THESIS OF THE DOCTORAL (PhD) DISSERTATION

GREEN SUPPLY CHAIN MANAGEMENT, CIRCULAR ECONOMY, AND SUSTAINABLE ORGANIZATIONAL PERFORMANCE

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INTRODUCTION

1.1. Background

Measuring performance in a supply chain system is challenging considering the multiple levels that are included within the organizational supply chain. Specifically, performance measurement in green supply chain management (GSCM) is required for various reasons. It regulates marketing and competitiveness aspects, considering the obstacles and challenges mentioned for this performance measurement in GSCM (OYEFUSI ET AL., 2025). However, GSCM, which pertains to environmental and resource concerns, is a unique way to improve operational efficiency and might establish a precedent for the subsequent strategic development of the organization. On the other hand, the concept of circular economy has been identified as a novel approach to assist GSCM and achieve sustainability at the organizational level.

The circular economy is primarily concerned with efficiently using resources, saving energy, and properly regulating the physical movement of commodities in green supply chain structures among stakeholders (SINGH ET AL., 2025). In recent times, there has been an increase in studies on GSCM such as, SHAHZAD ET AL. (2025), KHARAT ET AL. (2025), AFROOZI ET AL. (2025), SINGH ET AL. (2025) that investigate its connection with a circular economy model. Simultaneously, these scholars are also endorsing this pattern by consistently emphasizing the enhancement of sustainable performance through the integration of GSCM to facilitate the transition towards a circular economy, ultimately aiming to improve sustainable performance at the organizational level.

The present study indicates that GSCM, including the circular economy system, encourages managers to adjust their mindsets and actions towards facilitating pollution prevention and recognizing environmental prospects (JU ET AL., 2025). The current study highlights an additional significant issue associated with this approach, which is sustainable organizational performance that encompasses economic, social, and environmental aspects. Sustainable performance has emerged as a crucial metric, i.e., triple bottom line aspects for businesses aspiring to measure their excellence in performance experts (ANDERSON ET AL., 2025; NOGUEIRA ET AL., 2025). It represents both a measure and a goal for achieving outstanding results. The environmental component comprises the actions and obligations carried out by an organization to promote a more sustainable globe. The social component

incorporates the organization's initiatives and endeavors intended to promote the welfare of its personnel. The economic aspect primarily strives to optimize profitability by minimizing the consumption of raw materials, efficiently managing inventories, and reducing manufacturing expenses (OPOKU ET AL., 2025; VUKOVIC ET AL., 2025).

The objective of the current study is to fill the existing void in empirical research by undertaking a quantitative investigation in the ready-made garment industry in Bangladesh, which serves as a representative sample of emerging countries in South Asia. Additionally, this research aims to construct and analyze a conceptual model that explores the connections between GSCM and sustainable performance. It also includes the incorporation of another relevant element, i.e., circular economy, as a mediating and managers' green concern as a moderating factor. Thus, the present study intends to explore an extended examination of the relationship between GSCM and sustainable performance.

1.2. Problem Statement and Gap of the Research

In spite of the fact that managers have had considerable discussions about the relevance of green supply chain management (GSCM) and circular economy to improve company performance, there has been relatively limited research on this framework, notably in the context of developing and emerging countries, South-Asian research (AHMED ET AL., 2022; KARMAKER ET AL., 2023; ABDALLAH ET AL., 2024), and potential research areas such as the garment sector (ISLAM ET AL., 2024; AMIN ET AL., 2025; CHAITY ET AL., 2025). On the other hand, the convergence of GSCM and the circular economy has not been well addressed in existing literature, particularly in non-Western nations. That is why the present study considers GSCM a crucial independent component in enhancing the integrated impact of GSCM and the circular economy on sustainable performance. The relationship between GSCM, circular economy, and sustainable performance is a noteworthy aspect that has been highlighted by the present research.

As Bangladesh is contributing greatly to the global ready-made garment sector, there is an urgent need for a significant number of scientific studies to assess the current state of the environment, evaluate the implementation of GSCM practices, and explore the applicability of the circular economy model to meet the Sustainable Development Goals (SDGs) in Bangladesh. The quantity of research publications available on the research area of circular

economy and GSCM in the specific context of emerging nations, particularly Bangladesh, is notably limited (KARMAKER ET AL., 2023; ISLAM ET AL., 2024).

In earlier investigations, most researchers applied either financial or environmental indicators to assess the performance of the company (BAG ET AL., 2022; LIU ET AL., 2023; AMIR ET AL., 2024; ABDALLAH ET AL., 2024). However, more recent researchers have been focusing on the exploration of the organization in terms of environmental, financial, and social factors (AMIN ET AL., 2024; ISLAM ET AL., 2024; AMIN ET AL., 2025). As a result, the purpose of this research is to investigate the impact that green supply chain management and circular economy contribute to the financial, environmental, and competitive performance of a company.

Several prior research studies such as MARTÍNEZ-FALCÓ ET AL. (2024) and SHAHZAD ET AL. (2025) focused on employing unidimensional components to assess green supply chain management and circular economy. There have been no previous studies, as far as the researcher is aware, that have explored the combined impact of green supply chain management and circular economy on total company performance from the perspective of a multidimensional concept of sustainable organizational performance, i.e., environmental, financial, and social performance. The present study intends to fill the empirical gap of the above-discussed literature and methodology, as well as construct relationships in the context of industry and country.

1.3. Research Questions

To address the present research gap, this study intended to investigate the following five research questions:

RQ-1: Does green supply chain management positively influence sustainable organizational performance?

RQ-2: Does green supply chain management positively influence circular economy?

RQ-3: Does circular economy have a positive effect on sustainable organizational performance?

RQ-4: Does circular economy have a mediating effect between green supply chain management practices and sustainable organizational performance?

RQ-5: Does managers' green concern have a moderating effect between green supply chain management and sustainable organizational performance?

1.4. Research Objectives

The general objective of this study is to evaluate the effects of green supply chain management on sustainable organizational performance including the mediating effect of circular economy and moderating effect of manager's green concern. However, this study indicates the following specific objectives:

RO-1: To measure the effects of green supply chain management on sustainable organizational performance.

RO-2: To evaluate the relationship between green supply chain management and circular economy.

RO-3: To assess the relationship between circular economy and sustainable organizational performance.

RO-4: To examine the mediating effect of circular economy between green supply chain management practices and sustainable organizational performance.

RO-5: To evaluate the moderating effect of managers' green concern between green supply chain management and sustainable organizational performance.

1.5. Conceptual Framework

Based on the study objectives and research questions the current study to empirically investigate the following framework shown in Figure 1:

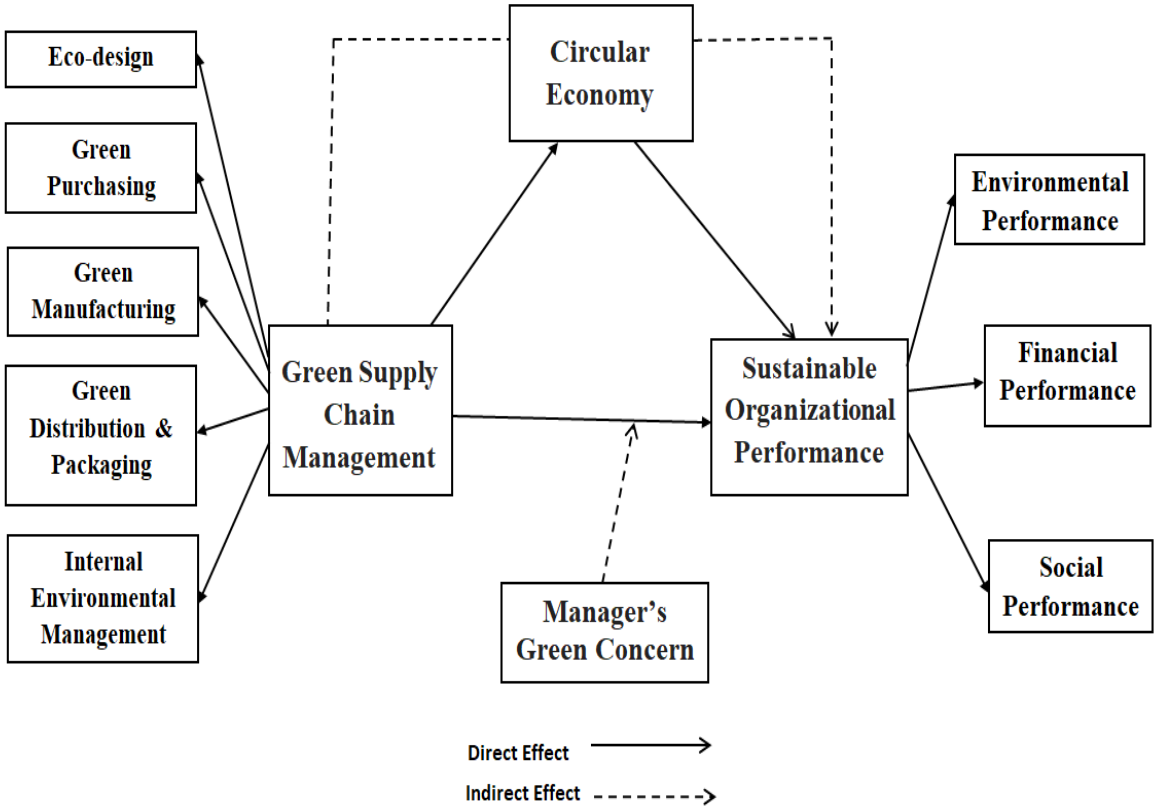

Figure 1: Conceptual Framework for this Study

2. LITERATURE REVIEW

2.1. Green Supply Chain Management and Sustainable Organizational Performance

Scholars in the field of organizational supply chain and sustainable performance (for example, CHEN ET AL., 2023; GUPTA ET AL., 2025; AL AMIN ET AL., 2025; BAGHERPASANDI ET AL., 2025) stated that sustainable performance, including economic, environmental, and social performance, must be considered as significant indicators of sustainable organizational performance. In another similar study, ISLAM ET AL. (2024) and JUNEJO ET AL. (2025) asserted that the manufacturing sectors must incorporate all dimensions of green supply chain management (GSCM) practices to improve sustainable performance. Similarly, ZHOU ET AL. (2023) examined the effects of proactive (reverse logistics) and reactive (threat of legislation and regulation) practices as a component of GSCM to attain the economic, environmental, and intangible performance of SME manufacturing enterprises in Bangladesh. As a collective explanation, these studies exemplify approaches to explore the several relevant aspects of GSCM processes.

Prior research (for example, ISLAM ET AL., 2024; RASHID ET AL., 2025) have shown that all components of GSCM significantly impact overall organizational performance. Similarly, GAWUSU ET AL. (2022) discovered that the implementation of proactive (reverse logistics) methods does not have a substantial influence resulting from the performance of GSCM. However, based on the above discussion and literature support, the present study indicates that it is essential to acknowledge a comprehensive range of measuring scales for the proposed model in this study. This research goal arises from the gap in research on incorporating all GSCM practices and sustainability performance within a single study. The activities of GSCM facilitate interaction across different components and play a crucial role in maintaining an organization's sustainability performance. Therefore, this study aims to analyze the relationship between GSCM and sustainable organizational performance thoroughly. The preceding discussions establish the foundation for the subsequent hypothesis:

Hypothesis 1: *Green supply chain management is positively related to sustainable organizational performance.*

2.2. Green Supply Chain Management and Circular Economy

In their study, WANG ET AL. (2025) discussed a comprehensive definition of green supply chain management (GSCM) in theoretical circles; however, clarifying the term GSCM varies across scholars due to their diverse perspectives. In similar research, ALKARAAN ET AL. (2025) proposed a thorough analysis by applying the principles of sustainable development and supply chain management. The authors also included that logistics, information, capital, and knowledge flow will be carefully planned, organized, guided, coordinated, and controlled among the participating entities in their green supply chain system. Similarly, CHEN ET AL. (2023) found that the objective of GSCM is to optimize resource allocation, enhance benefits, and achieve environmental compatibility. Additionally, the concept of GSCM will be appropriately accomplished through activities such as optimizing and improving the speed, certainty, and environmental friendliness of related processes (ISLAM ET AL., 2024).

From the perspective of GSCM, the concept of circular economy extends beyond merely minimizing the environment's role as a sink for waste or postponing cradle-to-grave material flows (JU ET AL., 2025). Instead, it focuses on developing systems that facilitate self-sustaining production methods that align with natural processes, where materials are continuously reused. Identifying various methods to integrate GSCM strategies related to circular economy principles that have thus become crucial for advancing the limits of environmental sustainability (KARMAKER ET AL., 2023). Besides, the circular economy focuses on the movement of materials within GSCM systems by fostering a transformative change in production philosophy (LONG ET AL., 2025). However, based on the above literature support, the present research proposes the following hypothesis:

Hypothesis 2: *Green supply chain management positively influence Circular Economy*.

2.3. Circular Economy and Sustainable Organizational performance

Organizations are becoming more cognizant of the numerous advantages that can be obtained by considering various aspects of performance (MEHMOOD ET AL., 2025). Additionally, it is essential to connect the application of the circular economy to achieve sustainable performance to make significant advancements. In this regard, MOUSA ET AL. (2025) proposed that organizations are more likely to allocate resources to implement the circular economy while they observe enhancements in domains such as productivity and performance. Similarly, AMIN ET AL. (2024) investigated the correlation between practices of the circular economy and company performance in terms of environmental, financial, and social aspects. As the concept of a circular economy revolves around the protection of natural resources, organizations can achieve this by integrating recycling and reusing waste materials throughout the manufacturing process, utilizing sustainable purchasing practices (SHAH ET AL., 2025).

Literature suggests that different practices related to the circular economy, including procurement, design, and recycling, can contribute to the implementation of green sustainable management aimed at achieving sustainable performance (AMIN ET AL., 2025; SANTIAGO ET AL., 2025). It is crucial to have a comprehensive understanding of how the activities of the circular economy affect the many aspects of sustainable organizational performance (AMIN ET AL., 2024). According to the resource-based perspective theory, it is possible to believe that by implementing the circular economy, employees can maximize the efficient use of resources by expanding their involvement in the economy, promoting energy conservation, lowering operational expenses, and avoiding environmental harm. Based on the above discussion and prior literature support, the current study puts forth the subsequent hypothesis:

Hypothesis 3: *Circular economy is positively related to sustainable organizational performance.*

2.4. Circular Economy as a Mediator

A notable lack of representation exists for innovative technologies like the circular economy within the research domain concerning sustainable company performance (MAGDALENA ET AL., 2025). This gap is even more pronounced in investigations that explore the interplay between Industry 4.0, circular economy (as a mediator), and sustainable performance (SHAHZAD ET AL., 2025). The authors further argued that it is especially possible when the circular economy is a mediating variable linking Industry 4.0 to company performance. Besides, the findings indicate that the circular economy significantly mediates the application of Industry 4.0, enhancing resource use efficiency and the sustainable performance of organizations.

According to CUEVAS-PICHARDO ET AL. (2025), circular economy practices play a key role in an organization's efforts to attain sustainability in business. The investigation was conducted to emphasize the contributions of the circular economy (as a mediator) to the sustainability of businesses. Taking into consideration the above point, AMIN ET AL. (2025) concluded that the circular economy mediates the connection between green human resource management and sustainable organizational performance. In addition, BAG ET AL. (2022) have proven the connection between the promotion of innovation and efficient resource usage that the circular economy provides to businesses and the overall sustainability of those businesses. According to the evidence presented in the previous section of the literature review, the current study proposes the following hypothesis:

Hypothesis 4: *Circular economy mediates the relationship between green supply chain management and sustainable organizational performance.*

2.5. Managers' Green Concern as a Moderator

From a managerial standpoint, attention to environmental issues positively influences the implementation of environmental innovation strategies (MO ET AL., 2022). Moreover, the authors emphasized that a manager's ecological concern is crucial in influencing whether a organization will engage in green innovation. They also noted that the level of this concern may moderate the relationship between green innovation and organizational performance. Managerial concern plays a crucial role in shaping the effectiveness of an organization's pro-ecological initiatives. In another study, MUNAWAR ET AL. (2022) indicated that when adopting sustainable green practices, such as green supply chain management, it is crucial to consider the knowledge and awareness from management perspectives. As a result, managers should receive a satisfactory level of incentives for their endorsement of the environmentally friendly initiatives.

In their study, CAO ET AL. (2022) revealed that the level of concern for environmental issues among managers influences the connection between shareholder pressures and ecological activities, particularly when shareholders prioritize ecological matters. In a similar vein, MO ET AL. (2022) demonstrated that the green concerns of managers drive organizations to prioritize effective practices, which encompass ecological protection initiatives that not only benefit the company but also enhance its corporate image among stakeholders and society. In another investigation, MUNAWAR ET AL. (2022) proposed that the green concern of managers (acting as a moderator) has resulted in an emphasis on ecological pressures from shareholders. With the support of previous study discussions and the focus of the present study, which is on green supply chain management and sustainable performance, this research investigates the possible moderating influence of managerial environmental concern in the following subsequent hypothesis:

Hypothesis 5: *Manager's green concern has a moderating effect between the relationship of green supply chain management and sustainable organizational performance.*

2.6. Research Framework with Hypotheses

This study aimed to investigate the mediation of circular economy and the moderating influence of managerial green concern on the relationship between green supply chain management and sustainable organizational performance. Based on the objectives of this study, addressing the research questions, and above discussed literature support, following four hypotheses have been developed that are shown in the following framework illustrated in Figure 2:

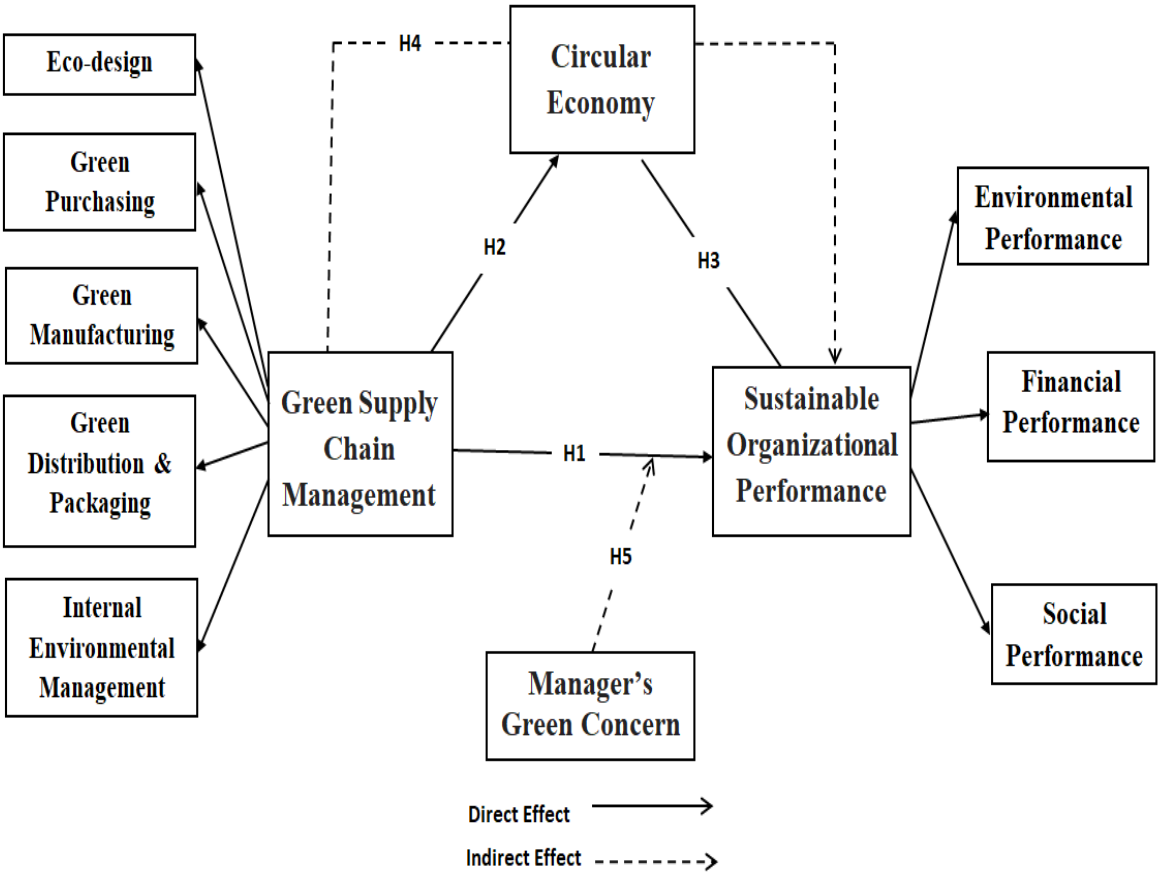

Figure 2: Research Framework and Hypotheses for this Study

3. METHODOLOGY

The methodology chapter of this thesis encompasses research planning, population, unit of analysis, sampling frame, sampling technique, sample size, data collection processes, research questionnaire and scales, and data analysis methods.

3.1. Population, Unit of Analysis, and Sample

The current research presents the following descriptions for the target population, unit of analysis, sample, sampling frame, and sampling techniques:

Target Population

The population of this research included all personnel (including managers at all hierarchical levels) employed in green garment organizations in Bangladesh. The researcher included personnel from all three levels in the organization to ensure accurate generalization of the data since the perception of sustainable organizational performance may differ among employees at various corporate levels.

Unit of Analysis

The present study concentrated on the ready-made garment enterprises that are formally approved and listed by the Bangladesh Garment Manufacturers and Exporters Association (BGMEA, 2025). The unit of analysis for this research is individual managers who work as full-time employees at several hierarchical levels of registered garment enterprises in Bangladesh, including top, mid, and lower levels, as regulated by the garment regulatory body. Additionally, this research focuses on managers who work primarily in green garment organizations that have obtained LEED (Leadership in Energy and Environmental Design) certification across all types of garment organizations (AMIN ET AL., 2024). The individuals employed in the specific clothing organizations identified are the focus of examination in this research.

Sample Size

To determine the appropriate sample size, it is essential to compile a comprehensive list of the whole population, i.e., a sampling frame (KREJCIE & MORGAN, 1970). Based on the Bangladesh Bureau of Statistics (2025) survey report, the comprehensive list of all workers in the garment business of Bangladesh is not available. The total number of workers estimated in the Labor Force Survey, Bangladesh (2023-2024) is likewise an approximation. Based on

these scholarly arguments, the sample size for the present study is suggested to be at least 80 or more (HAIR ET AL., 2010), preferably 160 (SEKARAN & BOUGIE, 2010), ideally around 200 but not too large (HOE, 2008). However, the appropriate recommended sample size is 384, according to COCHRAN (1977) and KREJCIE & MORGAN (1970). Hence, according to the above discussion and the supporting literature, the present study was determined to collect data from a sample size of 384 or more.

Sampling Technique

According to the recommendation of RIBE (2011), the present research is determined to utilize the "judgmental purposive sampling (JPS)" approach, which falls within the non-probability sampling type. When a particular list of respondents is unavailable, this strategy is often utilized (SEKARAN & BOUGIE, 2010; HAIR ET AL., 2014). The target demographic for the present research is the managers of green garment companies; no list is available from any group. The Bangladesh Garment Manufacturers and Exporters Association (BGMEA, 2025) also provided a tentative overall workforce count for this category.

3.2. Research Instrument

This segment focuses on explaining the measures used in the study to formulate the questionnaire. The items of the questionnaire were adapted from prior similar studies.

Pre-Test

According to PERNEGER ET AL. (2015), selecting the samples for pre-testing is an important endeavor. For this study, a total of four HR officers from garment organizations, two specialists from the Bangladesh Garment Manufacturers and Exporters Association (the regulatory/administrative body of garment organizations in Bangladesh), and two academicians from the University of Dhaka (the top-ranked university in the category of Business and Economics in Bangladesh) were selected using a purposive sampling technique. They were selected to assess the suitability, clarity, and duration of the time required to complete the survey.

Pilot Study

The purpose of conducting a pilot test survey is to determine the accuracy and reliability of the survey questions. In this pertinent, HERTZOG (2008) suggested performing a pilot test at the beginning of an investigation to prevent errors in large-scale research. Four garment

organizations will be chosen purposively to perform the pilot survey for this current investigation. The criterion for selecting these companies is to achieve LEED certification and have been operating for more than ten years. Additionally, they should have a workforce of at least 200 employees. Besides, these selected garment companies should be prominent participants in the RMG sector of Bangladesh, and they willingly agreed to participate in the present research survey.

3.3. Preparation of Data

Data Error

The present survey data was assessed prior to data analysis with the objective of reducing omissions. The researcher employed SPSS software, version 25, during the data cleaning step.

Missing Value Calculation

The present researcher examined the quantity of missing values and made appropriate adjustments. Missing values arise when respondents of any questionnaire fail to answer any of the questions contained in the survey. In this pertinent, COHEN (2013) and COHEN ET AL. (2013) indicated that a maximum of 10% missing values is not expected to have a significant impact on the clarity of the results. After including the missing values, this study investigated through statistical tests whether there is any evidence of common method bias.

Common Method Variance (CMV)

To address the challenges associated with CMV, the present study has included several procedural remedy tactics, including the utilization of proximal and methodological separation techniques as recommended by PODSAKOFF ET AL. (2003). The survey presented several variables, each accompanied by distinct sets of guidelines to measure, so that the perception of one variable would not be affected or biased by the other ones. The researcher of this study will utilize Harman's single-factor test, a generally used statistical remedy, to detect common method bias. Based on this methodology, PODSAKOFF ET AL. (2003) recommended that a researcher incorporate all the items under investigation to conduct an un-rotated exploratory factor analysis while maintaining a fixed factor count of one. If the variance explained by a single factor is less than 50 percent, it can be concluded that the presence of common method bias is not evident in the measuring method or dataset.

3.4. Data Analysis Techniques

In this research, a multitude of statistical methodologies and software tools were employed for data analysis. The hypotheses proposed in this study were tested using Smart-PLS fourth generation (Version 4) software through the application of structural equation modeling analysis. It is rational to employ structural equation modeling, i.e., PLS 4 is a fourth-generation method for analyzing multivariate data. It can independently overcome the intricacies inherent in first-generation statistical techniques, such as ANOVA, multiple regressions, and logistic regression (HAIR ET AL., 2014; CHIN, 2010).

3.5. Approaches of Structural Equation Model (SEM)

Researchers apply the maximum likelihood estimation (MLE) method in the context of CB-SEM to mitigate the disparities that may arise between the observed sample covariance matrix and the estimated covariance matrix (MALHOTRA & DAS, 2017). It evaluates the degree to which a suggested theoretical model accurately reflects the actual conditions of the examined context. In this regard, HAIR ET AL. (2017) stated that CB-SEM is preferred when the researcher aims to investigate and confirm existing theories or assess alternative models. The SEM technique presupposes that the dataset follows a normal distribution. Moreover, the sample size for multiple research frameworks is recommended to be sufficiently big, often ten (10) times the number of indicators (CHIN & NEWSTED, 1999). PLS-SEM is an alternate approach for conducting Structural Equation Modelling analysis. The SEM approach is commonly preferred when the underlying theory is not firmly established, and the researchers aim to estimate and elucidate the outcome constructions using predictor constructs (HAIR ET AL., 2013). PLS-SEM focuses more on optimizing the variance of the dependent variable by the independent variable instead of concentrating on covariance (HAENLEIN & KAPLAN, 2004).

4. ANALYSIS AND FINDINGS

4.1. Rates of the Responses

This research attains a response from the target respondents. In the beginning, 1000 questionnaires were administered or distributed to the respondents, out of which 609 questionnaires were returned. Among the 609 returned questionnaires, 49 included erroneous and incomplete answers and thus were considered unusable for this study. Ultimately, 560 questionnaires were deemed usable for data analysis. Hence, the finally usable response rate for the research is 56.0%. Even though there has been no universally accepted threshold level for response rates, FOWLER (2002) recommended that any response rate compared to total distribution would be between 20 and 30 percent (%) for a typical survey questionnaire, which may be considered reasonable and satisfactory.

4.2. Respondent's Profile

According to statistics gathered from the Bangladesh Bureau of Statistics (2025), the workforce of the ready-made garment (RMG) sector includes 41% males and 59% females. In contrast, the most common age group for garment sector workers is between 18 and 45. In this regard, SAIF & ISLAM (2025) delineated that the RMG business in Bangladesh is dominated by female employees (60%); perhaps, the notable point included by the scholars is that day by day, the percentage of female workers in this sector is increasing. On the other hand, the present research, based on its total sample size, found that the largest number of respondents (54.29%) fell under the age group of 36-45, as they are in executive and managerial positions. Moreover, most of the respondents chosen for this study were found to be female (55.95%), which is almost similar to the data of the Bangladesh Bureau of Statistics (2025). As a result, it appears that the demographic profile of the respondents chosen for this research may very well represent the personnel who work in the RMG sector of Bangladesh.

Additionally, the current research found that 45.71% of the respondents completed their master's or equivalent degree, and 42.14% completed their bachelor's or equivalent degree. This outcome has been supported by AMIN ET AL. (2024), who reported that most of the workers in the RMG sector have an educational qualification of at least a graduation. Sequentially, the monthly income range of most of the respondents (41.25%) was more than 300,000 taka ($250).

However, the maximum numbers of respondents (43.21%) have been working in their present organizations for ten to fifteen years. These findings are supported by ISLAM ET AL. (2024), who suggested that the minimum tenure of service by a manager in the RMG sector is ten years. The current research also found that nearly half of the employees (45.36%) possessed industry experience of between ten and fifteen years. Notably, the researcher of this study found that the employees in the RMG sector of Bangladesh are highly qualified, expert, and experienced. The reason is that this sector dominates the global RMG sector and has been facing challenges in upholding its position worldwide over the last two decades.

4.3. Common Method Biasness (Variance)

To statistically identify CMB, the present research used "Harman's single factor test" (HARMAN, 1976) to sort out this issue. Suppose one component does not account for most (50 percent or more) of the covariance among the variables and factors that were made sure by PODSAKOFF ET AL. (2003) study, then CMB will not be a big problem in the measuring process, according to this approach. The first factor contributed to only **32.39** percent of the total variance; therefore, the common method was not considered to be a continual problem in this study. On the other hand, if all the VIF values that are produced from the SEM analysis in the inner model are less than or equal to 3.3, then this indicates that the model does not include any common method bias (KOCK, 2015). Utilizing the VIF values, it is easy to arrive at the conclusion that this study is not influenced by the typical common method biasness. This conclusion can be reached without any difficulty.

4.4. Convergent Validity

Firstly, the factor loadings were computed, and a cutoff point of 0.6 for factor loadings was suggested by CHIN (2010), and 0.7 was suggested by HAIR ET AL. (2010). During the evaluation of the main loading, from a total of 49 items (Eco-design 4, Green Purchasing 4, Green Manufacturing 5, Green Distribution & Packaging 5, Internal Environment Management 4, Circular Economy 5, Manager’s Green Concern 5, Environmental Performance 6, Financial Performance 5, and Social Performance 6 items), among them no item was deleted, as their loading score was more than 0.6. Thus, the minimum required score of item loading was 0.6, which was recommended by CHIN (2010). However, each indicator used to assess the latent constructs (variables) in the research was adequately represented by the items.

Moreover, composite reliability (CR) scores for each construct were also used in this research (Table 1), where all the scores were above 0.7, which indicated acceptable reliability according to NUNNALLY (1978) and HAIR ET AL. (2010). The value of composite reliability (CR) fell in the range between the minimum score of 0.881 and the highest of 0.938. The CR was used to assess the reliability and internal consistency of the study. Subsequently, the average variance extracted (AVE) of the constructs (variables) was investigated. AVE is the variance in the individual items that are accounted for by the latent constructs (variables) indicated by MALHOTRA & DAS (2017). The results indicate a minimum Cronbach's alpha score of 0.833 and the highest of 0.921, demonstrating satisfactory internal consistency among the items within each construct, hence confirming its reliability. The inquiry successfully met the convergent validity criteria, achieving a minimum score of AVE of 0.598 and a maximum of 0.759, whereas the threshold value of 0.500 for AVE according to HAIR ET AL. (2010). Table 1 represents the comprehensive results of the measurement model for the reliability and validity assessment:

Table 1: Measurement Model

Constructs	Item Code	Loading Score	AVE	CR	Cronbach's alpha
Eco-design	ED1	0.797	0.725	0.913	0.873
	ED2	0.850			
	ED3	0.882			
	ED4	0.873			
Green Purchasing	GP1	0.870	0.759	0.926	0.894
	GP2	0.856			
	GP3	0.882			
	GP4	0.875			
Green Manufacturing	GM1	0.870	0.744	0.935	0.914
	GM2	0.835			
	GM3	0.853			
	GM4	0.875			
	GM5	0.879			
Green Distribution & Packaging	GDP1	0.864	0.707	0.923	0.896
	GDP2	0.843			
	GDP3	0.830			
	GDP4	0.830			
	GDP5	0.837			
Internal Environment Management	IEM1	0.731	0.678	0.893	0.840
	IEM2	0.863			
	IEM3	0.828			
	IEM4	0.864			
Circular Economy	CE1	0.871	0.702	0.922	0.894
	CE2	0.887			
	CE3	0.811			

	CE4	0.855			
	CE5	0.760			
Manager's Green Concern	MGC1	0.763	0.598	0.881	0.833
	MGC2	0.741			
	MGC3	0.771			
	MGC4	0.733			
	MGC5	0.853			
Environmental Performance	EP1	0.847	0.718	0.938	0.921
	EP2	0.83			
	EP3	0.848			
	EP4	0.864			
	EP5	0.859			
	EP6	0.834			
Financial Performance	FP1	0.857	0.746	0.936	0.915
	FP2	0.875			
	FP3	0.857			
	FP4	0.875			
	FP5	0.853			
Social Performance	SP1	0.789	0.662	0.921	0.897
	SP2	0.836			
	SP3	0.848			
	SP4	0.745			
	SP5	0.798			
	SP6	0.860			

4.5 Discriminant Validity

In the subsequent stage of this research, the Fornell-Larcker principle was used to evaluate the measurement model's discriminant validity. According to this principle, the square root of average variance extracted had to be judged against the correlation coefficients of the several other unobserved variables used in this study (FORNELL & LARCKER, 1981). As evident from Table 2, the scores of average variances extracted (AVE) surpassed the inter-connections of the diagonal unobserved variables against the other non-diagonal unobserved variables, which are indicative of satisfactory discriminant validity.

Table 2: Discriminant Validity of the Constructs (Fornell-Larcker Criterion Check)

	CE	**ED**	**EP**	**FP**	**GDP**	**GM**	**GP**	**IEM**	**MGC**	**SP**
CE	**0.838**									
ED	0.185	**0.851**								
EP	0.376	0.488	**0.847**							
FP	0.309	0.455	0.472	**0.864**						
GDP	0.127	0.303	0.422	0.445	**0.841**					
GM	0.167	0.312	0.448	0.469	0.401	**0.862**				
GP	0.212	0.528	0.401	0.393	0.422	0.422	**0.871**			
IEM	0.308	0.397	0.646	0.637	0.524	0.404	0.314	**0.823**		
MGC	0.205	0.232	0.545	0.33	0.151	0.226	0.179	0.342	**0.774**	
SP	0.361	0.493	0.503	0.494	0.441	0.482	0.448	0.582	0.154	**0.814**

Additionally, the following Table 3 represents the values from Heterotrait-Monotrait Ratio (HTMT) ratio:

Table 3: HTMT values

	CE	ED	EP	FP	GDP	GM	GP	IEM	MGC	SP
CE										
ED	0.212									
EP	0.409	0.543								
FP	0.335	0.508	0.509							
GDP	0.138	0.338	0.461	0.489						
GM	0.183	0.345	0.485	0.511	0.441					
GP	0.234	0.596	0.44	0.433	0.471	0.466				
IEM	0.352	0.46	0.729	0.724	0.594	0.455	0.363			
MGC	0.23	0.268	0.608	0.374	0.166	0.25	0.204	0.397		
SP	0.401	0.556	0.549	0.543	0.488	0.53	0.501	0.666	0.167	

4.6. Higher-order Construct model

In this study, based on the proposed framework and the prior studies, Green Supply Chain Management (GSCM) is composed of five components, including Eco-design (ED), Green production (GP), Green manufacturing (GM), Green Distribution & Packaging (GDP), and Internal Environment Management (IEM). GSCM is formed as a second-order reflective formative construct using the latent variable scores of the first-order constructs ED, GP, GM, GDP, and IEM. Similarly, Sustainable Organizational Performance (SOP) is composed of three dimensions, including Environmental Performance (EP), Financial Performance (FP), and Social Performance (SP). SOP is also formed as a second-order reflective formative construct using the latent variable scores of the first-order constructs EP, FP, and SP. This study carefully examined the outer weights and outer loadings of each exogenous latent variable along with the VIFs to investigate the degree of relationship of the lower-order variables with higher-order variables and multicollinearity (HENSELER ET AL., 2015). The five factors having the ‘p’ value less than 0.05 represent a significant influence on GSCM (Table 4). The VIF of each factor is less than 3.50, which is the threshold representing no

multicollinearity issues (USAKLI & RASOOLIMANESH, 2023). The following Table 4 describes the validation of the second-order construct of GSCM:

Table 4 Validation of second order construct of GSCM

	Outer loading	**Outer weight**	**T statistics**	**P values**	**VIF**
ED → GSCM	0.667	0.253	15.09	0	1.513
GDP → GSCM	0.59	0.018	11.896	0	1.57
GM → GSCM	0.641	0.23	14.893	0	1.384
GP → GSCM	0.591	0.149	14.122	0	1.647
IEM → GSCM	0.9	0.65	53.374	0	1.577

Similarly, the three factors having the 'p' value less than 0.05 representing significant influence on SOP (Table 5) and their VIF values are less than 3.50 as the threshold representing no multicollinearity issues based on the recommendation of USAKLI & RASOOLIMANESH (2023). Thus, the following Table 5 represents the validation of second order construct of SOP:

Table 5 Validation of second order construct of SOP

	Outer loading	Outer weight	T statistics	P values	VIF
SP → SOP	0.759	0.295	26.856	0	1.509
EP → SOP	0.864	0.525	48.702	0	1.469
FP → SOP	0.798	0.404	37.625	0	1.452

4.7. Assessment of Structural Model

Direct Effect

In this research, the multi-dimensional dependent variable named sustainable organizational performance has three dimensions: environmental, financial, and social performance, which scored R^2 of 0.642, 0.515, and 0.525, respectively. On the other hand, the mediating and dependent variable, as well as the circular economy, scored R^2 of 0.117. However, it is noted that the coefficient of multiple determination (R^2) scores of environmental, financial and social performance were deemed to be 'substantial', and circular economy deemed 'poor' based on the recommendation provided by COHEN (1988), in which the scholar suggested that R^2 of 0.02 - 0.12 is poor or 'weak,' 0.13 - 0.25 is 'moderate,' and 0.26 and above is 'substantial' model. The following Table 6 demonstrates the R^2 values of the dependent variables:

Table 6: R^2 values

Dependent Variables	R-square	R-square adjusted
Circular Economy	0.117	0.109
Environmental Performance	0.642	0.637
Financial Performance	0.515	0.507
Social Performance	0.525	0.517

As shown in the above Table 6, the R^2 for the endogenous latent variable (environmental, financial and social performance) turned out to be 0.642, 0.515, 0.525 consecutively, which indicated that the antecedents such as all the dimensions of green supply chain management and circular economy explained 64.2% variance of environmental performance, 51.5% variance of financial performance, and 52.5% variance regarding social performance. In addition, R^2 for the mediating (endogenous) latent variable (circular economy) turned out to be 0.117, which indicates all the dimensions of green supply chain management explained 11.7% variance of circular economy. Thus, the R^2 values obtained in the present study may be deemed satisfactory in accordance with the suggestion of COHEN (1988).

After the computation of the path coefficients in the structural model, the researcher performed a bootstrap analysis to examine whether the path coefficients are statistically significant. Based on the suggestions put forward by CHIN (2010) and HAYES (2009), a bootstrapping analysis was performed in this study based on 5000 re-samplings to evaluate the statistical significance of the path coefficients.

The outcomes of the data analysis, the Hypothesis 1a, shows that all the five exogenous (independent) constructs (ED, GP, GM, GDP, IEM) through the higher order construct GSCM ($\beta = 0.725$; $p < 0.05$) significantly contribute to sustainable form performance, the endogenous (dependent) higher order constructs of EP, FP, and SP. Similarly, the result of Hypothesis 1b represents that all five exogenous (independent) constructs (ED, GP, GM, GDP, IEM) through the higher order construct GSCM ($\beta = 0.288$; $p < 0.05$) significantly contribute to the circular economy. On the other hand, the result of Hypothesis 2 demonstrates that the circular economy ($\beta = 0.181$; $p < 0.05$) significantly contributes to sustainable form performance, the endogenous (dependent) higher-order constructs of EP, FP, and SP. Figure 3 highlights the outcomes of the direct pathways from exogenous constructs to the endogenous constructs as predicted by the hypotheses of this study. Therefore, the present research can accept hypotheses H1a, H1b, and H2. The structural model with the investigation of direct relationships among exogenous (independent), mediating, moderating, and endogenous (dependent) constructs is shown in the following Figure 3. Consequently, the summary of direct path coefficients, p-values, and the result of hypothesis testing for the present research are shown in Table 7:

Table 7: Hypotheses Testing (Direct Effects)

Hypotheses	Paths	Std. Beta	Std. Error	T Statistics	P Values	5.0% LLCI	95.0% ULCI	Decisions
H1a	GSCM → SOP	0.725	0.725	41.122	0.000	0.695	0.753	Significant
H1b	GSCM → CE	0.288	0.293	6.387	0.000	0.221	0.370	Significant
H2	CE → SOP	0.181	0.18	9.149	0.000	0.147	0.213	Significant

However, the following Figure 3 represents the Path coefficient and P-values of the present model generated from the PLS software:

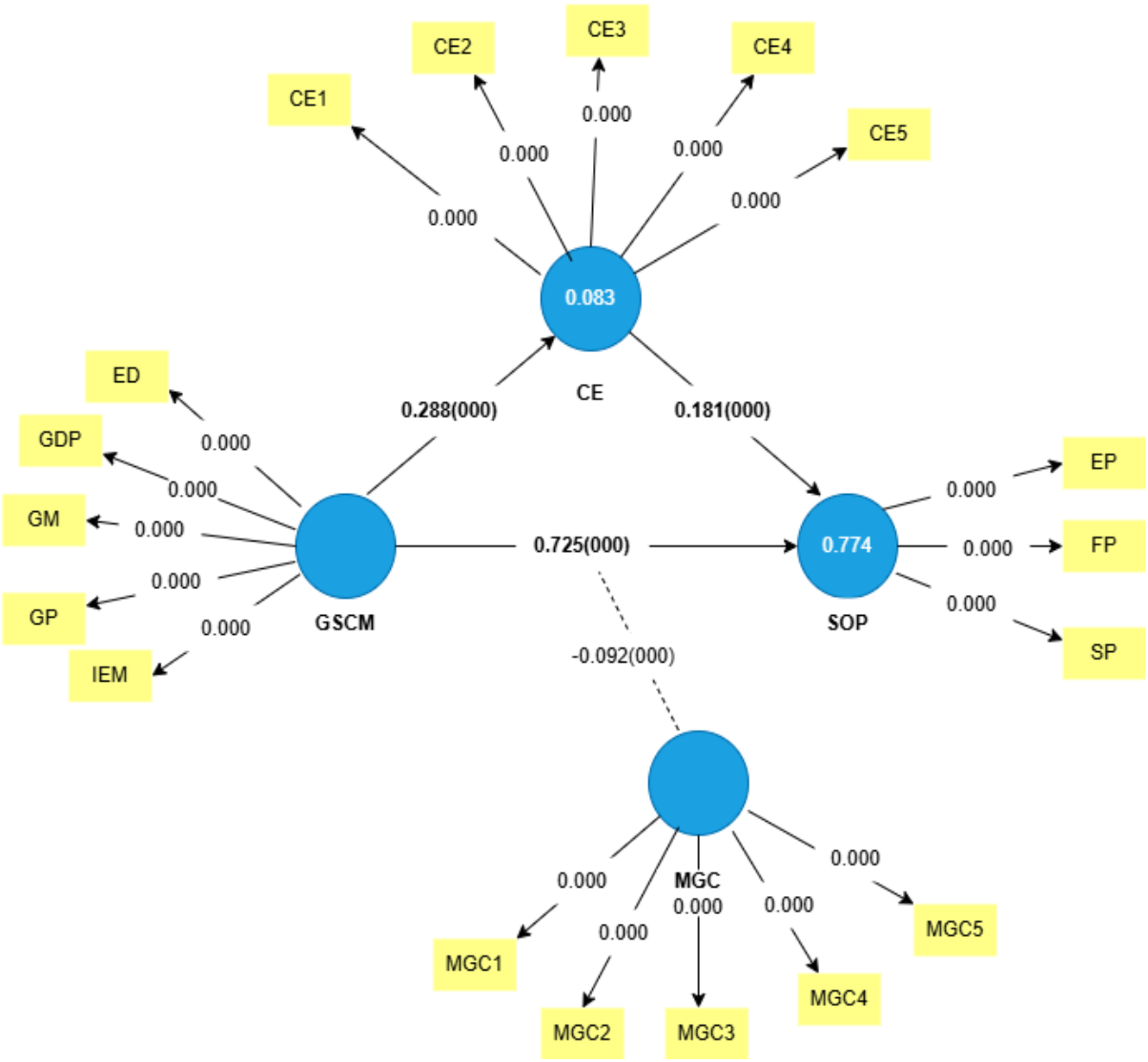

Figure 3: Path coefficient and P-values

Furthermore, the following Figure 4 represents the path coefficient and T-values of the present model generated from the PLS software:

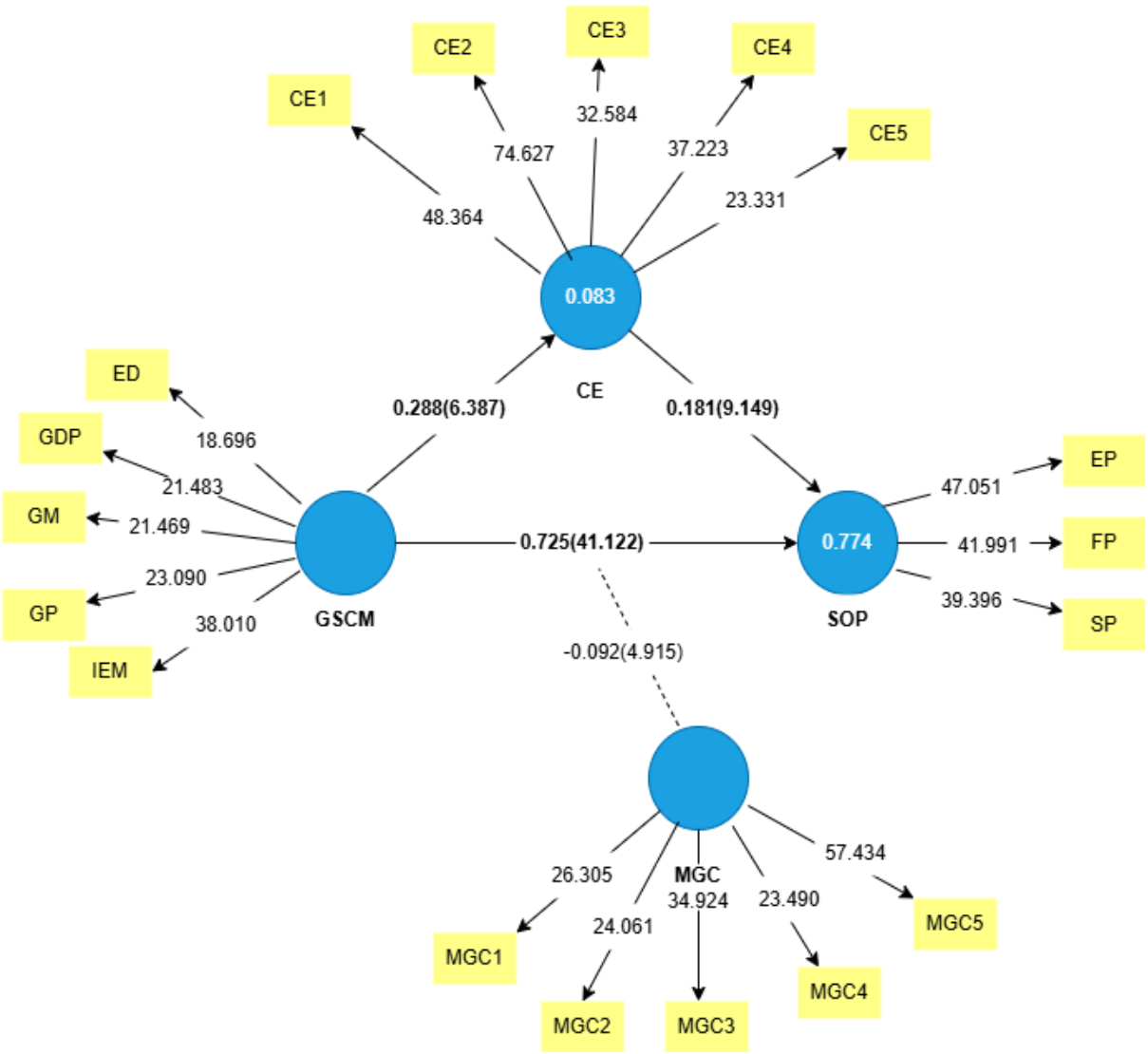

Figure 4: Path coefficient and T-values

Testing the Mediating Effect

If the indirect effect (mediator) of the predictor variable on the outcome variable turns out to be significant, it may be inferred that there is a full or partial mediating effect of the mediating variable (PREACHER & HAYES, 2008; HAYES, 2009). According to Table 8, the result from the Hypothesis 3 shows that circular economy has an indirect effect (mediating) among the relationships of all the five exogenous (independent) constructs (ED, GP, GM, GDP, IEM) through the higher order construct GSCM through the mediation of circular economy ($\beta = 0.052$; $p < 0.05$) and sustainable form performance, the endogenous (dependent) higher order constructs of EP, FP, and SP. Therefore, the study can accept hypothesis H3. Additionally, as the direct relationship is also shown to be positively significant in the result of Hypothesis 1a, this mediating effect of circular economy between GSCM and SOP is 'partial'. The summary of the results of the hypotheses testing with indirect effect is shown in Table 8:

Table 8: Hypotheses Testing (Indirect Effects)

Hypo-theses	Paths	Std. Beta	Std. Error	T Statistics	P Values	5.0% LLCI	95.0% ULCI	Decisions
H3	GSCM → CE → SOP	0.052	0.053	5.299	0.000	0.038	0.070	Significant
H4	MGC x GSCM → SOP	-0.092	-0.092	4.915	0.000	-0.123	-0.062	Significant

Testing the Moderating Effect

This study is intended to explore the moderating role of Manager's Green Concern (MGC) as a moderator between GSCM and sustainable form performance, proposing Hypothesis 4. To evaluate the moderating effect through structural equation modeling, the researcher of this study adhered to the methodology proposed by HAYES (2009). The scholars recommended bootstrap analysis, as it has been demonstrated to be superior to the approach suggested by BARON & KENNY (1986).

The result from Hypothesis 4 shows that MGC moderates ($\beta = - 0.092$; $p < 0.05$) the relationships of all five exogenous (independent) constructs (ED, GP, GM, GDP, IEM) through the higher order construct GSCM and sustainable form performance, the endogenous (dependent) higher order construct of EP, FP, and SP as the Beta value of this relationship shows a negative value while MGC moderates, the result suggests that MGC weakens this

relationship. This present result suggests that when managers already practice a green supply chain system, their greater concern for the environment may negatively impact the approaches of the managers, leading to weaker organizational performance.

4.8. Analysis of Predictive Relevance (Q^2)

To assess the strength of the R2 scores as a decisive factor for identifying predictive accuracy, Stone-Geisser's Q2 value (STONE, 1974; GEISSER, 1975) has been investigated. In evaluating the predictive relevance, blindfolding methods were conducted with the use of omission distance G = 5 as suggested by CHIN (2010), who recommends that omission distance scores between 5 and 10 are satisfactory. This study found an omission distance G = 7. In addition, the Q2 score, which is greater than zero (0), implies that the latent. The multi-latent equivalent of independent variables has predictive relevance for the latent, multi-item equivalent of the dependent variable (HAIR ET AL. 2010). Based on the outputs demonstrated in the following Table 9, the model is deemed to possess satisfactory predictive relevance:

Table 9: Predictive Relevance of Exogenous Constructs

Constructs	Construct Cross-validated Redundancy	Construct Cross-validated Communality
Circular Economy	0.076	0.510
Environmental Performance	0.286	0.563
Financial Performance	0.122	0.566
Social Performance	0.096	0.499

5. DISCUSSION

RQ-1: Does green supply chain management positively influence sustainable organizational performance?

The first result of this study is similar to the previous findings of AHMAD ET AL. (2022), BAG ET AL. (2022), CHEN ET AL. (2023), and ISLAM ET AL. (2024). In the domain of green supply chain management (GSCM), AHMAD ET AL. (2022) identified a positive correlation between green purchasing, green manufacturing, reverse logistics, and internal green management as components of GSCM practices and corporate performance. In another similar study conducted by BAG ET AL. (2022), it was found that GSCM, along with environmental cooperation from suppliers and customers' concerns for the environment, reduces the unsustainable behaviors of both customers and suppliers. These relationships, in turn, positively influence the sustainable performance of manufacturing companies. Following the implementation of educational and monitoring initiatives, CHEN ET AL. (2023) discovered that GSCM can aid manufacturing entities in generating materials for the final product that are associated with minimal environmental pollution, thus enhancing the sustainable performance of these organizations.

Although there are some negative correlations, most of the previous results found a positive relationship between GSCM and sustainable performance. For example, AL AMIN ET AL. (2025) discovered that by reducing the use of toxic materials, eliminating or properly disposing of random product components, and lessening the environmental impact of products, GSCM has a positive effect on company annual sales and revenue. In a similar vein, ISLAM ET AL. (2024) noted that GSCM results in cost savings along with enhancements in profits, sales, and increased market share. Besides, embracing environmentally friendly practices is thought to enhance the working conditions for employees and benefit the local community, allowing individuals to lead healthier lives (BAG ET AL., 2022). The execution of manufacturing processes that prioritize environmental considerations and reduce pollution has a positive impact on the social aspects of both employees and the broader community (CHEN ET AL., 2023).

RQ-2: Does green supply chain management positively influence circular economy?

There are some prior studies that support the idea that green supply chain management (GSCM) has a positive contribution to the circular economy. For example, ABDALLAH ET

AL. (2024) identified eco-industrial parks as a potential application of GSCM, wherein the enterprises within the industrial park endeavor to integrate circular economy principles into their GSCM systems. Additionally, AL AMIN ET AL. (2025) investigated a similar relationship with the present study, between five aspects of GSCM practices and four tiers of circular economic practices that require further investigation to explore. In a similar vein, the interrelationships between GSCM and the circular economy led to enhanced organizational performance due to their simultaneous implementation (AHMAD ET AL., 2022). The research undertaken by AMIN ET AL. (2025) substantiated the connections between GSCM and the circular economy, which supported the present result. They discerned several connections between GSCM and CE practices, particularly within the textile industry.

From the perspective of marketing management, YASSIN ET AL. (2022) argued that the integration of GSCM and the circular economy can fulfil several social objectives, including consumer protection, market transparency, and environmental conservation. However, if organizations integrate GSCM and the circular economy into their operations, they may significantly enhance sustainable performance (BAG ET AL., 2022). Although empirical studies on the relationship between GSCM and the circular economy are scarce, existing evidence indicates that sustainable practices can be achieved through the integration of GSCM and the circular economy, which serve significant social functions, including fostering customer loyalty, improving corporate reputation, creating advanced business opportunities, ensuring product safety, promoting environmentally friendly working conditions, and upholding legal and ethical standards (ISLAM ET AL., 2024).

RQ-3: Does circular economy have a positive effect on sustainable organizational performance?

The present result proved the concept of Elkington through its result, which shows that the circular economy has a positive impact on the three dimensions of sustainability. Along with the traditional focus on financial success, sustainability involves looking at the perspective of society and the impact of human activities on the environment (AHMED ET AL., 2022). In support of the present finding, RASHID ET AL. (2025) indicates that the movement towards sustainability represents significant challenges for businesses. Thus, it requires placing less attention on financial results and considering the social and environmental impacts, which can be daunting for risk-averse companies operating with constrained resources.

However, there are some prior findings that show dissimilarity and create an argument with the present hypothesis *H2*. For example, the research of JUNEJO ET AL. (2025) was based on the SME sector that is struggling to introduce sustainability practices, which leads to a delay in the development of their organizations. Additionally, SMEs have a key role in the implementation of the circular economy because of their combined contribution to the economy of different countries. In this pertinent, AMIN ET AL. (2024) argued that more research is needed to understand the aspects impacting the implementation of sustainable practices and find out which aspects need to be enhanced to facilitate their transition to the circular economy. Their study was based on sustainability and particularly the impact of circular economic practices on enhancing sustainability performance.

On the other hand, RASHID ET AL. (2025) highlighted the challenges related to the implementation of the circular economy and its adverse effect on sustainability, and found dissimilar results compared to the present study. They found that because of some adverse factors, it is difficult to ensure profitability, cost reduction, and environmental appreciation through the implementation of the circular economy by companies. In another similar study by AMIN ET AL. (2025) also found comprehensive barriers that affect the implementation of the circular economy, where they revealed unsupported results with the current research. They stated that some barrier drivers are context-specific, and specifically, information technology plays a negative role in the introduction of circular economy practices. From the perspective of emerging economies, BAG ET AL. (2022) collected the perception of the consumers as the samples for representing the need for extending the lifetime of products using the 3Rs, the use of big data to improve information flows, and government policy as significant factors for the adoption of the circular economy in developing countries. However, they also found that attaining sustainability in the performance of the organization is sometimes difficult because of the circular economy.

RQ-4: Does circular economy have a mediating effect between green supply chain management practices and sustainable organizational performance?

The prior results from sustainability-focused studies (for example, ISLAM ET AL., 2024; DAS ET AL., 2025; HOSSAIN ET AL., 2025) highlighted organizations' growing interest in developing sustainable economic activities. Notably, the previous research findings revealed that companies are seeking to increase their rational exploitation of resources and have a

stronger interest in environmental protection, which has led managers to rethink their linear business models. Consequently, scholars have found that the circular economy has arisen in response to a new paradigm that has redefined traditional key economic activities such as production, distribution, and consumption, which develop in a linear, unidirectional manner. Circular economy promotes resource regeneration, the conscious design of materials, and their return to specific cycles for reuse, while maintaining the maximum value of products until the end of their life cycle and optimizing their economic usefulness (AHMED ET AL., 2022; ABDALLAH ET AL., 2024).

According to SHARMA ET AL. (2025), there are some organizations that have clearly failed to apply the circular economy because of several growing integrated challenges in terms of obtaining circular economy-related information and incorporating it into their existing business practices. On the other hand, SINGH ET AL. (2025) underscores the need for a broader dissemination of information related to the circular economy. Nevertheless, MOUSA ET AL. (2025) confirmed that the circular economy has a full mediating role in the disclosure of circular economy-related information, social networks, and sustainable performance of IT firms. In this regard, this process requires a widespread awareness of the circular economy, and companies must develop well-defined strategies to integrate these principles into their management practices (NWAOGU ET AL., 2025) to ensure they foster sustainable development. The authors additionally suggested promoting forward-thinking initiatives, including renewable energy, resource maximization, reducing wastage, and climate change mitigation.

RQ-5: Does managers' green concern have a moderating effect between green supply chain management and sustainable organizational performance?

In their study, MUNAWAR ET AL. (2022) explored the moderating effects of managers' ecological concern, where they found that it moderated the relationship between ecological orientation, i.e., ecological values and ecological beliefs, and the organization's sustainable green practices. The results provide significant support for the present result of H4. Similarly, POLAS ET AL. (2023) investigated a framework with the moderation of managers' green concern and found similar results to the present study. Their study revealed that ecological values and ecological beliefs are the main basis for managers' general predispositions to pro-ecological action. Nevertheless, these results illustrate how individual

behaviors are strongly influenced by corporate values (MUNAWAR ET AL., 2022). Moreover, the study of SONG ET AL. (2021) found that each organization has different factors that drive them to adopt different pro-ecological behaviors, which are in line with the current research result. However, it is apparent from the results that there is an indirect link between ecological norms and a organizations' sustainable green practices, with the moderation of managers' ecological concern.

On the other hand, the research result of CAO ET AL. (2022) shows dissimilarities with the current finding, where they explored that the moderating effect for ecological concern shows insignificance between green practices and sustainable performance. Another similar scholar, MO ET AL. (2022) claimed that while managers' ecological concern was important, managers' norms and engagement with environmental issues need a fit between personal and professional values. This is essential in underpinning a manager's ecological engagement with sustainable green practices and encouraging a sense of personal responsibility of self-transcendence/openness to change. The authors suggested that additional studies are needed to explore further the construction of cultural value scores that can be moderated by managers' ecological concern. Future studies that derive data from different samples, along with the measurement of a wider array of ecological manifestations, may provide an outlook on the relationship between ecological norms and sustainable green practices of a organization based on the manager's ecological concern.

6. IMPLICATIONS AND CONCLUSION

6.1. Theoretical Implications

Theoretically, this research anticipates providing insights into sustainable practices in the ready-made garment (RMG) sector, with a focus on developing nations like Bangladesh. Using the Resource-Based View, Natural Resource-Based View, and Dynamic Capabilities theories as the foundation, this study seeks to reveal several significant theoretical implications. It contributes to existing practical understanding of how the RMG sector, which stands in for the world's developing countries, has successfully integrated GSCM, circular economy, and sustainable performance. To fill the present knowledge gap regarding the actual implementation of GSCM and techniques that are appropriate for emerging nations like Bangladesh, the current literature often emphasizes a hybrid approach that combines GSCM with the support of the circular economy model. This research adds to the growing body of theoretical literature on global sustainability practices by shedding light on the specific difficulties and potential rewards of the RMG industry in Bangladesh. Its findings might be applied similarly to those of other developing countries. Moreover, the study explores GSCM and sustainable performance as a multidimensional higher-order construct.

6.2. Practical implications

This study indicates that the policymakers, corporate governance experts, and managers in Bangladesh may all benefit from understanding the implications of the present study's results. Based on these research findings, GSCM must adopt circular economic tactics if it wants to achieve long-term success. This revolutionary method is required to maintain sustainable garment business practices in the RMG sector. By integrating GSCM with the circular economy, companies may gain a competitive edge while reducing the challenges of resource shortages. Moreover, GSCM is critical to the long-term viability of businesses, particularly in the ecologically delicate region of South Asia, where stakeholders are pressuring traditional companies to embrace sustainability and circularity by becoming green. According to the current research results, as Bangladesh is a developing economy in South Asia, its RMG industry requires the GSCM and circular economy, which is crucial to its future economic growth plans. This research proposes a framework for the transformation of the RMG industry that necessitates the implementation of GSCM throughout the distribution process.

Additionally, government and financial institutions should provide enhanced environmental protection initiatives and tax incentives as rewards.

6.3. Policy Contributions

The Bangladeshi government has established several environmental regulations and plans in response to the growing significance of the ready-made garment (RMG) manufacturing industry to the country's GDP. Nevertheless, there is a lack of connection between these strategies and long-term competitiveness at the organizational level. Because of a lack of proper training, research & development funding, many RMGs are unaware of these rules. Besides, when it comes to transforming into more sustainable practices, they do not have enough support from the government and regulatory organizations. RMGs in developing nations with an emphasis on practical knowledge for environmental concerns have not yet resulted in a coordinated national effort. This makes it hard for RMGs to take advantage of cutting-edge sustainability solutions, business strategies, and market trends. A unified framework to improve RMG owners' and managers' knowledge that is methodical, action-oriented, and successful is also necessary from current training and workshop programs. Authorities (such as government regulatory agencies and industrial associations) should work with stakeholders to launch capacity development initiatives to fill this shortage of knowledge and policy gaps.

6.4. Limitations and Future Research Directions

The study provides significant contributions to business and society while also recognizing its limitations and offering suggestions for future research. This study's findings are based on the garment industry, which may not generalize in all manufacturing industry contexts. In addition, replication of this study in a cross-cultural context will aid in developing globally applicable measures. Future research should collect data from diverse sectors and regions to inform universal decisions for emerging economies in South Asia.

Like earlier studies, the present study acknowledges its methodological and theoretical shortcomings, which provide the opportunity for future research. First, this cross-sectional study collects data at a single point. It may take time to assess GSCM and the circular economy to have their most significant impact on performance improvement. Future research may employ a longitudinal research method to examine the changes. Additionally, future

research might also use a mixed-method approach to investigate further the connection between GSCM and sustainable results at organizations, for there needs to be more insight into respondents' opinions when only quantitative data based on closed-ended questions is used.

6.5. Conclusion

In response to the growing trend of environmental responsibility, green garment organizations have realized that they should support and implement green organizational initiatives that lead to sustainable performance. The garment industry is a significant economic driver for the development of Bangladesh. This research presented here highlights the emerging notion of GSCM and circular economy as a collection of green environments, resource maximization, energy conservation, and recirculation of resources perceived as facilitators in fostering sustainable productivity by the manufacturing organizations. The impact of GSCM and circular economy on SOP suggests that organizations should have a system for recycling resources to develop sustainable business performance conditions. Organizations could use this knowledge to engage themselves and their members in establishing an environment conducive to promoting GSCM and the circular economy among all employees to attain long-term competitive advantages and enhance company performance. The findings encourage policymakers to evaluate the actions of garment managers regarding the optimization of resources and the conservation of energy, as well as the factors that motivate all levels of employees to attain overall sustainable organizational performance.

7. NOVEL FINDINGS

The first novel finding of this research is that green supply chain management (eco-design, green purchasing, green manufacturing, green distribution and packaging, and internal environment management) positively contributes to sustainable organizational performance, i.e., environmental, financial, and social performance. Understanding how green supply chain management (GSCM) influences sustainable organizational performance is vital for Bangladesh's ready-made garment (RMG) industry's future. Resource-based-view theory emphasizes organizational and industrial adoption of GSCM, and the current study proves it through its empirical findings. The research examines perception-based sustainable organizational performance and evaluates GSCM, whereas prior studies only discussed basic literature. This procedure reveals existing knowledge, discrepancies, and research needs for empirically examining Bangladesh's RMG sector.

The second novel finding of this study reveals that GSCM is significantly connected with the circular economy. Based on the Resource-based View theory, this finding explains that the managers of the RMG sector of Bangladesh perceive that the practices of GSCM positively support the activities of the circular economy. Therefore, GSCM significantly enhances the circular economy of green garments in Bangladesh.

This research indicates that the circular economy significantly and positively influences sustainable organizational performance. The third novel finding of this study is that managers in Bangladesh's RMG industry believe that embracing the circular economy enhances sustainable organizational performance. Consequently, the more they utilize circular economy practices, the more significantly they can achieve sustainable organizational performance in Bangladeshi green garments.

According to the fourth novel finding of this research, the circular economy has a significant and favorable mediating effect between GSCM and sustainable organizational performance. It may be inferred that the managers of the RMG industry in Bangladesh have the opinion that a rise in circular economy to support the activities of GSCM by the employees of the organization has a favorable impact on the organization’s overall performance in terms of environmental, financial, and social. As a result, the green RMG in Bangladesh can accelerate a more circular economy along with GSCM to attain outstanding and sustained organizational performance.

In terms of the environmental, economic, and social aspects, this study investigates whether the integration of GSCM and SOP has a moderating effect of managers' green concern. This study reveals a novel finding that managers' of green concern has a significant negative moderating effect on GSCM and sustainable organizational performance. So, this finding demonstrates that as the company is already practicing GSCM and circular economy, managers' are already working in a green management production system. The managers of green garment factories in Bangladesh are well concerned, knowledgeable, and expert to deal with all environmental issues. Therefore, there is no additional green concern policy or initiatives are required for the professional efficiency development of the managers. Managers are capable, responsible, and concerned enough to attain the SOP on this present ecosystem.

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LIST OF PUBLICATIONS

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Candidate: Mohammad Bin Amin
Doctoral School: Doctoral School of Management and Business
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List of publications related to the dissertation

Articles, studies (8)

1. **Amin, M. B.**, Rubel, M. R. B., Kee, D. M. H., Rimi, N. N., Oláh, J.: Achieving sustainable excellence: investigating the impact of green HRM, circular economy, and green knowledge sharing on the sustainable performance of Bangladesh's green garment industry.
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70. Hasan, M. M., **Amin, M. B.**, Nekmahmud, M.: Mapping the potential of a sustainable biofuel economy through bibliometric research.
In: European Union Policies International Thematic Conference : Book of Abstracts. Ed.: Kiss Rebeka, Doktoranduszok Országos Szövetsége, Budapest, 20, 2022. ISBN: 9786156457080

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