Influence of Green Human Resource Management and Green Work Engagement on Competitive Advantage in a Mediated Mechanism

Mahmudul Hasan Pias*
A. F. M. Aowrangazab**
Md. Al- Amin***

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Abstract

In Bangladesh, the ready-made garment (RMG) industry has become a strategic priority due to its environmental impact. Green Human Resource Management (GHRM) embeds environmental goals into HR policies (recruitment, training, appraisal, etc.), while Green Work Engagement (GWE) reflects employees' active participation in eco-initiatives (waste reduction, energy-saving, etc.). This study investigates how GHRM and GWE influence a firm's competitive advantage, with Green Empowerment (employee authority/resources for environmental action) as a mediator. We surveyed Bangladeshi RMG employees and analysed the data using SmartPLS (PLS-SEM), which is well-suited to complex

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* *Assistant professor, Department of Human Resource Management, Jatiya kabi Kazi Nazrul Islam University, Trishal, Mymensingh. Email: hasanmahmudul3030@gmail.com [*Corresponding Author]*

** *Professor, Department of Human Resource Management, University of Chittagong, Chittagong-4331. Email: aowrangazab@cu.ac.bd*

*** *Assistant professor, Department of Human Resource Management, Jatiya kabi Kazi Nazrul Islam University, Trishal, Mymensingh. Email: alaminsajibhrm@gmail.com*

models and non-normal data. All constructs showed sufficient discriminant validity (each construct's AVE square-root exceeded its correlations) and no multicollinearity (VIF ≤ 3 for all measures), confirming a sound measurement model. Overall, the findings underscore that cultivating an empowered, environmentally engaged workforce is key to gaining a competitive advantage. In Bangladesh's RMG sector, this means prioritizing green HR policies and encouraging employee-driven green initiatives. By doing so, firms not only address environmental challenges but also build efficiency and reputation – reinforcing competitiveness on the global stage.

Keywords: Green Human Resource Management, Green Work engagement, Competitive advantage, RMG.

1. Introduction

In recent years, the role of GHRM in environmental sustainability has gained widespread interest among organizations worldwide. Developing environmental awareness within an organization requires individual efforts as well, which is quite a multidimensional task; changes in attitudes, behaviours, and managerial approaches are all extremely required. Such initiatives tend to implement green policies and practices that spur workers to pursue eco-friendly behaviors for individual welfare, organizational effectiveness, societal welfare, and global sustainability. The green journey of an organization thus starts with increasing the environmental awareness of its employees, followed by formulating comprehensive green strategies and then their proper implementation. Therefore, every employee should be sustainable, competent, efficient and socially responsible and motivated in an employer-employee relationship that builds green awareness of creating green working office spaces **(Bombiak & Marciniuk-Kluska, 2018)**.

From the experience of COVID-19 world pandemic, there is an increase demand for GHRM so that organization gain their competitiveness without polluting the environment. The progressive global forces on sustainable development have accelerated GHRM practices' integration into organizational practices. Green HRM entails the conscious alignment of human resource policies toward environmental objectives while ensuring effective and sustainable resource utilization that builds stronger organizational capabilities for maintaining long-term competitiveness.

Common green initiatives in organizations are digital recruitment processes, virtual interviews, and paperless communication systems that reduce travel, energy consumption, and waste of resources **(Kuo et al., 2022)**. In addition, many of the green reward mechanisms would include workplace and lifestyle-based incentives, such as carbon reduction benefits, environmentally friendly options for commuting, or bicycle facilities, which enable employee commitment to green initiatives and enhance overall green work engagement.

These include paperless communication systems, online recruitment processes and virtual interviews, which not only reduce energy and resource waste, but also reduce unnecessary travel. In addition, green reward programs can include work or lifestyle-focused incentives—such as recognition for contributing to

environmental conservation, eco-friendly transportation facilities or bicycle use—that further strengthen employee engagement and commitment to green initiatives.

When green behaviors become part of the organization's daily operations, employees begin to consider economic, social and environmental aspects together during their work. As a result, they become more aware of the impact of their work and become accustomed to responsible behavior **(Dumont et al., 2017; Aboramadan, 2022)**. Therefore, active participation of employees at all levels in green activities is essential to achieve sustainable environmental goals. Although existing research mainly focuses on voluntary green activities by employees, the issue of mandatory or mandatory green responsibilities has received relatively little attention. Practical experience shows that employees are only interested in fulfilling these responsibilities when they feel psychologically safe, receive adequate training, work within clear and sustainable policies, and above all, feel empowered in their roles. Most previous studies have focused on the role of supporting and empowering employees in voluntary green behavior. As a result, there is a significant gap in research on the impact of these factors on the implementation of mandatory green responsibilities. However, this research gap is very important to effectively incorporate green practices into the organization's operations.

From previous research on GHRM and GWE, it is well established that people who are highly engaged at work are the most innovative and creative. The implementation of GHRM encourages technological innovation, corporate social responsibility, and environmentally responsible behavior in export and supply chain management. Through this, an organization can take a leadership role in sustainable development and set an example of responsible practices for others to follow. Above all, the implementation of GHRM helps in adopting international best practices, which ensures competitiveness in the global market and long-term sustainability.

However, research on this topic faces some limitations; a few of which are related to this study.

Therefore, this paper addresses a contemporary and important issue by answering the following research question: *How does employee green*

empowerment influence their organizations in implementing green human resources and green work engagement to gain competitiveness?

2. Literature Review

Green HRM can be referred to as the proper use of policies and practices related to human resources in a way that it encourages employees to behave in an eco-friendly manner. Its main goal is to help organizations become more sustainable, use resources wisely, and act responsibly towards society. Since it has been considered that sustainable development now plays an essential role in acting as a source of competitive advantage, organizations are showing more interest in incorporating environmental issues into their human resource strategies. This approach is commonly known as Green HRM. Even though Green HRM has increasingly received attention across the world, it remains a relatively modern and evolving concept described differently in different organizational. For this reason, it is not possible to have a unified universally-accepted definition of Green HRM. In general, Green HRM involves initiatives and processes through which organizations try to minimize environmental degradation by promoting energy efficiency and reducing pollution from business operations and daily workplace activities. Overall, green initiatives aim to reduce harmful effects on environmental sustainability that result from excessive energy use and pollution. GREEN HRM practices promote operational efficiency and cost savings also enhance employee experience leading to increased engagement and retention while minimizing the carbon footprint of operations associated with employees. General examples of GREEN HRM practices include the use of electronic documentation, carpooling and job-sharing arrangements, holding meetings and interviews virtually, recycling programs, flexible working policies, online training platforms, and the adoption of energy-efficient equipment and supplies at workplaces (Kuo et al., 2022).

Masri & Jaaroon (2017) noted that organizations are increasingly adopting environmentally responsible skilled professionals who possess strong environmental awareness and a commitment to green practices. Research has found that when organizations adopt the practices of Green Human Resource Management (GHRM), it affects them positively and, in return, they acquire a competitive advantage. Among various GHRM practices, green recruitment and selection have been found to have a stronger influence than others

concerning their effect of making organizations perform better than their competitors. On the other hand, green training and development practices tend to have a weaker effect. The concept of competitive advantage refers to a company's capability of providing their clients with better products or services, or even lowering costs by creating value for clients relative to its competitors.

In general, work engagement refers to a positive and vibrant emotional relationship between employees and their work. It involves employees being enthusiastic, dedicated, and attentive to their responsibilities (Schaufeli et al., 2002). Essentially, work engagement shows how emotionally, intellectually, and physically engaged employees are with their work. When viewed in an environmental context, this concept is referred to as "green work engagement (GWE)"—the amount of energy employees expends on environmentally friendly work, how willing they are to take extra steps to protect the environment, and how deeply involved they are in green activities. As the work environment is changing rapidly, it has become imperative for employees to be more proactive, responsible, and creative.

Work engagement captures the extent to which employees' cognitive involvement, emotional connection and behavioural energy in performing their roles, thereby enhancing overall role performance (Saratun, 2016). In similar, Schaufeli et al. (2002) viewed work engagement as a positive psychological state of mind, characterized by vigour, dedication and absorption. Work engagement allude high levels of enthusiasm, and mental toughness. It helps employees continue working despite obstacles. On the other hand, dedication refers to a deep emotional commitment to work, which includes pride, inspiration, and a sense of meaning in their work. These qualities help employees maintain enthusiasm and discipline for their work.

Employee engagement is not one-dimensional, but multi-dimensional. It includes mental commitment, thoughtful participation, and physical effort. Environmental employee engagement refers to the extent to which employees devote energy and attention to environmental protection activities and how willing they are to participate in these activities (**Aboramadan, 2022).**

Green work engagement orients environmental practices to protect the environment. Including sustainability policies in the organization's mission statement, introducing environmentally friendly human resource management,

making employees aware of environmental laws, and providing relevant training—these internal initiatives encourage employees to behave environmentally friendly. However, sustainable competitive advantage does not only come from having resources or capabilities. Rather, it is possible to achieve long-term advantages from the organization's own unique assets **(Azmy, 2024).**

Although natural resources, innovation, or large-scale production can be helpful in competition, they are easily imitated. In contrast, skilled and environmentally conscious human resources cannot be easily imitated. Therefore, a strong green employment structure becomes an important and valuable asset for the organization. According to the asset-based view, green work engagement acts as a strategic strength of the organization. Investing in valuable, rare, and hard-to-imitate human resources can provide an organization with a long-term competitive advantage. As a result, the importance of employee involvement in environmentally friendly activities is increasing day by day **(Aboramadan, 2022).**

Through green employee empowerment, employees are given the power, freedom, and resources necessary for them to take ownership of an organization in relation to its environment. This is very crucial in the context of Green Human Resource Management. This is because employees play critical roles in influencing the effectiveness of an organization in much the same way that neurons are essential for a human being to think **(Dumont et al., 2017).**

This is because employees have significant roles in relation to performance effectiveness. According to Dutta (2012), green HRM is grounded on two fundamental concepts. The first is environmental stewardship, which embraces pollution reduction and conservation of nature. The second is organizational knowledge protection, particularly concerning human skills and knowledge. Both of these are largely dependent on a strong level of green work engagement. This is because once individuals feel valued and cared for, they will readily participate in green programs, thereby increasing their capacity to display responsibility towards environmental conservation. As such, an increased level of green work engagement is presumably a key determinant of an increased level of green employee empowerment.

Employee motivation aligned with an organization's green culture and work values to enhance employee performance, increase job satisfaction and development of a committed attitude to assigned tasks **(Aladwan et al., 2015)**. The role of the green employee development organization abilities, motivate by using green employee rewards and giving green opportunities towards employees so that employees can increase your productivity, organizational performance and profit, reduce waste (Fatima et al., 2017). Furthermore, to integrate people management within the framework of Green Human Resource Management (GHRM), the researchers employed the Ability-Motivation (AMO) theory. This approach highlights how HR practices influence organizational outcomes by developing employee skills, stimulating their motivation and providing opportunities to perform effectively **(Tariq et al., 2016).** According to the theory, individual performance is shaped by the combined effect of what employees can do, what they are motivated to do and the organizational context that enables such performance.

When empowerment initiatives are implemented specifically to facilitate the effective accomplishment of green tasks. It can be conceptualized as green employee empowerment. This notion is relatively new within organization adopting green practices and prior literature has placed limited emphasis on it, thereby highlighting a significant research gap. There is a need to fully define the concept incorporated in green practices as it will open new doors research towards this new concept which has not been presented anywhere before this research paper (Jackson et al., 2011, 2014). The complex nature of the greening of the existing organization to achieve green empowerment emphasizes the need to study this topic (Andersson et al., 2013).

Amidst rapid changes and ongoing developments, business must adopt a more proactive and innovative approach in this dynamic environment. The pressures of globalization, alongside constantly evolving conditions, compel organizations to adopt or restructure their process and operations. Within this context, green employee empowerment serves as a key driver of business growth, development and long-term competitive advantage **(Aboramadan, 2022).**

Empowerment is key to improving organizational results and raises employee performance in in terms of efficiency and effectiveness where empowerment also enlarge the motivation level of employees this empowerment if done for

the purpose of green tasks will be called as green employee empowerment. There is ample evidence on this perspective to support the idea of increased employee motivation through employee empowerment (Mani 2010; Matthews et al., 2003; Smith, 1997).

Conceptual Model:

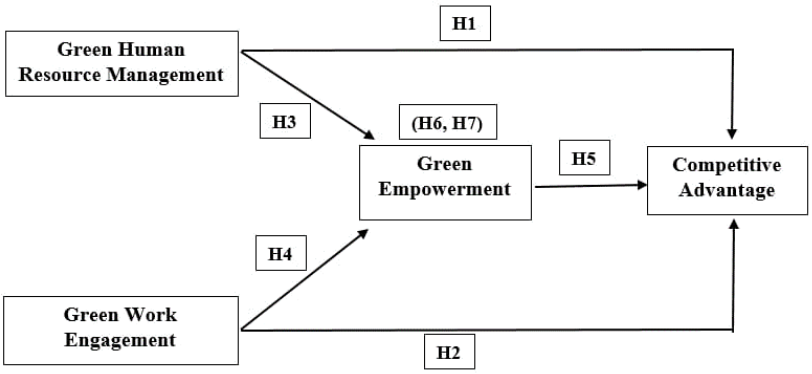


Figure 1: Conceptual Framework

3. Hypothesis development

H1: *GHRM positively impacts competitive advantage*

The corporate awareness of the natural environment that has developed due to environmental disasters across the global and the impacts placed on businesses to be environmentally conscious have taken corporate environmental practices a step further. The adaptation of green business creates a foundation to achieve competitive advantage while ensuring both economic viability and environmental sustainability **(Renwick et al., 2013).** The result is improved business performance, reduced costs, improved employee engagement and other outputs, and reduced corporate carbon footprints through GHRM and green HR practices through increased employee awareness of sustainability. Operational activities like using paperless systems, encouraging car-pooling, offering flexible work options, promoting virtual meetings, reusing and

recycling technology, using online learning platforms, and efficiently managing energy-saving office spaces help organizations reduce their carbon emissions. Productivity gained through GHRM practices reduces operating costs and helps businesses realize their organizational and social responsibilities (Aravamudhan, 2012). GHRM strictly implements ISO14000 standards, takes into account environmental inspections, changes organizational culture, and helps employees and manufacturers create the image and brand of the company. Overall, research clearly shows that Green Human Resource Management (GHRM) practices play an important role in creating and maintaining a strong competitive advantage for organizations.

H2: *GWE has a positive impact competitive advantage*

Green work engagement orients environmental practices to protect the environment. Including sustainability policies in the organization's mission statement, introducing environmentally friendly human resource management, making employees aware of environmental laws, and providing relevant training—these internal initiatives encourage employees to behave environmentally friendly. However, sustainable competitive advantage does not only come from having resources or capabilities. Rather, it is possible to achieve long-term advantages from the organization's own unique assets.

Although natural resources, innovation, or large-scale production can be helpful in competition, they are easily imitated. In contrast, skilled and environmentally conscious human resources cannot be easily imitated. Therefore, a strong green employment structure becomes an important and valuable asset for the organization. According to the asset-based view, green work engagement acts as a strategic strength of the organization. Investing in valuable, rare, and hard-to-imitate human resources can provide an organization with a long-term competitive advantage. As a result, the importance of employee involvement in environmentally friendly activities is increasing day by day.

H3: *GHRM positively impacts green empowerment*

Green Human Resource Management (GHRM) represents a vital approach organization to achieve sustainability by embedding environmental goals with traditional HR practices, policies and technique while also extending these efforts to the strategic level of human resource management **(Gholami et al., 2016).** At its core, this conceptual study concentrates multiple strategies to

motivating employees to actively adopt and support in green practices across the organization. In addition, previous studies on GHRM (Renwick et al., 2013) used of AMO theory to track employee performance results through three basic components. Basically, it is the ability to focus on developing high-performing employees to ensure compliance organizational goals. In terms of motivation and commitment, it consists of motivation through monetary and non-monetary rewards and effective performance management. While prior studies have applied AMO theory to explore its relationship with GHRM. Notable research gap persists, as relatively few studies that focus specially on AMO theory and GHRM practices in the workplace.

This concept study was to use employee empowerment strengthen the result of the organization so that employees are motivated to effectively and efficiently achieve green goals (Tariq et al., 2016). The empowerment of green employees has emerged as a key mediating variable for examining employees' motivation toward organizational green practices. This empowerment is closely associated to the execution of work tasks and to employees' overall job satisfaction.

H4: *GWE positively impacts green empowerment*

Green management includes the greening of every bit and byte of the organization, such as greening operations, greening HR, greening accounting and finance, greening retail and greening marketing and employees are under each head in these functional areas (Renwick et al., 2013). Give these employees a voice and encourage them to participate provide empowerment in decision-making and problem-solving (Matthews et al., 2003). When employees are given the authority and support to perform the organization's green tasks, this is referred to as "green employee empowerment", which fall under the broader scope of Green HR practices. This highlights the significance of integrating employee empowerment into GHRM, as employees are central to the organization's functioning, like neurons are essential for brain operations. The component breakdown of green HR includes two vital foundations: eco-conservation (environmental aspect, i.e., pollution control) and protecting the organization's knowledge assets (i.e., human/employee aspect) (Dutta, 2012). Both the basics need green work engagement so that it can be given due attention to a knowledge asset that will ultimately ensure green empowerment. This paper focuses at this point on the fact that green work engagement has a positive impact on gaining green empowerment.

H5: *Green empowerment positively impacts competitive advantage*

Therefore, green empowerment of human resource management is becoming more important. Green empowerment represents the driving force for changes and renovations in enterprises and also play a significant role in achieving the competitive advantages, economic, social and environmental sustainability of the enterprise. Recent studies on environmental management and human resource management in the Bangladeshi garment industry show that adopting green human resource practices improves the performance and acceptance of the organization in the global market. Organizations that empower and actively involve employees in environmental issues can increase employee motivation, reduce waste, and improve work efficiency. As a result, these organizations have a stronger environmental reputation in the international market.

Although research on directly measuring "competitive advantage" in the garment industry is still limited, extensive research on green human resource management shows that these practices make organizations more sustainable and strengthen their market position. As a result, profitability increases, employee turnover decreases, and brand attractiveness increases in export markets. These aspects are consistent with the signs of competitive advantage. Therefore, green empowerment as part of a sustainable human resource strategy can play a positive role in achieving competitive advantage in the Bangladeshi garment industry.

H6: *Green empowerment mediates the relationship between green human resource management and competitive advantage*

The main objective of green human resource management practices such as environmental training, performance appraisal and employee involvement is to integrate environmental values and skills into the work of employees. In the case of the ready-made garment industry, when employees are given appropriate environmental knowledge, given freedom to make decisions and their responsibilities are clearly explained, they are more likely to behave in an environmentally friendly and responsible manner in line with the goals of the organization.

Such empowerment serves as a mental and practical means that helps translate green human resource management principles into practical organizational actions. Research has also shown that factors such as employee motivation and

self-confidence often translate the impact of human resource management into positive outcomes such as innovation and performance enhancement. Similarly, green empowerment can also play an important role in transforming the impact of green human resource management into competitive advantage.

H7: *Green empowerment mediates the relationship between green work engagement and competitive advantages*

The more employees are interested, engaged, and emotionally involved in environmental activities at work, the more they can contribute to the sustainable development of the organization by bringing about positive change. However, involvement alone is not enough—employee empowerment is also essential. That is, employees should have the opportunity and freedom to put their interests and initiatives into practice.

Research has shown that even if employees are interested in environmental work, if they are not given the power to make decisions or work, the desired organizational results will not be achieved. Therefore, environmental empowerment is a process through which engaged employees can effectively contribute to the sustainable development of the organization and bring about positive change.

In the context of the Bangladeshi ready-made garment industry, employees who are aware of environmental issues, involved, and empowered at the same time not only contribute to the sustainable development of the organization, but also help the organization gain a competitive advantage in the international market.

4. Research Methodology

The literature makes use of a variety of research techniques, but three main strategies are frequently employed: mixed, quantitative, and qualitative. According to Creswell et al. (2003), gathering data that can be quantified and statistically analysed to either support or refute alternative knowledge claims constitutes quantitative research. There are three main categories in quantitative research: causal comparative, experimental, and descriptive (Leedy & Ormrod, 2015). One essential approach that investigates a situation as it is at the moment is descriptive research. It entails using observation to determine the characteristics of a particular phenomenon or examining correlations between two or more phenomena.

In an experiment, the study group is given an intervention treatment, and the results of the treatment are then measured by the researcher. On the other hand, casual comparative research focuses to identify and analyse casual links between independent and dependent variables to determine how they affected each other. Vogt & Cottrell (1999) defined factorial design as comparing two or more independent variable categories against a dependent variable. Researchers can investigate the relationship between independent variables and how it affects dependent variables by using a causal comparative research design. This dissertation uses a quantitative research design, as was previously indicated. It uses a causal comparative research design and hypothesis development to collect data from RMG employees through a questionnaire. After gathering the data, it is analysed to confirm research hypotheses and draw conclusions about the relationships between the variables.

4.1 Questionnaire's design and development

A structured questionnaire was used for the survey because it was an effective way to gather information fast and at a reasonable cost. This paper examined the effect of green human resource management and green engagement on competitive advantages with the mediating effect of green empowerment after an extensive review of the related literature. On the basis of the variables found, hypotheses and questionnaire were formulated. In all, the questionnaire contained twenty-three items. To make the questionnaire easier for RMG employees to complete, it was translated into Bengali. Manual survey administration took place in April and May of 2025. Following a period of three weeks, the answers were gathered in an anonymous manner and automatically input into an Excel document. Subsequently, the data was transferred to an Excel work sheet, after proper coding data were imported to SMART PLS version 3 Statistics program for further analysis and processing.

4.1.1 Demographic variables

Table 1: *Demographic Variables*

Male	42.7%
Female	56.8%
Prefer not to say	0.5%
Total	100%
Younger than 34	25.4%
35-44	45.4%
45-54	25.4%
55 or older	3.8%
Total	100%
Secondary school	8.1%
Bachelor Degree	34.6%

Source: *Authors*

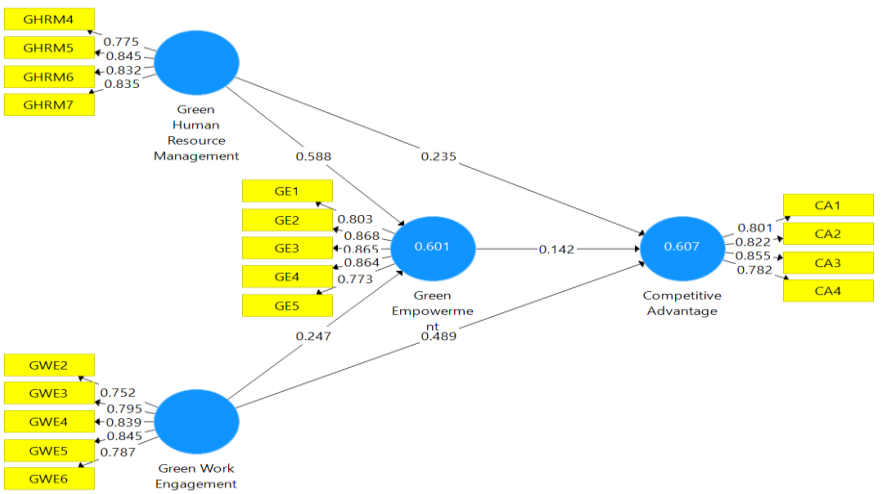
4.2 Data analysis

4.2.1 Reliability and validity of data

Table-2 shows the validity and reliability statistics. According to Yana et al. (2015), AVE higher than 0.50, Cronbach's alpha value bigger than 0.70 is adequate as threshold value to determine the convergent validity. It is indicated in the table that the factor loadings lie between 0.601 to 0.738, Cronbach's alpha greater than 0.70, CR scores also higher than 0.70 and AVE bigger than 0.50, meaning that the data is valid and reliable.

Construct	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Competitive Advantage	0.831	0.834	0.888	0.665
Green Empowerment	0.891	0.894	0.920	0.698
Green Human Resource Management	0.840	0.843	0.893	0.676

Table 2: *Reliability and validity of data* ***Source:*** *Authors*



Source: *Authors*

Figure 2: *structural equation model*

4.2.2 Determining Discriminant Validity

We used Fornell and Larcker test to determine the discriminant validity of each variable. According to Rahi et al. (2018), the square roots of AVEs should be bigger than their correlations. The following table evidences that the data is discriminately valid

Table 3: *Discriminant Validity*

Construct	**Competitive Advantage**	**Green Empowerment**	**Green HRM**	**Green Work Engagement**
Competitive Advantage	**0.815**	0.631	0.667	0.736
Green Empowerment	0.631	**0.836**	0.753	0.639
Green HRM	0.667	0.753	**0.822**	0.665
Green Work Engagement	0.736	0.639	0.665	**0.804**

Source: *Authors*

All constructs in the model demonstrate discriminant validity based on the Fornell-Larcker criterion. This implies that each construct has a stronger association with its own indicators than to those of any other construct.

4.3 Structural Model

4.3.1 Multicollinearity issue

The flowing table 4 ensures that the VIF values are less than 3.3 which mean that our study has no any multicollinearity concern.

Table 4: *Collinearity*

	VIF
CA1	1.684
CA2	1.899
CA3	2.195
CA4	1.793
GE1	2.321
GE2	2.981

GE3	2.715
GE4	2.954
GE5	1.919
GHRM4	1.611
GHRM5	2.114
GHRM6	2.054
GHRM7	1.854
GWE2	1.801
GWE3	2.044
GWE4	2.279
GWE5	2.317

Source: *Authors*

4.3.2 Hypothesis testing

We tested our hypothesis using the R^2 for explaining variance, Co-efficient (β), T-value and P value for judgement and decision making. The table-5 presents summary of the all-reported values for judgement.

Table 5: *Hypothesis testing*

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**	**Decision**
Green Empowerment -> Competitive Advantage	0.142	0.14	0.067	2.129	0.034	Significant
Green Human Resource Management -> Competitive Advantage	0.235	0.233	0.078	2.993	0.003	Significant
Green Human Resource Management -> Green Empowerment	0.588	0.589	0.065	9.098	0	Highly Significant
Green Work Engagement -> Competitive Advantage	0.489	0.493	0.063	7.825	0	Highly Significant
Green Work Engagement -> Green Empowerment	0.247	0.247	0.064	3.849	0	Significant

Source: *Authors*

The hypothesis testing revealed that Green Work Engagement is a significant and strong predictor of Competitive Advantage ($\beta = 0.489$, $p < 0.001$), followed by Green Human Resource Management ($\beta = 0.235$, $p = 0.003$). Green Empowerment also has a significant, though weaker, direct impact on Competitive Advantage ($\beta = 0.142$, $p = 0.034$). Notably, Green Human

Resource Management strongly predicts Green Empowerment ($\beta = 0.588$, $p < 0.001$), and Green Work Engagement positively affects Green Empowerment ($\beta = 0.247$, $p < 0.001$). the results imply that fostering employee empowerment and participation in green initiatives is crucial to securing a competitive advantage in the RMG sector of Bangladesh.

5. Discussion

This study found that Green Human Resource Management (GHRM) practices and Green Work Engagement (GWE) both have strong positive effects on a firm's competitive advantage, and that these effects operate in part through Green Employee Empowerment. The positive links we observe are broadly consistent with, and in some cases extend, past empirical work. For example, studies in manufacturing and service sectors have documented that GHRM can build a firm's green capabilities. Research reports that GHRM improves resource utilization and yields a "long-term competitive edge". Ali et al. (2022) similarly emphasized that GHRM "enhances environmental performance, stimulates innovative thinking, instils employee engagement in green initiatives, and elevates employee commitment to environmental goals". These findings mirror our evidence from the RMG sector: eco-friendly HR policies appear to generate new capabilities (skills, green knowledge, innovation) that competitors lack.

Our results also correspond with work on employee engagement. As one review notes, engagement in sustainability "can effectively bolster overall productivity and efficiency". In particular, Gustiah and Nurhayati (2022) found that higher green work engagement improves green employee performance. Thus, the fact that we find GWE enhances competitive advantage is logical: engaged workers apply their energy to reduce waste, improve quality, and suggest innovations, all of which can differentiate the firm. Similarly, Aboramadan (2022) showed that GHRM strongly predicts environmentally responsible work behaviors, which is consistent with our finding that GHRM indirectly drives performance via empowered green behaviors.

Regarding mediation, our finding that green empowerment is a conduit between HR practices/engagement and advantage resonates with organizational psychology studies. For instance, Sokro et al., (2023) found that employee green empowerment mediates the relationship between inclusive leadership and

engagement. While their context was leadership-driven, the principle is alike: when employees feel empowered to act on green initiatives, the firm accrues greater benefits. The PLOS study also emphasizes that GHRM's impact is multifaceted and that empowering employees is an integral part of the GHRM process. Hence, our mediation result extends this notion to the RMG context, suggesting that empowerment should be viewed as an active ingredient in leveraging green HRM and engagement for strategic gain.

6. Managerial implications

The findings of the study provide several important managerial implications for the RMG sector in Bangladesh, strongly based on the empirical results. First, green work engagement (β=0.489) was indicated as the strongest predictors of competitive advantage, managers should emphasize strategies that increase employee involvement in Environmental initiatives. promoting participation, recognising green behaviours and developing a sense of environmental responsibility can largely gain the organisational competitiveness. green Human Resource Management (β=0.235) significantly increases the competitive advantage, pointing that embedding green practices in HR functions enhances farm performance. It also strongly suggests green empowerment (β=0.588) indicating the role of HR in enabling employees. Green empowerment (β=0.142) father has a contribution to comparative advantage and mediates relationships.

Therefore, measures should strategically coordinate this element to drive both sustainability and long-term organisational performance

7. Future Implications

Future studies should test other mediators or moderators to fully explain how GHRM translates into performance, such as green organizational culture, employee motivation, and leadership. Industries other than RMG or cross-country samples may be compared to test the generalization of these relationships. Longitudinal designs could help to assess cause-effect properties; for example, testing before-and-after green interventions. Outcomes, such as actual financial performance, innovation rates, or customer satisfaction, could be connect to GHRM and GWE to complement the competitive advantage measure. For implications, the findings suggest that practitioners should focus their HR efforts on empowering and engaging staff for sustainability. Green

training, incentives, and participatory programs can strengthen market performance. Policymakers and industry leaders may also advocate green HR standards and certifications-such as LEED and ethical audits-to encourage these practices. Coherent with the strong influence of gaming working engagement and empowerment observed in this study, future research should explore behavioural and psychological mechanisms that strengthen these relationships.

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