Frontiers in Health Informatics
ISSN-Online: 2676-7104
www.healthinformaticsjournal.com
2024; Vol 13: Issue 8
Open Access

Assessing the impact of Green Supply Chain Behaviour on Organizational Sustainability in the Delhi NCR Region

Vikash Singh Chauhan[1], Dr. Deepak Dixit[2], Dr. Sanjeev Kumar[3]

[1]Research Scholar Alabbar School of Management, Raffles University Neemrana
[2]Assistant Professor Alabbar School of Management, Raffles University Neemrana
[3]Professor Alabbar School of Management, Raffles University Neemrana

Cite this paper as: Vikash Singh Chauhan, Dr. Deepak Dixit, Dr. Sanjeev Kumar (2024). Assessing the impact of Green Supply Chain Behaviour on Organizational Sustainability in the Delhi NCR Region. *Frontiers in Health Informatics*, *13 (8) 6579-6589*

Abstract:
This research investigates the influence of Green Supply Chain Behaviour (GSCB) on organisational sustainability within the Delhi NCR area. The salient GSCB dimensions considered are eco-design, green purchasing, green manufacturing, green distribution and packaging, internal environmental management, investment recovery, reverse logistics, and consumer cooperation. A structured questionnaire was distributed to 475 manufacturing and supply chain professionals. Through Partial Least Squares Structural Equation Modelling (PLS-SEM), the study measured the impact of the green practices on environmental, economic, social, and firm-level performance. Findings indicate that eco-design, green manufacturing, internal environmental management, and reverse logistics have a significant positive effect on sustainability outcomes. On the other hand, green purchasing and packaging provided selective effects. The model proved to have robust explanatory power (R^2 values: 0.481–0.539) and acceptable fit (SRMR = 0.033; NFI = 0.903).This research presents empirical support that embracing GSCB add significantly to sustainable performance, providing empirical advice for policymakers and industrial actors in emerging economies.
Keywords: Green Supply Chain Behaviour, Organisational Sustainability, Eco-design.

1. *Introduction*

In response to increasing environmental damage and world climate change, global organizations are increasingly being asked to embed sustainable practices. One of the most effective means of doing so is through the practice of Green Supply Chain Management (GSCM), which embeds environmental consideration in supply chain operations from procurement to end-of-life final delivery and disposal (Diab et al., 2015). GSCM practices range from green buying, green manufacturing, green packaging, distribution, and reverse logistics to reduce ecological footprints and enhance sustainability performance (Jassim et al., 2020). Organisational sustainability extends beyond profit maximisation but also includes environmental and social responsibility. Integration of green behaviour in supply chain activities not only minimises environmental hazards but also improves firm competitiveness, operational efficiency, and corporate image (Marhamati & Azizi, 2017). Particularly in emerging markets like India, where industrialisation and urbanization are expanding, green supply chain behaviour offers a strategic approach towards sustainable development. In the Indian context, and in the Delhi NCR region a manufacturing and urban hub the need to embrace sustainable supply chain practices is growing with stricter environmental regulations, conscientious consumers, and globalization of supply chains (Bagri et al., 2023). But with the existence of the policy guidelines and the evident benefits of GSCM, empirical understanding of the mechanism through which *green behaviors in supply chains contribute to organisational-level sustainability for this region is lacking. This study endeavours to fill this gap by addressing the impact of green supply chain practice on organisational sustainability in Delhi NCR. The study examines how practices such as green buying, collaboration with eco-friendly suppliers, waste minimization, and adoption of clean technologies influence the environmental, economic, and operational performance of firms. The study draws upon prior international research (Choi & Hwang, 2015; Zaid et al., 2018), while placing findings within India's dynamic industrial landscape. With focus on Delhi NCR companies, this research contributes to the broader corpus of knowledge regarding sustainable industrial development and offers tangible advice for managers, policy makers, and sustainability practitioners who wish to align operational plans with long-term environmental goals. By identifying firms in Delhi NCR, this study adds to the larger policy and practice discussion about sustainable industrial development and provides actionable findings to guide managers, policymakers, and sustainability practitioners in aligning operating strategies with long-term environmental objectives.*

2. Literature Review

The rise of green concerns and sustainable development objectives has revolutionized the business environment for organizations around the world. An increasingly large body of literature has attempted to investigate the uptake and impacts of Green Supply Chain Management (GSCM) as a key catalyst of sustainability. GSCM can be defined as incorporating environmental considerations into supply chain management, such as product design, material acquisition, manufacturing processes, distribution, and end-of-life activities (Diab, Al-Bourini, & Abu-Rumman, 2015). In the case of India's fast-industrialising and urbanising areas such as Delhi NCR, knowing how green supply chain activities attribute to organisational sustainability is especially important.

GSCM involves practices that reduce the harmful effects of supply chain activities on the environment. They involve green purchasing, green manufacturing, environmentally friendly packaging, recycling, reverse logistics, and cooperation with eco-friendly stakeholders (Jassim, Al-Mubarak, & Hamdan, 2020). Companies that adopt such practices aim to make optimal use of resources, lessen waste and emissions, and be in line with international sustainability standards.

The integrated model of GSCM is facilitated by internal environmental management systems and external partnerships. Choi and Hwang (2015) underscore the collaborative capability's contribution to amplifying the effectiveness of GSCM practice, noting that companies are required to harmonise green activities both in the organisation and in their supply chains. The resulting integration fosters increased operational efficiency, environmental compliance, and ultimately sustainable performance.

Substantial research has established that GSCM has a positive impact on firm performance. Diab et al. (2015) established in their research on Jordanian food industries that green practices like eco-design, green procurement, and waste minimization greatly improved operational, environmental, and financial performance. Likewise, Marhamati and Azizi (2017) found that internal green practices and external partnership have a significant impact on green performance and firm competitiveness. Their research corroborates the argument that environmental initiatives of a firm are not standalone efforts but are part of larger supply chain dynamics.

In the Indian scenario, Bagri et al. (2023) have identified some of the hindrances to the adoption of GSCM as being a lack of awareness, scarcity of resources, and poor training. Contrary to these challenges, the study highlights the capability of GSCM to enhance environmental as well as economic performance in industries based in the Delhi-NCR area.

Organisational sustainability is a multi-faceted concept that includes environmental, economic, and social aspects. The triple bottom line approach is now the overall philosophy to evaluate the long-term consequence of business operations (Zaid, Jaaron, & Bon, 2018). Their study in Palestine proved that GSCM, especially with the backup of green human resource practices, contributes positively to sustainable performance.

The integration of GSCM in business practices can decrease greenhouse gas emissions, save costs on operations, and improve brand reputation. Jassim et al. (2020) identified green manufacturing and marketing as the most significant practices that affected firm performance, while green packaging and design performed lower or even negative impacts. This indicates that the performance of GSCM practices is dependent upon the industry, location, and organisational maturity.

Choi and Hwang (2015) also established the mediating effect of collaboration in amplifying the advantages of GSCM. The research indicates that companies with effective collaborative competencies are in a position to execute green practices more effectively and deliver superior sustainability performance. Notwithstanding international momentum, adoption and performance of GSCM practices significantly differ across developing economies. Bagri et al. (2023) study was on Indian automotive industries, using the ISM model to determine GSCM drivers and barriers. Kumar & Bhatia (2020)The research indicated that poor knowledge of reverse logistics, weak institutional support, and few resources were factors that impeded successful adoption. These are very practical concerns in the Delhi NCR area, where numerous small and medium enterprises have fewer infrastructural resources (Kumar & Mathur, 2020).

Furthermore, GSCM literature tends to focus on industrial sectors with mature supply chain structures. There is limited region-specific research on the NCR region, which is marked by high population density, industrial diversification, and environmental pressures. This lacuna highlights the importance of localised research to identify how green supply chain behaviors are imitated, modified, and executed to suit unique socio-economic and environmental contexts.

Current research also emphasizes the need to combine Industry 4.0 technologies with GSCM for the sake of enhancing sustainability. Ghadge et al. (2022) demonstrated that IoT, AI, and blockchain technologies can improve transparency, traceability, and efficiency in supply chains. The digital technologies facilitate real-time monitoring of emissions, energy consumption, and waste, thus enhancing the uptake of GSCM practices.

3. Research Methodology

This part describes the research design and approach used to assess the role of Green Supply Chain Behaviour (GSCB) in organisational sustainability in the Delhi NCR market. A quantitative, empirical method was used to investigate how green practices affect environmental, economic, social, and overall firm performance.

3.1. Research Design

The research utilized a descriptive cross-sectional research design based on a structured questionnaire. Emphasis was laid on the measurement of relations between certain green supply chain behaviors—like eco-design, green purchasing, green manufacturing, green packaging, investment recovery, and reverse logistics—and various dimensions of organisational sustainability.

For the regional focus on Delhi NCR, this design enabled contextual comprehension of how manufacturing and supply companies implement GSCB and the consequential sustainability impacts The design is suitable for hypothesis testing and aligns with similar methodologies adopted by Choi and Hwang (2015) and Zaid et al. (2018) in GSCM research.

3.2. Conceptual Framework and Hypotheses

The conceptual framework for this study positions GSCB as the independent construct and organisational sustainability (comprising environmental, economic, social, and firm-level performance) as the dependent construct. Based on prior literature, the following hypotheses were tested:

- H1: Green purchasing positively impacts organisational sustainability.
- H2: Green manufacturing positively impacts organisational sustainability.
- H3: Green distribution and packaging positively impact organisational sustainability.
- H4: Internal environmental management positively influences organisational sustainability.
- H5: Investment recovery is positively related to environmental performance.
- H6: Reverse logistics is positively associated with both environmental and financial performance.
- H7: GSCB positively impacts economic performance, environmental, social, and overall firm performance.

H8: GSCB positively impacts environmental performance.
H9: GSCB positively impacts social performance.
H10: GSCB positively impacts firm performance.

3.3. Sampling and Data Collection

A stratified purposive sampling technique was employed to collect data from industrial clusters within Delhi NCR, including Gurugram, Noida, Faridabad, Bawana, and Bhiwadi. The population included manufacturing and supply chain firms across the automotive, electronics, textiles, and chemical industries.

Respondents were mid-to-senior-level professionals, operations heads, supply chain managers, and sustainability officers who have firsthand knowledge and decision-making authority related to green supply chain practices.

A total of 475 responses were targeted to ensure statistical validity for structural modelling and subgroup analysis. Data was collected via a structured questionnaire administered through online platforms and in-person visits.

3.4. Research Instrument and Scale Design

The questionnaire consisted of three major sections:

1. Demographics – capturing organisational and respondent characteristics.
2. GSCB Practices – measured on a 5-point scale ranging from 1 = 'Not considering' to 5 = 'Implemented successfully'.
3. Sustainability Outcomes – measured on a 5-point Likert scale from 1 = 'Strongly Disagree' to 5 = 'Strongly Agree'.

The constructs for GSCB and sustainability were borrowed from validated scales used in prior studies (Zhu et al., 2008; Khan & Qianli, 2017).

3.5. Validity and Reliability

Table 1 shows the statistical results of construct reliability and validity on several factors applied in the research study. These measurements are crucial in the assessment of the internal consistency and convergent validity of the measurement model employed in the study. The indicators employed in the table include Cronbach's alpha, Composite Reliability (rho_a and rho_c), and Average Variance Extracted (AVE).

Cronbach's alpha measures for all dimensions vary between 0.901 (CC) and 0.953 (EP), which are significantly higher than the generally accepted minimum of 0.70. This indicates a high degree of internal consistency of the items within each construct. That is, the items included under each factor consistently measure the same construct.

Composite Reliability (rho_a and rho_c) adds further strength to the internal consistency. Although Cronbach's alpha is a well-established measure, composite reliability (particularly rho_c) is thought to be more suited in structural equation modeling. All rho_a values are nearly equal to Cronbach's alpha, confirming the internal coherence. The rho_c values range from 0.931 (CC, IR) to 0.960 (EP), again exceeding the minimum recommended value of 0.70. This confirms that the constructs are consistently measured across different indicators.

Average Variance Extracted (AVE) values assess the amount of variance captured by a construct, with the variance due to measurement error. According to Hair et al. (2019), AVE values above 0.50 indicate good convergent validity. In this table, AVE scores range from 0.738 (SP) to 0.784 (RL), suggesting that all constructs have strong convergent validity. This implies that the indicators of each construct truly represent the intended latent variable.

From the above results, we can conclude that the measurement model demonstrates both reliability and validity. High Cronbach's alpha and composite reliability values indicate that the constructs are measured consistently. Similarly, the AVE values indicate that the latent constructs explain a substantial portion of the variance in their indicators.

Each construct, ranging from CC (Cooperation with consumers), ED (Eco Design), to RL (Reverse Logistics) and SP (Social Performance), demonstrates sound psychometric properties. This reliability and validity analysis builds a strong foundation for further structural modelling and hypothesis testing, as the constructs can be considered both reliable and valid for use in subsequent analysis.

Table 1 Construct reliability and validity

Factor	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
CC	0.901	0.901	0.931	0.771
ED	0.942	0.942	0.952	0.741
EP	0.953	0.953	0.960	0.752
EPA	0.926	0.926	0.944	0.770
FP	0.916	0.917	0.937	0.749
GDP	0.935	0.936	0.949	0.756
GM	0.926	0.927	0.944	0.772
GP	0.941	0.942	0.952	0.740
IEM	0.925	0.926	0.944	0.770
IR	0.902	0.902	0.931	0.772
RL	0.908	0.909	0.936	0.784
SP	0.941	0.941	0.952	0.738

3.5.1 Pre-testing and Pilot Study
The questionnaire was pre-tested with academic experts and industry professionals. A pilot study with 40 respondents confirmed the clarity and content validity of the instrument.

3.5.2 Reliability
Cronbach's Alpha and Composite Reliability (CR) were computed for all constructs. Values exceeding 0.70 confirmed internal consistency.

3.5.3 Validity
- Convergent Validity was tested using Average Variance Extracted (AVE).
- Discriminant Validity was verified using the Fornell-Larcker criterion.

3.6. Exploratory Factor Analysis (EFA)
EFA was performed using SPSS to extract the underlying factor structure of the GSCB and sustainability constructs. Factors with eigenvalues greater than 1 and loadings above 0.50 were retained. The results confirmed the multidimensional nature of GSCB and validated the constructs for SEM.

3.7. Structural Equation Modelling (SEM)
To test the hypothesised relationships, Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed using SmartPLS 4.0. SEM allowed estimation of the strength, direction, and significance of the paths between GSCB constructs and dimensions of organisational sustainability.

The model was evaluated based on:
- Path coefficients (β) and t-values
- Coefficient of determination (R^2)
- Effect size (f^2) and Predictive relevance (Q^2)

The base structural equation used was:

$$OS = \beta_1 \times GSCB + \varepsilon$$

Where:
- OS = Organizational Sustainability
- GSCB = Green Supply Chain Behaviour
- β_1 = Path coefficient

- ε = Error term

4. ***Empirical Findings***

4.1. Path Coefficient

Table 2 and Figure 1 present the path coefficients derived from Structural Equation Modelling (SEM), which measures the strength, direction, and significance of relationships among constructs in the conceptual framework of green supply chain behaviour (GSCB) and organisational sustainability. The path coefficient (original sample), t-statistics, and p-values are used to determine the statistical significance and practical influence of each relationship. A path is considered significant when the p-value is below 0.05, with stronger confidence levels indicated at $p < 0.01$ and $p < 0.001$.

Cooperation with Consumers (CC) significantly influences Economic Performance (EP) (β = 0.107, p = 0.022), Environmental Performance (EPA) (β = 0.168, p = 0.001), Firm Performance (FP) (β = 0.169, p = 0.000), and Social Performance (SP) (β = 0.134, p = 0.005), indicating that customer collaboration enhances sustainability across financial, environmental, and social dimensions.

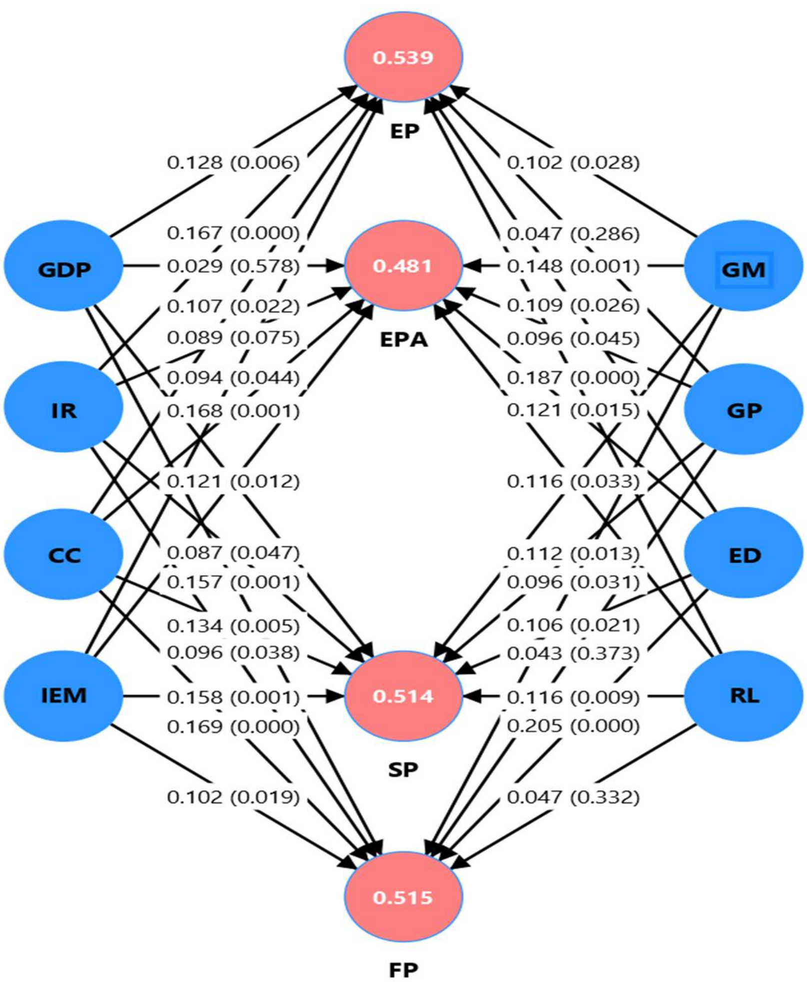

Figure 1: Path Coefficient

Eco Design (ED) demonstrates a strong and significant effect on all four outcome dimensions: EP (β = 0.109, p = 0.026), EPA (β = 0.121, p = 0.015), FP (β = 0.205, p = 0.000), and SP (β = 0.106, p = 0.021). These results highlight that integrating environmentally responsible design directly contributes to performance improvements.

Green Distribution & Packaging (GDP) significantly influences EP (β = 0.128, p = 0.006) and FP (β = 0.157, p = 0.001), but has no significant impact on EPA and SP. This suggests that logistics and packaging innovations mainly impact operational and financial efficiency.

Green Manufacturing (GM) positively affects EP (β = 0.102, p = 0.028), EPA (β = 0.148, p = 0.001), FP (β = 0.096, p = 0.031), and SP (β = 0.148, p = 0.001), indicating that clean production practices enhance sustainability in all areas.

Green Purchasing (GP) shows mixed results. While it significantly impacts EPA (β = 0.096, p = 0.045) and SP (β = 0.112, p = 0.013), it does not significantly affect EP or FP. This indicates that green procurement influences social and environmental outcomes more than financial ones.

Internal Environment Management (IEM) significantly contributes to EP (β = 0.094, p = 0.044), EPA (β = 0.121, p = 0.012), FP (β = 0.102, p = 0.019), and SP (β = 0.158, p = 0.001), underscoring the importance of internal practices, such as environmental training and audits, for overall sustainability.

Investment Recovery (IR) shows strong effects on EP (β = 0.167, p = 0.000), FP (β = 0.096, p = 0.038), and SP (β = 0.087, p = 0.047), though its impact on EPA is marginal (p = 0.075), suggesting financial and social benefits from resource recovery mechanisms.

Reverse Logistics (RL) has significant positive effects on EP (β = 0.187, p = 0.000), EPA (β = 0.116, p = 0.033), and SP (β = 0.116, p = 0.009), but no significant impact on FP (p = 0.332). This shows that while RL enhances environmental and social dimensions, it may not directly improve financial outcomes.

Table 2 Path Coefficient

Path	**Original sample (O)**	**T-Statistics (|O/Stdev|)**	**P-values**
CC -> EP	0.107	2.291	0.022**
CC -> EPA	0.168	3.406	0.001*
CC -> FP	0.169	3.544	0.000***
CC -> SP	0.134	2.815	0.005***
ED -> EP	0.109	2.223	0.026**
ED -> EPA	0.121	2.435	0.015**
ED -> FP	0.205	4.192	0.000***
ED -> SP	0.106	2.316	0.021**
GDP -> EP	0.128	2.735	0.006**
GDP -> EPA	0.029	0.556	0.578
GDP -> FP	0.157	3.386	0.001***
GDP -> SP	0.062	1.249	0.212
GM -> EP	0.102	2.202	0.028
GM -> EPA	0.148	3.235	0.001***
GM -> FP	0.096	2.163	0.031**
GM -> SP	0.148	3.199	0.001**
GP -> EP	0.047	1.066	0.286
GP -> EPA	0.096	2.004	0.045**
GP -> FP	0.043	0.891	0.373
GP -> SP	0.112	2.480	0.013**
IEM -> EP	0.094	2.014	0.044
IEM -> EPA	0.121	2.505	0.012**
IEM -> FP	0.102	2.354	0.019**
IEM -> SP	0.158	3.376	0.001***
IR -> EP	0.167	3.741	0.000***

IR -> EPA	0.089	1.780	0.075*
IR -> FP	0.096	2.080	0.038**
IR -> SP	0.087	1.989	0.047**
RL -> EP	0.187	3.908	0.000***
RL -> EPA	0.116	2.127	0.033**
RL -> FP	0.047	0.971	0.332
RL -> SP	0.116	2.608	0.009***

4.2. Model fit

Table 3 presents the model fit indices used to assess the adequacy of the proposed structural model compared to the saturated model. These indices include SRMR (Standardised Root Mean Square Residual), D_ULS (Unweighted Least Squares discrepancy), D_G (Geodesic discrepancy), Chi-square, and NFI (Normed Fit Index).

The SRMR value for the estimated model is 0.033, which is well below the acceptable threshold of 0.08, indicating a good fit between the observed and predicted correlation matrices. d_ULS (2.475) and d_G (1.035) are slightly higher than the saturated model values but remain within acceptable limits, suggesting minimal discrepancy between the models. The Chi-square value for the estimated model is 3166.300, close to the saturated model's 3102.328, further supporting a reasonable fit.

The NFI value of 0.903 exceeds the recommended minimum of 0.90, indicating that the model explains the data better than a null model and is considered acceptable. Overall, the reported indices confirm that the proposed structural model achieves a good fit, validating its suitability for hypothesis testing and interpretation of green supply chain behavior's impact on sustainability outcomes.

Table 3 Model fit

Model fit indices	Saturated model	Estimated model
SRMR	0.027	0.033
d_ULS	1.668	2.475
d_G	1.008	1.035
Chi-square	3102.328	3166.300
NFI	0.905	0.903

4.3. R-square

Table 4 presents the R-square and adjusted R-square values, which indicate the proportion of variance in the dependent variables explained by the model. The R-square for Economic Performance (EP) is highest at 0.539, suggesting that 53.9% of its variance is explained by the predictors. Firm Performance (FP) and Social Performance (SP) follow closely with R-square values of 0.515 and 0.514, respectively. Environmental Performance (EPA) has the lowest R-square at 0.481. All adjusted R-square values remain very close to the original, confirming the model’s consistency and strong explanatory power across all sustainability dimensions.

Table 4 R-square

Factors	R-square	R-square adjusted
EP	0.539	0.532
EPA	0.481	0.473
FP	0.515	0.508
SP	0.514	0.507

4.4. f-square

Table 5 presents the F-square values, which indicate the effect size of each exogenous (independent) variable on endogenous (dependent) variables in the structural model. An f-square value of 0.02 is considered small, 0.15 medium, and 0.35 large. In this model, most f-square values fall in the small range, suggesting that individual predictors have modest but meaningful effects on outcomes. For instance, Eco Design (ED) shows the highest impact on Firm Performance (FP) with an f-square of 0.041. Reverse Logistics (RL) has notable effects on Economic Performance (EP) (0.038) and Environmental Performance (EPA) (0.013). Internal Environment Management (IEM) demonstrates a moderate influence on Social Performance (SP) (0.026). Meanwhile, Cooperation with Consumers (CC) contributes to FP (0.030) and EPA (0.028). These values reflect that while no single construct overwhelmingly dominates, multiple green practices jointly contribute to sustainability outcomes, reinforcing the multifactorial nature of green supply chain effectiveness.

Table 5 f-square

Factors	CC	ED	EP	EPA	FP	GDP	GM	GP	IEM	IR	RL	SP
CC			0.013	0.028	0.030							0.019
ED			0.012	0.014	0.041							0.011
EP												
EPA												
FP												
GDP			0.018	0.001	0.026							0.004
GM			0.012	0.022	0.010							0.023
GP			0.002	0.009	0.002							0.014
IEM			0.010	0.014	0.011							0.026
IR			0.031	0.008	0.010							0.008
RL			0.038	0.013	0.002							0.014
SP												

4.5. Conclusion

The empirical analysis of green supply chain behaviour (GSCB) in this study reveals its substantial and multidimensional impact on organisational sustainability in the Delhi NCR region. The results derived from PLS-SEM demonstrate that various GSCB components, including eco-design, green purchasing, green manufacturing, green distribution and packaging, internal environmental management, investment recovery, reverse logistics, and cooperation with consumers, contribute significantly to sustainability outcomes, albeit with varying effect sizes.

Key findings indicate that eco-design and green manufacturing have a consistent and positive influence across all four sustainability dimensions, economic, environmental, firm, and social performance, highlighting the strategic value of environmentally responsible product and process design. Internal environmental management and reverse logistics also emerge as significant contributors, reinforcing the importance of internal practices and post-consumption logistics in sustainability advancement.

While green purchasing showed a weaker impact on economic and firm performance, its positive influence on environmental and social performance reflects a shift toward responsible sourcing. Interestingly, green distribution and packaging impacted economic and firm performance but lacked significance for environmental and social outcomes, indicating potential gaps in eco-packaging practices.

Overall, the study confirms that a well-integrated GSCB strategy enhances sustainability holistically. These insights provide a valuable foundation for policymakers and practitioners aiming to embed green practices into industrial ecosystems for long-term competitive and environmental advantage.

Limitations of the study

This study is limited to manufacturing firms in the Delhi NCR region, which may affect the generalizability of findings to other regions or sectors. Additionally, the cross-sectional design restricts causal inference, and reliance on self-reported data may introduce response bias despite methodological rigour.

References

Akehurst, G., Afonso, C., & Martins Gonçalves, H. (2012). Re-examining green purchase behaviour and the green consumer profile: New evidences. *Management Decision*, 50(5), 972–988. https://doi.org/10.1108/00251741211227726

Bagri, G. P., Gahlot, N. K., Gulati, B., Bhatia, L., Barat, S., & Das, S. (2023). Analysis of barriers to implement green supply chain management practices in Indian automotive industries with the help of ISM model. *Materials Today: Proceedings*, 82, 330–339. https://doi.org/10.1016/j.matpr.2023.02.146

Baines, T., Brown, S., Benedettini, O., & Ball, P. (2012). Examining green production and its role within the competitive strategy of manufacturers. *Journal of Industrial Engineering and Management*, 5(1), 53–87. https://doi.org/10.3926/jiem.365

Blackburn, J. D., Guide, V. D. R., Souza, G. C., & Van Wassenhove, L. N. (2004). Reverse supply chains for commercial returns. *California Management Review*, 46(2), 6–22. https://doi.org/10.2307/41166212

Choi, D., & Hwang, T. (2015). The impact of green supply chain management practices on firm performance: The role of collaborative capability. *Operations Management Research*, 8(3-4), 69–83. https://doi.org/10.1007/s12063-015-0100-x

Daily, B. F., & Huang, S. (2001). Achieving sustainability through attention to human resource factors in environmental management. *International Journal of Operations & Production Management*, 21(12), 1539–1552. https://doi.org/10.1108/01443570110410892

Diab, S. M., Al-Bourini, F. A., & Abu-Rumman, A. H. (2015). The impact of green supply chain management practices on organizational performance: A study of Jordanian food industries. *Journal of Management and Sustainability*, 5(1), 149–157. https://doi.org/10.5539/jms.v5n1p149

Ghadge, A., Mogale, D. G., Bourlakis, M., Maiyar, L. M., & Moradlou, H. (2022). Link between Industry 4.0 and green supply chain management: Evidence from the automotive industry. *Computers & Industrial Engineering*, 169, 108303. https://doi.org/10.1016/j.cie.2022.108303

Griskevicius, V., Tybur, J. M., & Van den Bergh, B. (2010). Going green to be seen: Status, reputation, and conspicuous conservation. *Journal of Personality and Social Psychology*, 98(3), 392–404. https://doi.org/10.1037/a0017346

Islam, M. M., Hossain, M. T., & Mia, M. N. H. (2017). Green supply chain practices and performance: Evidence from firms in an emerging economy. *International Journal of Supply Chain Management*, 6(3), 34–45.

Jassim, S., Al-Mubarak, M., & Hamdan, A. (2020). The impact of green supply chain management on firm's performance. *Journal of Information & Knowledge Management*, 19(2), 2040026. https://doi.org/10.1142/S0219649220400262

Khan, S. A. R., & Qianli, D. (2017). Impact of green supply chain management practices on firm performance: A study of the Pakistani manufacturing sector. *Environmental Science and Pollution Research*, 24(20), 16621–16630. https://doi.org/10.1007/s11356-017-9172-5

Lin, R. J., Tan, K. H., & Geng, Y. (2013). Market demand, green product innovation, and firm performance: Evidence from Vietnam motorcycle industry. *Journal of Cleaner Production*, 40, 101–107. https://doi.org/10.1016/j.jclepro.2012.01.001

Marhamati, A., & Azizi, I. (2017). The impact of green supply chain management on firm competitiveness. *International Journal of Supply Chain Management*, 6(4), 215–221.

Moktadir, M. A., Rahman, T., Sultana, R., & Ali, S. M. (2023). Enablers of sustainable circular supply chain management in the context of Industry 4.0: Evidence from emerging economy. *Resources, Conservation and Recycling*, 187, 106597. https://doi.org/10.1016/j.resconrec.2022.106597

Narasimhan, R., & Schoenherr, T. (2012). The effects of integrated supply management practices and environmental management practices on relative competitive quality advantage. *International Journal of Production Research*, 50(4), 1185–1201. https://doi.org/10.1080/00207543.2011.555426

Spicer, A. J., & Johnson, M. E. (2004). Third-party demanufacturing as a solution for extended producer responsibility. *Journal of Cleaner Production*, 12(1), 37–45. https://doi.org/10.1016/S0959-6526(02)00159-7

Tomar, S., & Oza, S. (2015). Impact of green packaging on the operational performance of the firm: A case study. *International Journal of Scientific and Research Publications*, 5(1), 1–7.

Vachon, S., & Klassen, R. D. (2008). Environmental management and manufacturing performance: The role of collaboration in the supply chain. *International Journal of Production Economics*, 111(2), 299–315. https://doi.org/10.1016/j.ijpe.2006.11.030

Zaid, A. A., Jaaron, A. A. M., & Bon, A. T. (2018). The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study. *Journal of Cleaner Production*, 204, 965–979. https://doi.org/10.1016/j.jclepro.2018.09.062

Zhu, Q., Geng, Y., & Lai, K. H. (2010). Circular economy practices among Chinese manufacturers varying in environmental-oriented supply chain cooperation and the performance implications. *Journal of Environmental Management*, 91(6), 1324–1331. https://doi.org/10.1016/j.jenvman.2010.02.013.

Zhu, Q., Sarkis, J., & Lai, K. H. (2008). Green supply chain management implications for "closing the loop". *Transportation Research Part E: Logistics and Transportation Review*, 44(1), 1–18. https://doi.org/10.1016/j.tre.2006.06.003

Kumar, S., & Bhatia, V. (2020). Construction Of Optimum Portfolio Using Sharpe’s Single Index Model: With reference to Pharmaceutical sector and Banking sector listed on BSE. *PalArch’s Journal of Archaeology of Egypt/Egyptology*, *17*, 10267-74.

Kumar, S., & Mathur, M. (2020). Performance evaluation of mutual fund: A comparative analysis of diversified top ranked equity fund in India. *Psychology and Education*, *57*(9), 3476-3479.