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Research Article

Driving Environmental Performance in Universities: The Interplay of Green HRM, Organizational Citizenship Behavior and Government Support

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ABSTRACT

The purpose of this research is to examine the impact of public university faculty members' GHRM practices on Environmental Performance of universities through the mediation role of Organizational Citizenship Behaviour toward Environment (OCBE) and the moderating effect of Government Support and Intervention (GSI). This study used a quantitative approach and utilized PLS-SEM technique, with a sample of 180 respondents from the faculty members of public universities located in Khulna Division of Bangladesh using purposive sampling technique. The results of this study indicated that among the three sets of GHRM practices, Green Motivation Enhancing Practices (GMEP) and Green Employee Involvement Practices (GEIP) had a significant relationship with OCBE but Green Competence Building Practices (GCBP) failed to show any effect. Furthermore, the mediation analysis spectacles that OCBE execute complementary mediation role amid GMEP and EP, and indirect only mediation between GEIP and EP but no significant mediation between GCBP and EP. Additionally, the results indicated that GSI did not moderate the relationship between OCBE and EP. Despite being a cross-sectional study and being executed only public university of Khulna division of Bangladesh only, this research contributes to the literature by understanding of how GHRM practices impact academic personnel's behaviour towards environmental sustainability in the presence of governmental support and intervention. The findings offer valuable insights for academic institutions of South Asian environmentally vulnerable countries seeking to enhance their environmental performance through targeted human resource management strategies.

Keywords: Green Human Resource Management, Organizational Citizenship Behavior towards Environment, Environmental Performance, Government Support, Public University.

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1. Introduction

Human behavior is identified as the main driver of environmental degradation and climate change (Lange & Brick, 2021; Venhoeven et al., 2018). The research highlights that the activities made by individuals and communities significantly impact the environment, leading to negative outcomes such as pollution, resource depletion, and habitat destruction (Lange & Brick, 2021). In response to this, organizations can address human behavior to control environmental degradation by implementing strategic human resource practices that promote environmental sustainability (Gutiérrez-Rua et al., 2019; Luís & Silva, 2022).Green Human Resources Management is one of the strategic human resources practices that can help organizations to be environment friendly and successfully implementing environmental policies at the workplace. GHRM incorporates environmental sustainability measures into HR policies, aligning with the UN 2030 Agenda for Sustainable Development (Zournatzidou et al., 2024). This integration helps organizations promote sustainable growth and achieve the Sustainable Development Goals (SDGs). Green HRM involves incorporating sustainability into various HR functions such as recruitment, training, and performance management. This integration helps create a workforce that is not only aware of but also committed to environmental sustainability (Yoo, 2024; Zournatzidou et al., 2024). By adopting green HRM practices, companies can enhance their environmental performance, contributing to corporate social responsibility and eco-friendly workplace practices (Sungaile & Stankeviciene, 2024).

Employees who are intrinsically motivated and work within a supportive organizational culture are more likely to engage in OCBE, which in turn positively impacts environmental performance (Satriawan et al., 2023). Intrinsic motivation and organizational culture are significant determinants of OCBE for the employees whatever the sector or industry they are working for including the educational institutes. Green HRM has been studied in various sectors, including multinational corporations (Haddock-Millar et al., 2016), healthcare (Pinzone et al., 2016), sports facilities (Gholami et al., 2016), and manufacturing firms (Nejati et al., 2017; Yong et al., 2019a, b; Yusliza et al., 2019a, b; Yusliza et al., 2017). There is a notable gap in the existing literature regarding Green HRM within higher education institutions, that represent an emerging area of research (Dyer & Dyer, 2017; Rath & Schmitt, 2017). Furthermore, there has been a notable lack of attention to environmental management in developing Asian countries like Bangladesh that are particularly vulnerable to pollution and environmental degradation. However, due to economic and environmental sustainability issues in Bangladesh, studies should be conducted to address the literature gap (Renwick et al., 2013).

Bangladesh as a one of the developing countries, is also facing a grave environmental crisis, such as sea level rise, draught, floods and cyclones (Huq, 2001; Rakib et al., 2019). Besides, rapid and unplanned pace of industrialization is recognized as the lead factor of air, water and soil pollution causing long last climate change (Nomani et al., 2022). To curb these problems, Bangladesh has taken several environmental policy and program to raise the level of environmental sustainability and reduce pollution (Muntasir, et al., 2024; Shampa et al., 2023a). Nonetheless, few studies of Bangladesh have explored the ways to create environmental sustainability through Green HRM (Yusliza et al., 2019a). Also, no studies has considered government support within this cohort.

Consequently, issues regarding environmental sustainability are deeply rooted in the current society and institutions including universities, as a critical hub of education and research, are no exception (Khare & Stewart, 2024; Mejía-Manzano et al., 2023; Pham et al., 2019; Puertas et al., 2023). They spend a lot of energy, generate sewage, have high carbon footprints, and thereby creating challenge in terms of their environmental performance (Alghamdi et al., 2019). That's why universities as the higher education institution should have some obligations for reducing environmental pollution (Hashmi et al., 2020) and some of them are gradually being engaged in environmentally friendly activities (Roos et al., 2020), thus set an example for their stakeholders on how to develop campuses in a sustainable way. (Paillé et al., 2020; Yong et al., 2019). Students of green sensitive universities frequently agree that their

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university presents itself as environment friendly way, get more environmental information and take part in more sustainability activities compared with non-green practicing universities (Dagiliūtė et al., 2018).

Universities worldwide have been taking significant initiatives for sustainability (Karatzoglou, 2013). Many campuses in Europe and North America have developed a three-dimensional green system of waste recycling, energy-saving and green procurement (Bonoli et al., 2021; Iqbal et al., 2020; Lestari, 2019; Malinauskaite et al., 2017). Many universities in Asia (Japan, China Indonesia, Malaysia, and Thailand) have been providing more undergraduate and graduate courses on sustainability and have been producing much research on renewable energy and environmental protection (Leal Filho et al., 2022; Mansor et al., 2023; Ninomiya-Lim et al., 2019; Wu et al., 2015). In spite of these initiatives, however, further progress is urgently needed to organically integrate the three elements of Green HRM, OCB and governmental support into a synergistic system in a developing country like Bangladesh. Government support plays a critical role implementing GHRM in the educational institutions. Furthermore, Bangladesh and developing countries in general have a long and challenging way to go, especially because studies on how green HRM and OCB can complement each other to improve their environmental performance are limited.

Although the existing research extensively expand the importance of Green HRM practices on environmental performance EP (Ali & Nisar., 2022), GHRM in HEIs to enhance green innovative behaviours (Aboramadan, 2020), employees' environmental passions, (Gilal et al., 2019), and employees' green behaviours (Fawehinmi et al., 2020). There still exists a critical gap in our literature regarding the possible role of government support and intervention (GSI) in this relationship. Anwar et al (2020) explored the mediation effect of OCBE amid the Green HRM practices and environmental performance and without incorporating potential interference that government policies or subsidies could have on this interaction. In the study of Japir Bataineh et al, (2023) perceived organizational support has been used as a moderator between green training and EP. However sustainable environmental practices in Bangladeshi universities are emerging but at a very shy level (Hoque et al., 2017). The lack of a sustainable landscape across higher education underscores more concerns behind the development of the sustainable development narrative, in particular the failure to mainstream topics that are necessary to create a sustainable future in education (Bhuiyan & Ullah, 2020; Hoque et al., 2017). This is heightened when clear government policy and support is in place to incentivize faculty engagement with OCBE into individual-level behaviors that lead to environmental performance (Benn et al., 2015; Kanfer & Chen, 2016). But, as a whole, GS and OCBE are non-linear. Based on the AMO theory, public aid can help remove barriers that may lead an institution's OCBE process and move the OCBE-EP process in each of the three axes of ability, motivation and opportunity (Sarmad et al, 2023). But GS impacts OCBE-EP in institutional and contextual contexts differently. This article focuses on the impact of Green HRM on EP in Bangladeshi public universities. Specifically, the mediating role of Organizational Citizenship Behavior for the Environment (OCBE) and the moderating role of Government Support (GS) are examined. The study aims to provide practical suggestions for sustainability in higher educational institutions in Bangladesh. This study seeks to address three pivotal research questions:

- How does the GHRM Practices can influence the OCBE of University faculties?
- To what degree does university faculties OCBE mediate the relationship between GHRM and EP?
- Does GS have any influence on the relationships between OCBE and EP?

Thus, to explore the answer to the above-mentioned questions this study has been adorned to examine the role of Green HRM practices and Organizational Citizenship Behavior for Environment (OCBE) for enhancing sustainable environmental performance of public universities in Bangladesh where GS may play a role in enhancing the environmental practices of universities as well. The article demonstrates

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the role of both internal practices and staff behavior in promoting environmental responsibility and provides practical implications for green training, appraisal, reward, and participation in policy frameworks for enhancing faculty members' pro environmental behavior leading to sustainable environmental performance of the universities. It suggests making the university concerned about green issues contributes to the achievement of environmental outcomes of society at a large.

2. Review of Literature and Hypothesis Development and Theoretical Framework

GHRM also emphasizes the use of interventions that enable ecological sustainability and environmental awareness at work and employee education regarding environmental topics (Wielewska et al., 2023). GHRM's overall mission is to contribute both in significant and meaningful ways to the preservation of the environment and in keeping companies competitive in a growing competitive marketplace (Fachada et al., 2022). Understanding GHRM is also about understanding the factors and tools that have been identified as crucial to its successful implementation. These are green recruitment and selection, green training and development, green compensation management, green performance management, green employee empowerment and participation, and green employee relations (Faisal, 2023).

GHRM practices are a complex mix of factors which are allegedly influential on organizations in a wide variety of ways. To start, the first element – Green Competence Building Practices –includes green hiring and providing employees with ample green training and development. (Pinzone et al., 2016). This module hopes to equip them with the knowledge and abilities needed to become engaged in sustainable practices. This factor instigates employees' engagement in green activities which leads to organization-wide sustainability culture (Shayegan et al., 2023; Veerasamy et al., 2023). In this regard, Longini et al. (2016), claimed that environmental performance of the organization is influenced by green recruitment and green training.

Proceed to the second element, Green Motivation Enhancing Practices, which focuses on how to establish a workplace that positively encourages employees to adopt green practices. This can be done by adopting green performance management, appraisal, green reward and compensation (Pinzone et al., 2016; Rizvi and Garg, 2020; Malik et al,.2021). Such procedures have significant impact on employee motivation, and therefore have profound impact on their contribution towards the environmental sustainability (Sarmad et al., 2023). Lastly, the third element, Green Employee Involvement Practices, emphasizes the importance of engaging and involving employees in sustainable programs. Implementation of these practices promotes employees to have a sense of ownership and environmental sustainability (Mostafa & Saleh, 2023a).

These elements have a massive impact because of their capacity to encourage an organizational culture of environmental stewardship according to Pham et al. (2020). This, in turn, is responsible for phenomenal growth in environmental performance, and a growing showing of organizational citizenship behaviour towards the environment and, there are several benefits in using these ingredients rather than traditional ones (Anwar et al., 2020; Heny et al., 2022).

Furthermore, they are key to the creation of a strong corporate image, because they address and respond in a significant way to the growing attention paid to the environment. Additionally, they can be executed by companies and this also gives organizations an edge in the market and again highlights their importance and efficacy in the marketplace. Taken together, all these elements of GHRM practices contribute to green actions, boost employees' motivation and ultimately help organizations build a permanent sustainable culture. Thus, following hypotheses are being formulated.

H1: GCBP has significant and positive effects on EP

H2: GMEP has significant and positive effects on EP

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H3: GEIP has significant and positive effects on EP

2.1 *Linkage of Green Competence Building Practices and OCBE*

Green competence building practices include green recruitment and selection as well as green training and development activities that improve the knowledge of environmental issues instigating pro-environmental behavior (Kim et al., 2019; Cabral & Lochan Dhar, 2019). This allows workers to understand environmental issues and take steps to minimize negative environmental effects at the workplace (Cabral & Dhar, 2021). Tang et al. (2018) highlighted green recruitment and selection include employee green awareness, green employer branding, and green candidate selection criteria. Employee green awareness is crucial in the recruitment process as it promotes positive responses to environmental concerns. Green training enhances understanding of environmental protection, adaptability to change, and knowledge of energy conservation and waste reduction(Cabral & Lochan Dhar, 2019). So, the establishment of green competencies, encompassing aspects such as green knowledge, green skills, green abilities, green attitudes, green behavior, and green awareness, is deemed indispensable for organizations in their pursuit of environmental performance (Cabral & Dhar, 2021; Subramanian et al., 2016). However, GCBP have been discovered to have a positive correlation with OCBE as indicated by Anwar et al. (2020). Mostafa & Saleh et al. (2023) have demonstrated that Green Human Resources Management (GHRM) practices enhance employees' OCBE fostering employee engagement in green activities. These findings suggest that the cultivation of green competencies building practices exert a positive influence on employees' engagement in OCBE. Thus, based on the above arguments, the following hypothesis is posited:

H4: Green competence-building practices are positively related to OCBE.

2.2 *Green Motivation Enhancing Practices and OCBE*

According to Anwar et al.(2020), the implementation of green motivation-enhancing practices, such as performance evaluation and incentives, is an essential factor in inspiring employees to align their actions with the environmental objectives of their organizations. Malik et al.(2021) also examined that employees' motivation and environmental duty can be reinforced through rewarded and recognized recognition for environmental achievement. Moreover, according to Hadziahmetovic et al. (2017), the path to environmental citizenship is very difficult to create by rejecting and devaluating employees' contributions and achievements in the area of environmental performance. In addition, green incentives both financial and non-financial, such as rewards for recycling, flexible work hours and telecommuting to minimize travel-emissions (Chang et al., 2019), are an efficient way to incentivize environmental citizenship in workers (Ahmed et al., 2021). So, with the help of these incentives, companies could encourage employees to participate more actively in environmental initiatives (Tairu, 2018; Yong et al., 2019). It is surely quite amazing that companies can provide employees with knowledge, skills, and competences to be able to effectively manage the environment through adding environmental duties into the performance management framework and providing feedback regularly (Chang et al., 2019; Malik et al.,2021). And reward employees for ecological achievement - not only reinforcing their ecological behaviour, but also supporting OCBE. Leveraging a combination of both monetary and non-monetary rewards further boosts employee engagement in environmental activities. Overall, these green motivation-enhancing practices contribute to the development of a culture of environmental stewardship and sustainability within organizations (Hadziahmetovic et al., 2017; Malik et al., 2021; Ostertag, 2023). Therefore, organizations should prioritize the implementation of effective green HR practices as a means to bolster green motivation and ultimately foster OCBE among their workforce. Thus, the following hypothesis is posited:

H5: Green motivation-enhancing practices are positively related to OCBE.

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2.3 The Relationship Between Green Employee Involvement Practices and OCBE

Green employee involvement practices involve creating opportunities for employees to actively participate in environmental management and contribute ideas toward solving environmental issues within an organization (Danirmala & Prajogo, 2022). It empowers employees to encourage their participation in environmental decision-making and initiatives (Tanova & Bayighomog, 2022).

Several researchers, such as Malik et al. (2021) and Ostertag,(2023), have found that involving employees in decision-making processes related to environmental management not only enhances their self-control but also improves their problem-solving skills. These participation opportunities are significant in nurturing a pro-environmental culture within an organization through open discussions, the exchange of ideas, and the sharing of diverse viewpoints on environmental aspects (Tanova & Bayighomog, 2022).Additionally, the utilization of green teams proves to be an indispensable factor for organizations seeking to enhance their environmental management practices. Ahmed et al.(2021) & Hadziahmetovic et al.(2017) postulates that this involvement not only encourages employees to cooperate and share information but also motivates them to propose innovative solutions for complex environmental issues. GEIP serve as a means for organizations to promote environmental sustainability by empowering employees, fostering open discussions, and facilitating teamwork. The inactive non-participation of employees in decision-making processes and their non-contribution to environmental initiatives ultimately lead to the development of a non-pro-environmental culture within an organization(Anwar et al., 2020).So, the following hypothesis is posited:

H6: Green employee involvement practices are positively related to OCBE

2.4 The Relationship Between OCBE and Environmental Performance

For successfully implanting environment related practices in organization OCBE execute a crucial role thereby workplace practices is ingrained with environmental policies (Channa et al., 2021; Jayabalana et al., 2020).Anwar et al. (2020) found a significant relationship between a manager's engagement in OCBE and the environmental management practices of their organization. Similarly, (Boiral & Paillé, 2012) exhibited that OCBE has a favorable influence on the environmental performance of a Chinese manufacturing organization. Yue et al. (2023) revealed that green HRM practices and OCBE act as successive mediators in the relationship between the environmental management system (EMS) and triple bottom line (TBL) performance in ISO14001-certified manufacturing firms. In the university context, OCBE can manifest as faculty members taking voluntary actions beyond their job descriptions, such as greening their research practices, conserving resources in their offices, or promoting environmental awareness among students (Ramus & Steger, 2000; Daily et al., 2009). Faculty members who engage in OCBE demonstrate a commitment to sustainability that extends beyond mandatory requirements, thereby fostering a culture of environmental stewardship (Lamm et al., 2015).

Thus, based on the aforementioned discussion, the following hypothesis is formulated for this study.

H7: OCBE is positively related to environmental performance.

2.5 The Mediating Role of OCBE

In 1996, Morrison claimed that organizational performance is not directly influenced by the implementation of human resource practices rather happened through the employee's deliberate efforts. Dumont et al. (2017) and Yong et al. (2019) explored individual effects of GHRM and OCBE on environmental performance and also suggested for future researcher that investigation of the mediating role of OCBE can provide insights into how GHRM practices translate into tangible environmental outcomes. However, Paillé et al. (2014) provide a strong foundation, demonstrating that strategic HRM practices enhance environmental performance through OCBE. Alt & Spitzeck (2016) contribute in this area by finding that empowering employees to participate in environmental initiatives, leading to

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increased OCBE and ultimately improved EP. Additionally, Pinzone et al. (2016) & Daily et al. (2009) add weight to the argument by suggesting a positive relationship between Green HRM and OCBE, and between OCBE and environmental performance, respectively. Anwer et al. (2020) also explored that OCBE strongly work as a mediating mechanism for influencing environmental performance by the practice of green competence building, green motivation enhancing practices and green employee involvement practices. In this way, the aforementioned studies lend support to the notion of OCBE as a mediating factor. Thus, the following hypotheses are posited.

H8: OCBE mediates the relationship between GCBP and EP.

H9: OCBE mediates the relationship between GMEP and EP.

H10: OCBE mediates the relationship between GEIP and EP.

2.6 The Moderating Role of Government Support and Intervention

In the context of ecological sustainability within organizations, the relationship between OCBE and EP is of paramount importance (Wells et al., 2018). It is important to understand that this connection is not something that happens independently, but that is affected by something else. And this association is largely shaped by Governmental Support and Intervention (GSI), which is the term used to describe tax breaks, environmental laws and subsidies for sustainable initiatives (Blackman & Baumol, 1980; Songling et al., 2018; Zailani et al., 2012) (Anwar & Li, 2021; Songling et al., 2018). Government regulations and programs can also have significant effects on university environment practices (Albareda et al., 2007; Lozano et al., 2013). Government subsidies for green infrastructure in universities, for instance, could enable professors to pursue green research and teaching (Tilbury, 2011). In addition to granting money, regulations and visibility, state programs can boost the impact of university-level sustainability efforts within universities (Cortese, 2003). Yet Anwar et al. (2020) revealed a close affiliation between OCBE and EP. Side by side some studies investigated strong effects of governmental support on environmental outcomes organizations (Anwar & Li, 2021; Songling et al., 2018; Zamberi Ahmad & Xavier, 2012). Additionally, several researchers have examined governmental support as a moderating effect between OCBE and EP relationship (Anwar & Li, 2021; Setyaningrum, 2022; Songling et al., 2018; Zailani et al., 2012; Zamberi Ahmad & Xavier, 2012). Thus, above finding form literature assist us to draw a notion that OCBE are triggered by governmental support policies and support to enhance environmental performance. So, the following hypothesis is formulated for this study.

H11: GSI moderates the relationship between OCBE and EP in such a way that the effect will be stronger when strong governmental support exists and weaker when it is less.

2.7 Theoretical Framework

Our conceptual framework (Figure 1) has been drawn basing on the Ability, Motivation, Opportunity (AMO) model (Appelbaum et al., 2000) to examine the complex relationships among GHRM practices, OCBE, government support (GS), and environmental performance (EP) in universities. This study utilizes the AMO theory to show the effect of GHRM on OCBE and EP because prominent researchers (Ahmed et al., 2021; Dumont et al., 2017; Pham et al., 2020) have already validated its relevance to present the directional effects of Green HRM practices on green behavior, sustainable development (Ahmed et al., 2021), environmental management change (Heny et al,. 2022) and organizational citizenship behavior toward environment (Pham et al., 2020). For instance, Dumont et al. (2017) demonstrated that environmental outcomes in organizations are mediated by employee citizenship behaviors, aligning with AMO's core principles. Similarly, Pham et al. (2020) applied AMO to higher education institutions, linking Green HRM to OCBE and highlighting the theory's applicability in academic settings.

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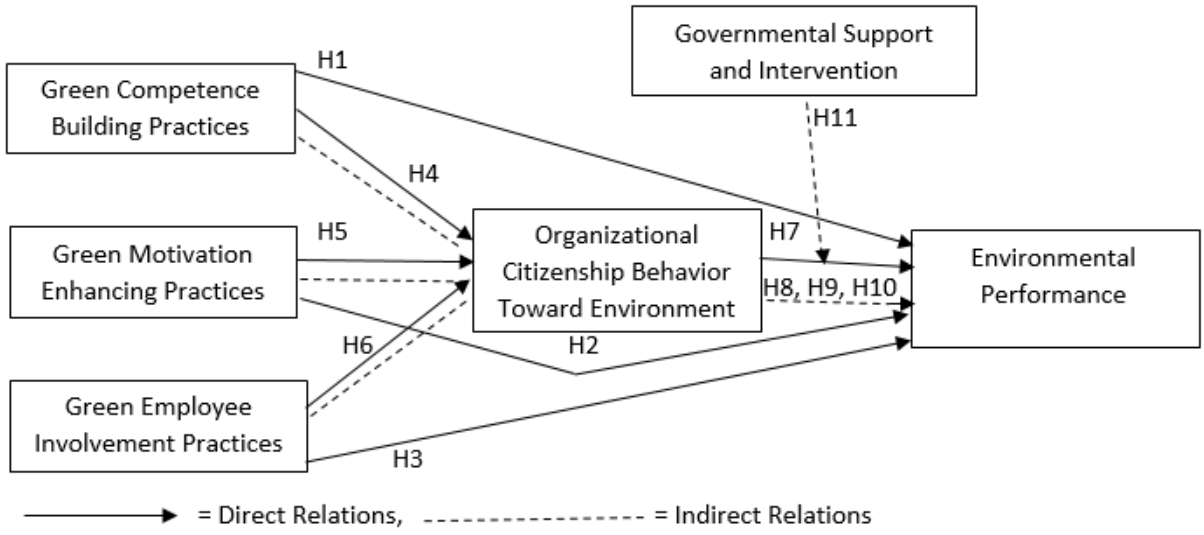
According to this theory, by providing right abilities, motivation, and opportunities, organizations can align the behavior and performance of the employees with its' goal (Fawehinmi et al.,2020). And these factors can be influenced and enhanced through HR practices (Jackson et al., 2014). Thus, the AMO model posits that individuals need the ability (knowledge, skills), motivation (desire), and opportunity (resources, support) to engage in specific behaviors. In this context, GHRM practices provide faculty with the ability and opportunity to engage in pro-environmental behavior by offering training on sustainability practices and green initiatives. Motivation is fostered by a strong environmental culture and leadership support within the university. Government support can further enhance opportunity by providing funding or regulatory frameworks that encourage sustainable practices. OCBE, the voluntary extra-role pro-environmental behaviors of faculty members, ultimately leads to improved environmental performance within the university (Eden, 1993)

Thus, the researcher of this study has developed following framework.



3. Methods

3.1. Sample and procedure

A quantitative research approach was applied and data were collected from faculty members of four public universities located in southern part (Khulna Division) of Bangladesh namely Khulna University, Khulna University of Engineering and Technology, Gopalganj Science and Technology University. Faculty members from these universities were chosen as the study participants because of their significant roles and direct engagement in the sustainable environmental practices within the academic premises. A total of 180 faculty members participated in the present study and the sample size was determined using G*Power 3.1.9.7 software since power analysis is treated as the most recommended approach of determining minimum sample size requirement for using PLS-SEM (Hair et al., 2017). According to the current study specifications (two-tailed, effect size 0.15, significance level 0.05; power 0.95 and predictors 8), 160 respondents were determined as the minimum sample size. However, additional 20 respondents were added to 160 as reserved sample in order to address probable non-response rate. Consequently, a total of 180 respondents were targeted as the study participants. The respondents were chosen using purposive sampling (a non-probability sampling technique) where it was assumed that they possessed the necessary knowledge of green human resource management practices and environmental performance indicators within the university premises.

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Data collection survey occurred during the month of September and October in the year of 2023 and the survey was conducted in both online and offline modes using a structured questionnaire. Some respondents were approached in person during the visits to the universities. For others, an online survey facilitated through Google Forms was conducted using online communication platforms, such as Gmail and WhatsApp. To reach the target respondents online, contact information, such as email address, cell phone numbers were meticulously sourced from the official websites of the public universities in Bangladesh. Subsequently, personalized emails containing the survey link were dispatched requesting their volunteer participation in the survey. The survey questionnaire translated into English language had two sections. First section of the questionnaire was designed to solicit demographic data of the respondents. At the second section of the questionnaire, the respondents were asked to express their level of agreements on each statement of the study constructs: GCBP, GMEP, GEIP, OCBE, GSI, and EP. After data collection, the responses were entered into IBM SPSS version 26 to prepare a data set. While preparing the data set it was found that out of 195 responses (while distributed 250), 180 responses were complete and flawless. Finally, a total of 180 responses were used in the data analysis process. Demographic analysis of the data set showed that out of 180 respondents, around 72% were male and 28% were female. In terms of designation, around 27% were professors, 20% were associate professors, 36% were assistant professor and the rest of the respondents were lecturers.

3.2. Measuring instruments

Construct measurement items of the current study were adopted from the scales developed by the earlier studies. However, the items were slightly modified to fit into the current context of the study and a five point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) was used in the survey questionnaire to measure the respondents responses on each item of the constructs.

3.2.1. Green competence building practices (GCBP)

GCBP was measured using a 6 item scales developed by Tang et al. (2018). The items include "I am attracted by the environmental sustainability initiatives of my university," "My university prefers to hire employees who are environmentally aware of," "I prefer to work at this university because of its environmental performance," "My university arranges environmental awareness programs to amplify my environmental knowledge," "My university offers integrated training to create the emotional attachment to the environment," and "My university has green knowledge sharing practice to guide me about environmental behavior."

3.2.2. Green motivation enhancing practices (GMEP)

GMEP was measured by 6 items adopted from the study of Tang et al.(2018). The items consist of "My university has set green performance indicators for performance appraisals," "My university sets environmental responsibilities for me, such as minimizing the use of printed paper," "Non-compliance issues are penalized, such as fine for smoking at campus," "I am offered green travel vehicles, such as bicycles to commute within campus," "Financial incentives are offered for environment friendly behavior," and "Recognition-based rewards are offered to encourage environmental engagement in the university campus."

3.2.3. Green employee involvement practices (GEIP)

A 4-item scale adopted from Tang et al. (2018) was used to measure GEIP. The items comprise "My university has a clear policy guideline to direct my actions towards environmental management," "I am involved in a mutual learning climate among university colleagues for green behavior and awareness," "Green communication systems such as email are highly encouraged in my university," and "I am encouraged to involve in environmental problem-solving issues."

3.2.4. Organizational citizenship behavior towards the environment (OCBE)

OCBE includes 6 items which were adapted from the study of Boiral & Paillé, (2012). The items consist of "At my work place, I avoid the activities the adversely affect the environment," "I voluntarily carry

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out environmental actions at work, such as turning off electronic equipment when leaving office or throwing waste in the beans," "I encourage my colleagues to protect the environment," "I actively participate in environmental events organized by my university," "I undertake environmental actions that contribute positively to my university's image," and "I voluntarily welcome the projects or events that address environmental issues in my university."

3.2.5. Governmental support and intervention (GSI)

GS was measured by a 6-item scale which was adapted from the study of Songling et al. (2018) & Zailani et al.(2012). The items were "In my University, govt. provided fund is available to enhance environmental performance," "In my university, government subsidies are available for environmental performance," "Government policies consistently favor our university's environmental activities," "Financial incentives in the form of grants and tax reductions are offered by the government to enhance environmental performance," "There are a large number of environmental regulations or restrictions imposed by the government," and "There are frequent government inspections or audits on my university to ensure that the Institution is in compliance with environmental laws and regulations."

3.2.6. Environmental performance (EP)

EP in the university campus was measured using a 10-item scale which was adapted from the study of Larrán et al.,(2016). The items were "In my university, environmental management system is implemented," "Energy conservation practices has increased in my campus," "In my university, use of alternative sources of energy, such as solar energy panel has increased," "In my university, unnecessary water consumption has reduced," "In my university recycling has increased," "In my university waste from canteen is collected through waste collectors," "In my university, practices related to reducing noise for each building are implemented," "Use of bicycles instead of private vehicles has increased in the campus," "In my university biodiversity is protected from degradation," and "In my university, research projects on environmental topics are conducted."

3.3. Common Method Biases (CMB)

Common Method Bias refers to the distortion that may arise in research findings due to the shared method of data collection, leading to inflated correlations among variables (Kock, 2015). In this study, Herman's Single Factor Test and VIF for multicollinearity testing have been used for assessing the presence CMB. In the case of Herman's single factor test, the researchers in this study have found that the maximum portion of variance narrated by a single factor is 15.482% which is below the suggested maximum value of 50% (Podsakoff et al., 2003) thus indicating the absence of CMV. Additionally in our inner model all the VIF Values (Table -5) don't surpass the threshold limit 3.3 (Kock, 2015) thereby ensuring the bias free model.

Table 1: Full collinearity testing

Source: Authors' contribution

	VIF
GCP -> OCBE	1.123
GEIP -> OCBE	1.044
GMEP -> OCBE	1.087
GSI -> EP	1.018
OCBE -> EP	1.031
GSI X OCBE -> EP	1.013

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4. Results

The researchers of this study have executed their analysis in two stages including measurement model at first stage and structural model in second stage (Anderson & Gerbing, 1988). For assessing the measurement model, reliability and validity test have been done by using PLS-SEM algorithm in SmartPLS-4. After that for structural model, bootstrapping (5000 sub-samples) and PLS predict technique has been employed.

4.1 Measurement model

We have evaluated this measurement model by using factor loading for ensuring indicators reliability, Cronbach alpha and Composite reliability for determining constructs reliability as well as AVE values for convergent validity (Trizano-Hermosilla & Alvarado, 2016). Additionally to prove distinctiveness of the construct (Henseler et al., 2015), discriminant validity, by using HTMT ratio and Fornell-Larcker Criterion, have been applied in this study. However, Table.2 represents that factor loadings of all the items, along with Cronbach alpha and Composite reliability are higher than their threshold values .708 (Hair et al., 2019) thus affirming the reliability of the model. For complying with this maximum limit, the researchers have deleted some items such as GCBP1=.531, OCBE2=.653, OCBE3=.659, EP6=.583, EP8=.642, EP10= .589 Moreover, Dijkstra & Henseler (2015) confirmed that the position of composite reliability (rho_a) within the range of Cronbach's alpha and composite reliability (rho_c) placed in table -2, can further supports the scales' reliability and consistency. In this study, AVE values of all the constructs surpasses the maximum limit 0.5 suggested by Hair et.al. (2022) which affirms the existence of convergent validity.

Equally the discriminant validity has been met as per the Fornell-Larcker criterion in Table.3 because the square root of AVE values for EP,GCBP, GEIP, GMEP ,GS, OCBE exceeds its correlation with all other constructs (Fornell & Larcker, 1981; Hair et al., 2022). Additionally, all the values of HTMT ratio in Table.4 lies below the suggested value of .85 (Henseler et al., 2015) , thereby indicating the existence of discriminant validity. So, on the basis of above discussion, we can affirm that this study is reliable and validated also.

Table 2. Result of reliability and convergent validity analysis

Constructs	Items	Loadings (>.708)	Cronbach alpha (>.708)	Composite reliability (rho_a) (fall between Cronbach alpha and rho_c)	Composite reliability (rho_c) (>.708)	AVE (>.5)
GCBP	GCBP2	0.797	0.849	0.893	0.890	0.625
	GCBP3	0.784				
	GCBP4	0.831				
	GCBP5	0.918				
	GCBP6	0.874				
GEIP	GEIP1	0.735	0.717	0.722	0.819	0.532
	GEIP2	0.764				
	GEIP3	0.800				
	GEIP4	0.712				
GMEP	GMEP1	0.739	0.809	0.808	0.859	0.504
	GMEP2	0.834				
	GMEP3	0.759				

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	GMEP4	0.722				
	GMEP5	0.788				
	GMEP6	0.708				
OCBE	OCBE1	0.778	0.742	0.787	0.836	0.565
	OCBE4	0.856				
	OCBE5	0.793				
	OCBE6	0.752				
EP	EP1	0.778	0.809	0.818	0.859	0.567
	EP2	0.799				
	EP3	0.781				
	EP4	0.797				
	EP5	0.729				
	EP7	0.747				
	EP9	0.840				
GSI	GSI1	0.811	0.869	0.876	0.904	0.654
	GSI2	0.785				
	GSI3	0.902				
	GSI4	0.848				
	GSI5	0.780				

Table-3: Fornell- Larcker criterion

	EP	**GCBP**	**GEIP**	**GMEP**	**GS**	**OCBE**
EP	0.683					
GCBP	0.276	0.791				
GEIP	0.109	0.234	0.730			
GMEP	0.350	0.348	0.127	0.710		
GSI	0.261	0.240	0.222	0.137	0.809	
OCBE	0.276	0.134	0.268	0.237	0.148	0.752

Table-4: Heterotrait-monotrait ratio (HTMT)-Matrix

	EP	**GCBP**	**GEIP**	**GMEP**	**GS**	**OCBE**	**GS x OCBE**
EP							
GCBP	0.324						
GEIP	0.174	0.304					
GMEP	0.393	0.377	0.215				
GSI	0.294	0.262	0.254	0.158			
OCBE	0.354	0.166	0.331	0.289	0.179		
GSI x OCBE	0.114	0.083	0.229	0.062	0.088	0.098	

In 2015, Henseler et al. suggested to test the fitness of the model as the first priority before going to structural assessment. This study has been proved as good fit according to the value of the Standardized

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Root Means Square Residual (SRMR) value of .065 which is lower than the threshold .08 (Hu & Bentler, 1999). Another index which is normed fit index (NFI) has also been used to check the fitness by following the suggestion of Lohmöller (1989). For our model, the NFI values is .982 that exceeds the acceptable limit of .90 (Byrne, 2008). From the two above test it is confirmed that our model is good to fit for removing the discrepancy between empirical and implied model correlations.

4.2 Assessment of Structural Model

In this part, the researchers have analyzed hypothetical linkage between and among the constructs where GCBP, GMEP, GEIP have been considered as independent constructs and which are being modeled as to affect OCBE as well as EP presented in Table-5 as showing direct effects. Not only these but also intervening effects of OCBE amid the linkage of independent constructs mentioned before and EP were evaluated and shown in Table-6. Additionally, Table-9 uphold the results of moderating variable GSI to check its effects on the relationship between OCBE and EP.

In Table-5 it is proved that H2, H5, H6, and H 7 are supported because their path bears significant p values which fall below the threshold 0.05. Therefore, GMEP has Significant impact on EP. GMEP and GEIP also has significant effect on OCBE independently. And, OCBE also exert significant effect on EP. Whereas the paths presented in H1, H3, H4 don't show the significant relation because of the higher p values than the threshold 0.05.

Table-5: Direct effect

Hypo.	Relations	Original sample (O)	T statistics (|O/STDEV|)	P values	Decision (P<.05)
H1	GCBP -> EP	0.135	1.531	0.063	NS
H2	GMEP -> EP	0.240	3.027	0.001	S
H3	GEIP -> EP	-0.045	0.534	0.297	NS
H4	GCBP -> OCBE	0.006	0.082	0.467	NS
H5	GMEP -> OCBE	0.204	2.782	0.003	S
H6	GEIP -> OCBE	0.241	3.176	0.001	S
H7	OCBE -> EP	0.185	2.330	0.010	S

Source: Authors Calculation; NS=Not supported, S= Supported.

For testing ***mediation effect*** of our multicategory variables, this study has utilized an advanced approach commonly known as Hayes' approach suggested by Hayes & Preachers,(2014). Following this approach, we have presented the result of Specific Indirect Effect (Effect of independent on Dependent through mediating only), Direct Effects (Effect of independent on Dependent with the presence of mediating one) and Total Effect (Effect of independent on Dependent without mediating one) in Table-6, Table-7, Table-8 consecutively (Hayes & Preachers, 2014). In table -6, bootstrapping confidence interval along with *p* values has been accepted for assessing the significance of indirect effect where significance is justified when the gap between CILL and CIUL don't produce 0 and $p < .05$ (MacKinnon et al., 2004).

However, From Table-6 it is evident that Hypothesis-8 is not supported because the specific indirect effect of GCBP on EP through OCBE only appears to be insignificant (p>.05; Confidence Interval (-0.025,0.027)). Even from Table-7, it is evident that direct effect between GCBP and EP is also insignificant. So OCBE does not execute significant mediating role between GCBP and EP, even there is no effect and no mediation exist in this relation. But it is clear that the indirect effect of OCBE execute a significant mediating role for the relations displayed in H9 and H10 because for H9, P is below '.05' (*p*=.001) and confidence interval don't produce 'o'(CI 0.083, 0.409). Likewise in the case of H10, *p*=0.003<.05 and CI (0.049,0.225), comply with our cut off criteria (MacKinnon et al., 2004).

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Additionally, from Table-7 we observe that GMEP has significant direct effect on EP because *p* value is 0.001<0.05. Not only this but also the multiplication result of coefficient of indirect and direct path for this case generate positive value. So, on the basis of these logic, it is clear that mediating role of OCBE amid GMEP and EP can be determined as complementary mediation (Zhao et al., 2010). However, Table-7 shows that direct effect doesn't exist for the path GEIP-> EP. Therefore, we can term the mediating role of OCBE amid the path of GEIP -> OCBE -> EP as indirect only mediation (Zhao et al., 2010).

Table-6: Indirect Effect

Path	Original sample (O) (Beta Coefficient)	T statistics (|O/STDEV|)	*P* Values	Confidence Interval LL (.05)	Confidence Interval UL (.95)	Decision
H8: GCBP -> OCBE -> EP	0.001	0.074	0.471	-0.025	0.027	Not Supported
H9: GMEP -> OCBE -> EP	0.269	3.338	0.001	0.083	0.409	Supported
H10: GEIP -> OCBE -> EP	0.206	3.024	0.003	0.038	0.225	Supported

Table-7: Direct Effect

Path	Coefficient	T statistics (|O/STDEV|)	*P* values
GCBP -> EP	0.135	1.531	0.063
GMEP -> EP	0.240	3.027	0.001
GEIP -> EP	-0.045	0.534	0.297

Table-8: Total Effects

Relations	Coefficient	T statistics (|O/STDEV|)	*P* values
GCBP -> EP	0.136	1.605	0.054
GMEP -> EP	0.278	3.848	0.000
GEIP -> EP	0.000	0.002	0.499

Moderation Analysis: In this study, Governmental support and intervention has been used as a moderating variable for analyzing whether it strengthen or weaken the relationship between OCBE and EP. However, result in Table -9 depicts that GSI don't exert any moderating impact between OCBE and EP because the *p>0.05. Therefore, H10 is rejected.*

Table-9: Moderating effect

Hypo.	Path	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	*P* values (*P*<0.05)
H11	GSI x OCBE -> EP	-0.012	-0.010	0.063	0.194	0.423

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5. Discussion

The purpose of this research was to investigate the impact of GHRM practices (GCBP, GMEP, GEIP) influence on Environmental Performance of public universities of Bangladesh through the intervening influence of faculty members' Organizational Citizenship Behavior (OCBE). It highlights complex web of above-mentioned factors instead of linear relations in all cases. While some hypotheses resonated with expectations, others challenged the research assumptions.

The findings of our first hypothesis reveals that GCBP don't have any significant effect on EP. This don't comply with the findings of previous study (Bazrkar, Moshiripour, 2021; Hossain, 2021; Shayegan et al., 2023; Veerasamy et al., 2023; Ghaderi et al., 2024) where it is claimed that green hiring and green training of employees can enhance environmental performance of the organization. In our case it may happen because faculties are not provided green sensitive training from the organization. Even in time of hiring, the authority is not sensitive to evaluate the environmental awareness issues of the incumbents because it is a new concept. But the result of the second hypothesis test shows that green motivation enhancing practice, that means green performance management and green reward, have significant effect on environmental performance of the universities. Thereby aligning with the result of previous studies of Longini et al. (2016) & Rawashdeh (2018). However, the third hypothesis shows that GEIP don't have any significant effect on employee performance thus challenging the existing presumptions of Mousa & Othman, (2020) and Mostafa & Saleh, (2023a). From the findings it has been found that there has some underlying fact such as university culture, management support may intervene here.

While findings found in other studies shows the direct impact of GCBP on OCBE (Ghaderi et al., 2024; Anwar et al., 2020), in our case the relationship is insignificant which indicates that green hiring and training don't affect faculties' behavior toward environment. This suggests that while structured programs might have potential, their impact might be more nuanced than initially anticipated. Thus, this finding made the researcher think in different ways. It may happen because of inappropriate green hiring mechanism as well as poor training and lower opportunities for competence building. Even if they arranged it, yet the training couldn't resonate with faculty's existing knowledge and interest and failed to empower them to translate skills into tangible actions. Besides employees sometimes get frustrated to implement new responsibilities generated from green training and das pointed by porter et al. (2016) Exploring the answer of these confusion could unlock the true potential of Green Competence-Building Practices (GCBP) for instigating faculties' citizenship behavior toward environment.

Hypotheses five, six, and seven resonated with prior research and AMO theory(Anwar et al., 2020; Faisal, 2023), highlighting the potent influence of Green Motivation-Enhancing Practices (GMEP) and Green Employee Involvement Practices (GEIP) on OCBE and ultimately OCBE on EP. GMEP, by fostering intrinsic motivation and a sense of purpose, empowers faculty to internalize environmental values and actively engage in pro-environmental typed behaviors(Anwar et al., 2020; Baloglu et al., 2022). GEIP further reinforces this effect by providing faculty with ownership and a voice in decision-making, aligning with AMO theory's emphasis on individual needs, opportunities, and abilities. This demonstrates that faculty, when motivated, empowered, and involved, are more likely to champion environmental initiatives and contribute to a university's sustainability performance. These findings offer concrete guidance for GHRM practitioners. Prioritizing GMEP and GEIP, tailored to the specific context of the university, can effectively cultivate a culture of environmental ownership and active engagement among faculty, ultimately leading to a more sustainable campus. Hypothesis seven confidently asserted the crucial connection between faculty actively engaging in pro-environmental behaviors and the university's overall environmental performance. This finding solidifies OCBE as the essential bridge between individual actions and collective impact, offering a clear direction for

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universities seeking to translate faculty engagement into tangible sustainability progress which comply with the prior research of Boiral & Paillé. (2012)

While OCBE proved its potency as a bridge between individual efforts regarded as citizenship behavior and collective environmental performance of universities shown in (H7), the mediation analysis of H8 took an intriguing turn. Here, GCBP did not exhibit the expected indirect effect on EP via OCBE. Because green recruitment and selection, green training and development is still in an initial stage in universities. Additionally, faculties have begun to ingrain the green values in their behavior at slow pace. Even it is at that malnourished level at which it is hard to expect everyone will demonstrate pro environmental behavior (Aggarwal & Agarwala, 2023). Like other corporate organization, a number of faculties consider that university authority is solely responsible greening activities. The next findings of this study reveals the significant mediating impact of OCBE between GMEP and EP which go in line with the result of Anwar et al. (2020) and thus our findings suggest that an university by including some environmental responsibilities with regular duties, utilizing some environmental indicators in performance management system, offering recognition, can instigate faculties' citizenship behavior toward environment (Saeed et al., 2019). This behavior at last enhance the environmental performance of that university. However, the finding of H10 strongly comply with the existing literature by Anwar et al. (2020) that OCBE significantly mediates the relationship between GEIP and EP. Yong et al. (2020) emphasized that OCBE emerged as a potent mediator between faculty involvement and university performance which also support the findings of this study. This suggests that when faculty own green initiatives and participate in decision-making, their motivation translates into concrete actions that impact the university's environmental footprint. This highlights the importance of fostering genuine faculty agency and ownership within GEIP. It is suggested that involving faculty in environmental decision-making and initiatives not only increases their pro-environmental behavior but also translates into tangible improvements in the university's environmental performance. This further strengthens the case for GEIP as a potent strategy for fostering sustainable progress.

Our last Hypothesis 11 assumed that **the existence of strong or weak** GS may strengthen or weaken the relationship between OCBE and EP. While it is a common assumption that strong governmental support can significantly instigates employee behaviors toward environmental performance (Anwar & Li, 2021; Songling et al., 2018; Zailani et al., 2012), our study challenges that notion by ignoring the moderating effect. The findings imply that Universities should not solely rely on external support but should focus on internal mechanisms and strategies to strengthen the link between employee actions and universities 'environmental outcomes. This highlights the need for universities to foster an independent and robust internal environmental framework, ensuring that employee efforts towards sustainability continue to contribute meaningfully, regardless of external support variations.

This study unraveled a fascinating green tapestry, revealing both expected and unexpected threads. While formal training didn't directly translate into action, empowering and involving faculty through motivation and ownership sparked pro-environmental behavior, bridging the gap to improved university sustainability.

5.1 Theoretical Implications

This research is grounded in the Ability-Motivation-Opportunity (AMO) theory, which posits that individuals need the ability, motivation, and opportunity to perform effectively in organizational settings. The results of this study provide nuanced insights into how Green Human Resource Management (GHRM) practices influence Organizational Citizenship Behavior for the Environment (OCBE) and, consequently, Environmental Performance (EP) within Bangladeshi public universities. By integrating GHRM, OCBE, and Government Support and Intervention (GSI), this research enriches the understanding of how institutional and contextual factors interplay to shape environmental outcomes (Anwar et al., 2020).

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The findings reveal that Green Competence-Building Practices (GCBP) do not significantly impact OCBE. This challenges prior studies that emphasize the linear effects of competence-building on pro-environmental behaviors (Tang et al., 2018; Cabral & Dhar, 2021). From an AMO perspective, this suggests that while GCBP provides the ability component, it may fail to align with the intrinsic motivations or contextual opportunities necessary for OCBE. Poorly tailored green hiring and training programs, or a lack of alignment with faculty interests and institutional culture, may contribute to this outcome. Furthermore, faculty members may perceive green training as an additional burden rather than an empowering opportunity, thereby disrupting the ability-motivation linkage essential for fostering OCBE (Aggarwal & Agarwala, 2023; Porter et al., 2016).

In contrast, Green Motivation-Enhancing Practices (GMEP) demonstrate a significant impact on both OCBE and EP, aligning with the AMO theory's emphasis on the role of motivation in driving organizational behaviors. Practices such as green rewards, performance management, and recognition create a culture where environmental responsibility is incentivized and valued (Saeed et al., 2019). Faculty members internalize environmental values when they perceive that their efforts are recognized and rewarded, reinforcing their engagement in OCBE. This supports the theoretical notion that motivation-enhancing interventions amplify individuals' willingness to contribute to environmental initiatives, thereby improving institutional sustainability outcomes (Hadziahmetovic et al., 2017; Malik et al., 2021).

Similarly, Green Employee Involvement Practices (GEIP) significantly influence OCBE, illustrating the importance of opportunity in the AMO framework. By providing platforms for faculty involvement in environmental decision-making and initiatives, universities foster a sense of ownership and agency (Mostafa & Saleh, 2023). This empowerment aligns with the AMO theory's proposition that opportunities for meaningful engagement drive discretionary behaviors, such as OCBE. The findings underscore the value of inclusive practices that not only involve faculty members but also enable them to actively contribute to environmental problem-solving and policy-making within their institutions (Tanova & Bayighomog, 2022).

The mediating role of OCBE between GHRM practices and EP further highlights the theoretical significance of discretionary behaviors in translating organizational policies into tangible outcomes. The results show that while OCBE effectively mediates the relationships between GMEP/GEIP and EP, it does not mediate the GCBP-EP linkage. This divergence underscores the complexity of the ability-motivation-opportunity interplay. For instance, while GCBP provides the ability to engage in pro-environmental actions, the absence of robust motivational and contextual support may hinder the translation of these abilities into OCBE. This finding suggests that the AMO model's components must work synergistically to achieve desired outcomes, particularly in the context of environmental sustainability (Pinzone et al., 2016; Dumont et al., 2017).

The study's findings on Government Support and Intervention (GSI) as a moderator also provide intriguing theoretical insights. Contrary to expectations, GSI does not significantly moderate the OCBE-EP relationship. This challenges the AMO theory's assumption that external opportunities, such as government subsidies or policies, invariably strengthen the ability-motivation-opportunity dynamic. The non-significant moderation effect suggests that faculty members may prioritize internal organizational factors, such as institutional culture and leadership, over external incentives. Additionally, the interpersonal nature of OCBE may make it less responsive to external interventions, as faculty members focus on their immediate social and organizational environments rather than broader policy frameworks (Anwar & Li, 2021; Songling et al., 2018).

These findings collectively expand the theoretical scope of the AMO model by highlighting the contextual and dynamic nature of its components. They emphasize the need for tailored and integrated GHRM strategies that simultaneously address ability, motivation, and opportunity while considering

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institutional and cultural specificities. Furthermore, the study sheds light on the limitations of external interventions, such as GSI, in influencing discretionary behaviors, thereby advocating for a greater focus on internal organizational mechanisms (Boiral & Paillé, 2012; Yong et al., 2019).

Concisely, this research contributes to the environmental management literature by demonstrating the complex interplay between GHRM, OCBE, and EP within the AMO framework. It highlights the importance of designing context-specific GHRM practices that resonate with faculty motivations and institutional dynamics while providing actionable insights for policymakers and academic administrators aiming to enhance sustainability in higher education institutions (Faisal, 2023).

5.2 Practical Implications

While the entire world is running to preserve environment keeping SDGs in mind, universities are providing constant effort for training next generation to take the sustainable environmental measures. To this end, this research has provided insights into the areas that may be utilized to reorientate the administration and faculties to think green differently so as to preserve the natural environment for future through the formulation of strategic plan. In the first, the study introduced university stakeholder to the very high priority of GHRM practice in universities. So, they can merge green issues with HRM policies that will be applied in the organization. This paper provides the empirical evidence that green motivating practices and involvement practices promote citizenship attitudes towards environment, and result in university sustainable environmental performance. So, from this research the university can learn a bit about adding some environmental measures in the evaluation of performance to give some reward and acknowledgement to the faculty for environmentally friendly performance and thereby help them increase the environmental awareness and behaviors of faculty members. The university could use green hiring and recruitment strategies and concentrate on effective training and education for spreading green values to everyone. Secondly, knowing the mediating function of OCBE provides a pragmatic path towards a sustainable organizational culture leading to environmental performance. Universities can create specific interventions to motivate and recognize environmentally mindful behaviors among faculty. There can be reward schemes, trainings and inclusivity decision-making forums to foster a culture of shared environmental action.

This suggests that universities should not only implement green practices but also ensure that academic members actively internalize and contribute to these initiatives. Fourth, and last, recognizing the limited moderating impact of government support. universities should proactively engage with governmental bodies to enhance their role in promoting environmental sustainability. Teamwork, joint initiatives and policy advocacy can strengthen the relationship between public universities and government to promote a better climate for sustainability. So, the real-world application of this research is that it gives a real-world direction for public universities in Bangladesh to achieve their goals of environmental sustainability. Through aligning GHRM practices with the mediating power of OCBE and by carefully tapping into government support, universities can set themselves apart as pioneers in campus-based environmental stewardship.

5.3 Limitations and Future Research Direction

This research, while contributing some valuable insights to the environmental sustainability, it is not without limitations that warrant consideration for future researchers. One of them is small sample size, which predominantly representing only public universities in Bangladesh. So, the inference cannot be generalized for all universities. So, the future researcher can conduct this study encompassing large sample from both private and public universities. Another one is its' cross-sectional research design which may hinder to find out evolving nature of variable over time especially faculties citizenship behavior and environmental performance also. Hence, leaving an opportunity of longitudinal studies. Since, collection of data for exogenous variable and mediating variable at a single time posits a risk of common method bias (Ployhart & Vandenberg, 2010), future studies may collect data at different point of time for these two types of variables. Self-reported data from faculties introduce the possibility of common method bias, where participants may align responses with social desirability. Employing

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multiple data sources or objective measures in future research would mitigate this limitation, ensuring a more accurate portrayal of the examined relationships. While the study focuses on government support as a moderating variable, and OCBE as mediators, there may be other unexplored contextual and organizational factors such as leadership styles and institutional cultures. In future the researcher could investigate their complex mechanism along with this model which may generate more comprehensive knowledge in this field. Finally, though, this study is based on quantitative research design, in future explanatory sequential research design may contribute a lot to find out more explanation of the findings. Exploring the role of technology and innovative practices in promoting green initiatives on university campuses presents another promising avenue for research. Additionally, investigating the perceptions and behaviors of students, as key stakeholders, could offer valuable insights into the broader impact of environmental practices within the academic community. These avenues for future research seek to advance our knowledge and offer practical guidance for strategic interventions aimed at fostering environmental stewardship in university settings worldwide.

Data Availability: The authors are ready to submit any data related to this paper.
Conflict of Interest: There is no conflict of interest for our cases.
Ethical Issues: Before collecting data, the authors have informed the objectives of the study to the participant and collected their consent to use their response in this paper
General Use of AI: This work has utilized AI (Quill-bot AI paraphrase) tool for the betterment of the sentence structure in a limited case.
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