

Green HRM and Green Servant Leadership: Enhancing Employee Performance through Green Innovation

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ABSTRACT

Submitted: **Purpose—** This study examines the influence of Green Human Resource Management (Green HRM) on employee performance, with Green Innovation as a mediator and Green Servant Leadership (GSL) as a moderator, in Bangladesh's ready-made garment (RMG) sector.
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Accepted: **Method—** A quantitative approach was employed using data collected from 180 RMG employees through a structured questionnaire. SPSS 27 and AMOS 24 were used for descriptive statistics, correlation analysis, and confirmatory factor analysis (CFA).
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Published: **Findings—** The findings indicate that Green HRM positively influences employee performance, with Green Innovation acting as a mediator. GSL moderates the relationship between Green HRM and employee performance, strengthening the positive influence of Green HRM on performance.
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Conclusion and Implications— The study highlights the importance of integrating Green HRM, Green Innovation, and GSL to enhance employee performance in the RMG sector. RMG companies should incorporate sustainable practices into their HRM and leadership approaches to support innovation and performance. Future research could examine other sectors to assess the generalizability of the findings.

Originality/Value— This study contributes context-specific evidence from Bangladesh's RMG sector by integrating Green Innovation as a mediator and GSL as a moderator in the relationship between Green HRM and employee performance. It offers practical insights into aligning HRM and leadership practices with sustainability objectives in an emerging economy.

Keywords: *Green HRM, Green Innovation, Green Servant Leadership, Employee Performance.*



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INTRODUCTION

Global Sustainability Trends are affecting the business landscape and the fast-changing nature of sustainability is transforming the practice of business including one of the driving sectors of Bangladesh economy, the Ready-Made Garment (RMG) Sector directly responsible for about 30% of country GDP and more than 40% employment. The sector has been under pressure to go green and enhance employee's performance (Sarkar & Ahmed, 2021). To this end, the synthesis of HR policies with the goal of sustainability, by adopting Green Human Resource Management (Green HRM), particularly in recruitment, training, and development, is becoming a practical reality for many companies (Jabbour et al., 2020; Renwick et al., 2020). These activities are significant for improving high performance especially through green innovation (Chaudhary, 2020).

There remains a lack of empirical studies on the relationship between Green HRM and employee performance, particularly in the context of green innovation which is the key to creativity, efficiency, and sustainability (García-Sánchez et al 2021; Chaudhary & Soni, 2022). GSL, which emphasizes environmental stewardship and employee well-being as part of getting the job done or the goal but may moderate (Kwak et al, 2020; Tuan, 2021). The purpose of this study is to investigate the role of Green HRM in the promotion of employee performance through the mediation of green innovation along with the moderating role of GSL. Despite the extensive research on Green HRM in developed countries (Jabbour et al., 2020; Renwick et al., 2020), its role in developing countries such as Bangladesh is still unexplored (Tariq et al., 2021). Moreover, the moderating role of GSL in the Green HRM-employee performance relationship in the RMG sector is also hitherto unexplored (Kwak et al., 2020).

There are obstacles to implementing sustainability and performance improvements in the RMG sector. In fact, Green HRM is becoming increasingly popular, yet the impact of Green HRM especially with respect to green innovation and also GSL is still limited (Chaudhary & Soni, 2022; Tuan, 2021). The purpose of this study is to bridge these gaps and provide an understanding of the influences of Green HRM on performance in the RMG sector. According to the above discussed problems the aims of this research work are:

1. To investigate the influence of Green HRM on employee performance in the RMG sector of Bangladesh.
2. To investigate the mediating role of Green Innovation in the relationship between Green HRM and employee performance.
3. The aim is to examine the moderating role of Green Servant Leadership in strengthening the impact of Green HRM on employee Performance.

4. To offer RMG companies in Bangladesh pragmatic insights of implementing Green HRM practices to enhance the performance of employees that leads them to green innovation.

LITERATURE REVIEW AND HIPOTESYS DEVELOPMENT

A. LITERATURE REVIEW

Thus, the need of the hour is Green HRM which integrates environmentally friendly practices into HR policies such as recruitment training and development thereby resulting in organizational sustainability (Renwick et al., 2020). Green HRM encourages environmentally sustainable behaviors that have positive correlations with employee engagement, motivation, and job satisfaction, thereby improving organizational performance (Jabbour et al., 2020). Research has proven that green competencies in organizations lead employees to better participation in sustainability functions when they are offered training following a green competencies axis (Chaudhary & Soni, 2022). This is very appropriate for the Ready-Made Garment (RMG) industry where environmental problems being prioritized by the employers and consumers of the country (Tariq et al., 2021). Nevertheless, Although Green HRM has been researched in developed economies, little is known about the influence of Green HRM on employee performance in the context of an emerging economy like Bangladesh (Roy et al., 2025).

Moreover, Green Innovation is an important mediator between Green HRM and employee performance. The process includes new products, processes or practices used to increase sustainability and business performance (García-Sánchez et al., 2021). Chaudhary (2020) explains that Green HRM promotes innovation through the encouragement of creative ideas of employees which help them reduce wastage, enhance energy efficiency, and facilitate environmentally friendly practices. It can result in reduced costs, improved quality of product, employee satisfaction and performance (Chaudhary & Soni, 2022). While green innovation has been previously studied, there is limited literature regarding the mediating role of green innovation as a mediator between Green HRM and employee performance in the Bangladesh context especially in RMG sector.

Green HRM and green innovation mainly result in employee performance, which refers to the execution of tasks towards set goals in terms of quality and efficiency (Lahagu et al., 2023). Sustainable HR practices reveal that employees who relate their values with their organizations perform better when organizations are focused towards sustainability (Chaudhary, 2020). The employees which are motivated to take part in green initiatives generally have a job satisfaction and better performance (Tariq et al., 2021). As sustainability transitions from an exotic issue to being a business imperative, this opportunity can yield multiple dividends for the RMG sector through improved employee performance. The relationship however has not seen the green innovation as a potential enhancer, more so in the developing world context such as Bangladesh.

Green Servant Leadership (GSL) is a novel approach which combines traditional servant leadership with environmental concern. Leaders who believe in GSL have a high concern for employees and performance on the environment and promote and support a sustainability culture (Kwak et al., 2020). The focus of this leadership style is mainly on the environment for work, and it also has a positive impact on employees being motivated to perform green behaviors and engage, helping them achieve the highest productivity from what the organization has (Tuan, 2021; Roy & Islam., 2025). The relationship between Green HRM and employee performance is expected to be moderated by GSL which helps in strengthening the positive effects of Green HRM practices. While GSL is recognized as a major force for green initiatives that to scale up the organizational performance (Kwak et al., 2020), but the moderating role of GSL in the Green HRM employee performance relationship especially in RMG sector is not yet well explored (Khan et al., 2020).

B. HYPOTESIS DEVELOPMENT

It is the relationship between Green Human Resource Management (Green HRM) and Employee Performance that becomes the basic of this research. Drawing upon the framework and previous literature, the following hypotheses are proposed:

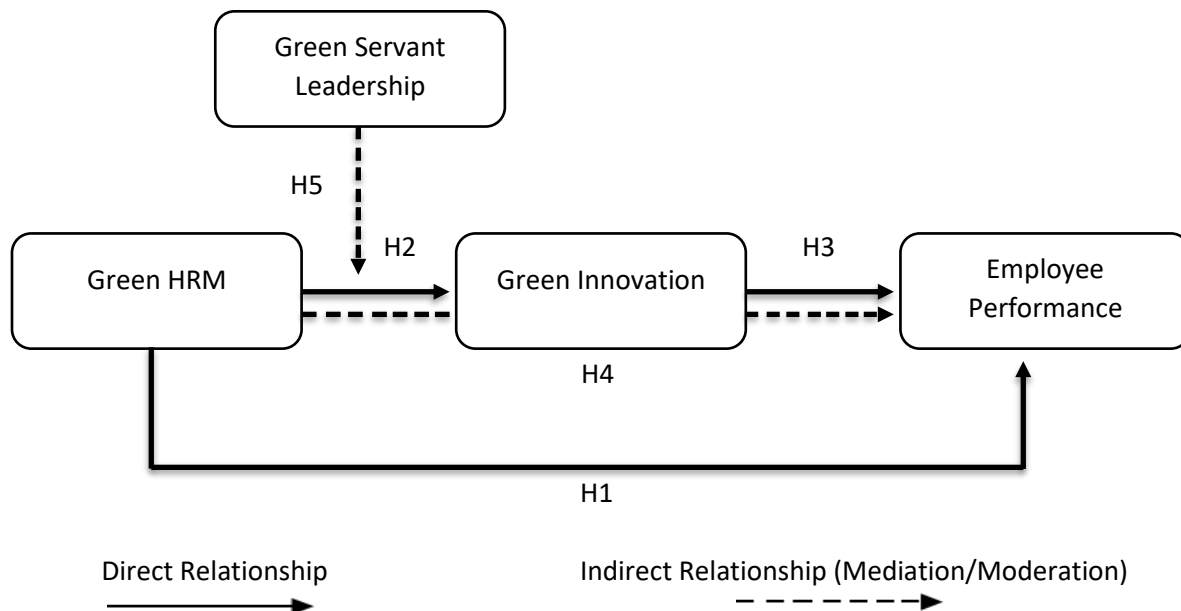


Figure 1. Conceptual framework

H1: Employee Performance positively affected by Green HRM

H2: Green HRM has a positive effect on Green Innovation.

H3: Green Innovation have a positive effect on Employee Performance.

H4: Green HRM has a mediating effect on Employee Performance through Green Innovation.

H5: The relationship between Green HRM and Employee Performance will be moderated by Green Servant Leadership

METHOD

This research uses a quantitative approach with methods of descriptive and verification analysis. The population of this study is all employees of different companies in the RMG sector of Bangladesh. Through a structured questionnaire, a total of 200 responses were collected. Following the exclusion of incomplete or invalid answers as adapted by (Roy et al., 2024), a total of 180 valid answers were obtained for analysis. When the population is large, researchers face the problem that it is impossible to analysis the whole population in the same time as the funds are limited, so the need for the samplings arises (Rahim, 2021). A total of 180 respondents were included in the final analytical sample.

Data were analyzed using SPSS version 27 and AMOS version 24. Descriptive statistics were first used to better understand the general characteristics of the data. The relationships between variables were examined using correlation analysis with further analysis of assessed discriminant validity where constructs should be distinct from each other. Also used for assessing reliability and validity: mean, standard deviation, correlation and square root of average variance extracted (AVE); factor loading, Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE) for convergent validati-on; and Confirmatory Factor Analysis (CFA) for validating the measurement m-odel confirming relationship between the observed variables and their corresponding latent constructs.

RESULTS AND DISCUSSION

A. RESULTS

Results of the analysis are organized in a series of these key tables with fundamental statistical results for comprehending the relationships and construct validity in the study. The constructs are Green Servant Leadership (GSL), Green Human Resource Management (GHRM), Employee Performance (EP), and Green Innovation (GI)

Descriptive Statistics and Correlations

Table 1: Descriptive Statistics, Correlations, and Discriminant Validity

Variables	Mean	SD	GSL	GHRM	EP	GI
GSL	3.7312	.61054	0.746			
GHRM	3.8944	.59964	-0.026	0.659		
EP	3.8120	.58934	0.130	-0.027	0.717	

Variables	Mean	SD	GSL	GHRM	EP	GI
GI	3.7376	.61594	-0.087	0.011	-0.008	0.735

The correlations between all study, means and standard deviations (SD) for all variables (n=175) Details SD is standard deviation across all constructs moderately to highly sd. Mean and standard deviation of GSL, GHRM, EP, and GI are 3.7312 (SD = 0.61054), 3.8944 (SD = 0.59964), 3.8120 (SD = 0.58934), and 3.7376 (SD = 0.61594), respectively. These correlations are relatively small, suggesting weak associations for example; GSL and GHRM are correlated -0.026, whereas GSL and EP 0.130, and GHRM and EP -0.027. Likewise, the weak correlation between GHRM and GI (0.011) and between EP and GI (0.008)

Mean, standard deviation, correlation, and square root of average variance extracted

Table 2: Mean, Standard Deviation, Correlation, and Square Root of Average Variance Extracted

Variables	Mean	SD	1	2	3	4	5	6	7
1. GHRM_avg	3.0044	.58164	1						
2. GI_avg	3.0931	.67788	.016	1					
3. GSL_avg	3.0569	.69858	-.023	-.080	1				
4. EP_avg	3.1667	.57138	-.035	-.016	.120	1			
5. Age	2.72	1.291	-.022	-.026	-.024	-.054	1		
6. Gender	1.36	.480	-.022	-.029	.048	-.014	-.092	1	
7. Work Experience	2.36	.990	-.009	-.017	.210**	.108	.088	-.084	1

Table 2 shows the Mean, Standard deviation, correlations, and square root of average variance extracted (AVE) (GHRM_avg, GI_avg, GSL_avg, EP_avg, Age, Gender, and Work Experience) for other variables One important thing to notice here is the strong positive correlation between Work Experience and GSL_avg (0.210**), which means that higher levels of Work Experience, greater levels of Green Servant Leadership. On the flip side, various demographic variables such as Age and Gender are found to have very low correlations with the primary constructs, suggesting that demographic factors have no strong effect on the study variables.

Confirmatory Factor Analysis (Model Fit)

Table 3: Confirmatory Factor Analysis (Model Fit)

Model	χ^2	DF	χ^2/DF	TLI	CFI	RMSEA	SRMR
One-factor model	961.787	135	7.124	.106	.211	.185	.1975
Two-factor model	694.081	134	5.180	.390	.466	.153	.1675
Three-factor model	372.252	132	2.820	.734	.771	.101	.1102
Four-factor model	131.086	129	1.016	.998	.998	.010	.0491

Outcomes of the confirmatory factor analysis (CFA) for the different model structures: one-factor, two-factor, three-factor and four-factor models. Out of all models tested, the four-factor is the best fit model for the data. For evidence of this, we would expect χ^2 to result in a good fit of the model with 129 degrees of freedom (DF); this is the case ($\chi^2 = 131.086$, $\chi^2/DF = 1.016$). Similarly, the TLI (0.998) and CFI (0.998) also suggest an almost perfect fit, whereas the RMSEA (0.010) and SRMR (0.049) suggest a superb fit. The fourth-factor model reflects appropriately good model fit indices and high agreement with the theoretical constructs, confirming that these indices are well-represented in the data.

Factor Loadings and Reliability

Table 4: Factor Loading, Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE)

Factors & Items	Loading	Cronbach's alpha	CR	AVE
Green HRM		.789	0.791	0.5
GHRMP1	.519			
GHRMP2	.718			
GHRMP3	.756			
GHRMP4	.579			
GHRMP5	.694			
Green Innovation		.823	0.825	0.5
GI1	.707			
GI2	.709			

Factors & Items	Loading	Cronbach's alpha	CR	AVE
GI3	.734			
GI4	.789			
Green Servant Leadership		.828	0.832	0.6
GSL1	.757			
GSL2	.836			
GSL3	.622			
GSL4	.752			
Employee Performance		.835	0.841	0.5
EP1	.668			
EP2	.755			
EP3	.744			
EP4	.646			
EP5	.766			

In addition, full details on the factor loadings Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE) for each factor and its items are available here. Internal reliability and validity of all constructs are adequate. Green HRM, Cronbach's alpha = 0.791, CR = 0.791, Item factor loadings between 0.519 and 0.756. Green Innovation appear more reliable with a Cronbach's alpha (CA) = 0.825 (CR = 0.825 and factor loadings from 0.707 to 0.789). Cronbach's alpha and CR are 0.832, while the loading of items varies from 0.622 to 0.836 for Green Servant Leadership indicating a respectable reliability. Last, Employee Performance (α = 0.841; CR = 0.841; Item loadings between 0.646 and 0.766) These results indicate impressive internal consistency for each and every of the constructs, with the items measuring the supposed factors reliably.

Structural Equation Modeling

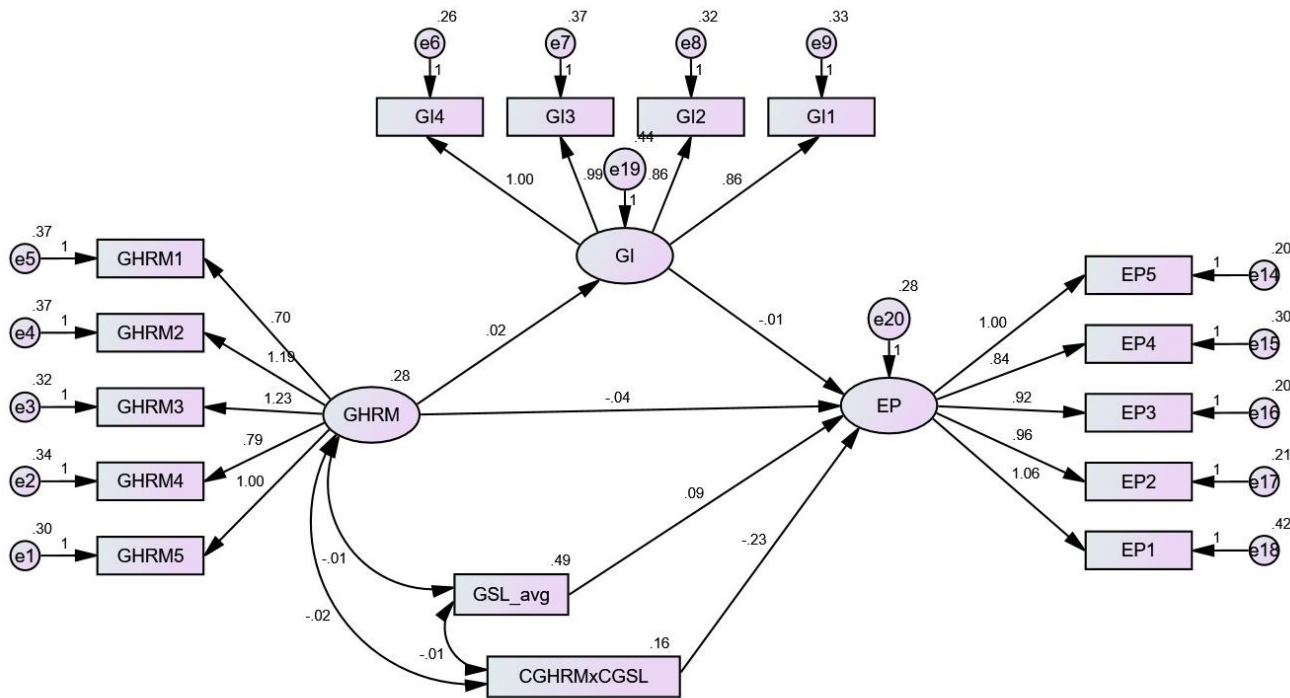


Figure 2: Structural Equation Modeling

The SEM model in general found GHRM as an independent variable that moderately affects both Employee Performance (EP) (0.28) and Green Innovation (GI) (0.28). GHRM has an indirect effect on GI through EP, and GSL also has a direct effect on EP (0.49). Green Innovation gives EP a negligible impact (-0.04), and the interaction of GHRM and GSL has a slight (0.16) positive impact. On the whole, GHRM is considered as the main component of which have an indirect effect on performance and innovation.

B. DISCUSSION

This research explored the relationships of Green Servant Leadership (GSL), Green Human Resource Management (GHRM), Employee Performance (EP), and Green Innovation (GI) — illuminating how GHRM facilitates both performance and innovation. These results deepen the comprehension of sustainability-oriented leadership and provide practitioners with insights for organizations to effectively implement sustainable practices and develop a thriving ecosystem successfully. Generally, this study highlights the role of combining the greatest sustainable leadership will GHRM for organizational performance and innovation. It suggests more research to examine the influence of work experience on leadership styles and the mechanisms

underlying these relationships, particularly regarding the impact of green innovation on employee productivity.

Moderate correlations between the theoretical implications of the study variables indicated that GSL, GHRM, EP and GI do not overlap in their influence on employee outcomes related to green practices. Confirmatory factor analysis (CFA) was used for supporting the treatment of these constructs individually, to reflect their unique influences. Our result suggests that work experience positively influences GSL, suggesting that GSL becomes more effective with the work experience of employees. In doing so, GHRM emerges as a significant driver of EP and GI, at least from a practical perspective. The results indicate the powerful influence of GSL on EP and point to the importance of leadership training programs addressing not only performance but also environmental protection issues. The impact of GI on EP also suggests that specific conditions or time may be necessary for innovation to create direct impact on performance, meaning innovation may need a unique approach.

CONCLUSION

The current study explores the roles of Green Human Resource Management (GHRM), Green Servant Leadership (GSL), Green Innovation (GI) and Employee Performance (EP) through a multiple mediation framework in the context of Bangladesh's RMG sector. The study results confirm the pivotal role of GHRM enhancing employee performance and green innovation, while the strengthening effect of GSL. The role of GHRM and its impact on enhancing performance via green innovation indicate the importance of inclusively conducting green practices in HRM and leadership structure to fulfil the sustainability objectives. This paper adds to the limited evidence on improving performance in emerging economies and specifically in the RMG sector, through Green HRM, leadership and innovation. It provides excellent pointers for aligning HRM and leadership with sustainability objectives. The generalizability of the research findings is restricted due to the context of the study—the RMG sector in Bangladesh. Future studies could build on other sectors or countries and include new variables, like organizational culture. These practices should be further examined for their longer-term effects on performance and the sustainability of such practices. As such, the paper highlights the role of Green HRM and GSL as underpinned sustainable practices. It implies that practicing greening of HRM and leadership can contribute to improved performance and innovation providing significant implications for organizations in their quest for sustainable outcomes in the long run. Future research would be well served to investigate these dynamics in other contexts.

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