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The Impact of Sustainable Supply Chain Practices on Corporate Social Responsibility in the Global Textile Industry

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Abstract

This study examines the impact of sustainable supply chain practices and circular economy on CSR performance in the global textile industry. More importantly, it analyzes the moderating effects of regulatory policies and compliance including consumer awareness and ethical demand on the CSR performance. The quantitative methods with the help of survey on textile firms as the population sample to which 2555 questionnaires were distributed, with a resultant 1533 valid returns. Structural equation modeling (SEM) with AMOS was used to analyze the data based on the regulatory and moderating variables identified and tested. Research suggests both Sustainable Supply Chain Management (SSCM) and Circular Economy Practices (CEP) positively and significantly influence CSR performance in the global textile industry. However, the moderating roles of regulatory policies and consumer awareness appear to be weak, suggesting that external pressure alone is insufficient to drive substantial CSR improvements in the global RMG's. The SSCM and CEP practices, while limited, do enhance CSR performance in the textile industry. Regulatory policies along with consumer awareness have little moderating impact, signaling the importance of moving from compliance to integrating sustainability into business. The imbalance between consumer awareness and CSR integration must be addressed to enhance ethical and environmental performance.

Keywords: *Sustainable Supply Chain Management (SSCM); Circular Economy Practices (CEP); Corporate Social Responsibility (CSR); Regulatory Policies; Consumer Awareness; Textile Industry*

Introduction

The textile industry is one of the largest contributors to environmental degradation, labour exploitation, and unethical supply chain practices, making corporate social responsibility (CSR)

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a pressing issue. Sustainable supply chain practices (SSCPs) have emerged as a potential solution to mitigate these challenges by promoting ethical labour practices, reducing carbon footprints, and ensuring transparency. However, many textiles' brands struggle to integrate sustainability into their supply chains because of cost constraints, lack of regulatory enforcement, and the complexities of global sourcing. Although some RMG's have implemented sustainability initiatives, their impact on corporate social responsibility remains inconsistent. So, empirical research is needed to explore how sustainable supply chain practices influence CSR performance in the global textile industry.

Despite the increasing awareness of sustainability in textile supply chains, several research gaps persist. First, while studies have explored sustainable textile practices, limited empirical research has examined how SSCPs directly impact CSR in a measurable manner. Most studies focus on environmental sustainability and overlook the social and governance aspects of CSR. Additionally, there has been inadequate investigation into the role of consumer awareness and regulatory policies as moderate factors in adoption. The effectiveness of various sustainable practices, such as circular economy models, ethical sourcing, and fair labour standards, also remains underexplored. Furthermore, although companies make sustainability claims, there is a lack of transparency in their reporting and measurement of the real CSR impact (Khattak et al., 2021).

The global textile industry is characterized by complex and fragmented supply chains, making sustainability a significant challenge. The rise in fast textile has exacerbated environmental and social issues, leading to calls for greater corporate responsibility. Sustainable supply chain practices include ethical sourcing, waste reduction, water conservation, carbon footprint reduction, and fair labour practices. Many leading brands have committed to sustainable initiatives; however, their implementation remains inconsistent across industries. Governments and organizations such as the European Union have introduced sustainability regulations and circular economy policies to encourage responsible production (Spani, 2020).

Therefore, the purpose of this study is to examine the impact of sustainable supply chain practices and circular economy on CSR performance in the global textile industry. More importantly, it analyzes the moderating effects of regulatory policies and compliance including consumer awareness and ethical demand on the CSR performance. This study also provides valuable insights for multiple stakeholders, including policymakers, suppliers, and consumers. For policymakers, these findings can inform legislation that encourages corporate responsibility and enhances supply chain transparency. Additionally, it contributes to the academic literature by filling empirical gaps in the interplay between sustainable supply chain practices and corporate social responsibility in the global textile industry.

Sustainable Supply Chain Management (SSCM)

Sustainable Supply Chain Management (SSCM) has emerged as a critical paradigm in modern business by integrating environmental, social, and economic considerations into supply chain operations. It encompasses ethical sourcing, waste reduction, carbon footprint minimization, and fair labour standards, aiming to maintain productivity while reducing costs and enhancing agility (de Andrade, Benfica et al 2025). The SSCM faces several challenges, including the need for clearer sustainability measurement indices and concrete frameworks. However, it also presents opportunities for organizations to improve their overall performance and create a more sustainable future. This necessitates organizational learning, especially with external stakeholders, and the co-creation of strategic plans for change. As businesses strive to balance environmental stewardship, social responsibility, and economic viability, SSCM will continue to play a crucial role in shaping the future of supply chain management (Abbate, Centobelli et al. 2024).

The adoption of SSCM practices has been shown to positively affect a company's financial performance, customer satisfaction, and brand reputation. Furthermore, the implementation of blockchain technology in SSCM has demonstrated its potential to enhance traceability and transparency throughout the supply chain. As global regulations and consumer demands for sustainable practices continue to evolve, companies prioritizing SSCM are likely to gain a competitive advantage in the marketplace (Zhang and Berhe 2022).

Sustainable Supply Chain Management (SSCM) encompasses a range of practices aimed at minimizing the environmental impact, promoting ethical sourcing, and ensuring fair labour standards. The literature identifies key dimensions of SSCM, including environmental practices such as green purchasing and eco-design, alongside social practices that emphasize safety and ethical considerations in supply chains. The integration of sustainability into supply chains is increasingly recognized as essential for enhancing economic performance while addressing societal and environmental challenges (Saththasivam, Fernando et al 2017). Furthermore, the review of existing tools and methodologies highlights the need for a structured approach to SSCM that can guide both researchers and practitioners in implementing effective sustainable practices. Despite growing interest, gaps remain in understanding the long-term outcomes of SSCM implementation, necessitating further research to fully realize its potential benefits (Ngo, Quang et al. 2024).

Circular Economy Practices in textile

Circular Economy (CE) practices in the textile industry have gained significant attention as a means to address environmental concerns and promote sustainability. These practices primarily focus on recycling, reusing materials, and implementing sustainable product life cycle management strategies. The textile industry, particularly the apparel sector, has been identified as a major contributor to pre-consumer waste. To address this issue, researchers have explored innovative approaches for sustainably managing waste. One study demonstrated the potential of reusing pre-consumer waste from cutting sections in apparel factories to create circular textile products. The research found that approximately 2238 pieces of circular products could be produced from surplus fabric, reusable cutting waste, and rejected cut panels, presenting a more efficient approach than recycling, landfilling, or incineration (Haq, Alam et al. 2023). Circular economic practices are governed by the 3Rs concept: Reduce, Reuse, and Recycle. This approach emphasizes waste reduction at various stages of production and consumption, promoting eco-

friendly materials that can be reengineered in each production cycle. The industry is shifting from a "take-make-dispose mentality towards a more circular model, with recycling and upcycling playing crucial roles in connecting environmental and social dimensions (Razzak 2023).

In the context of sustainable supply chain management, circular economies push environmental sustainability boundaries by focusing on innovative goods and creating viable relationships between ecosystems and economic growth. A systematic literature review identified four key themes in implementing circular economy practices in the textile and apparel industry: drivers, barriers, practices, and indicators of sustainable performance (Jia, Yin et al 2020). These themes form a conceptual model illustrating their interrelationships and highlight the challenges of circular economy implementation. In conclusion, the adoption of circular economic practices in the textile industry shows promising potential for addressing environmental concerns and promoting sustainability. However, significant efforts are still required from companies to fully implement these practices, and improvements in circular economy regulations are necessary to facilitate the transition towards more sustainable strategies in the textile industry (Razzak 2023).

The integration of circular economy practices in the textile industry is increasingly recognized as essential for addressing the environmental challenges associated with traditional linear production models. Key strategies include recycling, reusing materials, and sustainable product lifecycle management, all of which collectively aim to minimize waste and enhance resource efficiency. Reuse practices, such as upcycling and repurposing garments, are vital for reducing waste but require greater consumer incentives and education to be effective. Additionally, sustainable product lifecycle management emphasizes eco-design and product longevity, which can be supported by advanced technologies such as IoT and digitalization. Ultimately, fostering consumer engagement and transparency is crucial for bridging the gap between sustainability awareness and actual purchasing behaviours (Zhou, Tiruneh et al. 2024).

Regulatory Policies and Compliance

Government regulations and international sustainability standards play a significant role in shaping corporate social responsibility (CSR) performance. The literature reveals several key aspects of this relationship: Regulatory policies and international standards have a substantial impact on firms' CSR practices and performance. For instance, the Global Reporting Initiative (GRI) influences a multinational corporation's CSR management practices, affecting the management structure, CSR committee function, choice of CSR activities, relationships between subsidiaries, and interpretation of CSR performance. This demonstrates how global governance institutions can shape intra-organizational practices. Compliance with standards can lead to unintended consequences. While substantive standard adoption can positively influence CSR management, it may also result in unexpected changes within an organization (Vigneau et al., 2014).

This highlights the complex nature of regulatory compliance and its effects on corporate behaviour. The development of CSR initiatives is influenced by various factors including cultural, economic, social, political, and institutional elements. These factors affect the priorities and advancement of CSR practices at the national level. The quality of the political-regulatory environment plays a crucial role in determining CSR performance, emphasizing the importance of effective government policies. In the European context, future regulations are expected to significantly impact sustainable board governance and CSR performance. The European

Commission's upcoming evidence-based regulations, such as the Corporate Sustainability Reporting Directive (CSRD) and the Corporate Sustainability Due Diligence Directive (CSDD), are likely to promote sustainable board governance practices (Taghipour, Khazaei et al. 2022).

This demonstrates the potential influence of regulatory policies on corporate behaviour and CSR outcomes. The literature highlights the importance of credibility enhancement mechanisms in CSR reporting. Adherence to GRI reporting guidelines and external assurance of CSR reports are seen as ways to address the issue of CSR decoupling, the gap between CSR disclosure and actual performance (García-Sánchez, et al 2022). However, the efficacy of these mechanisms remains unclear. This suggests that, while regulatory policies and standards can improve CSR performance, their impact may vary depending on implementation and enforcement. In conclusion, regulatory policies and international sustainability standards significantly influence CSR performance by shaping organizational practices, priorities, and reporting mechanisms. However, their effectiveness can vary, and compliance may lead to both intended and unintended consequences. As governments and international bodies continue to develop and refine CSR-related regulations, understanding their impact on corporate behaviour and performance remains crucial for both policymakers and businesses (Tseng, Bui et al. 2022).

Government regulations and international sustainability standards significantly influence corporate social responsibility (CSR) performance by shaping organizational practices and stakeholder perceptions. Mandatory regulations often drive CSR engagement, whereas financial incentives can promote voluntary initiatives, highlighting the importance of context-specific strategies across industries and regions. Different regulatory scenarios, such as cooperative versus coercive approaches, affect corporate environmental performance (CEP), with cooperative regulations yielding the most positive outcomes by fostering internal motivation for compliance. Furthermore, international standards such as the Global Reporting Initiative (GRI) impact CSR management practices within firms, influencing organizational structures, and the interpretation of CSR performance. Transparency standards also play a crucial role, as they materialize the ideal of transparency into actionable practices, affecting how companies report and manage their CSR activities. Overall, effective regulatory frameworks and adherence to international standards are essential to enhance CSR performance (Khan, Sheikh et al. 2024).

Consumer Awareness and Ethical Demand

Consumer awareness and ethical demand have become increasingly important factors that influence corporate sustainability initiatives in the textile industry. Research indicates that, while consumers are generally ethically concerned, there is often a gap between their intentions and actual purchasing behavior when it comes to sustainable textile (Rausch, Kopplin et al 2021). Several studies have explored barriers that prevent consumers from purchasing green apparel, including price, availability, knowledge, transparency, image, inertia, and consumption habits. Despite high awareness of ethical issues, factors such as price, quality, and style tend to have a greater influence on apparel purchase decisions for many consumers. This suggests that ethical concerns alone may not be sufficient to drive the widespread adoption of sustainable textile. Interestingly, some studies have found that consumers' perceptions of a company's social responsibility efforts can directly affect their attitudes, trust, and sense of effectiveness regarding sustainable textile brands. However, positive attitudes and perceived consumer effectiveness did not necessarily translate into purchase intentions in all cases. Trust was found to be a key predictor of the intention to purchase sustainable textile (Govindan 2022).

Generational differences also exist in engagement with sustainability issues. A study examining Generation X and Y consumers found that each group's environmental consciousness and response to sustainability initiatives are shaped by distinct characteristics (Papadopoulou et al., 2021). This highlights the need for textile companies to tailor their sustainability marketing initiatives to different consumer segments. While consumer awareness of ethical issues in textile is growing, particularly through social media and high-profile industry disasters, fast textile culture and lack of large-scale awareness remain significant barriers to adopting a circular economy in the industry. Consumers often struggle to identify truly ethical brands amid greenwashing attempts. In conclusion, consumer perceptions and the demand for ethical textile influence corporate sustainability initiatives, but the relationship is complex. While ethical concerns impact attitudes, trust is crucial to purchase intention. Companies must overcome multiple barriers and tailor approaches to different consumer segments to effectively leverage ethical demands to drive sustainability efforts. Transparency and building consumer trust appear to be key factors in translating ethical concerns into actual sustainable purchasing behaviour (LeBaron, Edwards et al. 2022).

Consumer perceptions and the demand for ethical textile significantly influence corporate sustainability initiatives by driving companies to adopt more responsible practices. As consumers increasingly prioritize corporate social responsibility (CSR) in their purchasing decisions, brands are compelled to enhance their sustainability efforts by focusing on ecofriendly products and ethical labour practices. This shift is further supported by marketing strategies that raise awareness of social issues within the textile industry and encourage consumers to engage in sustainable consumption. Research indicates that factors such as brand reputation and perceived social impact are critical in shaping consumer attitudes towards ethical textile, which, in turn, motivates companies to innovate their business models and supply chains to align with these values. Consequently, the interplay between consumer demand and corporate responsibility fosters a more sustainable textile industry, highlighting the importance of ethical consumer behaviour in promoting environmental justice and social equity (Mok, Yu et al. 2022).

Corporate Social Responsibility (CSR) Performance

Corporate Social Responsibility (CSR) performance, measured in terms of environmental sustainability, ethical labour practices, and corporate transparency, has become a critical focus in business research and practice. Environmental sustainability is a key component of CSR. Studies have shown that incorporating green practices and environmental CSR initiatives can improve firm performance. Green innovation, driven by CSR activities, enhances enterprises' green innovation performance, particularly when mediated by managerial environmental concerns and moderated by green absorptive capacity (Mo, Boadu et al 2022). Furthermore, green behaviour has been identified as a mediator between CSR and firm performance, contributing to sustainable competitive advantage. Ethical labour practices and corporate transparency are crucial aspects of CSR performance. The literature emphasizes the importance of responsible behaviour towards all stakeholders, including employees, by providing positive work environments and maintaining operational transparency in operations (Di Vaio, Hassan et al. 2024).

However, measuring the "soft" aspects of CSR performance remains a challenge. Some companies have adopted innovative methods such as the Balanced Scorecard to include nonfinancial indicators in their performance assessment systems, although CSR is often not fully integrated (Panayiotou et al., 2008). In conclusion, while most studies (78%) report a positive relationship between corporate sustainability practices and financial performance, there is still a

need for more comprehensive and standardized measurement frameworks. The literature suggests that integrating CSR initiatives with green practices can synergistically enhance overall performance and promote pro-environmental behaviour in the workplace (Suganthi, 2019). Future research should focus on developing more robust measurement tools that can effectively capture the multifaceted nature of CSR performance across environmental, social, and governance dimensions (Liu, Wei et al. 2022).

Hypotheses Development:

Based on the provided context, the relationship between Sustainable Supply Chain Management (SSCM) and Corporate Social Responsibility (CSR) performance can be analyzed as follows. Several studies support the positive impact of SSCM practices on various aspects of firm performance, including CSR-related outcomes. Wang et al. (2020) indicated that green supply chain management, a subset of SSCM, has a positive impact on firm performance, suggesting that SSCM practices contribute to organizational performance, including environmental and social dimensions, which are key components of CSR. Interestingly, some studies present a reverse relationship, in which CSR drives SSCM practices. For instance, shows that both internal and external CSR positively impact green supply chain management, supporting this view that CSR positively promotes SSCM practices (Khan, Sheikh et al. 2023).

This finding suggests a bidirectional relationship between SSCM and CSR performance. In conclusion, while the hypothesis that SSCM has a positive impact on CSR Performance" is not directly stated in the literature, evidence suggests a strong positive relationship between SSCM practices and various aspects of firm performance, including environmental and social dimensions, which are closely related to CSR performance. However, it is important to note that this relationship may be more complex, with CSR also influencing SSCM practices, indicating a potential reciprocal relationship between the two concepts (Khan, Sheikh et al. 2023).

H1: Sustainable Supply Chain Management (SSCM) has a positive impact on Corporate Social Responsibility (CSR) Performance.

Corporate Social Responsibility (CSR) and Circular Economy (CE) practices are increasingly intertwined with modern business strategies, particularly in the textile industry. The hypothesis that CE practices have a positive impact on CSR performance is supported by several studies in the context provided. Research indicates that adopting CE practices can significantly enhance a firm's CSR performance. A study of manufacturing firms in China found that the frequency of eco-design (ECO) and reverse logistics (RL) practice adoption significantly improves CSR performance. This finding suggests that implementing CE practices, which are fundamental to the textile industry's sustainability efforts, can positively influence CSR outcomes (Hong, T., Ou, et al. 2024).

Interestingly, the relationship between CSR and CE appears bidirectional. A study of Spanish SMEs revealed that CSR practices drive companies towards CE, incorporating propositions on stakeholders' value creation (Gallardo-Vázquez et al. 2024). This implies that, as textile companies engage in CSR activities, they are more likely to adopt CE practices, which in turn further enhances their CSR performance. In conclusion, the hypothesis that CE practices have a positive impact on CSR performance is well supported by the available literature. The integration of CE principles into textile industry operations not only contributes to sustainable development but also enhances a company's CSR performance. This relationship underscores the importance

of CE practices as a strategic tool for improving CSR outcomes in the textile sector (Shekarian, Ijadi et al. 2022).

H2: Circular Economy Practices in textile have a positive impact on Corporate Social Responsibility (CSR) Performance.

Chain Management (SSCM) and Corporate Social Responsibility (CSR) performance. However, we can draw relevant insights from the available information, suggesting that SSCM practices and CSR are closely interrelated, with CSR often driving SSCM initiatives. For instance, Zhou et al. (2024), found that both internal and external CSR positively promote SSCM practices, which, in turn, contribute to organizational performance. Similarly, Wang et al. (2020) demonstrated that internal and external CSR have a positive impact on green supply chain management, a subset of SSCM. While regulatory policies are not explicitly discussed as a moderating factor, some studies suggest the importance of compliance and governance in SSCM and CSR performance.

It's mentioned that board structure and diversity influence the implementation of sustainable supply chain initiatives by increasing organizational commitment to environmentally friendly and socially responsible policies and practices (Sebastianelli, Tamimi et al. 2020). This finding suggests that governance, which often includes regulatory compliance, plays a role in the relationship between SSCM and CSR performance. In conclusion, while the provided context does not directly address the moderating effect of regulatory policies and compliance on the SSCM-CSR performance relationship, it suggests that governance and organizational commitment to sustainability play important roles in this relationship. Further research specifically focusing on the moderating effect of regulatory policies and compliance is necessary to fully support or refute this hypothesis (Le, Vo et al. 2022).

H3: Regulatory Policies and Compliance moderate the relationship between Sustainable Supply Chain Management (SSCM) and Corporate Social Responsibility (CSR) Performance.

The relationship between circular economic practices and corporate social responsibility (CSR) performance is likely moderated by regulatory policies and compliance, although the provided context does not directly address this hypothesis. Circular economy (CE) practices have emerged as innovative business models for firms to transform CSR into actions. The adoption of CE practices such as eco-design and reverse logistics has been found to significantly improve firms' CSR performance (Hong, T., Ou, et al. 2024). However, the impact of regulatory policies on this relationship has not been explicitly discussed in the given context.

Knudsen analyzes the policies of 22 European Union member governments designed to encourage CSR between 2000 and 2011. Northern European, Scandinavian, and UK governments are reconstructing their institutional structures to embed CSR concerns more explicitly, with policies converging around increased regulatory strength and broader issue application (Knudsen, Moon et al 2015). This suggests that regulatory policies may play a role in shaping the relationship between CE practices and CSR performance. In conclusion, while the provided context does not directly support or refute the hypothesis, it indicates that both CE practices and regulatory policies are important factors in CSR performance. Further research specifically examining the moderating effect of regulatory policies on the relationship between CE practices and CSR performance is necessary to fully address this hypothesis (Arrigo, Di Vaio et al. 2022).

H4: Regulatory Policies and Compliance moderate the relationship between Circular Economy Practices in textile and Corporate Social Responsibility (CSR) Performance.

Based on the context provided, there is limited direct information addressing the specific hypothesis about consumer awareness and ethical demand moderating the relationship between SSCM and CSR performance. However, we can draw some relevant insights from the available papers, and the relationship between SSCM and CSR has been highlighted in several papers. Zhu et al. (2022) suggested that CSR (both internal and external) positively promotes SSCM practices and contributes to organizational performance. Similarly, it indicates that internal and external CSR have positive impacts on green supply chain management, which is closely related to SSCM. Interestingly, proposed a framework integrating CSR and circular economy principles within SSCM, emphasizing the interconnectedness of these concepts (Centobelli, Abbate et al. 2022).

This finding suggests that the relationship between SSCM and CSR performance is complex and multifaceted. While these papers do not directly address consumer awareness and ethical demand as moderators, some implications can be drawn. Mentioned that SSCM practices have a positive effect on sustainable supply chain performance, particularly from economic and social perspectives. This could indirectly relate to consumer awareness and ethical demand, as these factors are likely to influence social and economic outcomes. In conclusion, while the available information does not directly support or refute the hypothesis, it suggests a strong interrelationship between SSCM and CSR. Further research specifically focusing on consumer awareness and ethical demand as moderating factors is necessary to fully address the proposed hypothesis (Chen, Xu et al. 2023).

H5: Consumer Awareness and Ethical Demand moderate the relationship between Sustainable Supply Chain Management (SSCM) and Corporate Social Responsibility (CSR) Performance.

The relationship between circular economy practices in textile and corporate social responsibility (CSR) performance is moderated by consumer awareness and ethical demand, as suggested by previous research. Circular economy practices, such as eco-design (ECO) and reverse logistics (RL), have been shown to significantly improve firms' CSR performance. These practices, along with waste treatment, reduction, and recycling, enhance brand reputation and financial performance. Consumer awareness plays a crucial role in this relationship, as consumers attach great importance to textile company's social and environmental sustainability practices. Interestingly, the COVID-19 pandemic has not significantly changed consumers' expectations of CSR practices in the textile industry (Chen, Xu et al. 2023).

This suggests that consumer awareness and ethical demand for sustainable products remain strong even in times of crisis. Young consumers, particularly Millennials and Gen Zers, show a preference for sustainable products over non-sustainable alternatives, indicating a growing trend in ethical demand. In conclusion, the evidence supports the hypothesis that consumer awareness and ethical demand moderate the relationship between circular economy textile practices and CSR performance. As consumers become more aware of sustainability issues and demand ethical products, textile companies are increasingly expected to adopt cleaner production practices and implement circular economic strategies. This consumer-driven pressure serves as a moderating factor, strengthening the link between circular economy practices and CSR performance in the textile industry (Dickson and Chang 2022).

H6: Consumer Awareness and Ethical Demand moderate the relationship between Circular Economy Practices in textile and Corporate Social Responsibility (CSR) Performance.

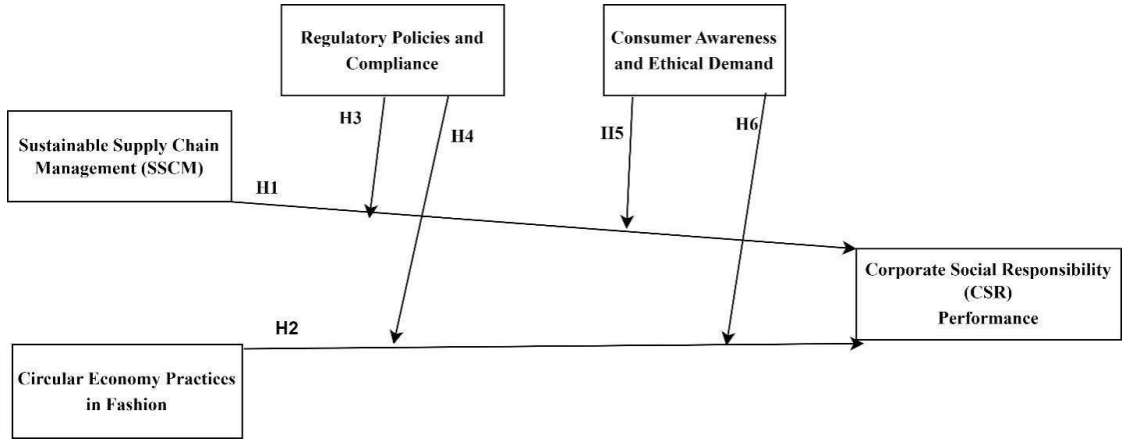


Figure1: Proposed Research Model

Methodology

A quantitative methodology using survey questionnaires employed to investigate the impact of sustainable supply chain practices on corporate social responsibility in the global textile industry. The survey conducted to a large sample of RMG's in Bangladesh, India, Pakistan, China and Vietnam. A total of 2555 questionnaires distributed to professionals who are directly involved in SCM decision making and CSR practice orientations in the firms in textile industries in these countries and received 1533 responses, almost 60% of the total respondents. This cross-sectional data collection method allows for a comprehensive analysis of industrial landscapes. The questionnaires were designed to capture demographic information such as experience, age, and qualification of respondents, as well as specific sustainable supply chain practices and corporate social responsibility initiatives implemented by the companies. The survey included questions related to standardized employee work conditions, employee wellbeing and development practices, and community-oriented social responsibility, as these factors have been shown to influence sustainable supply chain practices (Karmaker, Al Aziz et al. 2023).

For data analysis, structural equation modelling (SEM) with AMOS has been utilized, as demonstrated. This statistical technique allows for the examination of complex relationships between variables and can help identify the direct and indirect effects of sustainable supply chain practices on corporate social responsibility. Additionally, the use of AMOS software for model structuring and regression analysis, as employed for the empirical results. Tests were conducted on the model structure to ensure the validity and reliability of the instrument. The research also incorporated moderating variables, such as corporate technology orientation, which had been shown to strengthen the positive impacts of employee well-being and development practices on sustainable supply chain practices. By employing this comprehensive quantitative methodology and statistical analysis, researchers ended up gaining valuable insights into the relationship between sustainable supply chain practices and corporate social responsibility in the global textile industry (Daghighi and Shoushtari 2023).

Measurement of Variables

The variables in the conceptual framework were measured using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree)**,** with established scales from prior research**.** Sustainable Supply Chain Management (SSCM**)** was assessed using six items adapted from Seuring and Müller (2008). Circular Economy Practices in textile were measured using seven items based on. Corporate Social Responsibility (CSR) performance was evaluated using six items following Aguinis and Glavas (2024). Regulatory Policies and Compliance were measured using the six items adapted from Porter and Van der Linde (2000)**.** Consumer Awareness and Ethical Demand were assessed using seven items from Carrigan and Attalla (2001). Using these validated scales ensures construct reliability and validity in analyzing the impact of SSCM and circular economy practices on CSR performance (Gera, Yadav et al. 2022).

CFA of Model

The diagram represents a structural equation model (SEM) demonstrating the relationships among various latent constructs: Corporate Social Responsibility (CSR) Performance, Circular Economy Practices in textile, Sustainable Supply Chain Management (SSCM), Regulatory Policies and Compliance, and Consumer Awareness and Ethical Demand. Each latent variable is measured by multiple observed indicators, represented as rectangles, with the associated error terms shown as small circles. The arrows connecting these indicators to their respective latent constructs indicate factor loadings, which represent the strength of the association between each observed variable and its underlying latent construct(Liu, Ren et al. 2022).

Corporate Social Responsibility performance is influenced by multiple factors, including Circular Economy Practices in textile, Sustainable Supply Chain Management, and external influences such as Regulatory Policies and Compliance, and Consumer Awareness and Ethical Demand. Standardized path coefficients indicate the strengths of these relationships. The direct relationship between Corporate Social Responsibility Performance and Sustainable Supply Chain Management is 0.09, while the relationships between Corporate Social Responsibility Performance and other variables are 0.29 for Circular Economy Practices in textile, 0.21 for Regulatory Policies and Compliance, 0.22 for Consumer Awareness and Ethical Demand, 0.36 for Circular Economy Practices in textile to Sustainable Supply Chain Management, 0.23 between Regulatory Policies and Compliance and Consumer Awareness and Ethical Demand.

Moreover, it is 0.39 between Regulatory Policies and Compliance and Circular Economy Practices in textile, 0.50 between Regulatory Policies and Compliance and Sustainable Supply Chain Management, 0.54 between Consumer Awareness and Ethical Demand and Corporate Social Responsibility Performance, and 0.38 between Consumer Awareness and Ethical Demand and Circular Economy Practices in textile (Jensen and Whitfield 2022). Factor loadings for observed variables ranged from moderate to strong, indicating reliable measurement of latent constructs. The observed variables for CSR Performance have factor loadings ranging from 0.60 to 0.80, while those for circular economy practices range from 0.43 to 0.84. Sustainable Supply Chain Management indicators have loadings between 0.67 and 0.87, demonstrating strong measurement reliability. Regulatory Policies and Compliance show factor loadings between 0.35 and 0.78, whereas Consumer Awareness and Ethical Demand indicators range between 0.46 and 0.52.

Additionally, the correlations between the latent constructs reveal the interconnectedness of supply chain sustainability, regulatory frameworks, ethical consumer behaviour, and corporate

social responsibility performance. The model provides insights into how sustainability-driven business practices and regulatory compliance contribute to corporate social responsibility outcomes, emphasizing the role of sustainable supply chain strategies and circular economy adoption in enhancing ethical and environmental performance (Dhar, Sarkar et al. 2022).

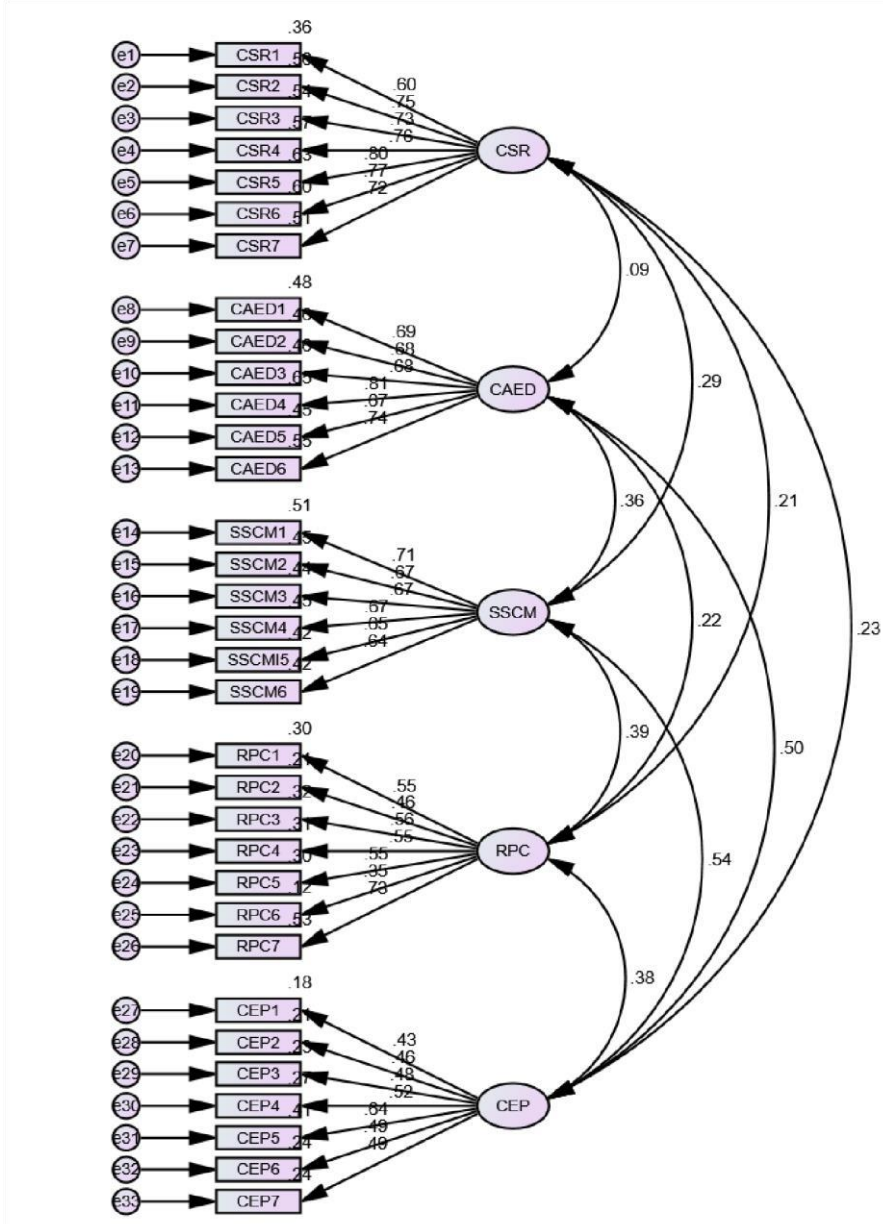


Figure 2: SEM of Study

Reliability and Validity:

The table presents key statistical metrics, including Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV), and Maximum Reliability (MaxR(H)), along with correlations between Corporate Social Responsibility (CSR) Performance, Consumer Awareness and Ethical Demand (CAED), Sustainable Supply Chain Management (SSCM), Regulatory Policies and Compliance (RPC), and Circular Economy

Practices in textile (CEP). The CR values for all constructs exceed the 0.7 threshold (Hair et al., 2010), ensuring strong internal consistency, with a CSR of 0.891, CAED of 0.861, SSCM of 0.830, RPC of 0.740, and CEP of 0.703. AVE values, which indicate convergent validity, exceed 0.5 for all constructs except CSR (0.539), with CAED at 0.509, SSCM at 0.568, RPC at 0.597, and CEP at 0.556 (Fornell & Larcker, 1981). Discriminant validity was supported as AVE values exceeded MSV values, with SSCM and CEP showing the highest MSV (0.289). The correlation analysis reveals strong relationships, notably between SSCM and CEP (0.538*) and CAED and CEP (0.504*), indicating the influence of sustainable supply chain practices and consumer awareness on circular economy adoption. Moderate correlations exist between CSR and SSCM (0.289*), RPC (0.205*), and CEP (0.231*), thus reinforcing the role of sustainability and regulations in corporate responsibility. These findings align with prior research that emphasizes the interplay between corporate sustainability, regulatory compliance, and ethical consumerism in shaping responsible business practices (Men, Yaqub et al. 2023).

	CR	**AVE**	**MSV**	**MaxR(H)**	**CSR**	**CAED**	**SSCM**	**RPC**	**CEP**
CSR	0.891	0.539	0.084	0.896	0.734				
CAED	0.861	0.509	0.254	0.867	0.094†	0.713			
SSCM	0.830	0.568	0.289	0.831	0.289***	0.365***	0.669		
RPC	0.740	0.597	0.151	0.766	0.205***	0.217***	0.389***	0.545	
CEP	0.703	0.556	0.289	0.714	0.231***	0.504***	0.538***	0.382***	0.606

Table 1: Reliability and Validity

Model Fit:

The model fit indices presented in the table indicate an excellent fit between the hypothesized structural model and the observed data according to the established criteria in structural equation modelling (SEM) literature (Hu & Bentler, 1999; Kline, 2015). The Chi-square (CMIN) value was 724.614 with 485 degrees of freedom (DF), and the CMIN/DF ratio was 1.494, which falls within the acceptable range of 1 to 3, confirming a strong model fit. The Comparative Fit Index (CFI) is 0.956, exceeding the recommended threshold of 0.95, further supporting model adequacy. The Standardized Root Mean Square Residual (SRMR) is 0.043, well below the 0.08 threshold, and the Root Mean Square Error of Approximation (RMSEA) is 0.030, which is significantly lower than the recommended 0.06, both of which indicate a well-fitting model. Additionally, the p-value of 1.000, which is greater than 0.05, confirms that RMSEA does not significantly differ from zero, reinforcing the model's strong fit. These findings validate the robustness and reliability of the model in capturing the relationships among the latent constructs, demonstrating a high level of confidence in the identified structural relationships (Ye and Dela 2023).

Measure	Estimate	Threshold	Interpretation
CMIN	724.614	--	--
DF	485	--	--
CMIN/DF	1.494	Between 1 and 3	Excellent
CFI	0.956	>0.95	Excellent
SUMMER	0.043	<0.08	Excellent
RMSEA	0.030	<0.06	Excellent
P Close	1.000	>0.05	Excellent

Table 2: Model Fit

Results

H1: Sustainable Supply Chain Management (SSCM) has a positive impact on Corporate Social Responsibility (CSR)

Hypothesis H1, Sustainable Supply Chain Management (SSCM) has a positive impact on Corporate Social Responsibility (CSR) Performance is supported by the regression analysis results. The model summary shows that SSCM explains 6.3% of the variance in CSR performance **(**$R^2 = 0.063$, Adjusted $R^2 = 0.061$**),** indicating a modest explanatory power. The ANOVA results confirm that the regression model is statistically significant ($F(1, 533) = 35.777$, $p < 0.001$), indicating that SSCM significantly influences CSR performance. The coefficient table reveals a positive and significant relationship between SSCM and CSR performance ($B = 0.131$**,** $\beta = 0.251$, $t = 5.981$, $p < 0.001$), indicating that CSR performance also increases as SSCM practices improve. The positive zero-order, partial, and partial correlations (0.251) further supported this relationship. Although the effect size is relatively small, the statistical significance suggests that SSCM contributes to CSR performance, emphasizing the importance of sustainable supply chain practices in enhancing corporate social responsibility outcomes (Mio, Costantini et al. 2022).

H2: Circular Economy Practices (CEP) in textile have a positive impact on Corporate Social Responsibility (CSR) Performance

Hypothesis H2 is supported by the regression analysis results. The model summary indicates that CEP explains 3.0% of the variance in CSR performance ($R^2 = 0.030$, Adjusted $R^2 = 0.029$**),** suggesting a weak explanatory power. ANOVA results confirm that the model is statistically significant **(**$F(1, 530) = 16.603$, $p < 0.001$**),** indicating that CEP significantly influences CSR performance. The coefficients show a positive and significant relationship between CEP and CSR performance ($B = 0.119$, $\beta = 0.174$, $t = 4.075$, $p < 0.001$), indicating that an increase in circular

economy practices leads to an improvement in CSR performance. The zero-order, partial, and part correlations (0.174) further confirm this positive association. Although the effect size is relatively small, the statistical significance highlights the importance of circular economy initiatives in enhancing CSR performance within the textile industry (Chowdhury, Chowdhury et al. 2022).

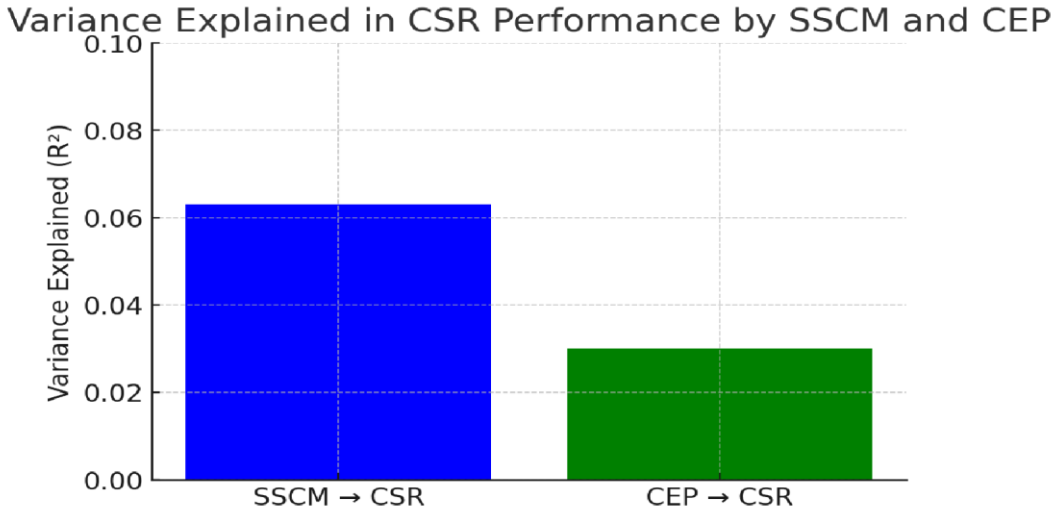
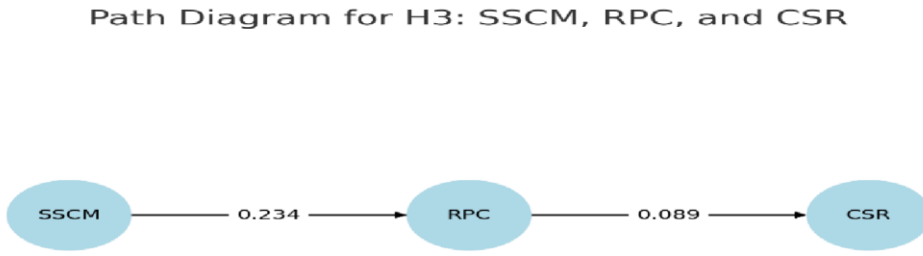


Figure 3: Variance Explained in H1and H2

The bar chart displays the variance explained (R^2) by SSCM and CEP in predicting CSR performance**.** This shows that SSCM has higher explanatory power (6.3%) than CEP (**3.0%**), meaning that sustainable supply chain practices contribute more significantly to CSR outcomes than circular economy practices.

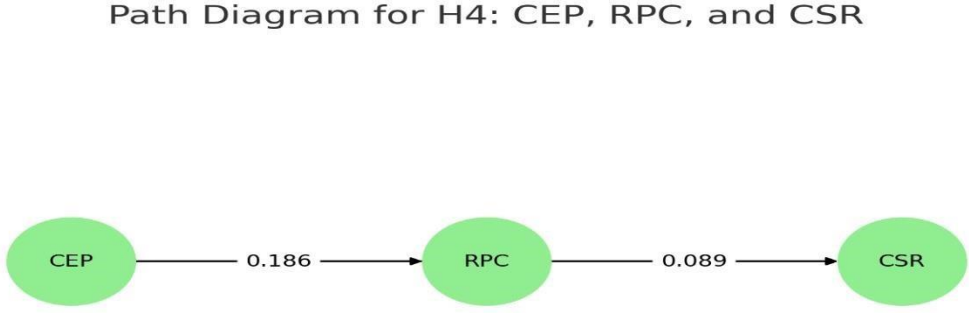
H3: Regulatory Policies and Compliance (RPC) moderates the relationship between Sustainable Supply Chain Management (SSCM) and Corporate Social Responsibility (CSR) Performance.

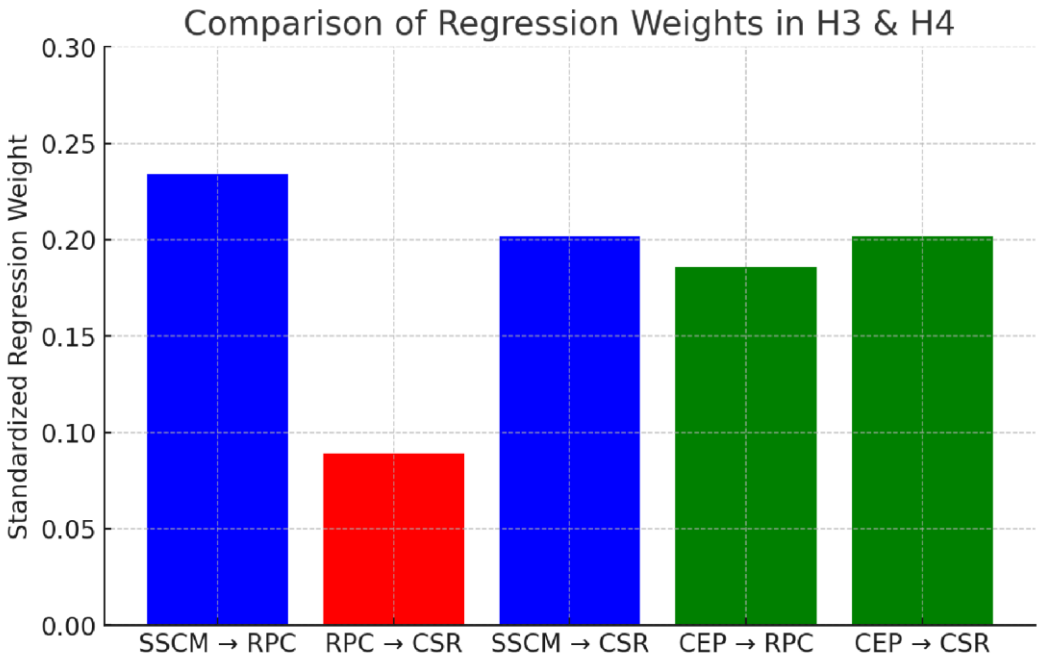
The standardized regression weight of SSCM → RPC was 0.234, indicating a moderately positive relationship. Thus, improved sustainable supply chain practices contribute to stronger regulatory compliance. Additionally, RPC → CSR has a standardized regression weight of 0.089, indicating that regulatory policies have a small but positive influence on CSR performance. Since the indirect effect of SSCM → RPC → CSR is 0.015, this suggests that regulatory policies play a minor moderating role. While SSCM positively impacts CSR performance directly ($\beta = 0.202$), the additional effect of RPC is limited. This implies that regulatory policies alone are not a strong mechanism to enhance CSR performance but do play a supplementary role. Therefore, H3 is partially supported as regulatory compliance strengthens the SSCM-CSR link, but only to a small extent(Ma, Chishti et al. 2023).



H4: Regulatory Policies and Compliance (RPC) moderates the relationship between Circular Economy Practices (CEP) and Corporate Social Responsibility (CSR) Performance.

The standardized regression weight of CEP → RPC was 0.186, indicating a moderately positive relationship. This means that circular economy practices contribute to regulatory compliance, likely due to waste reduction, resource efficiency, and sustainability goals that align with the regulatory standards. However, as H3 shows, the direct influence of RPC on CSR performance ($\beta = 0.089$) remains relatively small. The indirect effect of CEP → RPC → CSR is 0.005, indicating a very weak moderation effect. While circular economy practices help organizations comply with regulations, they do not significantly enhance CSR performance. This suggests that regulatory policies may not be a crucial factor in strengthening the CEP-CSR link. Therefore, H4 is weakly supported, meaning that, while regulatory compliance is influenced by circular economy practices, its role in enhancing CSR performance is minimal(Cao, Chen et al. 2025).





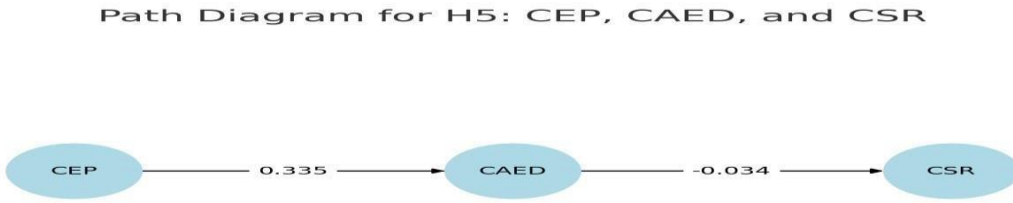
The path diagram for H3 illustrates the relationships among Sustainable Supply Chain Management (SSCM), Regulatory Policies and Compliance (RPC), and Corporate Social Responsibility (CSR), showing that SSCM has a moderate positive effect on RPC (0.234), RPC has a small positive influence on CSR (0.089), and SSCM directly impacts CSR (0.202). Similarly, the path diagram for H4 highlights the connections between Circular Economy Practices (CEP), RPC, and CSR, where CEP moderately influences RPC (0.186), RPC has a small effect on CSR (0.089), and CEP directly enhances CSR (0.202).

The bar chart comparing standardized regression weights reveals that SSCM → RPC (0.234) has the strongest relationship, followed by CEP → RPC (0.186), whereas RPC → CSR (0.089) has the weakest impact. Notably, the direct effects (SSCM → CSR and CEP → CSR at 0.202) are more significant than the indirect effects, suggesting that regulatory policies play only a minor moderating role in CSR performance. SSCM and CEP primarily contribute to CSR through direct pathways rather than via RPC, as evidenced by the weak indirect effects (0.015 for SSCM and 0.005 for CEP)(GarciaTorres, Rey-Garcia et al. 2022).

H5: Consumer Awareness and Ethical Demand (CAED) moderates the relationship between Circular Economy Practices (CEP) and Corporate Social Responsibility (CSR) Performance.

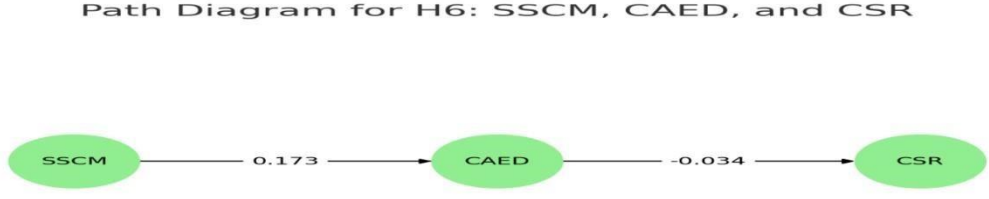
The standardized regression weight of CEP → CAED is 0.335, indicating a strong positive effect. This suggests that implementing circular economy practices significantly increases consumer awareness and ethical demands. Consumers are increasingly valuing sustainable textile, ethical sourcing, and waste reduction, making circular economic initiatives effective in influencing their perceptions. However, the path CAED → CSR has a negative standardized regression weight of -0.034, indicating that consumer awareness does not enhance CSR performance. The indirect effect of CEP → CAED → CSR was 0.000, further confirming that

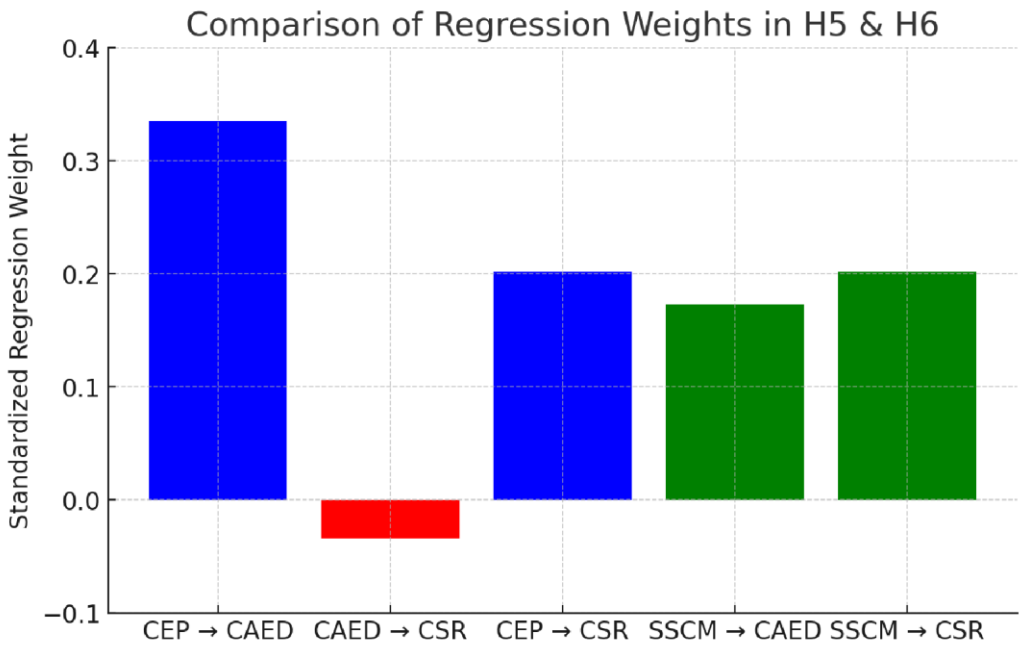
CAED does not serve as a meaningful moderator. This implies that while circular economy practices successfully raise consumer awareness, this awareness does not necessarily translate into better CSR performance. A possible reason could be that, despite consumers' increased expectations, businesses may not fully integrate these expectations into their CSR strategies. Thus, H5 is not supported, as consumer awareness does not play a significant role in moderating the CEP-CSR relationship(Xu, Wang et al. 2023).



H6: Consumer Awareness and Ethical Demand (CAED) moderates the relationship between Sustainable Supply Chain Management (SSCM) and Corporate Social Responsibility (CSR) Performance.

The standardized regression weight of SSCM → CAED is 0.173, indicating a moderately positive effect. This suggests that sustainable supply chain practices contribute to increased consumer awareness and ethical demand, likely due to transparency, fair labour practices, and sustainability initiatives. However, similar to H5, CAED → CSR has a negative impact (β = 0.034), indicating that consumer awareness does not enhance CSR performance. The indirect effect of SSCM → CAED → CSR was 0.000, further confirming that CAED does not act as a meaningful moderator in this relationship. This indicates that, while sustainable supply chain management improves consumer awareness, this awareness does not translate into improved CSR outcomes. This finding suggests that businesses do not fully respond to consumer demands for ethical and sustainable practices in their CSR strategies. Therefore, H6 is not supported, as consumer awareness does not significantly moderate the SSCM-CSR relationship (Jell-Ojobor and Raha 2022).





The path diagram for H5 illustrates the relationships between Circular Economy Practices (CEP), Consumer Awareness and Ethical Demand (CAED), and Corporate Social Responsibility (CSR), showing that CEP strongly influences CAED (0.335), but CAED harms CSR (-0.034), meaning that increased consumer awareness does not enhance CSR performance, whereas CEP directly improves CSR (0.202). Similarly, the path diagram for H6 highlights the relationships between Sustainable Supply Chain Management (SSCM), CAED, and CSR, where SSCM moderately increases CAED (0.173), yet CAED again negatively impacts CSR (-0.034), reinforcing that consumer awareness does not strengthen CSR, while SSCM has a direct positive effect on CSR (0.202).

The bar chart comparing standardized regression weights reveals that CEP → CAED (0.335) has the strongest relationship, SSCM → CAED (0.173) is moderately strong, and CAED → CSR (-0.034) is negative, indicating no meaningful moderation. Notably, the direct effects (CEP → CSR and SSCM → CSR at 0.202) are more significant than the indirect effects, suggesting that Consumer Awareness and Ethical Demand (CAED) does not effectively moderate CSR performance. Although CEP and SSCM successfully raise consumer awareness, this does not translate into better CSR outcomes, implying that businesses may not fully integrate consumer expectations into their CSR strategies, making direct effects more impactful than indirect pathways(Walters 2022).

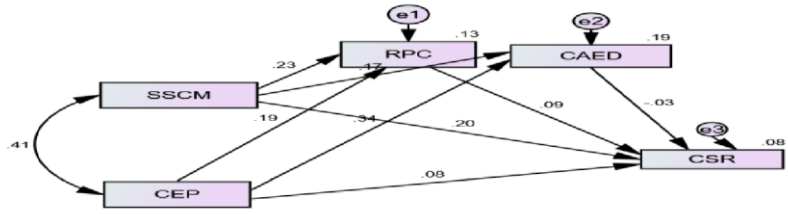


Figure 3: Paths of Model

Discussion

The findings provide valuable insights into the relationship between Sustainable Supply Chain Management (SSCM), Circular Economy Practices (CEP), and Corporate Social Responsibility (CSR). The results suggest that SSCM and CEP positively impact CSR performance, with SSCM having a stronger influence. However, the moderating roles of regulatory policies and consumer awareness appear weak, indicating that these factors do not significantly enhance CSR outcomes. To contextualize these results, this discussion integrates supporting and contrasting studies to examine the broader implications and limitations of these findings(Talpur, Nadeem et al. 2024).

Sustainable Supply Chain Management (SSCM) and CSR Performance

The results confirm that SSCM has a positive and statistically significant impact on CSR performance, explaining 6.3% of the variance. This aligns with prior research, which highlights the importance of sustainability-oriented supply chain practices in improving CSR outcomes. For example, Ahi and Searcy (2015) argued that firms implementing sustainable procurement, ethical sourcing, and environmental management systems enhance their social responsibility by reducing negative environmental and social impacts. Similarly, SSCM fosters social and environmental sustainability by promoting fair labour practices and reducing carbon footprints, which strengthens a company's CSR performance (Varley, Roncha et al. 2024).

However, some studies have challenged the magnitude of SSCM's impact of SSCM on CSR. Pagell and Wu (2009) suggest that while SSCM contributes to CSR, its effectiveness depends on industry-specific factors and organizational commitment. They argue that companies adopting sustainability measures for compliance rather than genuine strategic integration may see limited CSR improvements. Walker et al. (2014) found that supply chain sustainability efforts often face resistance from suppliers due to cost constraints, which can hinder their effectiveness in driving CSR outcomes. The relatively small effect size ($\beta = 0.251$) in this study suggests that SSCM

alone may not be sufficient to achieve significant CSR improvements, reinforcing the need for complementary strategies(Mostepaniuk, Nasr et al. 2022).

Circular Economy Practices (CEP) and CSR Performance

The results indicate that Circular Economy Practices (CEP) positively impact CSR performance, though with a weaker effect than SSCM ($R^2 = 0.030$, $\beta = 0.174$). This supports the research by Geissdoerfer et al. (2017), which emphasizes the role of circular economy initiatives in improving CSR through waste reduction, resource efficiency, and sustainable production models. Kirchherr et al. (2018) also highlight that circular business models, such as product life extension and remanufacturing, enhance environmental and social responsibility by reducing material consumption and promoting ethical sourcing(Yasin, Huseynova et al. 2023).

Despite these benefits, some scholars argue that circular economy adoption does not automatically translate to improved CSR performance. For instance, De Angelis et al. (2018) noted that while textile brands adopting circular economy models enhance sustainability perception, their actual CSR impact depends on supply chain transparency and consumer engagement. Additionally, Ghisellini et al. (2016) warn that some companies engage in "circular washing, " a form of greenwashing in which firms claim to adopt circular strategies without fully implementing them, leading to limited CSR benefits. The modest explanatory power of CEP in this study suggests that while circular economy initiatives support CSR, their impact remains constrained unless accompanied by broader corporate sustainability commitments(Asif, Lau et al. 2022).

Regulatory Policies and Compliance (RPC) as a Moderator

The findings suggest that regulatory policies and compliance (RPC) play a minor role in moderating the relationship between SSCM and CSR (indirect effect = 0.015) and between CEP and CSR (indirect effect = 0.005). This aligns with previous research indicating that while regulations provide a framework for CSR, they often fail to drive substantial improvements unless companies proactively integrate sustainability beyond compliance (Balon, Kottala et al. 2022).

For example, Porter and van der Linde (1995) proposed that well-designed environmental regulations can enhance innovation and competitiveness, indirectly benefiting CSR. However, Delmas and Toffel (2008) argued that regulatory compliance alone does not guarantee CSR improvements, as companies may meet minimum legal requirements without pursuing deeper sustainability commitments. The small indirect effects in this study reinforce this perspective, suggesting that, while regulatory policies influence SSCM and CEP, their role in strengthening CSR performance remains limited (Rupa and Saif 2022).

Consumer Awareness and Ethical Demand (CAED) as a Moderator

This study finds that Consumer Awareness and Ethical Demand (CAED) do not significantly moderate the relationship between SSCM and CSR or CEP and CSR, as evidenced by the negative path coefficient (-0.034) and zero indirect effect. This contradicts studies that suggest that consumer awareness plays a crucial role in driving corporate sustainability initiatives. For instance, Hsu highlighted that increased consumer demand for ethical products pressured companies to adopt sustainable practices. Similarly, Becker-Olsen argues that consumers' perceptions of CSR influence brand reputation and financial performance, incentivizing companies to align their strategies with ethical expectations (Mu, Xu et al. 2024).

However, other studies have provided contrasting results. Mohr found that while consumers express strong preferences for ethical brands, their actual purchasing behaviour does not always reflect these values, a phenomenon known as the attitude–behaviour gap." Similarly, Carrigan and Attalla (2001) suggest that price and convenience often outweigh ethical considerations in consumer decision-making. The findings of this study align with these arguments, indicating that, while CEP and SSCM raise consumer awareness, this awareness does not necessarily translate into improved CSR performance. This suggests that businesses do not fully integrate consumer expectations into their CSR strategies, or that consumers' ethical concerns do not exert enough pressure on firms to drive significant CSR improvements (Gong, Xiao et al. 2023).

Practical Implications

This study's findings provide critical insights into how businesses can enhance Corporate Social Responsibility (CSR) performance through Sustainable Supply Chain Management (SSCM) and Circular Economy Practices (CEP). While both SSCM and CEP positively influence CSR, their impact is relatively modest and the moderating effects of regulatory policies and consumer awareness appear to be limited. To maximize CSR outcomes, companies must adopt a strategic approach that goes beyond basic sustainability initiatives (Cezarino, Liboni et al. 2022).

Enhancing Sustainable Supply Chain Management (SSCM) for Stronger CSR Performance

This study confirms that SSCM positively influences CSR performance, highlighting the importance of ethical and environmentally responsible supply chain practices. To strengthen this impact, businesses must actively engage suppliers to ensure responsible sourcing, fair labour practices, and carbon footprint reduction. Implementing supplier sustainability audits, fostering long-term partnerships with ethical suppliers, and offering financial incentives for sustainable practices can enhance the effectiveness of SSCM in improving CSR performance (Adamkiewicz, Kochańska et al. 2022).

In addition, increasing supply chain transparency is crucial. Companies can adopt digital tracking technologies such as blockchain to monitor sustainability metrics and improve accountability. Regular sustainability reporting and third-party certifications (e.g., Fair Trade or ISO 14001) can further reinforce credibility and demonstrate a genuine commitment to CSR. However, since SSCM alone may not be sufficient to drive significant CSR improvements, businesses should integrate it with circular economy initiatives and broader sustainability strategies (Mahmood, Misra et al. 2024).

Maximizing the Impact of Circular Economy Practices (CEP)

Circular Economy Practices (CEP) also contribute positively to CSR, although to a lesser extent than SSCM. To maximize the impact of CEP, businesses should transition from traditional linear production models to circular business models that emphasize waste reduction, recycling, and extending product life. For example, the textile industry can adopt closed-loop supply chains and promote sustainable material reuse to minimize environmental impact (Abbate, Centobelli et al. 2023).

A key challenge in implementing CEP effectively is the risk of "circular washing," in which companies claim to adopt circular strategies without fully integrating them into their business models. To address this, businesses must establish clear sustainability goals, conduct third-party sustainability audits, and provide transparent communication about their circular economy

initiatives. In addition, consumer education and engagement are vital. Businesses can encourage customers to participate in circular initiatives by offering incentives for recycling programs, repair services, and second-hand product purchases (Naseer, Song et al. 2023).

Going Beyond Regulatory Compliance for Sustainable Impact

This study finds that regulatory policies and compliance (RPC) have only a minor moderating effect on CSR performance, indicating that legal requirements alone are not sufficient to drive significant sustainability improvements. This suggests that businesses should adopt a proactive approach, going beyond mere compliance to integrate voluntary sustainability standards such as B Corp certification, LEED accreditation, or adherence to the Global Reporting Initiative (GRI) (Zhang, Oo et al. 2022).

This finding highlights the need for stronger incentives and enforcement mechanisms for policymakers. Governments can encourage businesses to adopt deeper sustainability commitments through tax benefits, sustainability grants, and strict environmental regulations. Additionally, regulatory agencies should improve monitoring and enforcement to ensure that companies genuinely implement sustainable practices, rather than merely meeting minimum legal requirements (Joshi and Sharma 2022).

Bridging the Gap Between Consumer Awareness and CSR Performance

One of the key findings is that, while SSCM and CEP increase consumer awareness of ethical and sustainable practices, this awareness does not necessarily translate into improved CSR performance. This suggests that businesses may not fully respond to consumer sustainability expectations. To bridge this gap, companies must align their CSR initiatives with consumer behaviour and purchasing decisions (Munir, Habib et al. 2022).

One practical approach is to address the attitude–behaviour gap," where consumers express a preference for sustainable products but often prioritize price and convenience. Businesses can make sustainable options more accessible and affordable, encouraging the greater adoption of ethical consumption habits. Additionally, companies should enhance their sustainability communication strategies using transparent, data-driven messaging to build consumer trust and reduce scepticism about corporate sustainability claims (Ghosh, Mandal et al. 2022).

Engaging consumers directly in sustainability initiatives can strengthen their influence on CSR performance. For example, companies can introduce loyalty programs that reward sustainable purchasing behaviour, offer discounts for returning used products for recycling, or involve consumers in corporate sustainability projects. By fostering consumer participation, businesses can create a stronger demand for ethical and sustainable products, reinforcing their CSR impact (Asha, Dulal et al. 2023).

Adopting a Holistic Approach to Corporate Sustainability

As SSCM and CEP have direct but relatively modest effects on CSR, businesses must adopt a holistic approach that integrates sustainability across all business functions. This implies embedding sustainability principles into corporate governance, marketing, product development, and supply chain management (Hejazi, Al Batati et al. 2023).

Investing in sustainable innovation is another critical factor. Companies should explore new technologies, such as biodegradable materials, renewable energy solutions, and eco-friendly packaging, to enhance their sustainability. Additionally, collaboration with key stakeholders—

governments, NGOs, industry peers, and consumers—can drive collective action toward broader sustainability goals. Multistakeholder partnerships can facilitate resource sharing, knowledge exchange, and joint sustainability initiatives that amplify CSR performance (Warasthe, Brandenburg et al. 2022).

Conclusion

This study emphasizes the importance of Sustainable Supply Chain Management (SSCM) and Circular Economy Practices (CEP) for enhancing Corporate Social Responsibility (CSR) performance in the global textile industry. Both SSCM and CEP contribute positively to CSR outcomes, with SSCM demonstrating a stronger influence on the global RMG's. However, the moderating roles of regulatory policies and consumer awareness appear to be weak, suggesting that external pressure alone is insufficient to drive substantial CSR improvements. Instead, businesses must take a proactive and integrated approach to sustainability, embedding responsible practices into their core operations, rather than relying on compliance or consumer demand.

One of the key takeaways of this study is that while SSCM plays a significant role in CSR, its impact is still relatively modest. This suggests that businesses should not view supply chain sustainability as a standalone initiative but rather as part of a broader strategy that includes supplier collaboration, transparency, and continuous improvement. By integrating SSCM with innovative circular economy models, companies can enhance their overall CSR performance, while achieving greater environmental and social benefits.

Similarly, while CEP contributes to CSR, its effectiveness is limited unless businesses fully commit to circular economic principles. The risk of "circular washing" remains a concern as companies promote circular strategies without meaningful implementation. To address this, businesses must set clear sustainability goals, adopt measurable impact assessments, and actively engage stakeholders, including consumers, suppliers, and policymakers in their circular economy initiatives.

The limited moderating effect of regulatory policies indicates that compliance with sustainability regulations does not necessarily lead to substantial CSR improvements. This suggests that businesses must exceed legal requirements and voluntarily adopt higher sustainability standards. Simultaneously, policymakers must strengthen enforcement mechanisms and introduce more robust incentives to encourage deeper corporate engagement in sustainability.

Another critical insight is the disconnection between consumer awareness and CSR performance. Although both SSCM and CEP raise consumers' awareness of ethical and sustainable practices, this awareness does not necessarily translate into improved CSR outcomes. Businesses must address this gap by making sustainable products more accessible and affordable, improving transparency in sustainability communications, and involving consumers more actively in corporate sustainability initiatives.

Ultimately, this study highlights that achieving meaningful CSR improvements requires a holistic approach that integrates SSCM, CEP, regulatory engagement, and consumer participation into a cohesive sustainability strategy. Businesses that proactively embed sustainability into all aspects of their operations, rather than react to external pressures, are more likely to create lasting environmental, social, and economic benefits. Organizations must adopt innovation-driven,

stakeholder-inclusive, and forward-thinking sustainability practices to ensure long-term success in their CSR efforts.

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