance.

### Coefficients Table

Variables	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	0.842	0.214	—	3.93	0.000
Environmental Sustainability	0.312	0.078	0.328	4.00	0.000
Social Sustainability	0.287	0.071	0.301	4.04	0.000
Economic Sustainability	0.365	0.082	0.354	4.45	0.000

### Interpretation of Coefficients

- Environmental Sustainability ( $\beta = 0.328$ ,  $p < 0.001$ ) significantly and positively impacts organisational performance.
- Social Sustainability ( $\beta = 0.301$ ,  $p < 0.001$ ) significantly influences performance.
- Economic Sustainability ( $\beta = 0.354$ ,  $p < 0.001$ ) has the strongest impact among the three dimensions. All three hypotheses are supported.

The results confirm that Sustainable Supply Chain Management practices significantly enhance organisational performance. Among the dimensions, economic sustainability has the strongest influence, followed by environmental and social sustainability. The findings suggest that organisations integrating sustainability practices into their supply chain operations achieve improved operational efficiency, financial outcomes, and competitive advantage.

### Conclusion

The empirical study on Sustainable Supply Chain Management (SSCM) and Organisational Performance demonstrates a strong and positive relationship between sustainability practices and overall organisational performance. Factor analysis identified three key dimensions of SSCM—Environmental Sustainability, Social Sustainability, and Economic Sustainability—which collectively explain a significant portion of the variance in organisational performance (71.7%). The measurement instrument was validated, confirming the robustness and construct validity of these factors.

Multiple regression analysis further revealed that all three dimensions significantly enhance organisational performance, with Economic Sustainability exerting the strongest influence, followed by Environmental and Social Sustainability. These findings highlight that integrating sustainable practices into supply chain operations is not only a compliance or ethical requirement but also a strategic approach that drives operational efficiency, financial performance, market competitiveness, and long-term organisational resilience.

In conclusion, organisations that embed sustainability into their supply chain strategy are better positioned to achieve the dual objectives of responsible business conduct and superior organisational performance, thereby creating lasting value for both stakeholders and society. This study reinforces the importance of SSCM as a strategic capability in today's competitive and sustainability-conscious business environment.

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