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Using green human resource management practices to achieve green performance: Evidence from Italian manufacturing context

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Abstract

The effect of green human resource management (GHRM) practices on employees' environmental engagement, attitudes, and behaviors is well-known. What is less known is which GHRM practices can have a positive influence on achieving green performance through the mediating role played by people's engagement. To address the research gaps, this study used mixed-method research design. In Phase 1, this study focused on the advanced manufacturing context of Italy by surveying 540 managers to develop a multiple regression model and test six different GHRM practices as the hypotheses. In Phase 2, qualitative data analysis was analyzed. Our findings highlighted that GHRM practices connected with awards and compensations did not affect green performance. Conversely, a correlation was observed between achieving green performance and practices such as training, aligning management with the company's strategic environmental goals and objectives, involving managers in the process of defining the goals and objectives, and the green reputation of the company and the managers who can act as environmentally responsible leaders. This study extends social exchange theory and opens new avenues for further research and proposes several practical suggestions for practitioners.

KEYWORDS
data triangulation, green human resource management, green performance, Italian manufacturing, mixed methods, practices, social exchange theory

1 | INTRODUCTION

Over the last decades, companies have introduced different initiatives to gradually improve their corporate social responsibility (CSR) performance (Liu et al., 2023). CSR initiatives can promote employee engagement, which can be one of the most important endogenous propellants for achieving the goals of these initiatives (Opoku-Dakwa et al., 2018). In this light, employees engaged in pursuing their expectations are extremely relevant for successful implementation of a company's CSR strategies (Molina-Azorin et al., 2021; Mukherji & Bhatnagar, 2022; Yong et al., 2019). The relationship between employee engagement and CSR performance has been studied by several authors (Zhu et al., 2014; Barakat et al. Omer, 2018; Opoku-Dakwa et al., 2018; Miethlich et al., 2022). We already know how CSR initiatives implemented by a company can strengthen the ties between managers and employees by increasing their identification and commitment to the company (Ellemers et al., 2011; Rodrigo & Arenas, 2008).

As regards the environmental management component of CSR, the existing literature on green human resource management (GHRM) has demonstrated how the improvement of environmental performance is often the result of employees' green engagement (Farrukh et al., 2022; Lo et al., 2012; Paillé et al., 2014; Saeed et al., 2019). It is

Abbreviations: CSR, corporate social responsibility; DV, dependent variable; EMAS, eco management and audit scheme; GHRM, green human resource management; IV, independent variable; RQ, research question; Sig., significance; Q, question; VIF, variance inflation factor.

likely that the employees who have developed a certain level of green attitude and have attached themselves to their organization's green performance and strategic goals will be more concerned about environmental issues thus propelling their organization toward new strategies (Gaskell, 2021; Yong et al., 2019).

Although many studies have demonstrated how GHRM practices affect employees' environmental engagement, attitudes, and behaviours, there is still a dearth of studies on how GHRM practices increase green performance through the mediating role played by people's engagement (Aftab & Veneziani, 2023; Graham et al., 2023; Gyensare et al., 2023). It is probable that the companies that have reached a high level of green performance and belong to a developed country (where specific as well as advanced laws and regulations have been issued) are leveraging different kinds of GHRM practices. For such companies, engaging people and managers to reach their environmental goals and objectives could take a very different form.

To contribute to this debate, we attempted to explore which kind of GHRM practices can be used to make managers more engaged in reaching green strategic goals and objectives as well as increase the green performance of companies with advanced levels of environmental implementation. We believe that this can also push companies toward new environmental objectives, leading to a virtuous circle. For this study, we focused specifically on managers. Thus, we aimed to answer the following research question:

> **RQ1.** *What kinds of GHRM practices are companies with a significant green performance involved in to engage the managers for achieving the desired green performance?*

To the aim, we surveyed a sample of Italian manufacturing companies and evaluated the hypotheses derived from a literature review by using a multiple regression model. Italy has very strict legislation for environmental management and advanced standards, which is mainly derived from European directives (WWF, 2019). In general, this legislation has improved the industry's environmental performance significantly. Moreover, according to the latest International Organization for Standardization (ISO) survey, Italy ranks first in the world in terms of the number of issued ISO 14001 certificates, with more than 13,000 certified organizations, mostly in the manufacturing sector. Further, Italy is the second highest-ranking country in Europe after Germany in terms of the number of EMAS-registered companies (1078 registrations) and the highest-ranking in terms of the number of registered sites (4186). The second leading sector in terms of EMAS registrations is the manufacturing of fabricated metal products, along with the manufacture of chemicals (European Commission, 2022). Therefore, it can be assumed that Italy has all the necessary characteristics as a country to find companies with an advanced level of environmental management performance; consequently, it also has the characteristics needed to identify the relevant GHRM practices and management involvement.

The contribution of the present study is twofold. First, it explored the relationship between managers' engagement through GHRM practices, green performance, and environmental objectives in an advanced context using social exchange theory as a theoretical lens. Second, the results provide practical insights for managers and companies to improve their environmental objectives through GHRM practices. Thus, our findings surely contribute to the ongoing development of GHRM theories and green strategies.

The rest of the sections are organized as follows. Section 2 presents theoretical underpinning and hypothesis development. Section 3 presents the methods followed by results in Section 4. Section 5 provide a discussion of findings and final section presents concluding remarks.

2 | THEORETICAL UNDERPINNING AND HYPOTHESES DEVELOPMENT

2.1 | Background theory

The impact of green human resource management (GHRM) practices on employee environmental engagement can be explained by social exchange theory. This theory states that employees who adopt environmentally friendly practices view these efforts as an investment in their well-being, which leads to reciprocity. This fosters a sense of commitment among employees to make a positive contribution through environmentally friendly behaviors. GHRM practices improve job satisfaction, engagement, and pro-environmental behaviors as employees reciprocate the organization's efforts. In essence, social exchange theory explains how GHRM practices create a reciprocal relationship between the organization and its employees, leading to greater environmental commitment.

2.2 | Hypotheses development

The existing literature lacks studies dedicated to GHRM practices and their direct influence on employees' and managers' involvement in increasing green performance, especially in advanced environmental contexts. Several studies have analyzed human resource practices and principles in the context of environmental management; however, according to Jackson et al. (2011) and Mukherji and Bhatnagar (2022), the area of GHRM has been sparsely investigated as well as the mechanisms though which GHRM influences green performance are not well understood (Yuan et al., 2023).

Yong et al. (2020) highlighted how GHRM practices help companies align their business strategies with the environment and have a positive impact on the different aspects of employees' attitudes toward the environment. In this light, GHRM is primarily studied as a vehicle for supporting pro-environmental company management (Bombiak & Marciniuk-Kluska, 2018; Chaudhary, 2020; Molina-Azorin et al., 2021; Yong et al., 2019; Yong et al., 2020). GHRM studies have been carried out as comparative case studies in subsidiaries in the UK, Germany, and Sweden (Haddock-Millar et al., 2016), manufacturing firms in China (Tang et al., 2018) and Malaysia (Yong et al., 2020), and hotels in Thailand (Kim et al., 2019). In essence, the results of all these studies pointed toward a more or less positive effect of GHRM on the

managers' and employees' engagement, eco-friendly behaviours, and company green performance. An interesting study by Pucker (2021) foregrounded certain clues for our analysis of the literature. The author observed a specific contradiction related to companies presenting themselves as advanced in terms of environmental performance and transparency. According to Pucker (2021), the number of companies that formally reported their CSR initiatives increased by 100 times in the past two decades, while socially responsible investments grew to over 30 trillion dollars. Despite this, over the same time span, carbon emissions continued to rise, accelerating their environmental impact. The author claimed that the focus on reporting their initiatives could have distracted companies from the real need for implementing changes related to CSR and environmental issues. Quoting the findings of Puker, Gaskell (2021) highlighted how employees, as a consequence, are now demanding more in terms of sustainability, and the COVID-19 pandemic has even increased the employees' desire to align themselves with their employers' objectives. From this perspective, Opoku-Dakwa et al. (2018) positioned employees as potential agents of social change and demonstrated how employees direct their efforts toward CSR initiatives when they expect these initiatives to have a significant impact on the stakeholders, which include the employers and the employees themselves. The same study also highlighted how employee engagement is positive when the anticipated impact is commensurate with the employees' personal needs and expectations. Torugsa et al. (2012) and Chen et al. (2015) studied the so-called green shared vision between companies and employees, which is a clear and common strategic direction for achieving collective environmental goals and aspirations that have been internalized by the employees (Chen et al., 2015). claimed how CEO's environmental belief has a strong relationship with the use of GHRM which in turn affects employee commitment to green firm performance. Thus, through this review of literature, we derived the following hypotheses:

H1. Green performance is positively affected when the employer's environmental objectives and goals are aligned with those of the managers (ALIGNED).

H2. Green performance is positively affected when the employer involves the management in defining its environmental objectives and goals (INVOLVED). Here, the terms within brackets are the operationalized variables used in the ensuing multiple regression model as independent variables.

Previous authors have highlighted the importance of different aspects of GHRM. Renwick et al. (2013) were among the first to study how companies are not using the full range of GHRM practices to involve employees in environmental management. By using the ability-motivation-opportunity theory, the authors identified other key GHRM areas that could have an impact on environmental outcomes. Among these practices, surely the environmental reputation of the company is worth of investigation. studied the effects of social performance on organizational reputation while Helm (2013) highlighted how perceived external reputation can affect pride in membership and job satisfaction. According to Renwick et al. (2013), employees, especially the ones with high levels of skill and education, believe that the environmental reputation of a company is a fundamental appeal to creating positive bonds with the company, starting with the initial moment of recruitment. These results were initially confirmed by Bansal and Roth (2000), who conducted a comparative interview with 88 employees among 53 companies in the UK and Japan to confirm how employees gain more satisfaction by working in firms with a better environmental reputation. Walsh and Sulkowski (2009) directly tested the hypothesis that employee satisfaction and engagement are positively impacted when a company is perceived by external stakeholders to be performing well environmentally. Further, Dangelico (2015) discussed how employees' involvement and the creation of green teams have a positive impact on company reputation. In this manner, a company can create a positive loop where its good green reputation positively affects managers' engagement, and, in turn, the management becomes more dedicated to increasing green performance. Pham et al. (2019b), who carried out a comprehensive literature review of 74 GHRM studies, claimed that green reputation represents an attractive phenomenon for employees connected with the level of green management maturity of the company and did not emerge as popular until recently (Pham et al., 2019). From this literature review, we developed the following third hypothesis:

H3. Green performance is positively affected when managers believe that the company has a good environmental reputation (REPUTATION).

Green performance appears to also be connected with the environmental training that the managers are receiving. In the existing literature, we found several studies that either directly or indirectly explored this relationship. Singh et al. (2019) demonstrated how environmental training mediates the relationships between environmental ethics and environmental performance, whereas Yafi et al. (2021) demonstrated how green training, directly and indirectly, impacts green performance. Moreover, studies from Jabbour et al. (2010), Daily et al. (2012), and Pham et al. (2019b) showed how green training improves environmental awareness and skills, thereby motivating employees' behaviors even to a greener engagement outside the company. Green training allows employees to acquire certain skills, which help them focus on environmental improvements to meet the company's green objectives (Gupta, 2018; Jabbour, 2011; Tang et al., 2018). This phenomenon was also studied in connection with the development of the so-called "green intellectual capital" and "green innovation" (Asiaei et al., 2023). Similarly, Astakhova and Porter (2015) and Sabokro et al. (2021) claimed that GHRM practices, including environmental training, raise the green passion and environmental self-identification of the employees. However, Masri and Jaaron (2017), who investigated the Palestinian manufacturing context, found that green training is the least influential practice for environmental performance. Pham et al. (2019a), in their literature review

focusing on GHRM, recommended further studies to explore the effects of environmental training as a GHRM practice on job performance and company outcomes. Indeed, according to the authors, there is a dearth of studies dedicated to the subject. Thus, we formulated the following fourth hypothesis:

> **H4.** Green performance is positively affected when the managers receive environmental training from the employer (TRAINING).

Green pay and compensation are practices of involving employees in efforts toward the environmental goals and objectives of the company (Gupta, 2018) by keeping the employees motivated and aligned with the direction of green initiatives (Renwick et al., 2013). It is well-known that companies usually define their compensation policies to increase employee engagement and company performance (Burhanudin & Tambun, 2021; Crespi Vallbona & Mascarilla i Miró, 2018; Islam et al., 2012; Jeet & Sayeeduzzafar, 2014). Arulrajah et al. (2015), through a case study conducted in Sri Lanka, determined how environmental reward management can lead to the improvement of a company's green performance. Similarly, Leszczynska (2016) discussed how rewards and recognition such as awards have a positive impact on managers' engagement toward generating eco-initiatives. also demonstrated how ISO-14001-certified companies that use proper awards have a significant impact on employees' green behaviors as well as their environmental performance. On the contrary, Khan and Khan (2022) demonstrated how employees' behaviors toward environment are characterized as non-recognized or rewarded behaviors. They concluded that financial incentives and awards are not always effective in changing employees' green behaviors. Further, Masri and Jaaron (2017) also demonstrated a positive relationship between reward and compensation practices and the green performance of Palestinian companies, even if the relationship was not considered as strong as those with other GHRM practices. These findings from the existing literature led us to the following fifth hypothesis:

> **H5.** Green performance is positively affected when the managers receive compensations and awards connected to environmental performance (COMPENSATION).

Finally, we identified another interesting clue that led us to our sixth and final hypothesis. Several authors discussed the concept of green leadership and its influence on environmental management and CSR performance. Maak and Pless (2006) were among the first authors to theorize the conceptualization of responsible leadership as the integration of CSR elements into traditional leadership roles. Responsible leaders act by setting examples for other employees and promoting sustainable development. Some authors have presented this kind of leader as connected with green performance and environmental behaviours (Afsar et al., 2020; Doh et al., 2011; Wang et al., 2015). Hence, it is expected that there would be a positive relationship between being a responsible environmental leader and the green performance of the company. The sixth hypothesis is as follows:

> **H6.** Green performance is positively affected when the managers act as environmentally responsible leaders within their companies (LEADER).

3 | METHODOLOGY

3.1 | Research method

Mixed methods research involves the integration of quantitative and qualitative methods to investigate a research problem. By incorporating both numerical and textual data collection and analysis, researchers can leverage the advantages of each approach and overcome their individual limitations.

In a mixed methods study, researchers employ diverse techniques such as surveys, interviews, observations, or document analysis to gather data. This data encompasses both quantitative information and qualitative information. Subsequently, the collected data is integrated and analyzed to draw comprehensive conclusions and interpretations.

3.2 | Data collection

The first step of this study was to select the companies with similar characteristics. In order to avoid introducing any bias, the companies were selected based on the following inclusion criteria:

- All the companies should have been ISO-14001-certified for over 10 years. An ISO-14001-certified company should be regarded as a company with more advanced environmental performance (Johnstone & Hallberg, 2020).
- The companies should not belong to sectors with high environmental impact. As a result, we ruled out several companies belonging to the chemical sector, refineries, steelworks, and other energy-intensive businesses, along with some companies belonging to the food industry that are highly water-exploitative. This is because we did not want the managers of these companies to be affected by biases with regard to specific companies' environmental initiatives.
- The companies should have at least 50 employees. This is because micro and small-sized companies usually have either a reduced management structure or no management structure at all. Besides, some authors reported that large companies incorporate their CSR actions into HRM practices to a different extent (Barrena-Martinez et al., 2018).

Thus, we acquired a dataset of 6503 manufacturing companies from a specialized database provider and ruled out 412 of them based on these criteria. Over a period of 17 months, we sent out an online questionnaire to the selected 6091 companies via email thrice. In the end, we collected 540 responses from 244 different companies. We had sent the link to the online questionnaire primarily to environmental managers or managers belonging to the production department

who oversaw environmental processes. Sixty-seven respondents out of 540 (12%) belonged to a specific CSR or environmental department within the production department. Table 1 presents the number of companies divided by sector.

By collecting data from managers in different sectors we aimed to obtain variance in GHRM practices and managers' engagement. The manager sample in this research consisted of 59.3% males and 40.7% females. 47.0% had a PhD or a Master's degree, 22.9 a Bachelor's degree, and 30.1 a High School diploma.

A multiple linear regression model was chosen to explore the linking of the variables because multiple regressions extend a simple regression by including multiple explanatory independent variables (IVs), which can be continuous, categorical, or both. First, the 540 managers were asked to rate their companies' level of achievement in terms of their green performance goals through the outcome dependent variable (DV) "ACHIEVED," which could vary from 0 to 100. We chose a percentage scale because it was more convenient and familiar to our respondents. It is known how changing the scale of the variable will lead to a corresponding change in the coefficients and standard errors, but no change in the significance of correlation (Frost, 2019). To that aim, we posed the following opening question on the first page of the online questionnaire:

"Think about the green performance objectives and goals of your company. On a scale of 0 to 100, to what extent do you consider them achieved by your company using GHRM practices?"

On the same page, we briefly explained to the managers what we meant by GHRM practices, including the ones connected with our study. Thus, we clarified how we were only focusing on the impact of GHRM practices by excluding other environmental initiatives and investments. By using a multiple linear regression model, the DV "ACHIEVED" could be correlated with the six IVs or predictors that were derived from the previously stated six hypotheses. Like the opening question for the DV, for each of the six hypotheses, we asked the managers to rate their answers between 0 and 100. For instance, from the literature review, we found that the first hypothesis is that green performance is positively affected when the employer's environmental objectives and goals are aligned with those of the managers. Therefore, to operationalize such a hypothesis, we stated the first question, Q_1, of the questionnaire in this way:

TABLE 1 The number of companies per sector.

Sector	Number of companies
Automotive components	45
Mechanical machining	40
Plastic molding	37
Electronic components and systems	37
Automatic machine	29
Rubber molding	26
Wooden products	21
Fashion products	5
Mechanical assembly	4
Total	244

- Q_1: "Think about the environmental objectives and goals of your company. On a scale of 0 to 100, how much do you consider them aligned with your proposed objectives and goals? (If you did not propose any objective/goal, please assign 0.)"

In the same manner, we stated the following five questions of the questionnaire:

- Q_2: "Think about how your company defines its environmental objectives and goals. On a scale of 0 to 100, how involved do you consider yourself in this process?"
- Q_3: "Think about your company and its environmental reputation. On a scale of 0 to 100, how much do you consider this affects your engagement with green performance?"
- Q_4: "Think about the environmental training you receive from your employer. On a scale of 0 to 100, how much do you consider this affects the achievement of green performance?"
- Q_5: "Think about the compensations and awards connected with reaching the environmental objectives that you receive from your employer. On a scale of 0 to 100, how much do you consider this affects the achievement of green performance?"
- Q_6: "Think about when you act as an environmentally responsible leader (i.e., in charge/responsible for significant environmental plans and initiatives) within your company. On a scale of 0 to 100, how much do you consider this affects the achievement of green performance?"

Considering all these 6 IVs, the multiple regression equation to be fitted is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

$$\begin{aligned}\text{ACHIEVED} = {} & \beta_0 + \beta_1(\text{ALIGNED}) + \beta_2(\text{INVOLVED}) \\ & + \beta_3(\text{REPUTATION}) + \beta_4(\text{TRAINING}) \\ & + \beta_5(\text{COMPENSATION}) + \beta_6(\text{LEADER}) + \varepsilon\end{aligned}$$

where each IV is multiplied by a coefficient β_i and a constant coefficient β_0; ε is the error term that is added for considering the inaccuracy of the model. The error term is known as the residual.

For each of the six hypotheses derived from the literature review, the null hypothesis was that there is no association between the DV "ACHIEVED" and the IVs that affect the DV. Naturally, the alternative hypothesis is that there is an association.

The next section discusses the quantitative results of the model and the testing of the hypotheses. The analysis of the results was aided by notes left by the managers at the end of each question.

4 | QUANTITATIVE RESULTS

Using the 540 "ACHIEVED" outcomes, a dataset containing the correlated IV values was created. Initially, we conducted a test for the common method bias. Method biases are a problem because they are the

main sources of measurement error and, therefore, can threaten the validity of the conclusions about the relationships (Podsakoff et al., 2003). The potential sources of common method biases are the respondents' propensity for trying to maintain consistency in their responses to questions, their propensity for agreeing (or disagreeing) with questionnaire items independent of their content, and the use of a common scale format (Podsakoff et al., 2003). The test was conducted through a factor analysis. Table 2 presents the results of this test.

The eigenvalue in the second total column is a measure of how much of the variance of the variables a factor can explain. More importantly, the percentage of variance in the third column shows that the first factor accounted for less than 50%, meaning that the common method bias did not affect the results.

A second relevant test is the one concerning normality. Multiple linear regressions do not have to break the fundamental rule that the outcome or DV must be normally distributed. First, we analyzed the frequency distribution of the results of the DV "ACHIEVED," while also calculating its mean and standard deviation. Table 3 presents the frequencies of the outcome for each class interval of 10, along with their percentages and the cumulative percentage.

At first glance, Table 3 demonstrates how only four managers (0.7%) believed that GHRM practices had a very poor or null (from 0 to 10) impact on their companies' green performance. The mean was found to be 60.26, and 204 out of the 540 respondents were assigned a value between 55 and 65. From Figure 1, we can also observe how the distribution resembles a normal one. To ensure greater certainty, we performed the Shapiro–Wilk test, which is more suitable when $n < 2000$ (Yap & Sim, 2011).

When the p value (Sig.) was greater than 0.05, as in the results presented in Table 4, we assumed a normal distribution.

As Table 5 shows, the R square estimated the fit of the linear regression and was the proportion of variance in the DV that could be explained by the IVs. It increased as the number of predictors was included. Adjusted R square corrected this overestimation. A value of 1 indicates a model that perfectly predicts the values of the outcome, whereas a value that is less than or equal to 0 indicates a model that has no predictive value. From our value of 0.608, we can affirm that our IVs explained 60.8% of the variability of our DV.

TABLE 2 Common method bias test.

	Initial eigenvalues		
Component	Total	% of variance	Cumulative %
1	2.781	39.723	39.723
2	1.507	21.529	61.252
3	0.860	12.291	73.543
4	0.680	9.718	83.261
5	0.491	7.008	90.269
6	0.407	5.818	96.087
7	0.274	3.913	100.000

As Table 6 shows, we performed an ANOVA test where the F-ratio demonstrated whether our model was a better fit than a model with no IVs. In this case, p (Sig.) < .0005; therefore, we rejected the null hypothesis that the model with no IVs fits the data as well as our model.

As the first column of Table 7 shows, the coefficient β_i and the constant coefficient β_0 were calculated in the final analysis. The SPSS software presented the unstandardized coefficients that provided the real amount of change in the DV. Table 7 also presents how multicollinearity was evaluated. This happens when the IVs are correlated with each other. In this case, a change in one IV caused a change in another, and the model created an overfitting problem, rendering some IVs insignificant (Daoud, 2017). Further, we used the variance inflation factor (VIF) for each IV. VIF is a measure of collinearity that starts at 1 and has no upper limit. According to Daoud (2017), a value of 1 indicates that there is no correlation between a given predictor variable and any other predictor variables in the model, a value between 1 and 5 indicates a moderate correlation, and a value greater than 5 indicates that some IVs are potentially highly correlated. By observing the last column of Table 7, we can affirm no significant multicollinearity. More importantly, in the fourth column of Table 7, Sig., which reports the p values of the t-test run for each coefficient, the p value of "COMPENSATION" was the only one that was found to be greater than 0.05. The null hypothesis related to "COMPENSATION" was accepted, and no association between "COMPENSATION" and "ACHIEVED" was observed. In the end, the multiple regression equation was formulated as follows:

$$\begin{aligned}\text{ACHIEVED} = {} & 5.236 + 0.070(\text{ALIGNED}) + 0.267(\text{INVOLVED}) \\ & + 0.283(\text{REPUTATION}) + 0.043(\text{TRAINING}) \\ & + 0.283(\text{LEADER})\end{aligned}$$

5 | DISCUSSION

First, we analyzed the findings presented in Table 2 and Figure 1. We began this study with a question posed to the respondents regarding the extent to which they considered their companies' green performance objectives and goals to be achieved using GHRM practices. With the mean of the outcome being 60.26, we can conclude that, in our sample of companies, GHRM practices contributed to nearly 60% of green performance, whereas the remaining 39.74% could be related to other factors, such as investments in technology. This is the reason that we ruled out the companies with high environmental impact from our sample.

We combined the quantitative results and the qualitative notes left by the managers who responded to the questionnaire. At the end of each item in the online questionnaire, we left a text field inviting the respondents to offer their suggestions and comments regarding the questions. This was done because qualitative data analysis can help in structuring and explaining quantitative data by providing

TABLE 3 Frequency distribution of the outcome "ACHIEVED".

		Frequency	Percent	Valid percent	Cumulative
Valid	10	4	0.7	0.7	0.7
	15	4	0.7	0.7	1.5
	20	12	2.2	2.2	3.7
	25	12	2.2	2.2	5.9
	30	20	3.7	3.7	9.6
	35	20	3.7	3.7	13.3
	40	24	4.4	4.4	17.8
	45	36	6.7	6.7	24.4
	50	32	5.9	5.9	30.4
	55	44	8.1	8.1	38.5
	60	60	11.1	11.1	49.6
	65	100	18.5	18.5	68.1
	70	44	8.1	8.1	76.3
	75	28	5.2	5.2	81.5
	80	28	5.2	5.2	86.7
	85	24	4.4	4.4	91.1
	90	28	5.2	5.2	96.3
	95	16	3.0	3.0	99.3
	100	4	0.7	0.7	100.0
	Total	540	100.0	100.0	

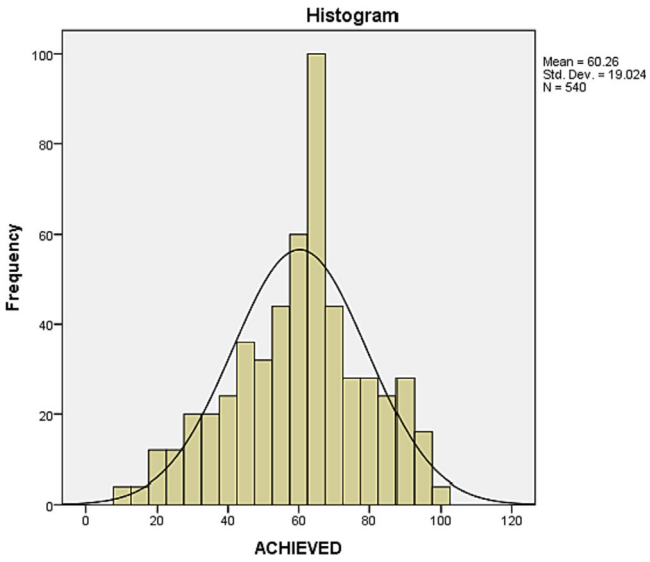

FIGURE 1 Histogram with normal curve overlay (ACHIEVED).

TABLE 4 Tests of normality.

	Kolmogorov–Smirnov[a]			Shapiro–Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ACHIEVED	0.109	540	.074	0.977	540	0.090

[a]Lilliefors significance correction.

information that is not easy to obtain through a quantitative model. Each question and its associated hypothesis are discussed below.

5.1 | Managers' alignment with environmental objectives and goals

The quantitative results presented in Table 7 demonstrate how the more the managers are aligned with the environmental objectives and goals of the employer, the higher the green performance owing to GHRM practices. By going over the qualitative notes left by the interviewed managers, we found 39 comments that emphasized this concept in similar terms. For example, the following comment is among the most significant:

> "Every year, the board of directors of our company sets company objectives in terms of environmental and health and safety management. The process is usually managed by means of questionnaires in order to align these strategic goals with our opinion. I am very satisfied of this process and it gives me a better engagement and motivation to carry out all the actions to achieve green company objectives."

According to the previous studies (Opoku-Dakwa et al., 2018), managers seem to confirm that this has a positive influence on their engagement as it positions them as potential agents of environmental

TABLE 5 Model summary.

Model	*R*	*R* Square	Adjusted *R* Square	Std. error of the estimate
1	0.782[a]	0.612	0.608	11.915

[a]Predictors: (Constant), LEADER, COMPENSATION, TRAINING, REPUTATION, ALIGNED, and INVOLVED.

TABLE 6 ANOVA test.

Model		Sum of squares	df	Mean square	*F*	Sig.
1	Regression	119394.158	6	19899.026	140.164	.000[a]
	Residual	75669.546	533	141.969		
	Total	195063.704	539			

Note: Dependent Variable: ACHIEVED.
[a]Predictors: (Constant), LEADER, COMPENSATION, TRAINING, REPUTATION, ALIGNED, and INVOLVED.

TABLE 7 Coefficients and collinearity test.

		Unstandardized coefficients				Collinearity statistics	
Model		*B*	Std. error	*t*	Sig.	Tolerance	VIF
1	(Constant)	5.236	2.333	2.244	.025		
	ALIGNED	0.070	0.025	2.788	.005	0.725	1.379
	INVOLVED	0.267	0.031	8.544	.000	0.610	1.639
	REPUTATION	0.283	0.032	8.776	.000	0.633	1.580
	TRAINING	0.043	0.015	2.824	.005	0.886	1.128
	COMPENSATION	0.008	0.027	0.317	.751	0.744	1.344
	LEADER	0.283	0.023	12.533	.000	0.779	1.284

change. We also noticed that of the 39 comments, 16 came from managers belonging to CSR department. This is relevant, considering that managers from the CSR department represent just the 12% of the total. Probably this kind of respondent is the most interested in this issue. The following comment made by one of the CSR managers is particularly suggestive of this:

> "Yes, I feel aligned with the environmental goals of my employer, and it is not so taken for granted in all companies. I think it is fundamental if you want to be really engaged in all the sustainability initiatives of your company. Last year, for instance, I proposed two new investments to reduce energy consumptions and new environmental indicators for the shop floor; I proposed the initiatives because I know that the top management pays attention to my suggestions."

The phenomenon has been studied in the field of strategic management, where alignment or consensus is obtained when there is a certain level of agreement between the top managers and the other managers. Previous authors have demonstrated how alignment in developing strategies leads to alignment in implementation, that is, adjusting processes, decisions, allocation of resources, and organizational culture (Joshi et al., 2003).

Out of the negative comments left by the respondents, we highlighted 28 statements confirming that when there is no such alignment, the managers tend to be less engaged in terms of green expectations, which could have a negative effect on the entire process of achieving environmental performance. The following comment left by a manager refers to such an instance:

> "It is so frustrating when you discuss with your director about environmental goals and how to achieve them and you receive a completely different answer. I proposed, for instance, to publish a specific sustainability report for our stakeholders but it fell upon deaf ears. No one cares about it according to my director. Unfortunately, in our board of directors they specialize in finance and sales, they know a little about environmental management and what really our stakeholders want from us in terms of green performance."

It can be argued that aligning the company's environmental objectives and goals with those of the environmental managers has a threefold positive impact on green performance. One of the impacts concerns a possible improvement in the manager's motivation when they have to reach a determined goal, which can lead to an alignment of the implementation process through the different levels. Besides, the company can use the expertise of dedicated managers, such as the environmental manager. The comments left by these managers lead us to the discussion of the second hypothesis.

5.2 | Involving managers in defining the environmental objectives and goals

The quantitative results presented in Table 7 demonstrate the statistically significant correlation between the variable "INVOLVED" and the outcome "ACHIEVED." Further, the coefficient was equal to 0.267, which is the second highest after 0.283 (related to "REPUTATION" and "LEADER").

Previous studies proposed a strategic process called "green shared vision" (Chen et al., 2015). We observed 17 notes left by the respondents, six out 17 from the CSR managers, that pointed in this direction. For instance, a manager commented:

> "Every year we participate in what we call yearly management review, where each manager brings his/her objectives for the next year. I am one who has to bring and discuss green objectives collected from our stakeholders and I feel particularly satisfied with it. Over the years this has developed a sense of trust between the company and me. Believe me, in this way in the last five years we have achieved the most important environmental performance ever."

Meanwhile, the following significant comment was left by another manager:

> "Being involved in setting green goals is key for the company as a whole. Indeed, I am the manager who has to collect all the needs and suggestions from the other employees and stakeholders, make an initial selection, and propose them to the CEO. It really works."

It is interesting to focus on the process carried out by this company where, initially, the manager appointed for setting the environmental goals collects suggestions from their subordinates. Later, out of these suggestions, the manager selects the most appropriate ones to discuss with the CEO. According to Chen et al. (2015), the green shared vision is a clear and common strategic direction for achieving collective environmental goals and aspirations that have been internalized by the employees. These statements are in line with those of other authors who demonstrated the positive effect of GHRM on employee engagement and company's environmental performance (Haddock-Millar et al., 2016; Tang et al., 2018; Yong et al., 2020). This phenomenon was studied by Renwick et al. (2013), who emphasized how it is essential to win the "hearts and minds" of the employees by keeping them engaged in environmental initiatives. This encourages them to offer suggestions and become engaged in environmental performance improvements.

5.3 | Working in a company that benefitted from a good environmental reputation

Green performance also appears to be affected when managers work in a company that has a good environmental reputation. In relation to this, Table 7 presents the highest coefficient of .283 and a p value that is approximately equal to zero. Once more, we found some relevant hints by observing the notes left by the managers. The following comment concerns the attractiveness of such a company from the perspective of a manager:

> "I was looking for a new job as environmental manager and I ruled out all the companies with had in the past serious environmental incidents and were suspected of green washing. I think that working in these companies could damage your future career and also you cannot be of any help in increasing their environmental performance."

The words of this manager can be connected to the results of some previous studies (Pham et al., 2019; Renwick et al., 2013) that demonstrated how the environmental reputation of a company has a positive impact on employees from the initial moment of recruitment. From the very beginning, a company can rely on the best-motivated managers for environmental management.

As regards managers' green engagement, we found 23 notes (of which four from the CSR department) in which the respondents expressed their fulfilment in correlation with their companies' good reputation and the consequent positive engagement. For instance, one of the managers wrote:

> "I am very satisfied and gratified by working in my company. They have a great green reputation recognised by customers, suppliers and the community as well. In such an environment you feel proud and excellent, and you are stimulated to keep on improving environmental company performance. You want to be always amongst the green first in class."

This confirms the findings of Walsh and Sulkowski (2009), who claimed that employees are more satisfied and engaged in working for companies with a better environmental reputation. Further, this opens up an interesting debate regarding the possibility of a positive interaction between green reputation and environmental performance and vice versa, where one of the most important agents is people's satisfaction and the consequent engagement. According to Astakhova and Porter (2015) as well as Sabokro et al. (2021), GHRM practices raise green passion and self-identification among employees, and GHRM practices in the context of good reputation are probably more valuable.

5.4 | Managers receiving training in environmental management

As Table 7 shows, there is a correlation between training and green performance, even if it is not as strong as the correlation between the other factors. This is also evident from the notes left by the respondents. One of the respondents wrote:

> "We provide on average 24 hours of environmental training each year for every employee. I, as a manager, attend several courses especially on new legislation and European directives. This encounters my expectations, but principally has allowed me to grow in terms of expertise and consequently we are improving our green performance."

In the remaining 20 notes, 5 of which were from the CSR department, we found similar clues that emphasized the link between providing green training, especially pertaining to laws and regulations, and increasing green performance. The following negative comment left suggests that the respondent was not fulfilled with their green expectations in relation to the training:

> "Our senior managers believe that environmental goals and performance are just a matter of technological investments. This is in part true, but what about all the environmental practices like competencies, training and awareness? I am in charge of reducing environmental impacts and I do not receive the training I might require for my job. How can I identify, measure and improve impacts without knowing them?"

The positive impact of training on green performance, whether direct or indirect, was demonstrated by several authors, such as Daily et al. (2012), Jabbour et al. (2010), Pham et al. (2019b), Singh et al. (2019), and Yafi et al. (2021). However, our findings are consistent with those of Masri and Jaaron (2017), who presented training as the least influential GHRM practice for improving green performance. As can be seen from Table 7, the *B* coefficient for "TRAINING" was the lowest, being equal to 0.043. As a consequence, there appears to be a bit of a contradiction in the findings. On the one hand, the managers recognize the importance of training for achieving green performance, but on the other hand, the quantitative results demonstrated that training is less influential in this regard. The following comment left by a manager brings more context to this alleged contradiction:

> "In an advanced context like Italy, where training related to environmental, health and safety management is often required by several laws and regulations, I think green training is taken for granted. To better affect green performance, it is much more important your personal attitude and engagement. You have to believe in green, acting and coherently behaving every day. You could receive tons of training but your attitude is everything."

In a way, this respondent confirmed the importance of green attitude and engagement, although they think that green attitude and engagement are more linked to factors other than training. Jackson et al. (2011) argued that training on regulatory standards and training to raise awareness of the organizations' green goals are both important for companies that want to change their corporate culture. However, we have to notice that these companies belong to an advanced context where cultural shifts and technical education have already been achieved.

5.5 | Managers receiving compensations and awards

Interestingly, the quantitative results presented in Table 7 demonstrate that there was no association between the IV "COMPENSATION" and the DV "ACHIEVED." Therefore, we can state that environmental compensations and awards are practices that do not sustain better green performance. So, what does this mean, and why are Italian managers not engaged based on compensation? To investigate this phenomenon in greater depth, we can start with the following comment made by a respondent that summarizes what the other 28 respondents, five of which were from the CSR department, think about this matter:

> "When the company reaches green targets, you should be able to discern how much effort each manager and employee put into the different actions and plans to achieve the target. It is impossible because it depends in large part on your behaviour and motivation."

To an extent, this idea contradicts the findings of Arulrajah et al. (2015), who proposed that reward management could lead to the improvement of a company's environmental performance, as well as the findings of Jackson et al. (2011), who claimed that compensations and rewards help implement GHRM practices. According to Jackson et al. (2011), several companies in Europe and in the US have successfully experimented with incentives to strengthen environmental practices and performance goals. However, they also stated how it is difficult to develop an effective monetary incentive. Further, Fernández et al. (2003) commented on the difficulty of successfully installing a reward system that works for the entire staff. Individuals have different motivations when it comes to green behaviors; therefore, it is not easy to evaluate green behaviors and performance, as one of the respondents said. Masri and Jaaron (2017) also reached the same conclusions.

Another interesting issue emerges when we connect compensations and rewards to green performance. For instance, one of the respondents wrote:

> "I do not believe in pay practices. I know a couple of colleagues who are very good at cooking the books when they have to demonstrate savings connected with green performance. And I know other colleagues who avoid reporting environmental incidents because they know it negatively affects their rewards."

The phenomenon of using accounting tricks in the short term to improve green performance was studied by Denis et al. (2006), whereas the issue of employees who avoid reporting environmental problems for fear of negative consequences such as losing money was studied by Brio et al. (2007). Their findings can be connected with those of Pucker (2021), who claimed that companies are distracted from achieving green performance because of reporting issues.

5.6 | Managers acting as environmentally responsible leaders

The quantitative results presented in Table 7 indicate that the strongest correlation was between green performance and managers who are acting as environmentally responsible leaders. We found an interesting comment by one of the managers who participated in the study and had previously criticized compensation systems. This comment, which is similar to the other 37 responses, is as follows:

> "Being in charge of relevant environmental plans and initiatives is the most effective way to achieve green goals. You can organize your resources; you are more proactive and at the same time it is easier for the company to assess how much effort you really put in your actions."

It is well-documented that a responsible leader may be key to successfully achieving organizational goals. Indeed, a responsible leader is usually under scrutiny by shareholders, employees, other managers, and even external stakeholders. Of the 37 responses, five came from the CSR department.

In the domain of environmental goals and green performance, we might have found similar results. For instance, Afsar et al. (2020) discussed the mechanism through which environmentally responsible leadership affects employees' behaviors and attitudes. Similar to what the respondent declared, the authors also argued how environmentally responsible leaders are more proactive in managing and communicating environmental initiatives to employees. Riva et al. (2021) demonstrated a positive effect of green transformational leadership on green performance in the hotel industry through the mediating effect of green creativity.

Finally, the following comment left by a manager summarizes and brings together the previously discussed GHRM practices:

> "I believe that for your research you should investigate the characteristics of the real environmental leader at the top of the organization. You ask about alignment, manager involvement, company reputation, training, compensations, but all of them are nothing without the real environmental responsible leader, the highest one."

5.7 | Theoretical implications

The results discussed extend social exchange theory by emphasizing how practices such as the responsible leader, the alignment between managers and environmental goals and their involvement in them, and company's environmental reputation contribute improving environmental performance. In our model, we measured and proposed the GHRM practices in descending order of influence. The most important GHRM practice is managers who can act as environmentally responsible leaders. Environmentally responsible leaders are more engaged as they are constantly under scrutiny from different stakeholders. For this reason, this leader is more proactive in managing and communicating green initiatives to the staff. Then, the alignment between managers and environmental goals and their involvement illustrates the principle of reciprocity, where managers, driven by shared goals, invest their efforts in GHRM practices, resulting in improved environmental performance throughout the organizational hierarchy. In addition, employee satisfaction and engagement are linked to perceptions of organizational support and favorable psychological arrangements, as the organization's commitment to a green reputation is reciprocated in the form of increased employee engagement in green initiatives. However, it is important to notice how certain basic kinds of environmental training, in this advanced context, are taken for granted. Essentially, these findings underscore how the guiding principles of the social exchange theory play a foundational role in shaping the mechanisms of GHRM practices and their impact on promoting environmentally responsible performance.

5.8 | Practical implications

The research results also provide useful implications for HR practitioners. The least influential GHRM practices were found to be training and compensation. Companies in advanced contexts suggest that it is more important to train people to develop people's attitudes and engagement and that it is more about following practices. HR practitioners in this context should be very careful when they think about awards and compensations; this could even lead toward counterproductive results. On the contrary, to increase environmental performance, HR practitioners in an advanced context should leverage the alignment of green objectives and goals with those of environmental managers, involving the managers in specific ways. When the managers are involved in defining the company's green objectives and goals, they are more engaged in offering suggestions and participating in environmental initiatives. Moreover, increasing managers' motivation means aligning the implementation processes, and utilizing better

managers' expertise. HR Practitioners should also take into serious consideration how a good environmental company's reputation affects green performance, as managers in such situations feel very satisfied and gratified, which raises their green passion and self-identification as well as motivates them to throw themselves into green initiatives. Probably, the most practical impact is bound to having managers acting as environmentally responsible leaders. Therefore, the company should appoint such a manager, as several interviewees' suggestions pointed out how often GHRM practices are associated with this organizational figure. Ultimately, this is the true responsible leader of the company as a whole, and he/she can truly promote engagement for achieving green performance.

6 | CONCLUSIONS, LIMITATIONS, AND AGENDA FOR FURTHER RESEARCH

This study began with the following question: what kinds of GHRM practices are companies that have a significant green performance involved in to engage the managers for achieving the desired green performance? The literature review demonstrated how there is a need for more discussion. We narrowed down the focus of our research to the advanced context of Italy—specifically, the manufacturing sector. Several novelties emerged from this study, many of which are worthy of further investigation as they at times contradict previous results. Moreover, our findings can also be helpful for practitioners who are trying to improve green performance by leveraging GHRM practices.

To begin with, our quantitative findings indicated that, in this specific context, GHRM practices would contribute to nearly 60% of green performance. This has never been measured before by using a quantitative model, thus representing a relevant scope for research.

Then, considering our initial hypotheses supported by social exchange theories, we ruled out compensations, awards and training as practices that sustain the achievement of green performance. The qualitative findings suggest that in an advanced context like this, it is difficult to develop an effective and objective incentive system, mainly because people have different kinds of motivations and behaviors with regard to the environment. It also appears that the fear of losing incentives could lead to poor efficiency in the short term and even cheating and hiding the emerging green problems. Regarding training, the latter should be mainly oriented toward developing people's attitudes and engagement. Finally, it seems that managers belonging to CSR and environmental departments within the production are more interest in defining environmental objectives and goals, aligning them with theirs.

This study had some limitations, which have opened up avenues for further research. First, the study was based on a sample of Italian manufacturing companies. Therefore, other scholars can test our hypotheses in different advanced contexts. Moreover, similar hypotheses could also be tested in developing countries as well as in different industries.

One of the most important limitations of this study was the evaluation of the different factors that can affect the achievement of green performance. We found that GHRM practices account for around 60% of green performance; however, we were unable to analyze the composition of all the possible factors along with their weights. Thus, these factors need to be identified and analyzed, and a quantitative model should be formulated accordingly. Even a longitudinal study, comparing a before and after situation, could be interesting. Some differences between managers from the CSR department and the production one emerged; however, we did not use the department as a control variable.

Our findings, along with the related hypotheses, have opened up pathways for further research. For instance, scholars could delve into the difficulty of developing an effective and objective green incentive system. Is there a way to develop such a system or, by our findings, is it too linked with personal expectations? Furthermore, we need more examples of how to align green objectives and goals with those set by the managers using case studies, along with the knowledge of how to align the entire organization. Additionally, the way to involve managers in the green strategic process should also be investigated further.

We found some examples of how a good company reputation can affect managers' engagement and, ultimately, green performance; however, the mechanisms and mediating factors behind this relationship remain under examined to an extent. Finally, the characteristics of the environmentally responsible leader and green leadership in general require deeper exploration, especially in terms of their effect on green performance.

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