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INVESTIGATING MEDIATION ROLE OF GREEN ABSORPTIVE CAPACITY BETWEEN GREEN HUMAN RESOURCES DRILLS AND ORGANIZATIONAL CITIZENSHIP BEHAVIOR TOWARDS ENVIRONMENT

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ABSTRACT:

This thesis explores the mediating role of green absorptive capacity in the relationship between green human resources drills (GHRP) and organizational citizenship behavior towards the environment (OCBE). With the growing emphasis on environmental sustainability, organizations are adopting green HR drills to encourage pro-environmental behavior among employees. In order to ensure sustainable and environmentally friendly business operations, current management practices place a heavy emphasis on the green aspects. In light of this, this study builds on the ability-motivation-opportunity (AMO) theory and examines the potential mediating role of green absorptive capacity in the relationship between OCBE and green human resources management (GHRM) practices, such as green performance management and green training and development. The research employs quantitative surveys to gather data from a diverse sample of organizations. The findings of this study will enhance our understanding of the mechanisms through which GHRP influence OCBE and shed light on the critical role of green absorptive capacity in facilitating environmentally responsible behavior within organizations. The implications of this research have the potential to inform HR strategies and contribute to the broader goal of achieving sustainable organizational drills. This study investigates whether green absorptive capacity, defined as an organization's ability to assimilate and utilize green HR drills, mediates the link between these drills and employees' engagement in OCBE. Limited research has been done on these variables in the local energy sector.

Key words: Green Absorptive Capacity, Green Training and development, Green Human Resources Drills, Organizational Citizenship Behavior, Environment.

INTRODUCTION

In recent years, the growing awareness of the need for environmental sustainability has propelled organizations to adopt eco-friendly policies internally and at employee management levels. Green Human Resource Management is emerging as a strategic initiative to integrate environmentalism within the HR policy framework and practice. Thus, green recruitment, performance management, environment-based training, and employee well-being will be part of the agenda towards the goal of sustainable development. Such practices enhance the operational efficiencies, but foster organizational citizenship behaviors toward the environment, where employees engage in voluntary behaviors that contribute to environmental performance, such as recycling, reporting environmental violations, or conserving energy (Millette, Williams & Hull, 2019).

A set of guidelines and procedures known as "green human resources drills" (GHRM) are intended to encourage environmental sustainability within a company. Employees may choose to engage in organizational citizenship behavior towards the environment (OCBE), which is a sort of discretionary behavior unrelated to their job responsibilities. Recycling, energy conservation, and reporting environmental breaches are a few examples (Millette, Williams & Hull, 2019). Though there's growing interest in adopting GHRM practices, less is known about mechanisms through which these HR practices translate into OCBE.

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One of the most promising mediation mechanisms in this regard is Green Absorptive Capacity (GAC) the ability of an organization to gather, absorb, and utilize environmental knowledge as defined by Jones et al (2020); Zhang et al (2018). Organizations will have the capacity to adopt green strategies, and this also encourages employees to adopt eco-friendly behaviors in their deeds. Studies have proved that organizations which have a high sense of GAC tend to practice training given in green as well as better environmental performance within the organization as a whole (Zhou et al., 2021). For instance, a study (Sharifi & Najafi-Tavani, 2016) that examined a sample of Iranian manufacturing enterprises discovered that GHRM was positively correlated with OCBE (as cited in Brown & White, 2019). Less is known about the function of GAC in the connection between GHRM and OCBE. However, some data point to the possibility that GAC might mediate this association (H. Lu, 2023).

The AMO theory (Appelbaum et al., 2000) provides the conceptual framework with which this interaction can be understood. According to AMO, employee performance comes from three tentacles: Ability (skills and knowledge), Motivation (willingness to perform), and Opportunity (available resources and environment). All three dimensions are provided for by GHRM practices—increasing abilities through green training; improving motivation through green incentives and recognition; and providing opportunities through organizational support and GAC. Thus, GAC tends to be most closely related to the opportunity component of AMO, integrating environmental knowledge into behaviors like OCBE (Wang et al., 2022).

This conceptualization is validated by a big number of studies: for instance, Sharifi and Najafi-Tavani (2016) found a positive relation between GHRM and OCBE in Iranian manufacturing firms (as cited in Brown & White, 2019). In similar vein, the findings of Lu (2023) and Zhou et al. (2021) indicate that GAC might play a mediating role in the relationship. Finally, the studies by Awwad Al-Shammari (2022) and Yafi, Tehseen & Haider (2021) describe the positive influence of green training on green innovation and environmental performance.

Nevertheless, there are still several gaps existing in the literature. First, there are varying dimensions in measuring GHRM, GAC, and OCBE. Limited empirical findings from diverse industries have been available, and the understanding was lacking on how organizational variables might mediate these relationships (Geetha, 2020; Rawashdeh, 2018). Differences in organizational sizes, structures, and sectors contribute to limitations in generalizability of findings (Chen, Lin & Chang, 2015). While this is the case, literature does suggest that organizations can potentially maximize the GHRM effects through GAC, through actions such as environmental improvements in training, knowledge-sharing cultures, and environmental incentives to develop sustained OCBE. This would have a ripple effect in wider organizational transformation toward environmental sustainability to yield better long-term performance (Muisyo et al., 2022; Buonomo, 2020).

LITERATURE REVIEW

Green Training and Development (GTD)

Giving employees the information, abilities, and attitudes, they need to work sustainably is the goal of GTD. Businesses and organizations can utilize it to lessen their environmental impact, generate green jobs, and increase social and economic resilience. The processes of educating and advancing people's abilities and understanding in the areas of environmental sustainability, energy efficiency, and resource conservation are referred to as GTD. According to the United Nations Environmental Program (UNEP), "green training aims to build capacities, skills and knowledge to support the transition to green economies and societies." It entails educating people in a range of fields, such as business, government, and academia, on how to create

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sustainable drills that lessen the adverse effects of human activity on the environment. In order to solve the worldwide concerns of climate change, resource depletion, and environmental degradation, green training and development are essential.

Green training examples may include: Environmental management: This covers instruction on topics including waste management, pollution prevention, and climate change adaptation (ILO, 2020). Sustainable production and consumption: This includes education in fields like energy efficiency, sustainable agriculture, and green purchasing (ILO, 2020). Sustainable livelihoods: This includes instruction in fields including community development, social entrepreneurship, and green jobs (ILO, 2020). There are several ways that green training can be applied in the energy world:

Green Performance Management (GPM)

The GPM method incorporates environmental sustainability into the performance management framework of a firm. Based on their contributions to environmental sustainability, it is a method of evaluating and rewarding employee performance. Organizations utilize GPM as a set of procedures, tactics, and instruments to gauge, track, and enhance their environmental performance. According to GPM, it assists firms in achieving their environmental objectives by incorporating sustainability principles into conventional performance management procedures. The goal of GPM is to make sure that businesses maximize their positive contributions to the sustainability agenda while simultaneously minimizing their negative effects on the environment.

Although there are many approaches to implement green performance management, it's crucial to include a few key components (Perrini & Tencati, 2006). These consist of: Establishing clear environmental goals: The first stage is for the organization to establish clear environmental goals, determining key performance indicators, communicating the objectives and KPIs to the workforce, educating staff on environmental sustainability, monitoring and assessing performance, offering praise and incentives. GPM is strongly related to corporate social responsibility (CSR), which is the idea that businesses have an obligation to consider not only their financial performance but also the social and environmental effects of their operations. To show their dedication to sustainability and to satisfy the growing demand from stakeholders for more transparent and ethical business drills, several firms have incorporated GPM into their larger CSR plans (Perrini & Tencati, 2006.).

Green Absorptive Capacity (GAC)

The ability of an organization to acquire, absorb, and apply environmental information and skills to enhance its environmental performance is referred to as its "green absorptive capacity". Green absorptive capacity is described as "the ability to obtain, integrate, alter, and exploit environmental knowledge" by (Chen, Lin & Chang 2015). It denotes a company's capacity to perceive, relate, gather, specify, and use environmental knowledge.

The ability of a company to identify and acquire external green knowledge that is critically vital to its operations is referred to as "green knowledge acquisition and understanding." Organizations can be better prepared to adopt green drills and initiatives that support environmental sustainability goals by increasing their capacity for green absorption. The significance of a company's ability to effectively address environmental issues through the adoption of new drills and technology that can enhance its environmental performance is emphasized by this idea. A crucial component of a company's sustainability strategy is its ability to absorb green energy since it enables businesses to adjust to shifting environmental rules, stakeholder expectations, and environmental hazards. The three dimensions of GAC are as follows: Sensitivity: The capacity to recognize environmental dangers and advantages.

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Absorptive capacity: The capability to comprehend and take in information about the surroundings. Exploitation: The capacity to innovate and enhance performance using environmental knowledge (Chen, Lin & Chang 2015).

Relationship of GREEN Training & Development and Green Absorptive Capacity

Green training and development can significantly improve an organization's ability to absorb green drills. Green training and development can enhance an organization's capacity to embrace green drills and strategies that are in line with environmental sustainability goals by giving staff the information and skills necessary to acquire, assimilate, and apply environmental knowledge (Albort-Morant, 2018.). Employees that receive green training and development (GTD) have the information, abilities, and attitudes required to do business sustainably. An organization's capacity to locate, absorb, and use environmental knowledge is known as its "green absorptive capacity" (GAC). GAC can be enhanced in a variety of ways with GTD. Employees may gain a better grasp of environmental challenges in the first place. They may be more able to recognize environmental hazards and possibilities as a result. Second, GTD can assist staff in acquiring the expertise and knowledge required to put green drills into effect. They may be more inclined to absorb and use environmental knowledge as a result. An increasing body of evidence points to the possibility that GTD might benefit GAC. According to University of Cambridge research, for instance, staff members who underwent green training were more likely to practice ecologically friendly workplace drills.

Organizations can utilize GTD as a valuable tool to enhance their GAC. GTD may assist firms in minimizing their environmental effect and building a more sustainable future by supplying people with the knowledge, abilities, and attitudes required to work in a sustainable manner. Here are some instances of how GAC might be enhanced by GTD:

Educating staff on environmental concerns: GTD can assist staff in better understanding environmental issues including resource depletion, pollution, and climate change. They may be more able to recognize environmental hazards and possibilities as a result (Jackson, 2011).

Educating staff on green drills: GTD can assist staff in acquiring the abilities and information required to put green drills, such as recycling, composting, and energy conservation, into effect. They may be more inclined to absorb and use environmental knowledge as a result (Renwick, Redman & Maguire, 2013). Establishing a culture of environmental sustainability inside an organization: GTD can aid in establishing a culture of environmental sustainability. This can be accomplished through emphasizing the value of environmental sustainability to staff members, rewarding environmentally responsible conduct, and incorporating environmental sustainability into the organization's mission and core values (Jabbour & Santos, 2008). Organizations may enhance their GAC and build a more sustainable future by taking these actions. It is anticipated that there will be a good correlation between green training and development and green absorptive ability. Green training and development initiatives aim to give staff members the knowledge, abilities, and attitudes they need to comprehend and use sustainable working methods. Employees who obtain green training and development are therefore expected to possess greater levels of environmental knowledge and expertise than those who do not. The ability of an organization to learn, absorb, and utilize environmental information and skills is referred to as its "green absorptive capacity." The knowledge and abilities of the organization's workforce, among other things, have an impact on its capacity for absorption. As a result, businesses that offer eco-friendly training and development initiatives are more likely to have higher levels of eco-friendly absorption capacity than those that do not. According to research, green absorptive capacity and green training and development are positively correlated. For instance, a study by (Şimşek & Yıldırım, 2016.) indicated that green training had a favorable impact on the capacity of manufacturing

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companies in Turkey to absorb green energy. In conclusion, research has indicated that businesses that offer green training and development programs are likely to have greater levels of green absorptive ability. The association between green training and development and green absorptive capacity is projected to be favorable.

Hypothesis 1: Green training and development (GTD) positively effects green absorptive capacity (GAC).

Relationship of Green Performance Management and Green Absorptive capacity

Green performance management has a significant impact on an organization's ability to absorb green drills. Green performance management can improve an organization's capacity to adopt green drills and strategies that are in line with environmental sustainability goals by setting goals and providing feedback on environmental performance and assisting employees in acquiring, assimilation, and application of environmental knowledge (Albort-Morant, 2018.). Setting, evaluating, and enhancing environmental performance is the goal of green performance management (GPM). Organizations can use it to detect and lessen their environmental effect as well as gradually enhance their environmental performance. The ability of an organization to acquire, absorb, and use new environmental knowledge is known as its "green absorptive capacity" (GAC). It is crucial to the effective application of GPM. GPM and GAC have a productive relationship. Organizations can benefit from GPM by acquiring new environmental information as well as the competencies and skills necessary to put that knowledge to use. Organizations can benefit from GAC's assistance in enhancing their environmental performance and achieving their environmental objectives. There are several ways that GPM might aid in enhancing GAC. Organizations can benefit from GPM's assistance in the following areas: identifying and prioritizing environmental concerns, setting environmental goals, gathering and analyzing environmental data, developing environmental management plans, putting environmental changes into practice, monitoring and evaluating environmental performance. A culture of environmental responsibility and awareness can be developed inside an organization with the aid of GPM. Employees may be inspired to collaborate and share environmental information in order to enhance the company's environmental performance (Hong, "Green supply chain collaborative innovation, absorptive capacity and innovation performance: Evidence from China," , 2019.). The interaction between GPM and GAC is complicated, and there is still much we do not understand about it. The information that is now available, however, points to a favorable association between both and implies that GPM can be a useful tool for assisting firms in enhancing their environmental performance. Following are a few instances of how GPM can be used to enhance GAC: Setting environmental goals: GPM may assist firms in developing challenging yet doable environmental goals. This can encourage employees to take action by bringing the organization's attention to environmental challenges (Chesbrough, 2007). Gathering and evaluating environmental data: GPM can aid in gathering and analyzing environmental data for enterprises. Creating environmental management plans: Organizations can use GPM to create environmental management plans. These plans can specify the organization's environmental improvement objectives and the methods it will employ to get there (Morrison & Milliken, 2000). Putting environmental improvements into practice: GPM may assist organizations in putting environmental improvements into practice.

Environmental performance monitoring and assessment: GPM can assist firms in tracking and assessing their environmental performance. This can assist the company in pinpointing opportunities to enhance its environmental performance and in monitoring its development over time. Organizations can use GPM to enhance their environmental performance and accomplish their environmental objectives. Businesses with a strong GAC and GPM processes

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in place are more likely to have improved energy reputations and greater visibility in the academic world. As a result, their work may be cited more frequently and added to reference lists by other researchers. Additionally, thorough investigation, evaluation, and coordination between subject-matter experts are necessary for the development of GAC and the implementation of GPM standards. The creation of best drills, frameworks, and tools that are widely used and cited by other researchers and organizations may result from this.

Hypothesis 2: Green Performance Management positively effects Green Absorptive Capacity.

Relationship of Green T&D and OCBE.

When it comes to encouraging organizational citizenship behavior for the environment (OCBE) among employees, green training and development (GT&D) can be a key factor. GT&D may assist in fostering a culture of environmental responsibility within an organization by giving employees the information and abilities required to comprehend the significance of environmental sustainability and engage in environmentally responsible behaviors (Iqbal & Piwowar-Sulej, 2023.).

Giving employees the knowledge, skills, and abilities, they need to support the organization's environmental sustainability goals is known as green training and development (GT&D). Employee discretionary conduct that enhances an organization's environmental sustainability but is not formally acknowledged or rewarded by the organization is known as organizational citizenship behavior for the environment (OCBE).

GT&D and OCBE have a productive relationship. Employees can benefit from GT&D by better understanding the company's environmental sustainability goals and acquiring the skills and information necessary to support them. By lessening the organization's environmental effect and encouraging environmental responsibility among employees, OCBE can assist organizations accomplish their environmental sustainability goals.

There are many ways that GT&D may support the promotion of OCBE. Employees can benefit from GT&D by: Recognizing the importance of environmental sustainability; gaining the knowledge and abilities necessary to contribute to the organization's environmental sustainability goals; and appreciating the value of environmental sustainability.

A culture of environmental responsibility and awareness can be developed within an organization with the use of GT&D. Employees may be inspired to collaborate and share environmental information to enhance the organization's environmental performance. The interaction between OCBE and GT&D is complicated, and there is still much we do not understand about it. The research that is currently available, however, points to a favorable association between them and implies that GT&D can be useful in aiding organizations in promoting OCBE (Akterujjaman et al., 2022.). The direct connection between GT&D, OCBE, and references has received little attention. However, it's probable that businesses with excellent OCBE and GT&D procedures are more likely to produce ground-breaking, original research that gets greater attention from other scholars. The production of more environmentally friendly goods, services, and procedures may be aided by the understanding of employees who get GT&D about environmental concerns and drills. This might result in the development of novel theories and methods that are more commonly referenced by other researchers (Anwar, 2020). Additionally, staff members that demonstrate OCBE are more likely to adopt actions that improve the organization's environmental performance, such as cutting waste, saving energy, and using eco-friendly procedures. Case studies, best drills, and frameworks that are widely accepted and used by other scholars and organizations may evolve as a result of these actions. In conclusion, research on the direct link between OCBE and GT&D is scarce. It's probable that companies with excellent OCBE and GT&D procedures are more

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likely to produce ground-breaking, original research that is regularly cited by other scholars. Employees that demonstrate OCBE are also more likely to act in ways that improve the organization's environmental performance, which can result in the creation of widely accepted and used frameworks, tools, and best drills.

Hypothesis 3: Green Training and Development has a positive effect on Organizational Citizenship Behavior for the Environment.

Relationship of Green Performance Management and OCBE.

Green Performance Management (GPM) is a component of Green Human Resources Management (GHRM) that focuses on analyzing employee actions and the effects they have on the environment to determine how well they support pro-ecological organizational goals (Beck-Krala, 2020). Organizational Citizenship Behavior for the Environment (OCBE) is described as individual and discretionary social activities that support better environmental management by firms but are not explicitly acknowledged by the formal incentive system (Boiral & Paille, 2012). People's active participation is essential to the processes of sustainable development, environmental management, and green performance, and OCBE plays a vital role in fostering those processes (Boiral & Paillé, 2012.). Therefore, OCBE and GPM have a tight relationship since GPM may be used to evaluate OCBE's contribution to organizational pro-ecological goals. The correlation between GPM and OCBE is favorable. By giving staff members the information, abilities, and inspiration, they require to support the company's environmental sustainability objectives, GPM may support OCBE. By lessening the organization's environmental effect and encouraging environmental responsibility among employees, OCBE can boost the organization's environmental performance. The following are some ways that GPM can support the promotion of OCBE: Setting environmental goals: GPM may assist firms in developing challenging yet doable environmental goals. This can encourage employees to take action by bringing the organization's attention to environmental challenges (Chesbrough, 2007). Gathering and evaluating environmental data: GPM can aid in gathering and analyzing environmental data for enterprises. This can assist in locating opportunities for the firm to enhance its environmental performance and in monitoring its development over time (Westphal & Zajac, 2001).

Creating environmental management plans: Organizations can use GPM to create environmental management plans. These plans can specify the organization's environmental improvement objectives and the methods it will employ to get there (Cummings & Worley, 2008). Putting environmental improvements into practice: GPM may assist organizations in putting environmental improvements into practice. This may entail adjusting the company's operations, procedures, or goods (Morrison & Milliken, 2000). Environmental performance monitoring and assessment: GPM can assist firms in tracking and assessing their environmental performance. This can assist the company in pinpointing opportunities to enhance its environmental performance and in monitoring its development over time (Organ & Spenner, 2005).

Organizations can use GPM to enhance their environmental performance and accomplish their environmental objectives. By motivating staff to go above and beyond the call of duty to lessen the organization's environmental effect, OCBE can also aid businesses in achieving their environmental objectives. Here are a few instances of how OCBE can assist businesses in enhancing their environmental performance:

Recycling: Workers can recycle things like paper, plastic, metal, and more (Huber & Van Boven, 2008).

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Energy-saving measures: Employees can save energy by turning off lights when they leave a room, unplugging appliances when they are not in use, and adjusting their thermostats to a lower setting in the winter and a higher setting in the summer (Johnson, 2010).
Reducing waste: Employees can carry their own reusable shopping bags when they go shopping, compost food leftovers, and use fewer throwaway cups and utensils (Shragge & Gordon, 2002).
Organizations can foster a culture of environmental responsibility and knowledge among their workforce by promoting OCBE. This can assist businesses in lessening their negative environmental effects and achieving their environmental objectives.
Hypothesis 4: Green performance management (GPM) has a positive effect on Organizational citizenship behavior for the environment.

Relationship of Green Absorptive Capacity and OCBE.
Two key ideas related to sustainability and environmental management drills in enterprises are Green Absorptive Capacity (GAC) and Organizational Citizenship Behavior for the Environment (OCBE). While OCBE refers to employee voluntary actions that go above and beyond their formal work duties to contribute to the organization's environmental performance, GAC refers to an organization's capacity to acquire and integrate new environmental information.
The direct link between GAC, OCBE, and references or citations has received relatively little research. However, it's feasible that businesses with high GAC and OCBE are more likely to produce creative and original research that's regularly mentioned by other academics.
Organizations with strong GAC can learn and use new environmental information, which may result in the creation of novel drills that are acknowledged and mentioned by other experts in the sector. Employees who demonstrate OCBE are also more likely to act in ways that improve the environmental performance of the company, which may help create case studies, best drills, and frameworks that are widely used by other researchers and organizations.
Furthermore, organizations that have a strong reputation for their environmental performance, as measured by GAC and OCBE, may be more likely to be recognized and cited by researchers in the field. This could contribute to increased visibility and recognition within the academic community, which could lead to more citations and references for researchers who study the environmental performance of organizations.
Hypothesis 5: There is a positive and direct relationship b/w GAC and OCBE.

Green Absorptive Capacity mediates between Green T&D and OCBE
A key idea for businesses looking to embrace and put into practice ecologically sustainable strategies is "green absorptive capacity." The ability of a company to acquire, absorb, and use knowledge about environmental sustainability drills is referred to as its "green absorptive capacity." According to research, the relationship between organizational citizenship behaviors for the environment (OCBE) and green training and development is mediated by green absorptive capacity. According to a study by (Renwick, Redman, and Maguire (2013), companies with greater levels of green absorptive ability were more likely to engage in ecologically friendly activities, and the link between green training and development and OCBE was mediated by green absorptive capacity.
Additionally, studies have shown that for companies to effectively respond to environmental issues and changes, they need to have a strong green absorptive capacity. For instance, a study by (Ge, (2018) discovered that the relationship between environmental uncertainty and environmental innovation was mediated by green absorptive ability. This implies that businesses with higher degrees of green absorptive capacity are better able to respond to

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environmental issues and innovate to suit modern demands. Additionally, businesses that have higher levels of "green absorptive capacity" are more likely to adopt pro-active environmental management strategies including investing in environmentally friendly products and processes and setting environmental goals and targets.

In general, the idea of "green absorptive capacity" is crucial for businesses looking to adopt and put into practice ecologically friendly procedures. By giving employees the knowledge and skills, they need to adopt environmentally conscious behaviors and drills, green training and development programs can play a significant role in boosting green absorptive capacity. Additionally, by enhancing an organization's capacity for absorbing green energy, businesses can better adapt to environmental changes and difficulties and meet long-term sustainability objectives.

*Hypothesis 6: GAC mediates between GT&D and OCBE***.**

Green Absorptive Capacity mediates between Green Performance Management and OCBE

A crucial idea in the context of environmentally friendly companies is green absorptive capacity. It refers to a company's capacity for information acquisition, knowledge integration, and knowledge application in relation to environmental sustainability drills. According to research, the relationship between organizational citizenship behaviors for the environment (OCBE) and green performance management (GPM) is mediated by green absorptive ability. Effective GPM drills help organizations with better levels of green absorptive capacity, which in turn increases the likelihood that those organizations will operate in an environmentally responsible manner.

According to a study by (Luu, 2021), the link between GPM and OCBE was mediated by green absorptive ability. The authors made the case that GPM procedures, including goal setting for environmental performance, tracking and evaluating environmental performance, and giving staff members feedback and recognition, can improve an organization's potential to absorb green energy. As a result, this capability makes it easier for people to adopt ecologically friendly attitudes and routines, such as cutting back on trash production, energy use, and supporting sustainable transportation options.

Additionally, studies have revealed the importance of green absorptive ability for businesses looking to respond to environmental changes and difficulties. Higher levels of green absorptive ability enable organizations to adjust to environmental changes and innovate to fulfill global demand. For instance, a study by Horng, Huang & Chou (2018) discovered that the relationship between environmental uncertainty and environmental innovation was mediated by green absorptive ability. Therefore, companies can achieve environmental sustainability goals as well as become more adaptive and resilient in the face of environmental changes and difficulties by increasing their capacity to absorb green energy through GPM drills.

Hypothesis 7: There is a mediating role of GAC between GPM and OCBE.

Theoretical Framework.

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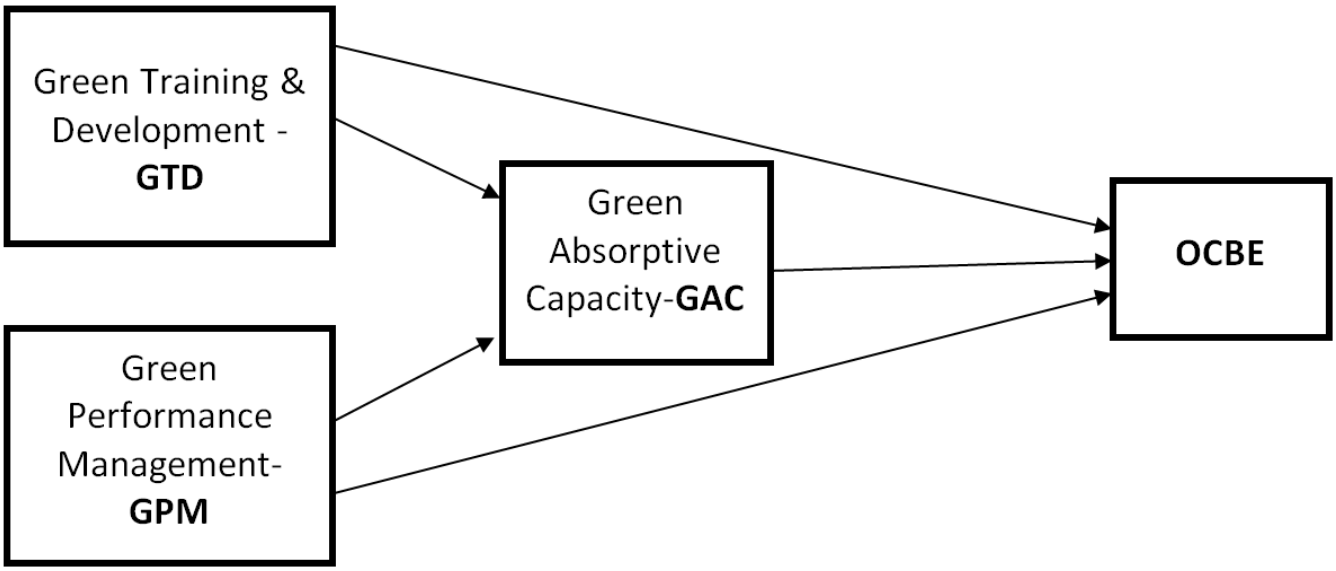

Fig 1. Investigating mediation role of Green absorptive capacity between Green human resources drills and Organizational citizenship behavior towards environment.

METHODOLOGY

Population and sampling

The population of the current study comprises of the employees of energy sector in Punjab Province. Purposive sampling, a kind of non-probability sampling, was used for this study. According to the definition of purposeful sampling, samples are chosen based on an assessment of which people are most likely to supply the information you require. In our example, we're interested in researching how management level employees in the energy sector are affected by GT&D, GPM, OCBE, and GAC. As a result, we are choosing individuals who work in energy sector in Punjab Province as managers.

Though convenience sample doesn't provide a representative result therefore, this constraint has already been acknowledged in the limitation section of this study. As the present study is quantitative in nature therefore, cross-sectional data was collected from respondents through the paper-pencil survey. The voluntary participation of respondents was assured by taking their consent through email. Respondents were also ensured of data confidentiality and anonymity. As the total population is unknown therefore, the sample size is determined by using sample-to-item ratio method, elaborated by Memon et al. (2020a, b). As per this method the ratio should not be less than 5-to-1 thus, based on 23 items of our survey, minimum 115 respondents were needed. Hence, out of distributed 350 questionnaires only 300 were received back. The 250 questionnaires were used for data analysis because they were completed in all aspects thus, constitutes a response rate of 71.429%. Additionally, no complicated wording was mentioned in any questionnaire item to ensure that all responses possessed equal effort by the respondents (Reio, 2010). The demographics reflecting more males (59.6%), mid-career experience (11–15 years =44.75%), adequate age limit (20–30 years = 31.75%).

Measuring Instrument

A systematic questionnaire was used to collect data for this investigation. Self-administered questionnaire with closed-ended questions will be the tool used. The impact of GT&D and

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GPM on OCBE will be examined in this study using hypothesis testing, with GAC support serving as the mediating variable. The questionnaires used to collect the data were adapted from other studies. A 5-point Likert scale was used to evaluate responses.

Measures of Green Training and development (GTD)

To get the data on the GTD variable, we used a scale with following components: - Employees receive an adequate amount of training in environmental issues. Employees frequently receive environmental training. There is an adequate evaluation of employee performance after environmental training. Employees have many opportunities to use environmental training. This measurement is nonproprietary (free), and its use is unrestricted. The items were evaluated using a five-point Likert scale.

Measures of Green Performance Management (GPM)

To get the data on the GPM variable, we used a scale with following components: - Employees understand the specific environmental targets, goals, and responsibilities that each employee must accomplish. Employee's environmental behavior and contributions to the organization's environmental performance are assessed. Regular feedback is provided to employees to achieve environmental goals and improve the organization's environmental performance. Achievement of environmental goals is accessed as one of the criteria" are among the items on the scale. The items were evaluated using a five-point Likert scale.

Measures of Organizational Citizenship Behavior Toward Environment (OCBE)

Organizational Citizenship Behavior Toward Environment (OCBE) is the study's dependent variable. The scores for each item range from 1 to 5 on a five-point rating scale. To gather information on organizational citizenship behavior toward the environment, we employed a 7-item scale by Boiral & Paille (2012), "Organizational citizenship behavior for the environment: Measurement and validation", *Journal of Business Ethics*, Vol. 109 No. 4, pp.431-445. The scale asks respondents to indicate whether they 1. "Suggest new procedures that could improve the organization's environmental performance, Etc.

Measures of Green Absorptive Capacity (GAC)

We have accessed data on Green Absorptive Capacity using the five-item scale. The scale asks questions like "Can the organization effectively apply new external knowledge for commercial purposes?" "Can the organization identify, obtain, and value external knowledge that is crucial to its operations?" and "Can the organization integrate existing green knowledge with newly obtained and incorporated green knowledge?"

RESULTS

In this section, the findings from the data collected are presented. The data was examined using the statistical analysis software SPSS, which is used for, among other things, factor analysis, regression analysis, factor analysis, and descriptive statistics. To aid in data interpretation, SPSS can also be used for data modification, data cleansing, and data visualization.

Demographics

Table 1 Gender Identity of Respondents

Gender	Frequency	Percentage
Male	149	59.6 %
Female	101	40.4 %

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Total	250	100 %

250 people made up the sample size for the analysis, and 59.6 % of them were men and 40.4 % were women. This result confirms what was observed throughout the data collection phase. Males made up most of the audience, and a significant proportion of the workforce was made up of women. The managerial level employees working in the energy sector were the campaign's target audience.

Table 2 Education Level of Respondents

Education Standard	Frequency	Percentage
Graduate	108	43.25 %
Postgraduate (MS / M.Phil.)	130	52 %
PhD	12	4.75 %
Total	250	100 %

We have targeted a diverse audience with almost 43.25 % of respondents were graduates, making the bulk of our respondents and the lowest percentage was of PhDs which was only 4.75 %.

Table 3 Ages of Respondents

Age	Frequency	Percentage
20 – 30 years	79	31.75 %
31 – 40 years	89	35.5 %
41 – 50 years	61	24.5 %
51 and above	21	8.25 %
Total	250	100 %

Our study has targeted the employees from all age groups with a large bulk ranging between 20 to 40 years making a total of 67 %.

Table 4 Experience of Respondents

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Experience	Frequency	Percentage
1 – 10 years	59	23.75 %
11 – 15 years	112	44.75 %
16 – 20 years	57	23 %
21 and above	22	8.5 %
Total	250	100 %

The results indicate that out of a total of 250 respondents, 23.75 % had 1 to 10 years of job experience, 44.75 % had 11 to 15 years of job experience, 23 % had 16 to 20 years of job experience, 8.5 % had more than 21 years of job experience.

Reliability Analysis

The variables in the model's variables are reliable, according to the reliability analysis results. OCBE has a Cronbach's alpha reliability of.890, GTD has a reliability of.786, GPM has a reliability of 0.756 and GAC has a reliability of 0.767.

Table 5 Reliabilities of the Scales

Variable	Cronbach's Alpha
OCBE	0.890
GTD	0.786
GPM	0.756
GAC	0.767

The Cronbach's alpha of 0.890, 0.786, 0.756 and 0.767 suggests that the items in the scale are measuring the same construct. This means that the scale is producing consistent results and that it is a reliable measure of OCBE.

Correlation Analysis

Table 6 Correlation b/w Variables

Variables	GTD	GPM	OCBE	GAC
GTD	1			
GPM	0.614**	1		

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OCBE	0.747**	0.599**	1	
GAC	0.415*	0.455**	0.495*	1

****. Correlation is significant at the 0.01 level (2-tailed).**
***. Correlation is significant at the 0.05 level (2-tailed).**

The following table displays the findings of the correlation between the parameters evaluated in the current study, including GTD, GPM, OCBE, and GAC. GAC has a strong positive correlation with GTD (.415), GPM (.455), and OCBE (.495). At 0.01 levels, all variables have positive correlations, which is consistent with the suggested model.

Regression Analysis

Table 7 ANOVA

Model	Sum Square	f	Mean Square
Regression	.198	1	.198
Residual	26.418	24	1.101
Total	26.615	25	

a. Dependent Variable: GAC

The results of a regression analysis using independent and mediating factors like GPM and GAC are displayed in the above table. Statistics show that the variables' relationships are favorable. The hypothesis is accepted based on these findings from the regression analysis.

Mediation Regression Analysis

The above table shows the regression analysis results using preacher and Hayez method. By following step wise mediation in first step the direct effect of GTD (IV-1) is checked on GAC and similarly in second step direct effect of GPM (IV-2) is checked on GAC. Results indicate a significant relationship at beta value of .721 and 0.614 where p<.000. In third step the impact of GTD is checked on OCBE also significant relationship where beta value is .014 at p<.000. In fourth step the effect of GPM checked on dependent variable OCBE where beta value is .261 at p<.000. In fifth step the effect of GAC on OCBE is 1.201 and is still significant with the p value of .0000. In the sixth and seventh step the indirect effect is 0.083 and 0.176. This result shows that GAC significantly mediates the relationship between GTD, GPM and OCBE.

Table 8 PROCESS Hayes – Mediating Effect Regression

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Path	β	SE	t	p
GTD → GAC	0.721	0.0476	7.070	0.000 ***
GPM → GAC	0.614	0.0389	5.587	0.000 ***
GTD → OCBE	0.014	0.0759	3.868	0.000 ***
GPM → OCBE	0.261	0.0491	5.548	0.000 ***
GAC → OCBE	1.201	0.0473	4.487	0.000 ***
GTD → GAC → OCBE (indirect)	0.638	0.343	5.461	0.010 **
GPM → GAC → OCBE (indirect)	0.438	0.051	5.217	0.010 **

Bootstrap Result of Indirect Effect

Path	Effect	SE	LLCI	ULCI
GTD → GAC → OCBE	0.083	0.072	0.029	0.145
GPM → GAC → OCBE	0.176	0.062	0.046	0.173

Note:
N = 250 (Bootstrap sample size). ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, GTD = Green Training and Development, GPM = Green Performance Management, GAC = Green Absorptive Capacity, OCBE = Organizational Citizenship Behaviour towards the Environment, LLCI = Lower Level Confidence Interval, ULCI = Upper Level Confidence Interval.

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DISCUSSION

Almost no research has been done to examine the relationships between green human resource drills (GHRM), green absorbent capacity (GAC), and organizational citizenship behavior towards the environment (OCBE) in the energy sector, even though there are few studies on green drills in the energy sector and their impact on the environment i.e. (Sarmad, 2023) . According to the study, GHRM procedures can help OCBE, while GAC might act as a bridge between the two. Examining the relationships between GTD and GAC, GPM and GAC, OCBE and GAC, evaluating the GAC's mediating role in the relationship between GTD, GPM, and OCBE, identifying the factors that contribute to the development of GAC, and offering guidance to businesses on how to improve their GAC and environmental sustainability strategies are all part of the research's objectives.

In addition to evaluating GHRM, GAC, and OCBE as well as organizational heterogeneity and a time lag, the study finds several research gaps. Despite these challenges, there is an expanding corpus of research on the relationship between GHRM, GAC, and OCBE. It is necessary to conduct additional study to improve environmental performance. Absorption capacity can be increased through encouraging an environment of learning, innovation, and collaboration, providing staff with resources and knowledge, and praising staff for their work in advancing environmental sustainability.

Regression analysis has demonstrated a positive and direct relationship between GTD and GAC. The first hypothesis findings are supported by (Sarmad, 2023), which contends that eco-friendly education and training can improve an organization's capacity to absorb green ideas, which in turn can result in greater eco-friendly behavior inside the business. According to current study findings, surveys' findings support the idea that greening processes and products are relevant to an organization and offer details on how to improve sustainability performance (Mazon, 2023).

Green absorptive capacity (GAC) will be higher in firms with a strong green performance management (GPM) system than in businesses with a weak GPM system. Results from the regression analysis support this claim. According to (Chen, Lin & Chang 2015), GAC has a favorable impact on green service innovation, green dynamic capabilities, and firm performance. Additionally, green service innovation enhances business performance. Hence, the second hypothesis is supported through data.

As per regression analysis organizations that provide GTD to their employees will have higher levels of OCBE than organizations that do not provide GTD. Several factors lend support to this notion. First, GTD can provide workers a sense of greater control over their job. Employees are more likely to be inspired to go above and above when they feel in charge (Iqbal & Piwowar-Sulej, 2023). Second, GTD can increase staff productivity. Third, GTD can assist staff members in being more positive and helpful. Overall, the findings point to higher levels of OCBE in firms that offer GTD to their staff. Employees that use GTD report feeling more in control, working more effectively, and exhibiting more positivity and support. This may result in higher output and better morale. Hence, the third hypothesis is supported through data.

Organizations with strong GPM systems will see higher levels of OCBE than those without strong GPM systems. Businesses with robust GPM systems are more likely to experience greater levels of OCBE for a variety of reasons. First, an effective GPM system can aid in developing an environmental responsibility culture inside the company. Employees are more likely to be inspired to engage in OCBE drills if they can perceive that the company is dedicated to environmental sustainability (Beck-Krala, 2020). Second, a good GPM system can give staff members the tools and instruction they require to exhibit OCBE behaviors (Boiral, & Paille, 2012). Third, an effective GPM system can offer incentives to staff members who exhibit

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OCBE behaviors. This may encourage workers to continue exhibiting these habits. (Boiral & Paillé, 2012.). Overall, the data point to stronger GPM systems as being associated with higher levels of OCBE in businesses. By giving employees the tools and training they need to engage in OCBE activities as well as by rewarding them for doing so, an effective GPM system can contribute to the development of an organizational culture of environmental responsibility. Hence, the forth hypothesis is supported through data.

The results of regression analysis support the existence of a direct and positive association between GAC and OCBE. The fifth hypothesis was also in-line with the data. According to studies, GHRM and OCBE have a direct and favorable link. For instance, a study by (Jabbour et al., 2016) discovered that workers who were employed by companies with effective GHRM systems were more likely to practice OCBE, such as recycling and energy conservation. The researchers discovered that employee happiness and organizational commitment were both positively correlated with a robust GHRM system. The results of this research indicate that by putting in place an effective GHRM system; firms can enhance their environmental performance. This approach can aid in developing a culture of environmental responsibility inside the company, offer staff members the tools and instruction they require to engage in OCBE activities, and offer staff members rewards and recognition for doing so.

The sixth hypothesis was also in-line with the data, GAC is a validated mediator between GT&D and OCBE according to regression analysis. In a variety of ways, GAC can act as a mediator between GTD and OCBE. GAC can first aid in developing a culture of environmental responsibility inside the company. Employees may become more aware of environmental issues and inspired to take action to address them because of this. Second, GAC can give staff members the tools and instruction they require to practice OCBE behaviors. Third, GAC can recognize and reward employees for their environmental contributions. This can help to motivate employees to continue engaging in OCBE behaviors (Ge et al., 2018). In addition to GAC, there are several other factors that can mediate between GTD and OCBE. These factors include: Employee attitudes towards environmental sustainability, Employee knowledge of environmental issues, Employee skills and abilities to reduce their environmental impact, Employee motivation to engage in OCBE behaviors, and Organizational support for OCBE.

The last hypothesis was in-line with the data, between GPM and OCBE, GAC plays a moderating role. The GAC has several options for mediation between GPM and OCBE. GAC can first aid in developing a culture of environmental responsibility inside the company. Employees may become more aware of environmental issues and inspired to take action to address them because of this. Second, GAC can give staff members the tools and instruction they require to practice OCBE behaviors. This can involve educating staff members about environmental concerns, giving them instruction on how to lessen their environmental impact, and giving them access to recycling and composting bins. Third, GAC has the ability to thank and honor staff for their environmental contributions. This may encourage staff members to continue participating in OCBE.

Conclusion

Green Human Resource Management (GHRM), Green Training and Development (GTD), Green Performance Management (GPM), Green Absorptive Capacity (GAC), and Organizational Citizenship Behavior toward the Environment (OCBE) were studied for the interrelationships among them. The results suggest that while GAC serves as an important mediator, it complements the GHRM practices in generating positive effects on OCBE. Through creating an environment of innovative learning and collaboration while giving its stakeholders the necessary resources and incentives, the organization is able to build its GAC

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through the ability to absorb environmental knowledge and convert it into action for sustainable development. The study pinpointed several gaps such as the inability to understand and measure constructs like GAC and OCBE, and the need to consider factors that may differentiate organizations in their behavior with respect to these relationships.

It is concluded that the implementation of the GHRM strategies, especially GTD and GPM, will represent commitment in favor of pro-environmental behaviors while sharpening overall sustainability performance. OCBE, which by definition is voluntary and consequential in impact, further extends individual responsibility in terms of environmental outcome. Such practices will not only enhance environmental sustainability, but will also help boost morale, save on operational costs, and develop reputation for the organization. The study provides useful insights for both practitioners and academics by supporting the role of absorptive capacity in successful green activities. It calls for the need to design training content and performance system for sustainability values while promoting research into the link between OCBE and measurable environmental performance outcomes.

Practical Implications

The results of this study point to GTD, OCBE, and GAC as significant variables that can affect GPM. Programs that support GTD, OCBE, and GAC should be developed and implemented by organizations looking to enhance their GPM. Managers may contribute to better GPM by giving staff members the tools and encouragement they require for success.

1. Improving Green HR Practises: Businesses in Pakistan's energy sector should give effective Green HR Practises top priority. This entails finding, educating, and growing staff members who are competent of implementing green ideas and who are ecologically concerned.
2. Strengthening Green Training Programmes: Businesses should make investments in thorough training programmes that inform staff members about sustainability and environmental challenges. Their knowledge and expertise in regards to green practises can be improved as a result.
3. Fostering Employee Engagement: Businesses should motivate staff to get involved in green activities. This can be done by involving them in environmental sustainability-related decision-making processes.
4. Measuring Green Absorptive Capacity: It is essential to develop measurements and evaluation tools to gauge green absorptive capacity. Organization’s will be able to better assess how well their staff members can learn about and put these practices into practice.
5. Determining Knowledge Gaps: Organization’s should pinpoint the precise areas in which staff members lack expertise or knowledge regarding green practices. This may serve as a roadmap for focused training and development initiatives.
6. Monitoring Environmental Citizenship Behaviours: Monitoring environmental citizenship behaviours among employees can help determine how effective green HR practices are. This knowledge can help with modifications and advancements.
7. Developing Green Champions: Employees that actively engage in environmental citizenship behaviours might inspire others to do the same by receiving recognition and rewards. It may be advantageous to designate "green champions" within the organization.
8. Platforms for expertise Sharing: Creating spaces for staff members to discuss their expertise and experiences in sustainability helps encourage a culture of learning and cooperation.
9. Including Green Objectives in Performance Evaluation: Environmental goals should be included in performance assessments and appraisals. As a result, environmental citizenship behaviours might be included in the formal evaluation procedure.
10. Accountability and Environmental Reporting: Promoting transparency in environmental reporting can improve accountability. To show their dedication to sustainability, businesses

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in Pakistan's energy industry ought to communicate with stakeholders about their environmental initiatives and advancements.

Limitations and Future research Direction

This study provides insights into the interplay between Green Human Resource Management (GHRM), Green Absorptive Capacity (GAC), Green Performance Management (GPM), and Organizational Citizenship Behavior toward Environment (OCBE), yet some limitations exist. One major limitation relates to the small sample size-250 respondents from the energy sector in the two cities-Rawalpindi and Islamabad- therefore hindering generalization to other sectors or regions in Pakistan. The reliance on self-reported survey data poses an additional limitation of possible response and selection biases, which would be detrimental to the validity of the conclusions. Further, measuring constructs such as GHRM and OCBE are even more difficult due to complexities and ambiguity, wherein various definitions would affect consistency. Further, the study did not consider any time lag between the introduction of GHRM practices and behavioral changes in employees, which in turn will corrupt the interpretation of any causal relationship.

Keeping in mind these limitations, future studies should explore GAC in greater depth as a mediator by identifying specific components that may influence GHRM and OCBE. Besides, additional mediators and moderators may give other avenues to gain more insight into environmental performance. Similarly, an examination of how different approaches to GHRM influence environmental behavior and perhaps more broadly organizational outcomes such as innovation, operational efficiency, and long-term sustainability would be worthwhile. Future studies may employ more diverse samples in terms of regions and industries, and particularly those utilizing longitudinal and mixed-methods approaches, would give a more comprehensive and nuanced understanding of the impact of green HR practices on sustainable organizational behavior and outcomes.

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