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The Relationship between Green Human Resource Management Practices and Organizational Citizenship Behavior

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Abstract

In an era of green environmental awareness, Green Human Resources Management (GHRM) uses human resources management practices to support green environmental functions. It embraces green environmental concerns by applying human resources initiatives to generate high performance and better efficiency in operations. Although the literature on GHRM is growing, a few studies investigated to what extent green innovative culture (GIC) moderates the relationship between green human resources management practices and organizational citizenship behavior towards the environment (OCBE). To address this research gap, the authors tested a new conceptual framework investigating the direct and interactive effects of GHRM practices and GIC on OCBE. A quantitative study uses a survey from a 174 convenient sample of employees selected from a manufacturing firm operating in Egypt. The research results revealed that (1) GHRM practices are crucial for encouraging employees to engage in green activities, in addition (2) there is a significant positive effect of GHRM practices on OCBE, while on the other hand, (3) the interaction of GHRM and GIC can foster employees' engagement in OCBE. The research significance lies in identifying and validating the GHRM practices applied in the manufacturing firm, as it advances the previous studies by developing a research model that offers critical insights on how manufacturing organizations working in industrial and agricultural packaging solutions could strategically link their GHRM practices and green innovative culture to support their OCBE in creating a competitive advantage in the market.

Keywords: green innovative culture, green HRM Practices, organizational citizenship behavior towards the environment

1. Introduction

Scholars and practitioners have paid increasing attention to an organization's environmental performance over the last few decades (Sobaih et al., 2020). Governments prioritize environmental concerns as part of their strategies to protect natural resources and meet the United Nations' sustainable development goals (UNSDGs) (Sobaih et al., 2020). It is all about natural environment protection from the harmful effects of pollution, environmental discharges, and wastes while maintaining the overall performance of businesses (Kim et al., 2019; Singh et al., 2020). In line with the 2030 agenda, the Egyptian government has launched an operational plan called Egypt's vision 2030, which is known as sustainable development strategy (SDS) that is strongly guided by the UNSDGs; it revolves around three sustainable development pillars; environment, society, economic development, and protection. This encourages developed and developing countries to pay more attention to sustainable development and environmental challenges. This urges many firms and industries to increase their efforts in creating and implementing green management strategies that embrace more environmentally friendly products and practices (Masri & Jaaron, 2017).

Although the manufacturing sector plays a critical role in the economic growth of developed and developing countries (Marconi et al., 2016), it is considered the primary source of environmental pollution (Rehman et al., 2016). Thus, there is a growing need to adopt more friendly environmental practices to alleviate the sector's environmental impacts. HRM is integrated into the green movement called Green Human Resource Management (GHRM) (Masri & Jaaron, 2017). HRM has a main role in shaping organizational policy, structure, culture, and strategy development (Schuler & E. Jackson, 2014). This is a crucial domain for organizations to survive and

succeed (Malik et al., 2021).

In this light, GHRM can improve green organization performance by recruiting those with environmental sustainability awareness, providing green training to inspire and motivate employees to engage in green activities, and establishing a green performance and reward system (Muisyo & Qin, 2021). Some researchers have examined the influence of GHRM practices on employees' pro-environmental behaviors, termed Organisational Citizenship Behaviour towards the Environment (OCBE), and proved a positive relationship between GHRM practices and OCBE (Anwar et al., 2020). OCBE is considered individual voluntary actions related to depolluting the workplace, implementing waste-reduction solutions, promoting and implementing green technology, and attending environmental conferences to understand better how to manage environmental protection (Anwar et al., 2020; Malik et al., 2021).

Since GHRM alone is not enough to achieve a green competitive advantage for organizations, other organizational contexts might be crucial for developing employees' competencies, motivation, and opportunities for green initiatives (Muisyo & Qin, 2021). The green innovation culture (GIC) is a crucial organizational context for developing innovative products and manufacturing processes that reduce adverse environmental effects (Chen et al., 2006). Green innovation is a growing concept in popularity and has received much attention as the threats of global warming and environmental deterioration offer a major worldwide challenge (Miao et al., 2017). Nevertheless, studies attempting to integrate GIC and GHRM to examine their combined effect on employee environmental behavior are limited. Many authors suggest that studies on green-conscious employees applying green initiatives are incomplete without green innovative culture (Muisyo & Qin, 2021).

To the best of researchers' knowledge, the role of green innovative culture in enhancing the relationship between GHRM and OCBE is under-researched. The following research questions will be addressed to fill the research gap: Which GHRM practices need more emphasis to fulfill OCB towards the environment? What is the interaction effect of GHRM practices and green innovation culture on OCBE? Despite that, there is a growing substantial literature on GHRM in developed countries (Masri & Jaaron, 2017; Renwick et al., 2016), but still, there is uncertainty about its effective implementation in developing countries, where there are more ecological issues, so there is an immense need to focus on environmental problems to contribute towards reducing them (Anwar et al., 2020; Malik et al., 2021). Added to the above many researchers claimed that there are few empirical studies in developing countries, especially in the manufacturing sector (Rehman et al., 2016; Zhan et al., 2018).

Therefore, this research involves two objectives. First, to test the effect of GHRM practices on OCBE. Second, to determine how green innovative culture moderates the relationship between GHRM practices and OCBE in a manufacturing firm operating in Egypt. The paper is organized as follows. First, it starts by explaining the concept of GHRM and how it relates to GIC and OCBE. The research methodology is illustrated, followed by data analysis, results, and discussion. To end with the managerial and theoretical implications, research limitations, and suggestions for further research work.

2. Literature Review and Hypotheses Development

2.1 Green HRM Practices

In an era when environmental management and resource development are more widely recognized and demanded (Cavicchi, 2017). Organizations started to align their environmental priorities with human resource objectives to develop green activities that assist firms in reducing environmental problems (Yong et al., 2020). Here comes the concept of Green Human Resource Management (GHRM), which refers to HRM practices that are linked to the firm environmental strategy and green employee behaviors (Singh et al., 2020). In other words, it is about using HRM policies, procedures, activities, and ideologies to maximize business efficiency and resources in a sustainable manner (Malik et al., 2021). It is claimed that GHRM serves as a platform for connecting HRM practices to the firm's environmental management activities (Masri & Jaaron, 2017). In an attempt to engage employees in green job behavior that minimizes environmental pollution at work (Singh et al., 2020). This means that GHRM includes the strategic fit of organizations' environmental management goals into the HR practices, namely, recruitment and selection, training and development, performance management, rewards, and recognition. Firms that engage in green activities foster productivity and gain a competitive advantage (Malik et al., 2021).

2.2 Organizational Citizenship Behavior towards the Environment

GHRM has a direct and indirect connection to an in-role employee green behavior at the workplace, as per the research finding of (Dumont et al., 2017), in which OCBE represents the employees' willingness to cooperate

with their organizations to implement activities that favor the environmental protection that goes beyond their formal duties (Malik et al., 2021). Collective OCBE represents the synergy of team members' efforts in green initiatives required by the sustainability strategy (Luu, 2019). An organization that fosters an environmentally friendly environment can significantly increase OCBE among employees. As a result, organizational environmental success depends not only on implementing sustainable corporate policies but also on the environmentally friendly behaviors of employees (Malik et al., 2021). OCBE is an employee's voluntary behavior not rewarded by the organization but aimed at enhancing the environment, considered a critical contributor to the firm's sustainability and environmental protection (Dumont et al., 2017). Managers and researchers have begun investigating what factors motivate employees to undertake OCBE. The research results of (Dumont et al., 2017; Malik et al., 2021) revealed a significant effect of GHRM on OCBE. Based on this, the following hypothesis is proposed: Hypothesis (H1): GHRM practices have a positive impact on OCBE

2.3 Green HRM Practices and OCBE

2.3.1 Green Recruitment and Selection (GR&S)

With environmental and sustainable awareness, HR professionals are keen on attracting and retaining workers with green awareness (Tang et al., 2018; Zaid et al., 2018) as an essential part of the green hiring process because if an employee's environmental values align with those of the company, he is more likely to respond positively to the company's environmental concerns (Anwar et al., 2020), the authors added that job seekers prefer to work for organizations with a good environmental reputation and recruiters prefer to hire applicants who have environmental knowledge and a positive attitude toward the environment because they are more likely to participate in eco-initiatives (Anwar et al., 2020). Organizations should reflect their environmental sustainability agenda on their website and other public-facing channels available so that the applicants can view the organization's greening focus (Masri & Jaaron, 2017). This cultivates an environment with a reputation and images based on the notion that the organization is environmentally conscious (Guerci, Montanari, et al., 2016).

Organizations should implement several measures that improve green recruitment and selection. First, job descriptions should encompass elements that focus on environmental reporting by incorporating environmental tasks, responsibilities, and duties into each employee's job (Masri & Jaaron, 2017). Second, interviews should be designed to evaluate whether the applicants are compatible with the organization's greening programs by asking environmental-related questions. To ensure that environmentally committed candidates are selected during the shortlisting process (Masri & Jaaron, 2017). Finally, an induction program for newly hired applicants should provide information about the organizational green goals, policies, and values (Muisyo & Qin, 2021). Therefore, previous research showed that organizational competitiveness is shaped by a set of practices that encompasses hiring green-conscious employees and internalizing unique processes that assess a job candidate's commitment and coherence to the environment (Saeed et al., 2019). This supports the findings of (Malik et al., 2021; Masri & Jaaron, 2017), which revealed a significant effect of GR&S on OCBE. Hence, the following sub-hypothesis is presented: *(H1a): GR&S positively impacts OCBE*

2.3.2 Green Training and Development (GT&D)

Environmental training and development programs are critical for enhancing employees' environment management skills and attitudes (Anwar et al., 2020; Teixeira et al., 2016). Green training (GT) refers to activities designed to help employees better understand the importance of environmental protection, learn basic energy-saving techniques, maximize efficiency, and reduce waste and natural resource consumption (Anwar et al., 2020; Sobaih et al., 2020). Green training facilitates the voluntary activities of employees (Malik et al., 2021) by providing the necessary knowledge that aids in connecting environmental knowledge with environmental behavior to be able to offset the problems pertaining to the environment (Anwar et al., 2020; Muisyo & Qin, 2021). Therefore, training and development plans should include sessions, programs, and workshops about recycling, energy efficiency, green workspace analysis, development of green personal skills, and waste management to enable employees to learn and acquire knowledge about green environmental issues (Renwick et al., 2013). Furthermore, according to (Masri & Jaaron, 2017), employees could participate in environmental problem-solving projects through job rotation principles, including green assignments as an integral part of green career training and development programs. The findings of (Malik et al., 2021; Pellegrini et al., 2018) suggested a positive relationship between GT and OCBE, in which the planning and implementation of an effective and efficient green management system rely on GT that helps employees' practices and exercise green activities. Thus, the following sub-hypothesis is formulated: *(H1b): GT&D positively impacts OCBE*

2.3.3 Green Performance Management (GPM)

It is defined as evaluating an individual's performance in the context of green management practices (Sobaih et

al., 2020). GPM aims to encourage employees to align their behaviors with the organizational environmental green objectives, integrating environmental responsibilities in a performance management system by setting green goals and providing employees with clear information about what is expected to do in environment management (Anwar et al., 2020). Then, using green work rating as a key indicator of job performance to monitor green behaviors and evaluate achievement toward environmental goals (Masri & Jaaron, 2017). During performance appraisals, the HR practitioners engage employees in achieving green targets and brainstorming ideas on how to reduce waste and improve green performance (Muisyo & Qin, 2021) by equipping employees with the necessary knowledge, skills, and ability towards environmental management (Anwar et al., 2020; Malik et al., 2021). On the other hand, an employee who doesn't meet green performance standards faces disbenefits (Sobaih et al., 2020). This was confirmed by (Masri & Jaaron, 2017), who stated that to increase employees' motivation and engagement in green environmental responsibilities, it is crucial to share appraisal results with employees to know how well they are progressing toward environmental goals. An online information system and audits could allow employees to track their green performance and suggest practical ways to make the organization greener (Masri & Jaaron, 2017). The findings of (Anwar et al., 2020; Malik et al., 2021) showed that green performance appraisal and OCBE have a significant relationship. Thus, the following sub-hypothesis is proposed: *(H1c): GPM positively impacts OCBE.*

2.3.4 Green Reward & Compensation Management

Green compensation management (GCM) is the practice of using rewards to hire and motivate employees to work on environmental objectives (Sobaih et al., 2020). green rewards are about developing a financial and non-financial reward system for employees to handle environmental issues (Malik et al., 2021). Within organizations, rewards should be linked to the results of the green performance appraisal system (Masri & Jaaron, 2017). Green reward and compensation systems can be used to promote employees' environmental citizenship behavior by providing various types of benefits such as financial and non-financial benefits, flexible work schedules, telecommuting to reduce travel costs, providing free bicycles, linking promotion opportunities with green performance (Anwar et al., 2020), cash rewards, bonuses (Malik et al., 2021), leaves, gifts, awards, dinners, publicity (Masri & Jaaron, 2017)**.** Moreover, a mix of financial and non-financial rewards is necessary to foster employee engagement in environmental activities (Anwar et al., 2020). These rewards should be used to value and recognize employees who contribute the most to fulfilling environmental goals. At the same time, managers should encourage their subordinates to adopt green practices (Masri & Jaaron, 2017). But for employees whose performances do not align with the green organizational objectives, negative reinforcements or disincentives could be used to push them to become more environmentally conscious (Malik et al., 2021; Tang et al., 2018). According to (Ahmad, 2015; Malik et al., 2021), these incentives can influence OCBE toward the environment at the workplace. This leads to formulating the following sub hypothesis: *(H1d): GCM positively impacts OCBE*

2.4 The Role of Green Innovative Culture in the Relationship between GHRM practices and OCBE

Green innovation refers to the development of environmentally friendly (Green) products and processes through adopting organizational practices such as greener raw materials, reduced water and electricity consumption, using fewer materials during product design, using eco-design principles to minimize emissions (Singh et al., 2020) energy conservation, pollution prevention, and waste recycling (Muisyo & Qin, 2021). If organizations try to solve environmental problems with environmental management solutions without considering organizational green innovation culture, GHRM application might be difficult (Renwick et al., 2013). Previous studies suggested mixed findings on the relationship between HRM and organizational innovation. According to previous research, organizations with a green innovative orientation are highly successful (Albort-Morant et al., 2017). They outperform their competitors by utilizing their green capabilities and resources to respond quickly and appropriately to customers' needs (Allameh, 2018). Other studies suggested that HRM practices positively promote an organizational culture with technological and product innovation orientation (Singh et al., 2020). While (Seeck & Diehl, 2017) discovered in their review of previous studies that HRM has little impact on administrative and process innovation. However, organizations that value and leverage their human talent must implement GHRM practices to attract, motivate, and provide opportunities for green human resources to maximize their potential for green process and product innovation (Singh et al., 2020).

To this end, not much progress can be achieved without employees' support; this led to the conclusion that organizations cannot become green when their employees lack green capabilities and competencies. Therefore, much attention has been paid to GHRM practices encouraging green innovative culture (Muisyo & Qin, 2021). Especially that prior studies revealed that HRM could enhance employees' knowledge, skills, and ability, which promote organizational green product and process innovation (Seeck & Diehl, 2017; Sobaih et al., 2020; Song et al., 2020). Based on this logic, it is suggested that GHRM positively affects green innovation culture. *Hypothesis*

(H2): GIC moderates the relationship between GHRM practices and OCBE.

Green hiring improves the firm's attractiveness in environmental management, as hiring more environmentally conscious employees will engage in more eco-friendly activities (Song et al., 2020). Green organizational innovation is leveraged by suggesting more useful and novel environmental ideas. Hence the following hypothesis is proposed: *(H2a): GIC moderates the relationship between GR&S and OCBE*. On the other hand, green training and development are critical for building a green organizational culture (Muisyo & Qin, 2021). Green training practices can equip employees with the necessary environmental knowledge and skills and provide a promising avenue to enhance their creativity for green innovation, thereby engaging in extra-role activities (Chowhan, 2016). Therefore, the following hypothesis is suggested: (*H2b): GIC moderates the relationship between GT&D and OCBE.*

GPM and GCM practices can aid in aligning employees' behavior with the organizational environmental goals (Guerci; Longoni et al., 2016). However, green innovation is an important aspect of environmental management that directly responds to innovative environmental challenges; green performance management effectively improves employee environmental and innovative involvement and increases their willingness to engage in eco-friendly innovation (Song et al., 2020). Therefore *(H2c) is proposed: GIC moderates the relationship between GPM and OCBE.* In contrast, the green rewarding system supports green innovation and creativity by asking employees to share innovative green ideas concerning their jobs (Masri & Jaaron, 2017). Hence *(H2d) is suggested: GIC moderates the relationship between GCM and OCBE.*

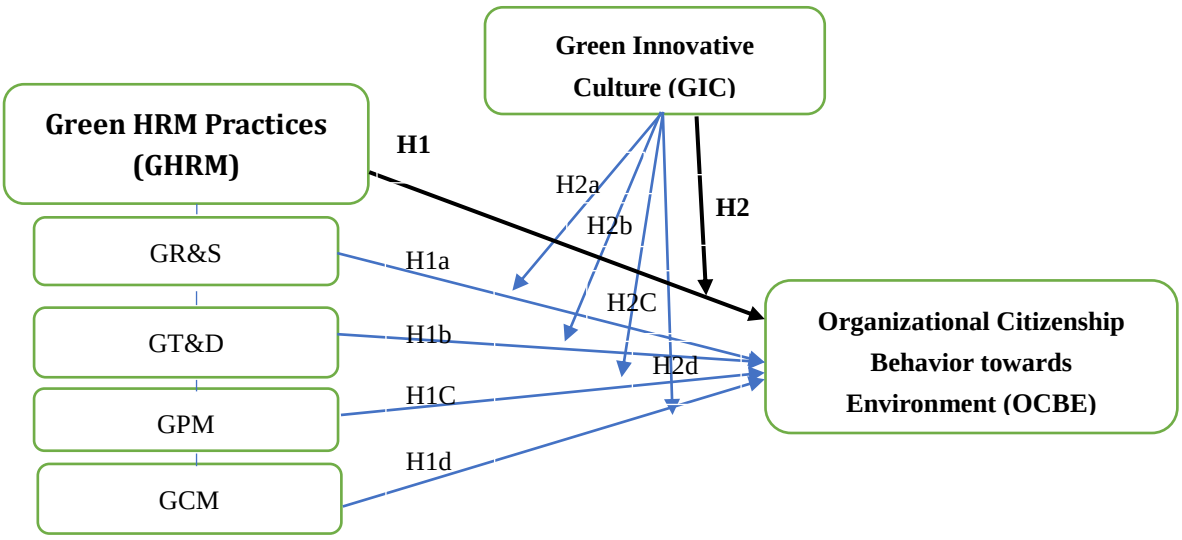

Figure 1. Research Model

3. Method

3.1 Research Design, Data Collection, and Analysis

An online survey instrument was designed using a five-point Likert-type scale to collect data from a non-probability convenient sample of 174 employees working in a leading manufacturing company operating in Egypt. This company was selected because it specializes in supplying a wide range of industrial and agricultural packaging solutions and applying the GHRM practices in its daily operations, which is compatible with this research topic. To assess the research hypotheses, correlation, and regression analysis were employed using SPSS software version 20. The construct of Green HRM practices is formed by four dimensions: GR&S, GT&D, GPM, and GCM, adapted from a (Shah, 2019) study. To measure OCBE, the 10 items scale that (Anwar et al., 2020) developed in their study was used. Seven items were chosen from the (Muisyo & Qin, 2021) study to measure Green Innovative Culture.

4. Results

Table 1. Respondent's profile/ Sample demographics

Items	*Category*	*Frequency*	*Percentage*
Age	20-30	113	65%
	31-40	35	20%
	41-50	26	15%
Gender	Male	151	86%
	Female	23	14%
Education	Undergraduate	16	10%
	Graduate degree	96	60%
	Master degree	38	24%
	Doctoral degree	10	6%
Department	HR	100	57%
	Finance & Accounting	30	17%
	Customer Service	44	26%
Working Experience	Less than 6 years	104	60%
	6-10 years	51	29%
	10-15 years	19	11%

65% of the respondents were aged 20-30, 86% males, and 14% females. The respondent's academic rank was distributed as follows: undergraduate 10%, graduates 60%, master degree 24%, doctoral degree 6%, and 57% of the respondents from the human resource department, followed by 26% from the customer service department, then 17% from finance and accounting, finally 60% with less than 6 years of working experience in the company.

4.1 Descriptive Analysis

Table 2. Pearson correlation test and reliability coefficient results

Variables	*GIC*	*OCBE*	*GR&S*	*GT&D*	*GPM*	*GCM*	*Cronbach's Alpha*
GIC	1						0.787
OCBE	.025	1					0.796
	(.859)						
GR&S	.316	.781	1				0.890
	(.024)	**(.000)**					
GT&D	.327	.845	.680	1			
	(.019)	**(.000)**	**(.000)**				
GPM	.562	.563	.900	.643	1		
	(.007)	**(.007)**	**(.000)**	**(.000)**			
GCM	.587	.519	.909	.608	.979	1	
	(.000)	**(.000)**	**(.000)**	**(.000)**	**(.000)**		

To test the reliability of the measurement scale, GIC was measured using 7 items, where Cronbach's alpha was equal to .787. OCBE was measured using 10 items; Cronbach's alpha was equal to .796. While the GHRM practices scale consisted of 19 items, with Cronbach's alpha equal to .890. Field (2013) indicated that the high-reliability value suggested that the pattern of correlations among items is well above the recommended value of .5. The pearson correlation test revealed a significant positive, strong relationship between GHRM practices and OCBE with correlation coefficient values of .781, .845, .563, .519, respectively, at a significant level less than .05. Second, there is a significant positive, strong relationship between GPM and GCM practices with GIC, with correlation coefficient values of .562 and .587 respectively, but a moderate positive relationship between GR&S and GT&D practices with GIC with a correlation coefficient value of .316 and .327, respectively at a significance level less than .05. Finally, there insignificant relationship between OCBE and GIC, as the P-value is greater than .05. Moreover, From the pattern of correlation, it can be noticed that the convergent and discriminant validity of GHRM practices, OCBE, and GIC based on hetero-trait/mono-trait ratios given by (Henseler et al., *2015)* is established.

4.2 Hypotheses Testing

Since GHRM practices are divided into four practices, therefore, to test the effect of each practice on OCBE, (H1) is divided into four sub-hypotheses as follows:

Table 3. Simple Linear Regression Analysis Results

Model	*β*	*T-test*		*R2*	*F-test statistic*
		Value	p-value		
Constant β0	1.823	2.757	**.008**	.602	260.161
GR&S → OCBE	.781	16.13	.000		(.000)
Constant β0	2.958	4.726	**.000**	.708	417.041
GT&D → OCBE	.845	20.42	.000		(.000)
Constant β0	1.664	3.443	**.001**	.303	74.77
GPM → OCBE	.563	8.65	.000		(.000)
Constant β0	3.154	16.129	**.000**	.254	58.563
GCM → OCBE	.519	7.65	.000		(.000)

Table (3) shows that the adjusted coefficient of determination, which indicates the explanatory power of the regression model, is 0.602, meaning that GR&S explains 60% of the changes in the OCBE. At the same time, the complement ratio is due to other factors. The (F) statistic equals 260.161 with a significant level of less than 0.05, which means that the regression model is significant and valid for testing the relationship in question; accordingly, H1a is accepted. The forecasting regression equation is OCBE=1.823+ 0.781(GR&S) + ε. On the other hand, GT&D explains 70.8% of the changes in the OCBE with (F) statistic equals 417.041 with a significant level less than 0.05, indicating that the regression model is significant and valid for testing the relationship in question; accordingly, H1b is accepted. The forecasting regression equation is OCBE=2.958+0.845 (GH&S) + ε.

As for GPM explains 30.3% of the changes in the OCBE with (F) statistic equals 74.77 with a significant level less than 0.05, which means that the regression model is significant and valid for testing the relationship in question; accordingly, H1c is accepted. The forecasting regression equation is OCBE= 1.664+0.563(GT&D) +ε. Finally, GCM explains 25.4% of the changes in the OCBE with (F) statistic equals 58.563 with a significant level less than 0.05, indicating that the regression model is significant and valid for testing the relationship in question; accordingly, H1d is accepted. The forecasting regression equation is: OCBE= 3.154+ 0.519(GCM)+ε

Second, Multiple Regression analyses are employed to test the moderating effect of GIC on the relationship between each GHRM practice, and OCBE (H2) is divided into four sub-hypotheses, as presented in table (4).

Table 4. Testing the moderation effect of GIC on the relationship between GHRM & OCBE

Model	*β*	*Collinearity Statistics*		*R2*	*F-test (Model Sig. level)*
		Tolerance	VIF		
Constant β0	.259			.755	174.626
GR&S	.676	.678	1.475		(0.000)
GIC	.300	.764	1.309		
GR&S*GIC	.737	.564	1.773		
Constant β0	.062			.798	223.861
GT&D	.804	.345	2.898		(0.000)
GIC	.204	.567	1.764		
GT&D*GIC	.193	.465	2.150		
Constant β0	.080			.447	45.804
GPM	.836	.764	1.309		(0.000)
GIC	.490	.234	4.273		
GPM*GIC	.145	.465	2.151		
Constant β0	.301			.412	39.705
GCM	.382	.234	4.274		(0.000)
GIC	.700	.567	1.764		
GCM*GIC	.559	.423	2.364		

Regression, with interaction terms of independent and moderator variables, is accepted as an appropriate method for moderation analyses (Baron & Kenny, 1986). Table 4 presents the moderating effect of GIC on the relationship between GR&S and OCBE. The interaction term (GR&S*GIC) has a positive and significant effect on OCBE (β= .737; P<0.05). Therefore, H_{2a} is supported. The forecasting regression equation is OCBE*GIC =β0+ β1(GR&S) *β2(GIC) +ε. As for the moderating effect of GIC on the relationship between GT&D and OCBE. It can be observed from the interaction term (GT&D*GIC) has a positive and significant effect on OCBE (β= .193; P<0.05). Thus, H_{2b} is supported. The forecasting regression equation is OCBE*GIC=β0+ β1(GT&D) * β2(GIC)+ε. To test the moderation effect of GIC on the relationship between GPM and OCBE. It can be observed that the interaction term (GPM*GIC) has a positive and significant effect on OCBE (β= .145; P<0.05). Thus, H_{2c} is supported. The forecasting regression equation is OCBE*GIC=β0+ β1(GPM) * β2(GIC)+ε. Finally, to test the moderation effect of GIC on the relationship between GCM and OCBE. The interaction term (GPM*GIC) has a

positive and significant effect on OCBE (β= .559; $P<0.05$). Therefore, H_{2d} is supported. The forecasting regression equation is $OCBE*GIC=\beta0+ \beta1(GCM) * \beta2(GIC)+\varepsilon$. Thus, the data provide sufficient evidence to conclude a moderating effect of GIC.

5. Discussion

A conceptual model was developed by incorporating GHRM practices with GIC to maximize OCBE in the workplace and provide valuable understandings to manufacturing organizations to strategically link GHRM practices and GIC to support their OCBE in creating a competitive edge the Egyptian market. After reviewing the literature on GHRM, four GHRM practices were presented; GR&S, GT&D, GPM, and GCM. Then the effect of GHRM on OCBE was tested, and the analysis revealed a statistically positive impact of the four GHRM practices on OCBE. This confirms the author's results of (Silvester et al., 2019), who stated that GHRM practices are the primary reason behind strengthening OCBE in an organization.

"Green training and development" practice was the important one, with a coefficient value of .845. In contrast, the least one was *"green compensation and reward,"* with a coefficient value of .519. This is consistent with (Malik et al., 2021; Masri & Jaaron, 2017; Yong et al., 2020) findings, which stated that "green training is a main tool for facilitating the transition to a more sustainable society." This is consistent with (Anwar et al., 2020; Teixeira et al., 2016), who stated that environmental training and development programs are critical for enhancing employees' environment management skills and attitudes, which means that employees who are educated and trained on environmental knowledge and policies are inclined more towards pro-environmental behaviors. It is noteworthy that the research results revealed that "green compensation" significantly affects OCBE but with a small magnitude than other GHRM practices, which is in line with (Masri & Jaaron, 2017) and (Anwar et al., 2020; Malik et al., 2021) who showed a significant relationship between green reward and OCBE. But partially contradict (Silvester et al., 2019), who stated that the green reward and compensation are applied to a greater extent than other GHRM practices for raising employees' awareness and involvement.

The second influential practice was *"green recruitment and selection,"* in which the results reveal that green recruitment and selection positively affect OCBE with a coefficient value of .781. This result aligned with the past empirical findings of (Malik et al., 2021), which show that GR&S significantly impact OCBE. This means that GR&S practices implemented by the manufacturing organization demonstrate its desire to hire environmentally conscientious employees, which might help the organization become more competitive. This highlights that HR managers can easily influence recruitment outcomes and procedures by hiring workers who are better prepared to protect organizational environmental values. This is aligned with (Masri & Jaaron, 2017), who claimed that organizations should reflect their environmental sustainability agenda on their website and other public-facing channels available so that the applicants can view the organization's greening focus. The third influential practice at the manufacturing organization was *"green performance management,"* with a coefficient value of .563, where respondents agreed on each employee's presence of individual green targets, goals, and responsibilities. The results suggested that GPM positively impacts OCBE, which was confirmed by (Malik et al., 2021) and (Masri & Jaaron, 2017), who stated that to increase employees' motivation and engagement in green environmental responsibilities, it is crucial to share appraisal results with employees to know how well they are progressing toward environmental goals.

The second hypothesis was developed to examine the interaction effect of GHRM practices and GIC on OCBE. The results revealed that GIC has a positive and significant moderation effect on the relationship between GHRM practices and OCBE. The results confirm the findings of (Muisyo & Qin, 2021), who stated that green innovation is linked to innovative products with environmentally friendly material, packaging, recycling, and eco-labeling. This improves the organizational ability to optimize existing operations, develop new strategies to enhance energy savings, increase waste recycling and prevent pollution. The results show a moderating effect for the GIC on the relationship between GT&D and OCBE. The interaction term of GR&S, GCM, GT&D, and GPM with GIC separately results in a significant and positive coefficient of .737, .559, .193, and .145 on OCBE, respectively. Confirming the argument of (Albort-Morant et al., 2017) and (Allameh, 2018) that organizations with green innovative orientation are highly successful and outperform better than their competitors, as they utilize their green capabilities and resources to respond quickly and appropriately to customers' needs.

According to the research findings, manufacturing organizations that apply GHRM practices must highlight the importance of cultivating an innovative green culture in their products and processes to assist workers in implementing green plans and strategies. The findings support the argument of (Muisyo & Qin, 2021), who claimed that the innovative integration between GHRM and green innovative culture is required to achieve lasting environmental sustainability and improved environmental performance. It also supports the findings of

(Sobaih et al., 2020) that the impact power of the GHRM practices (abilities, motivations, and opportunities) on green innovation and environmental performance are not equivalent. The impacts of green abilities have more power than the impact of green opportunities and motivations on green innovation and environmental performance. This emphasizes the importance of the management's ability to select and recruit the right candidate, only those who share environmental concerns, interests, and design the right environmental training for employees to improve green innovation and environmental performance.

6. Conclusion

The manufacturing industry is one of the main contributors to the economy and towards pollution and environmental issues (Malik et al., 2021). In response to the Egyptian sustainable development strategy (SDS), there should be proper arrangements and solutions to sustain environmental development by implementing green initiatives, which can be done through GHRM practices. This research spotlights the growing concept of "GHRM" as a set of practices that build employee ability, motivation, and enhancement, towards environmental protection to affect their environmental citizenship behaviors. The results proved the positive consequences of GHRM practices and GIC on demonstrating such behavior among the employees operating in a manufacturing firm. It suggested that the better the implementation of GHRM practices, especially green recruitment and selection along with green training and development, the more likely the employees will perform OCBE in the organization. Moreover, the relationship between the research variables is strengthened by the existence of GIC as a moderator. The research provides an integrated framework that could help organizations make effective green decisions regarding their green management strategies and uncover new avenues for future green research. The results support all the research hypotheses and have several theoretical and practical implications.

6.1 Theoretical and Practical Contribution

Theoretically, this research advanced the knowledge of green management as a contemporary global concern. More preciously, it supports previous studies in proving the influence of GHRM on OCBE (Singh et al., 2020). Moreover, few types of research have investigated the linking mechanism between GHRM practices and green innovation in an organization (Albort-Morant et al., 2017; El-Kassar & Singh, 2019; Singh & El-Kassar, 2019; Song et al., 2020). More precisely, using GIC as a moderator contributes to the literature on green management by proposing an integrated framework for examining how organizations can achieve a higher OCBE by integrating GIC and GHRM. To the best of the authors' knowledge, this is the first study to consider innovative green culture as a moderating variable in the relationship between GHRM practices and OCBE. Thus, empirical evidence from the Egyptian perspective regarding GHRM, GIC, and OCBE must be considered. Finally, this study also responded to the call of (Masri & Jaaron, 2017; Song et al., 2020) for further research conducted on manufacturing organizations operating in a developing country; this may necessitate more significant green innovation to address environmental challenges and get a better understanding of how GHRM practices support manufacturing organizations green initiatives to gain a competitive advantage in the markets.

On the practical side, it helps policymakers in the manufacturing sector integrate the organizational environmental management goals with GHRM practices and policies to support and sustain green innovative products and processes and determine which practices are most worthy of investment. Practitioners and managers should communicate the organizational green policies and goals effectively to their employees to help them comprehend their green efforts for deeper environmental engagement to exhibit stronger citizenship behavior to maintain superior organizational performance and beat market rivals. Furthermore, the GHRM model proposed in this research aims to guide manufacturing organizations on how to implement best practices of GHRM that have the most significant impact on the OCBE; applying this model in developing countries can improve organizational cleaner production capabilities required for competing on a national and international level.

6.2 Limitation and Further Study

The existing theoretical and methodological limitations provide new opportunities for future investigation. First, this cross-sectional study collected data at a single point in time. Further research may use a longitudinal research method to examine the changes that happen to employees' environmental citizenship behavior that might change due to the deployment of Green HRM practices over time because it takes time to maximize the influence of GHRM on behavioral change (Anwar et al., 2020) and organizational green innovation (Song et al., 2020). Second, the results of this study are also limited to one manufacturing firm operating in Egypt, limiting their generalizability to the non-manufacturing sector; future research should include other manufacturing firms or sectors such as tourism, higher education, and banking. Furthermore, duplicating this study in a multicultural setting will help design a globally relevant measure for the research variables in the manufacturing sector. Third,

relying solely on quantitative data derived from close-ended questions provides limited insight into respondents' perceptions. Future research could adopt a mixed-method approach to offer more in-depth analysis and reduce the common method biases of a single method. Fourth, this study tested GIC as a moderating variable between GHRM and OCBE. However, GIC is not the only moderating variable that could be included. Future studies should consider other moderating variables, such as green leadership (Singh et al., 2020), and management support (Anwar et al., 2020). Furthermore, only four core GHRM practices were included in this research. Accordingly, other green practices could be considered in future studies, such as green work-life balance, green health and safety, and green retention. Finally, a future comparative study is suggested to test the relationship between GHRM practices and OCBE in public and private organizations.

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