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FOSTERING SUSTAINABLE PERFORMANCE: THE ROLE OF GREEN REWARDS, PERFORMANCE EVALUATION, AND INNOVATION IN OMAN'S MINISTRY OF EDUCATION

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ABSTRACT:

This study examines the influence of green human resource management practices mainly green rewards and green performance evaluations on the Triple Bottom Lines (environmental, economic, and social performance) of sustainability. This study looks into how these associations can be mitigated by green innovation. The data for this study was collected through a tailored questionnaire as part of quantitative analysis by using the Ministry of Education's correspondence system which yielded 315 responses. It was established that Green awards did not significantly affect sustainability performance during examination via Structural Equation Modeling (SEM) using Smart PLS. On the other hand, Green Performance Evaluations had a positive effect. Furthermore, Green innovation largely enhances sustainable performance as well as serves as a mediator between green practices and the Ministry of Education's objectives towards sustainability. This information is very important for both academics and practitioners since it offers valuable perceptions of what role does or can green innovation play in influencing sustainable performance.

Keywords: Green Human Resource Management, Green Rewards, Green Performance Evaluation, green innovation, sustainable performance.

1. INTRODUCTION

Increasingly, organizations are recognizing the need for environmental sustainability to fight against global environmental problems and improve their environmental, financial, and social performance. The study revealed that the utilization of current learning helps (alqudah, 2022). The recognition of increasing global environmental deterioration and unsustainable use of resources has led to a shift towards sustainable practices in some sectors. International, national, and business initiatives have been instrumental in this change. Green human resource management (GHRM) is when human resource practices are combined with environmental management. It is aimed at creating an environmentally sensitive, energy-efficient, and socially

responsible workplace (Amrutha & Geetha, 2020). Organizations that wish to deal with increasing ecological problems must embark upon ecologically sustainable development, economically profitable production, and equally distributed distribution systems. The expansion of phenomena of globalization (alqudah, 2023). Their goal is to integrate environmental management systems and sustainable practices into their organizational strategy to enhance environmental and social outcomes and improve financial performance. Consequently, some of the units like Innovations or HRs will gradually be adopting these green policies to meet these challenges head-on (Baeshen, Soomro, & Bhutto, 2021).

It is essential to include particular GHRM practices, such as green rewards and green performance assessments, to promote an organization's sustainability goals. These practices are crucial not only for their immediate environmental advantages but also for their role in promoting economic and social sustainability. Several sectors worldwide have recognized the clear correlation between environmentally conscious management and improved financial outcomes. Nevertheless, there is a conspicuous dearth of research, particularly within the public domain. Prior research has mostly focused on the private sector, namely in the areas of manufacturing and supply chain while giving little attention to the public sector (Al Hattali, Husin, & Mahmood, 2023; Alja'ar, 2022). In addition, the Ministry of Education in Oman acknowledges the critical significance of green innovation in attaining sustainable performance. This includes developing and implementing eco-friendly strategies and technologies, such as using sustainable energy sources and initiatives to mitigate pollution. Green innovation has a dual advantage of benefiting the environment and enhancing organizational performance via cost reduction and increased environmental consciousness among personnel schooling quality for understudies with visual disability (alqudah, 2022). It includes enhancements in procedures, goods, services, establishments, technology, and promotional tactics, to achieve environmental benefits by reducing the negative impacts of different activities (Elzek, Gaafar, & Abdelsamie, 2021a; H. Li, Li, Sarfarz, & Ozturk, 2023). This study investigates the impact of green rewards (GR) and green performance evaluations (GE) on the sustainable performance (SP) of Oman's Ministry of Education, with green innovation (GI) acting as a mediator. The objective is to assess the influence of these environmentally friendly measures on the Triple Bottom Line (TBL), which includes the performance in terms of the environment, society, and economy.

2. LITERATURE REVIEW

2.1. Theoretical Background

The current study examines the correlation between Green Human Resource Management (GHRM) and organizational performance at the Ministry of Education in the Sultanate of Oman, using the resource-based view (RBV) approach. Referencing strategic GHRM and strategy literature, this study recognizes human capital as a crucial factor in determining an organization's performance (Barney, 2001). The RBV framework assesses how firms use strategic resources that possess value, rarity, and non-imitability to attain a competitive edge (Arici & Uysal, 2022; Karatepe, Hsieh, & Aboramadan, 2022). The research suggests that implementing GHRM practices, such as green awards and green performance evaluations, plays a crucial role in motivating employees to exhibit behaviors that are in line with the organization's objectives of achieving a sustainable competitive advantage (Karatepe et al., 2022).

The study investigates the correlation between GHRM and organizational performance at the Ministry of Education in the Sultanate of Oman, using the resource-based view (RBV) approach. Referring to strategic GHRM and strategy literature Customer satisfaction and customer relationships are important component (alqudah, 2023), this study recognizes human

capital as crucial in determining the success of an organization (Barney, 2001). The RBV framework evaluates how firms use strategic resources with value, rarity, and non-imitability to gain a competitive advantage (Hameed et al., 2022; Karatepe et al., 2022). The study proposes that the adoption of GHRM practices, such as green awards (GR) and green performance evaluations (GE), is essential in stimulating employees to demonstrate behaviors that align with the organization's goal of attaining sustainable competitive advantage (Hameed et al., 2022). The RBV theory has been broadened to include sustainability, highlighting the imperative to use limited and distinctive resources for long-lasting success effectively. The concept emphasizes the significance of internal resources, including both tangible and intangible assets like as human capital, organizational skills, information, and technology, in attaining strategic advantage and long-term viability (Karatepe et al., 2022). This study highlights the crucial significance of GHRM activities, such as green rewards and green performance evaluations, in fostering green innovation and improving sustainable performance o mould a healthier and more prosperous future for Jordan. (alqudah, 2023). The text emphasizes the significance of environmentally oriented GHRM activities in attaining sustainability objectives. To conduct empirical testing, the following sections will provide hypotheses that are derived from the Resource-Based View (RBV). Figure 1 illustrates the theoretical structure of the investigation. Figure 1 illustrates the Conceptual Framework of the study.

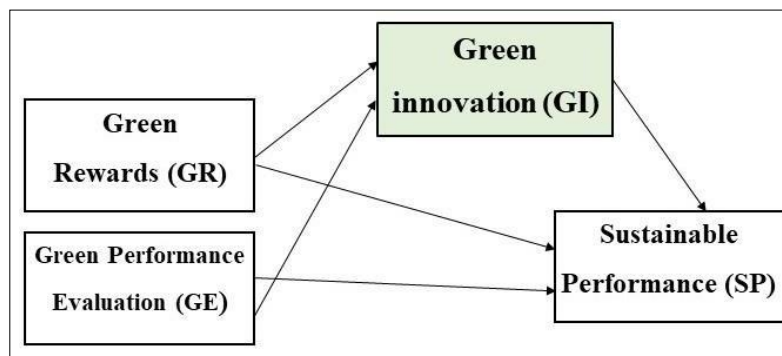


Figure 1 Conceptual Framework

2.2. Hypotheses Development

2.2.1. Green Rewards, Green Performance Evaluation, and Sustainable Performance

The integration of environmental factors into GHRM procedures is increasingly recognized. Organizations must implement environmental management systems to improve their environmental performance. These procedures are essential for accomplishing this objective (Gilal, Ashraf, Gilal, Gilal, & Channa, 2019; Yong, Yusliza, & Fawehinmi, 2019). GHRM's primary objective is to encourage organizations to implement environmentally friendly practices and promote environmental sustainability. This method provides numerous significant advantages, such as improved employee retention, a diminished environmental impact, and an enhanced organizational appeal. Research conducted by Renwick, Redman, and Maguire (2019) indicates that the implementation of green performance evaluation and rewards, which are components of GHRM strategies, can significantly improve an organization's environmental impact and performance. Highlighted key practices in GHRM include green rewards and green performance evaluation, which are important for achieving sustainability goals (Jabbour & Renwick, 2020). Research conducted in several locations substantiates the efficacy of these methodologies. Studies performed in Indonesia and Kenya have shown the substantial influence of green incentives on employee performance and their

contributions to sustainability activities (Ardiza, Nawangsari, & Sutawidjaya, 2021; Mandago, 2019).

Furthermore, this study is being conducted to investigate the influence of certain GHRM practices on sustained performance the hypothesized pathways in this investigation were tested simultaneously utilizing (alqudah, 2023). There exists a significant correlation between the implementation of measures such as Gr and GE, and the attainment of improved outcomes for the organization. These references provide evidence that GHRM has positive effects on both the environment and organizational performance (El Dessouky & Alquaiti, 2020; Jerónimo, Henriques, de Lacerda, da Silva, & Vieira, 2020; Shoaib, Nawal, Zámečník, Korsakienė, & Rehman, 2022; Shobhana et al., 2022). Therefore, the following hypotheses are proposed:

H1. Green rewards positively influence sustainable performance.

H2. Green performance evaluation positively influences sustainable performance.

2.2.2. Green Rewards, Green Performance Evaluation, and Green Innovation

GHRM plays an important role in incorporating environmentally sustainable practices into organizations, which is an essential step towards attaining sustainable development and enhancing environmental performance. The core of this method is on green innovation, which involves making improvements that not only fulfill but surpass environmental objectives, thereby greatly reducing environmental effects (Liu, Gao, Ma, & Chen, 2020; Wang, Cui, & Zhao, 2021). These innovations are specifically created to support the environmental goals of the organization and provide significant eco-friendly advantages, establishing a basis for sustainable development in the long run (Soewarno, Tjahjadi, & Fithrianti, 2019). More precisely, GHRM practices like green rewards and green performance evaluation play an essential role in guiding employees' actions toward achieving environmental objectives. These practices not only include employees, but also stimulate the development of inventive, environmentally aware concepts, goods, and procedures. By incorporating these practices into the human resources framework, organizations develop a culture that is conducive to innovation and deeply dedicated to environmental stewardship (Muduli et al., 2020; Song, 2020).

The significance of top management in promoting and advocating for this culture of eco-innovation cannot be emphasized enough. Promoting a culture of innovation and willingness to take risks among employees results in notable advancements in the creation of environmentally friendly products and processes. Research has shown that GHRM systems that include GR and GE have a greater influence on innovation compared to individual practices. Implementing extensive GHRM practices not only improves skills and motivation but also facilitates the development of opportunities required for promoting eco-innovation (Fang, Shi, Gao, & Li, 2022). It is crucial to adopt these practices from the RBV to develop and maintain a workforce that is dedicated to environmental goals, which will eventually promote and advance green innovation. This developing collaboration highlights the need for more research on how GHRM practices jointly influence green innovation, resulting in the formulation of these hypotheses:

H3. Green rewards positively influence Green Innovation.

H4. Green performance evaluation positively influences Green Innovation.

2.2.3. Green Innovation and Sustainable Performance

Sustainability is a significant and urgent concern that organizations confront every day. It necessitates achieving a balanced and harmonious state between meeting the present needs of stakeholders and protecting the environment and resources for future generations (Bilan, Hussain, Haseeb, & Kot, 2020). Sustainability performance refers to an organization's capacity to effectively manage the intricate relationship between its economic, environmental, and social aspects, which may be either beneficial or detrimental (Blinova, Ponomarenko, &

Knysh, 2022; Naciti, Cesaroni, & Pulejo, 2022). Since 1992, the importance of organizations adjusting their operational procedures to minimize environmental and social consequences while still achieving economic success has been a prominent focus of global policy (Imran, Alraja, & Khashab, 2021; Mio, Costantini, & Panfilo, 2022).

Organizations are increasingly compelled to move from conventional operating procedures to green practices due to the growing urgency of environmental concerns, such as climate change. Green innovation (GI) plays an important role in facilitating this transition. GI, encompassing improvements in products, processes, managerial methods, and marketing tactics, is crucial for attaining sustainable performance and granting organizations a competitive advantage (Santos, Borini, & Oliveira Júnior, 2020; Saudi, Obsatar Sinaga, & Zainudin, 2019). However, the link between green innovation and sustainable performance requires further investigation. Strategic management encompasses the process of creating long-term plans and decisions that emphasize the survival and prosperity of a business. Sustainability and innovation are important for successful strategic management within this framework. The importance of green innovation in improving organizational performance has been specifically seen in industries such as hospitality and tourism, where it has been linked with enhanced environmental and overall sustainable performance (Asadi et al., 2020; Elzek, Gaafar, & Abdelsamie, 2021b). Moreover, research conducted in several sectors, such as small and medium-sized businesses in Saudi Arabia, has shown the beneficial influence of green innovation on sustainable performance (Al Doghan, Abdelwahed, Soomro, & Ali Alayis, 2022; Rehman, Kraus, Shah, Khanin, & Mahto, 2021; Seman et al., 2019). The following hypothesis is put out for the Ministry of Education of Oman:

H5. Green innovation positively influences sustainable performance.

2.2.4. Green Innovation as a Mediator

The connection between GHRM practices and sustainability is now acknowledging green innovation as a crucial intermediary. More precisely, it operates as a mediator where GHRM practices have an initial effect on GI, which then affects organizational sustainability via both direct and indirect routes. Multiple research conducted in various situations has provided evidence in favor of this mediation concept. Seman et al. (2019) found that GI acts as a mediator between green supply chain management and environmental performance in Malaysian manufacturing enterprises.

Their research highlighted the essential importance of implementing green supply chain management practices in promoting green innovation, which in turn improves environmental performance. Rehman et al. (2021) found that GI has a mediating role in the connection between GHRM practices and organizational performance in Malaysian companies. This implies that GI is a crucial factor in transforming GHRM practices into environmental benefits. The study conducted by Kraus, Rehman, and García (2020) provides additional evidence for the mediating effect of GI on the relationship between corporate social responsibility and environmental performance in large manufacturing companies in Malaysia. Corporate social responsibility has an indirect impact on environmental outcomes by influencing strategic environmental practices and technologies. In addition, the study conducted by Singh, Del Giudice, Chierici, and Graziano (2020) presented data from manufacturing small and medium-sized enterprises (SMEs) in the United Arab Emirates (UAE) that demonstrated how the implementation of GHRM practices may drive the development of environmentally friendly goods and process innovations. This, in turn, leads to enhanced environmental performance, confirming the intermediary function of GI. Pham et al. (2019) suggested further exploration of the relationship between GHRM practices and GI to achieve sustainable objectives. Al Doghan et al. (2022) further said that GI functions as an intermediary between the cultural aspects of an organization's environment and both its environmental sustainability and environmental performance. Similarly, Afum, Zhang,

Agyabeng-Mensah, and Sun (2021) discovered that green practices had an indirect influence on sustainable performance (SP) through intermediary factors. For that reason, the purpose of this study is to provide a foundation for future empirical studies by reviewing studies that have already been conducted (alqudah, 2023). However, there is still a lack of thorough research that investigates the complex connection between GHRM practices, GI, and SP. Considering the proven impact of GI on environmental results via mediation, more empirical research is necessary to confirm the mediating function of GI. Given the previous debates and the need for more investigation in this field, Therefore, the following hypotheses are proposed:

H6. Green innovation mediates the relationship between green rewards and sustainable performance.

H7. Green innovation mediates the relationship between green performance evaluation and sustainable performance

3. METHODOLOGY

This study adopts a quantitative research methodology to explore the impact of green rewards and green performance evaluations within the Ministry of Education. To tailor the inquiry to the specific needs of this investigation, the questionnaire was developed by adapting items from prior research and refining them to align with the study's goals. The questionnaire was initially drafted in English and subsequently translated into Arabic by qualified linguists to ensure clarity and comprehensibility for the participants. This study was approved by the ethics committee of Universiti Tenaga Nasional / College of Graduate Studies (Letter No. UNITEN/COGS/23/2/1/PM21247).

The Department of Educational Studies in the Ministry (Letter No. 2823956620) approved the distribution of a custom-designed questionnaire via the Ministry of Education's digital correspondence system, which we used for data collection. The survey link was sent to potential respondents, culminating in a total sample size of 315 employees. The distribution and retrieval of questionnaires were facilitated through an application commonly used by all personnel within the Ministry for official communications, ensuring efficient and widespread participation. For the analytical phase, the study employed Smart PLS 4 to evaluate the structural model and test the hypotheses. The use of the Partial Least Squares (PLS) method is particularly advantageous in this context due to its aptness for models featuring multiple constructs and varying levels of construct complexity. The PLS approach is also suitable for analyses involving relatively small sample sizes, as it simplifies the computation of parameters and enhances the understanding of complex relationships between constructs. This methodology extends researchers' capabilities in examining and interpreting the complex dynamics between various theoretical constructs, thereby advancing our understanding and prediction of latent phenomena (Hair et al., 2021).

3.1. Ethical consideration

Oman's Ministry of Education provided a written permission letter for data collection. As a result, the permission letter reference number is 2823956620. After receiving authorization, an online questionnaire was sent to all employees inside the Ministry of Education campus using the ministry's online correspondence platform. Employees were not forced to participate in this study during the data collection phase. All stages of research activities handled data confidentially and anonymously. Therefore, participants' identities or positions were not publicly disclosed.

3.2. Sample Description

The demographic profile from a sample of 315 respondents showcases a varied mix of gender, education, job experience, and positions. The gender distribution is nearly even, with a slight female majority at 54.9%. Educationally, 47.3% hold bachelor's degrees, 34.6% have master's degrees, while diploma and PhD holders make up smaller percentages. Regarding job experience, 68.6% have over 16 years of experience, indicating a highly experienced workforce. In terms of job roles, 68.9% are Executive Employees, with the rest in various managerial positions. This profile highlights a workforce rich in seniority and management experience within the Ministry of Education. Table 1 shows the demographic profile of the study.

Table 1. Demographic Profile of Respondents.

		Frequency	Percentage %
Gender	Male	142	45.1 %
	Female	173	54.9 %
Education degree	Diploma	18	5.7 %
	Bachelor degree	149	47.3 %
	Master	109	34.6 %
	PHD	39	12.4 %
Job Experience	1-5 Years	13	4.1 %
	6-10 Years	18	5.7 %
	11-15 Years	68	21.6 %
	More than 16 years	216	68.6%
Position	General Manager	5	1.6 %
	Deputy General Manager	6	1.9 %
	Director of the Department	14	4.4 %
	Deputy Department Manager	27	8.6 %
	Head of the Department	46	14.6 %
	Executive Employees	217	68.9 %
	Total	315	100%

3.3. Measures

The study adopted measures that had been validated and utilized in prior studies to maintain their reliability and validity. Each measure was evaluated using a 5-point Likert scale, where a rating of 5 represented 'strongly disagree', 4 'disagree', 3 'neutral', 2 'agree', and 1 'strongly agree'. The dependent variable under investigation was sustainable performance, which was analyzed across three distinct dimensions: environmental, economic, and social. The items for this analysis were sourced from established research by (Imran et al., 2021; Kanan et al., 2023; Lai, Wang, Hung, & Pai, 2021; Malik et al., 2021; Mousa & Othman, 2020; Sebhatu, 2009; Singh et al., 2020) . The independent variables, which included green rewards (Jabbour & Renwick, 2020; Malik et al., 2021; Mandago, 2019; Opatha & Kottawatta, 2020; Veluchamy, Srikumar, & Mk, 2021) and green performance evaluations (El Dessouky & Alquaiti, 2020; Jerónimo et al., 2020; Lai et al., 2021; X. Li, Wang, & & Xu, 2020; Malik et al., 2021; Mousa & Othman, 2020; Opatha & Kottawatta, 2020), were similarly derived from those studies. Additionally, green innovation was included as a mediating variable, evaluated using methodologies developed in the research conducted by (Afum et al., 2021; Al Doghan et al., 2022; Asadi et al., 2020; Elzek et al., 2021b; Kraus et al., 2020; Pham, Hoang, & Phan, 2019; Seman et al., 2019).

3.4. Model Measurement

Table 2 shows the inner model evaluation results. The results indicate robust construct reliability and validity for the measured variables, as evidenced by high factor loadings (all above 0.7) and satisfactory Average Variance Extracted (AVE) values. Constructs such as Green Rewards, Green Performance Evaluation, and Green Innovation exhibit strong Composite Reliability (CR) values exceeding 0.9, highlighting the internal consistency of the measurement items. Notably, constructs related to Green Managerial Innovation and Social Performance achieved the highest AVE values, 0.826 and 0.82 respectively, suggesting a significant proportion of variance is captured by the constructs' indicators. Cronbach's alpha (α) values for all constructs surpass the acceptable threshold of 0.7, further affirming the reliability of the scales. These findings align with the guidelines suggested by Hair Jr, Page, and Brunsveld (2019) for evaluating reflective measurement models, ensuring the credibility and robustness of the inner model.

Table 2. Inner model evaluation.

Variables	Constructs	Factor loading	AVE	CR	α
Green Rewards	GR1	0.916	0.771	0.930	0.898
	GR2	0.925			
	GR3	0.925			
	GR4	0.731			
Green Performance Evaluation	GE3	0.814	0.731	0.942	0.926
	GE4	0.852			
	GE5	0.848			
	GE6	0.875			
	GE7	0.867			
	GE8	0.872			
Green Innovation			0.501	0.939	0.929
Green product innovation	GPI1	0.870	0.759	0.940	0.920
	GPI2	0.830			
	GPI3	0.914			
	GPI4	0.901			
	GPI5	0.839			
Green process innovation	GPrI1	0.717	0.722	0.939	0.922
	GPrI2	0.881			
	GPrI3	0.834			
	GPrI4	0.911			
	GPrI5	0.867			
	GPrI6	0.875			
Green managerial innovation	GManI2	0.862	0.826	0.950	0.929
	GManI3	0.920			
	GManI4	0.935			
	GManI5	0.916			
Green marketing innovation	GMarI1	0.758	0.694	0.900	0.896
	GMarI2	0.919			
	GMarI3	0.794			
	GMarI4	0.851			
Sustainable Performance			0.584	0.965	0.962
Environmental performance	EP1	0.871			
	EP2	0.881			

	EP3	0.910	0.774	0.954	0.941
	EP4	0.902			
	EP5	0.871			
	EP6	0.841			
Economic performance	EcP1	0.815	0.786	0.957	0.945
	EcP2	0.801			
	EcP3	0.897			
	EcP4	0.862			
	EcP5	0.897			
	EcP6	0.908			
	EcP7	0.921			
Social performance	SPe1	0.887	0.820	0.970	0.963
	SPe2	0.924			
	SPe3	0.910			
	SPe4	0.929			
	SPe5	0.928			
	SPe6	0.866			
	SPe7	0.892			

3.5. Discriminant Validity

The discriminant validity of the items was evaluated using the Fornell-Larcker criteria and the Heterotrait-Monotrait (HTMT) ratios, which are both recommended methods for assuring discriminant validity in structural equation modeling. The Fornell-Larcker criteria state that the square root of the Average Variance Extracted (AVE) for each construct must exceed the greatest correlation with any other construct. Table 3 shows the diagonal elements (square root of AVE) for GR, GE, GI, and SP in this assessment are 0.878, 0.855, 0.824, and 0.838 respectively. These values are all greater than the inter-construct correlations that correlate to them. As an example, the correlation coefficient between GR and GE is 0.711, which is less than the square root of their respective AVEs, which are 0.878 and 0.855. This validates that each concept has a higher degree of correlation with its indicators compared to other constructs, thereby meeting the Fornell-Larcker criteria (Fornell & Larcker, 1981).

Table 3 illustrates the HTMT ratios provide further evidence of discriminant validity since all values are below the threshold of 0.850 (Kline, 2023). The HTMT ratios for the comparisons between GR and other constructs are 0.774 (GE), 0.796 (GI), and 0.688 (SP), all of which are lower than the crucial threshold. This indicates that there is sufficient evidence to support the discriminant's validity. Similarly, the HTMT ratios for additional constructions also fall under acceptable thresholds: GE with GI (0.793) and SP (0.744), and GI with SP (0.840). These findings confirm that the constructs are separate and unique from one another.

In conclusion, the Discriminant Validity evaluation, conducted using the Fornell-Larcker criteria and HTMT ratios, confirms that the constructs are sufficiently different from each other. This further strengthens the reliability of the measurement model.

Table 3. Discriminant validity.

Fornell–Larcker criterion					Heterotrait–monotrait (HTMT) ratios				
	GR	GE	GI	SP		GR	GE	GI	SP
GR	0.878				GR				
GE	0.711	0.855			GE	0.774			

GI	0.746	0.759	0.824		GI	0.796	0.793		
SP	0.644	0.710	0.815	0.838	SP	0.688	0.744	0.840	

3.6. Model Assessment

This research utilizes a bootstrapping technique with 5,000 iterations and sample replacement, following the methodology described by J. Hair, Joe F, Sarstedt, Matthews, and Ringle (2016), to examine the given hypotheses. The findings, shown in Table 4, indicate that green rewards do not have a significant impact on sustainable performance. These results are shown by a β coefficient of 0.012, a t-value of 0.157, and a p-value of 0.875. Consequently, Hypothesis 1 is not supported. There is a strong and meaningful relationship between green performance evaluation and sustainable performance. The results show a coefficient of 0.211, a t-value of 2.501, and a p-value of 0.012. Therefore, Hypothesis 2 is supported. Hypothesis 3 shows a significant positive relationship between green rewards and green innovation, as shown by a coefficient of 0.417, a t-value of 6.465, and a p-value of 0.000. The coefficient of 0.462, the t-value of 6.969, and the p-value of 0.000 provide strong evidence to support the strong effect of Hypothesis 4 on green innovation. Hypothesis 5 suggests that green innovation has a positive effect on sustainable performance, as shown by a β coefficient of 0.646, a t-value of 8.355, and a p-value of 0.000. The findings of the hypothesis testing confirm the support for all hypotheses from H2 to H5, suggesting significant connections within the model. However, Hypothesis 1 does not show any meaningful impacts.

Table 4. Hypothesis testing

Hypothesis		Path Coefficient β	t value	P values	Decision (p < 0.05)
H1	GR \rightarrow SP	0.012	0.157	0.875	Not Supported
H2	GE \rightarrow SP	0.211	2.501	0.012	Supported
H3	GR \rightarrow GI	0.417	6.465	0.000	Supported
H4	GE \rightarrow GI	0.462	6.969	0.000	Supported
H5	GI \rightarrow SP	0.646	8.355	0.000	Supported

3.7. Mediation Analysis

Mediation analysis was performed to assess the mediating role of green innovation in the relationship between green rewards, green performance evaluation, and sustainable performance. Table 5 revealed a significant indirect effect of green rewards on sustainable performance through green innovation (H6: $\beta = 0.270$, $t = 5.108$, $p\text{-value} = 0.000$). Table 6 shows that the total effect was significant (H6: $\beta = 0.282$, $t = 3.117$, $p\text{-value} = 0.002$), with the inclusion of the mediator, the effect of green rewards on sustainable performance was not significant ($\beta = 0.012$, $t = 0.157$, $p\text{-value} = 0.875$) as shown in table 7. The results show that green innovation has full mediation, namely an "indirect only", between green rewards and sustainable performance. Therefore, H6 was supported.

Similarly, table 5 shows a significant indirect effect of green performance evaluation on sustainable performance through green innovation (H7: $\beta = 0.299$, $t = 5.288$, $p\text{-value} = 0.000$). The total effect (H7: $\beta = 0.510$, $t = 5.685$, $p\text{-value} = 0.000$), with the inclusion of the mediator the effect of green performance evaluation on sustainable performance was still significant effect ($\beta = 0.211$, $t = 2.501$, $p\text{-value} = 0.012$). This shows a complementary partial mediating role of green innovation between green performance evaluation and sustainable performance. Hence, H7 was supported too.

Table 5. Indirect effect

Hypothesis	Indirect effect		
	Path Coefficient β	T- Value	p- Value
H6	0.270	5.108	0.000
H7	0.299	5.288	0.000

Table 6. Total effect

Hypothesis	Total effect		
	Path Coefficient β	T- Value	p- Value
H6	0.282	3.117	0.002
H7	0.510	5.685	0.000

Table 7. Direct effect

Hypothesis	Direct effect		
	Path Coefficient β	T- Value	p- Value
H6	0.012	0.157	0.875
H7	0.211	2.501	0.012

3.8. R² and Predictive Relevance Q²

Table 8 presents the R² and adjusted R² values for two constructs, Green Innovation, and Sustainable Performance, within a structural equation model. The Green Innovation construct exhibits an R² of 0.662 and an adjusted R² of 0.660, indicating that the model explains over 66% of the variance. For Sustainable Performance, the R² is 0.684 and the adjusted R² is 0.681, suggesting that approximately 68% of the variance is accounted for by the model. These high values demonstrate the model's robust explanatory power for both constructs, with minimal changes between the R² and adjusted R² values reflecting the model's resilience to the number of variables (J. F. Hair, Black, & Babin, 2010).

Additionally, the table includes Q²predict values for both constructs, with Green Innovation at 0.654 and Sustainable Performance at 0.529. These values indicate that the model accurately predicts 65.4% and 52.9% of the variance for Green Innovation and Sustainable Performance, respectively, underscoring the model's excellent predictive relevance. Values above 0.5 are considered significant in Structural Equation Modeling (SEM), confirming the model's predictive precision (Hair et al., 2021).

Table 8. Predictive accuracy

	R ²	R ² adjusted	Q ² predict
Green Innovation	0.662	0.660	0.654
Sustainable Performance	0.684	0.681	0.529

4. DISCUSSION AND CONCLUSION

The study indicates valuable insights into the relationships among GHRM practices, green innovation (GI), and sustainable performance (SP) within the Ministry of Education in Oman. The results show green rewards (GR) do not have a direct effect on SP, but green performance evaluations (GE) significantly foster sustainability. Moreover, GI is of utmost importance, serving as both a direct factor in achieving SP and as a link between GHRM practices and sustainability results.

The finding that GR does not have a significant direct impact on SP implies that financial or physical rewards by themselves may not be enough to induce important transformations in

organizational sustainability results. This emphasizes the intricacy of employee motivation and the possible constraints of using incentives as a means to cultivate enduring, inherent dedication to sustainability. This result contradicts previous studies that found a significant effect of green rewards on sustainable performance. (Mandago, 2019; Rawashdeh, 2018; Veluchamy et al., 2021).

According to the findings of El Dessouky and Alquaiti (2020); Malik et al. (2021); Mousa and Othman (2020), GE has a significant positive impact on SP. Incorporating environmental elements into performance evaluations ensures that individual performance is in line with the organization's overarching sustainability goals.

This congruence likely promotes employees to embrace and maintain environmentally conscientious habits, therefore reinforcing the organization's commitment to sustainability. GI stands out as a pivotal element in this study. The direct positive impact of GI on SP confirms that innovative practices, processes, and technologies are essential for achieving sustainability. Organizations that prioritize innovation in their approach to environmental challenges are better positioned to reduce their ecological footprint, enhance operational efficiency, and improve overall sustainability performance. Furthermore, it is important to highlight the significant impact of green innovation in mediating the relationship between GHRM practices and SP. The mediation suggests that the impact of GHRM practices on sustainability is mostly achieved via their capacity to promote innovation. This discovery is consistent with the RBV, which suggests that the strategic use of valuable, uncommon, and difficult-to-replicate resources, such as inventive talents, is crucial for attaining a competitive advantage. GI plays a vital role in converting GHRM practices into improved SP.

The study's findings have significant theoretical implications. By integrating green innovation into the framework of GHRM, this research extends the RBV theory, demonstrating that internal organizational practices focused on environmental sustainability can lead to improved performance outcomes through innovation. This study also incorporates the TBL theory, emphasizing that GHRM practices contribute to environmental, social, and economic performance. The results enrich the theoretical understanding of how strategically managing human resources can drive sustainability, supporting the call for more comprehensive models that include mediating variables like innovation in the study of GHRM and sustainability.

The findings of this study offer practical guidance for managers aiming to enhance sustainability performance within their organizations. Firstly, integrating environmental criteria into performance evaluations is crucial, as it ensures employees are consistently aware of and accountable for their environmental impact, aligning their efforts with the organization's sustainability goals. Promoting and supporting GI is also essential; organizations should create an environment that encourages, and rewards innovative ideas aimed at sustainability by providing resources and fostering a culture of creativity. While GR alone may not directly drive sustainable performance, it plays a significant role in fostering innovation. Therefore, managers should use rewards strategically in conjunction with other GHRM practices, such as GE, to maximize their impact. Adopting a holistic approach to GHRM—combining green performance evaluations, rewards, training, and employee engagement—can create a synergistic effect, fostering a culture of sustainability that permeates all levels of the organization.

Despite its valuable contributions, this study has several limitations that suggest avenues for future research. The context-specific nature of the research, focused solely on the Ministry of Education in Oman, may limit the generalizability of the findings, warranting exploration in different sectors and regions. The cross-sectional design restricts the ability to establish causality, highlighting the need for longitudinal studies to examine the causal relationships between GHRM practices, green innovation, and sustainable performance over time. Additionally, future research should investigate other potential mediators and moderators, such

as organizational culture, leadership style, or employee engagement, to gain a deeper understanding of the mechanisms driving sustainability. Expanding the scope to include a broader range of other GHRM practices, would provide a more comprehensive understanding of their impact on sustainability. Combining quantitative and qualitative methods could also offer richer insights, allowing for a more nuanced exploration of employee perceptions and experiences with GHRM practices and their effects on sustainability.

Disclosure of interest

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Data availability statement

The corresponding author's data supporting the study's findings are available upon reasonable request.

Author contribution statement

Dua Al Maki: conceptualized, designed, and wrote the first draft of the article, collecting, analyzing, and interpreting data the study's findings have real-world implications for (alqudah, 2023). Nasrudin Baidi: participated in the conception and design, drafted the article, edited it critically for intellectual content, and gave final approval of the version to be published. Both authors agree to be responsible for all aspects of the work.

Ethical considerations

The Ministry of Education in Oman gave written permission for data collection. Therefore, the approval letter reference number is 2823956620. All Ministry of Education campus employees received an online questionnaire via the ministry's online interaction network after gaining permission. Employees were not coerced to participate in this research during data collection. Every study step handled data discreetly and anonymously. Thus, participants' identities and positions were kept private.

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