



**Impact of Green HRM Practices on Business Performance of  
Employees with Mediating Role of Environmental  
Performance in Telecommunication Sector of Twin Cities**

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## ABSTRACT

This research investigates the correlation between Green HRM practices and the business performance of telecom employees in the metropolitan areas of Islamabad and Rawalpindi. It analyzes the correlation between mediation and environmental performance. An escalating number of companies are implementing GHRM practices, which integrate environmental management with human resource policies, to improve operational performance and sustainability credentials. This study employed a deductive approach utilizing a quantitative methodology, with data collected from 301 employees of several telecommunications companies in twin cities of (Pakistan) using standardized surveys. The survey instrument adopts from the previously developed and well-validated scales used by the prior researchers. The results show that employee business performance which is defined by higher levels of productivity, creativity, and job satisfaction is considerably improved by GHRM methods. Environmental performance serves a vital mediating function in this relationship. Incorporating sustainable HR practices is critical to achieving the twin benefits of improved economic and environmental performance, as the study emphasizes. They offer a strategic framework for utilizing GHRM to accomplish organizational excellence and sustainability goals, these insights are especially pertinent to the Twin Cities telecom industry. Data was gathered from 301 employees employed in various across diverse telecom organizations like Ufone, Zong, Telenor, PTA, and PTCL through questionnaires distributed via Google Forms. Software like Smart PLS and SPSS were used for analysis. Different tests were performed, including demographic profiling, descriptive statistics, correlations, and assessments of measurement and structural models. The research findings provide empirical evidence contributing to the theoretical understanding.

**Keywords** - Green Hiring (GRS) and GREEN Training and involvement (GTD). Green performance management and assessment, also known as GPA. BP, refers to the evaluation of business performance concerning environmental factors. Environmental Performance (EP).

## Introduction

Organizational perspectives require a change in response to growing concerns about decreasing resources, climate change, and the environmental impact of industrial activity. GHRM appears as a strategic solution to balance environmental responsibility with human resource practices with the need to implement sustainable practices. The dynamic and rapidly changing telecom industry in Pakistan is adopting sustainable business practices (Amjad et al., 2021). Green HRM has emerged as a vital strategic component in the struggle of the sector to tackle environmental concerns. The need to combine organizational procedures with environmental sustainability objectives is shown by this major change in human resource management in the telecommunications industry. In a previous study by (Jimenez and Lorente 2001), if EP is prioritized alongside quality, it can have a favorable impact on the outcomes of the other operations objectives. (Laosirihong Thong et al. 2013) identified a positive correlation between green practices and all three dimensions of performance: environmental, economic, and intangible. Namkung and Jang (2013) found contradictory findings regarding the influence of green practices on company performance. If the managers of

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a firm appreciate the environmental and social expectations of the consumers and the government and if they are unwilling to compromise on the quality of the environment and the living standards of the people's sake for more profit then; the company can easily record very sustainable levels of business performance. Such a business is suitable for controlling the environmental issues that emerge from it and guaranteeing compliance with environmental managing organizations' activities (Orobia et al., 2020). LE, continues the thread of well-known academics asserting that researching sustained business performance has been intriguing. This is a crucial aspect as businesses need to sustain the natural environment as well as society in this world of competitiveness and competition by availing the products or services to the consumers or the public (Schaltegger et al., 2019).

Green HRM encompasses a wide range of practices, including environmentally conscious hiring practices, eco-friendly staff education and training, and eco-friendly HRM performance reviews. By sourcing and recruiting talented and like-minded people it will be certain that those organizations have the required staff with environmental awareness and adequate skills for their sustainability initiatives (Amjad et al., 2021). In this study, we would assume that environmental performance serves as an intermediary between Green HRM and the financial success of Pakistani telecoms. This study aims to examine the correlation between sustainable green HR practices and the environmental impact of the innovation-based communications business. Its objective is to promote a favorable relationship between the sustainability of businesses and their ecological responsibility in this industry

The telecom industry is a key driver of technical change and economic growth, putting it in more appropriate terms the industry has become a key player in the engineering of sustainability and thus the adoption of SG is strategic in meeting stewardship responsibilities and at the same ensuring superior business performance and resilience (Amjad et al., 2021). Creating an environmental culture and improving the environmental performance must be facilitated by the business. Another way by which an organization can enhance the quality of human resources is by strengthening the human capital within an organization so that junior staff possess the relevant knowledge and skills to support the green causes championed by their employers. Past research has established that green training bears a positive effect on EP ea, as it helps organizations to achieve their greening aims and objectives through encouraging individuals to bear responsibility for environmental improvements (Lather and Goyal, 2015; Jabbour and Jabbour, 2016).

Businesses have adopted the trend and instituted sustainable human resource management strategies. The research by (Masri and Jaaron 2017) indicates that Green Human Resource Management (GHRM) is a strategy that employs human resource practices to improve organizational sustainability and foster environmental conservation. According to (Renwick et al. 2013) and Rizvi and Garg (2020), both incorporate green performance management, green Training and development, along with green recruitment, are techniques encompassed within it. Implementing green HR practices enables organizations to enhance their public image, augment economic efficiency, and sustain competitive advantage, along with various social benefits. Tang et al. (2018), Shah (2021), Muisyo (2021). Research indicates that the adoption

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of environmentally sustainable HR practices can improve employee performance (EP) (Rozario et al., 2019). Nonetheless, it is inadequate to guarantee that companies will assuredly experience an increase in EP (Muisyo and Qin, 2021). The research indicated that the adoption of sustainable human resource management practices directly affects business results, which are additionally shaped by the organization's environmental performance. Maria et al. (2023) assert that the effects of green HRM practices on corporate success are partially realized through improved environmental performance.

A recent study found that the environmental performance of Palestinian universities improves through the implementation of green Human Resource Management (HRM) practices, especially in the presence of a supportive green organizational culture and green management support. According to Mohd Roslee Othman (2023), this indicates that green HRM practices are favorably adopted in environments characterized by environmentally conscious leadership and a nurturing culture. Key factors that influence this impact include the presence of a green environment and the execution of innovative green initiatives by employees. The summary of the authors of the articles is derived from the retrieved sources (Su, W, et al., 2023). Consequently, this study is positioned to address the following inquiries

Q1. What is the implications of Green Hiring on business performance in Pakistan's telecommunications industry?

Q2. What is the implications of Green Training and Involvement on Business Performance in Pakistan's Telecommunication Industry?

Q3. What is the implications of Green Performance Management and Compensation on Business Performance in Pakistan's Telecommunication industry?

Q4. What is the implications of Green Hiring on Environmental Performance in Pakistan's Telecommunication industry?

Q5. What is the effect of Green Training and Involvement on Environmental Performance in Pakistan's Telecommunication industry?

Q6. What is the implications of Green Performance Management and Compensation on Environmental Performance within Pakistan's Telecommunication industry?

Q7. What is the implications of Environmental Performance on Business Performance within Pakistan's Telecommunication industry?

Q8. Does Environmental Performance mediate the relationship between Green Hiring and Business Performance?

Q9. Does Environmental Performance mediate the relationship between Green Training and Involvement in Business Performance within the Telecommunication industry of Pakistan?

Q10. Does Environmental Performance mediate the relationship between Green Performance Management and Compensation regarding Business Performance in the telecommunications industry of Pakistan?

In coherence with the above stated problem statement objectives of the research are

- To analyze the impact of Green Hiring on Business Performance within Pakistan's Telecommunication sector.

- To analyze the impact of Green Training and Engagement on Business Performance within Pakistan's Telecommunication sector.
- To investigate the impact of Green Performance Management and Compensation on Business Performance within Pakistan's Telecommunication sector.
- To investigate the impact of Green hiring on Environmental Performance within Pakistan's Telecommunication sector.
- To investigate the impact of Green training and involvement on environmental performance within Pakistan's telecommunication sector.
- To investigate the impact of Green Performance Management and Compensation on Environmental Performance within Pakistan's telecommunication sector.
- To investigate the impact of Environmental Performance on Business Performance within the Telecommunication Industry of Pakistan.
- To examine the mediating role of Environmental Performance in the relationship between Green Hiring and Business Performance within Pakistan's telecommunication sector.
- This study aims to investigate the role of Environmental Performance as a mediator in the relationship between Green Training and Involvement on Business Performance within Pakistan's telecommunications sector.
- This study aims to investigate the function of Environmental Performance as a mediator in the relationship between Green Performance Management and Compensation concerning Business Performance in Pakistan's telecommunications sector.

### **Literature Review and Hypotheses**

“The assessment and evaluation of an organization's or company's effectiveness in accomplishing its entire mission, goals, and objectives is known as business performance” (Amjad et al, 2021). It involves a wide variety of variables that show how successful, efficient, and effective a firm is in many areas. Both financial and non-financial measures can be used to evaluate business performance, giving a complete picture of the strength and competitiveness of an organization. Within the framework of Green Human Resource Management (HRM) practices, business performance relates to the assessment of the level to which an organization's HR policies and operations support environmental sustainability and corporate social responsibility (Aggarwal and Agarwala, 2023).

The goal of green human resource management (HRM) practices is to include eco-friendly activities into several facets of HRM. In this context, evaluating business success involves deciding how well these practices accomplish organizational and environmental objectives. According to (Darnall et al., 2008), organizations are not benefiting from adopting excessive environmental prevention, therefore researchers have not given a lot of attention to improving BP through green activities. When discussing environmental performance, business performance refers to the evaluation and measurement of how successfully an organization implements environmentally friendly practices into its plans and operations. It entails evaluating how business operations affect the environment as well as the efficacy of programs aimed at reducing negative impacts on the environment and encouraging sustainability. Within the Pakistani telecommunications industry, the evaluation of

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business performance concerning Green Human Resource Management (HRM) relates to the level to which companies in this field effectively implement ecologically sustainable practices into their human resource strategies and operations (Amjad et al., 2021).

This includes taking into account how HR policies and procedures affect corporate social responsibility generally and environmental sustainability in the particular context of Pakistan's telecom industry. Different Green HRM practices are present in the Pakistani Telecommunications industry in a manner that affects the business success of the employees through EPP and environmental performance (Alam et al., 2023). To have a clearer perception about the fact that green HRM practice positively impacts the environmental outcome and this outcome results in overall organizational success, the study focuses on the sustainability of the telecommunications companies in Pakistan. Those who want more specifically to enhance the performance of the companies involved would do well to consult the original work (Masri & Jaaron, 2017). Sustainability actions require an understanding of the impact of green Human Resource Management practices.

GHRM plays a significant role in the utilization of environment management techniques and practices together with green initiatives. By understanding the impacts of green HRM practices, policymakers may employ frameworks that reward and support sustainability in the telecommunications sector (Aggarwal and Agarwala, 2023). This means green solution across the entire industry only. Companies that have well established environmental and social responsibility policies are considered very important by investors and consumers. The findings of this study may assist telecom companies to mitigate their vulnerabilities by showcasing an enterprise's CSR efforts when disaster strikes communicating the resolution to address grave and reprisal asserts. Presenting the impression of commitment to sustainability when disaster occurs. A distinct competitive managerial pattern of differentiation for the telecom sector can be participation in environmentally friendly green HRM practices.

Regarding Pakistan's telecom industry's reputation, the report has consequences. Strengthening relationships with consumers, investors, and the community at large can be achieved by companies that actively participate in green HRM practices and exhibit a commitment to environmental responsibility. The study helps the industry align with international sustainability strategies and aspirations. Companies can take the initiative to solve environmental issues and contribute to a more sustainable future by knowing how green HRM practices affect business performance. This study adds to the body of knowledge regarding the relationship between environmental performance, business outcomes, and HRM practices (Aggarwal and Agarwala, 2023). This information can be disseminated both within and possibly outside of the telecommunications industry, promoting a sustainable and ongoing improvement culture.

*H1: Green hiring has a positive and significant impact on Business Performance.*

businesses are the main culprits when it comes to environmental problems, thus it's only fair that they shoulder some of the responsibility for environmental management (Bebbington, 2001; Ragas et al., 2017). Firms are being pushed in multiple directions to follow this trend because of the societal impact it could have (McGuire and Germaine, 2015). This has led some companies to launch eco-initiatives, and others are

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actively seeking solutions to their environmental management woes. One of the practices arising from the destruction of the environment is GHRM. Seek applicants who have a strong commitment to sustainability to incorporate environmental factors into the hiring process. Inform staff members about the company's energy-saving techniques, waste disposal tactics, and green policies. To reduce the need for travel, use teleconferencing and virtual meetings. Include strategies for environmental performance in employee performance reports. Work with suppliers who follow ethical and sustainable practices. Create and execute human resources policies that support environmental sustainability. Implementing green HRM practices benefits the organization's reputation draws in like-minded personnel, and satisfies the demands of stakeholders who care about the environment in addition to helping to maintain environmental sustainability.

Stronger organizational sustainability and more staff engagement have been linked to GRS. Identifying workers who possess the abilities, know-how, mindset, and approach to establish sustainable practices is known as "green recruitment". A lot of businesses are starting to realize how beneficial green hiring is to their reputation. GH is the source from which GHRM draws applicants who care about the environment. According to (Obaid and Alias 2015), it's the process of implementing environmental management into HRM functions inside a firm to increase productivity and sustainability. The relationship between the two constructs can be best explained by both AMO and RBV theory. AMO theory proposes that practices of human resource like training would influence the abilities of employees, creation of opportunities as well as their level of motivation which further contributes towards improved business performance (Gull & Idrees, 2022).

According to the theory of Resource based view, organizations have unique capabilities and resources which further leads towards sustainable competitive advantage. This helps improve performance. In line with the concept of this theory, green training and involvement can be seen as strategic resource which have tendency to further enhance the sustainability capability of the organization. Previous studies have proven that when supervisors and managers are actively involving their employees for achievement of goals related to environment, there is always an improvement in green performance of employees (Obeidat et al., 2020). In another research where the study was conducted on food companies, it was revealed that green training has a significant impact on the organizational performance (AlZgool et al., 2021). In developing country of Bangladesh where study was conducted in the context of pharmaceutical company, significant and positive relationship was revealed between green training and business performance (Alam et al., 2023). Putting into consideration of discussion above, following hypothesis can be made:

**H2: Green Training and Involvement has a significant and positive impact on Business Performance.**

In understanding the theoretical framework of impact of green performance management and compensation on business performance, AMO theory may be applied (Muisyo et al., 2021). By implementation of green performance management practices, the abilities of employees would be enhanced in sustainable behaviors. Employees are given opportunity to increase their skills, knowledge and competencies to execute green behaviors. Also industry needs to ensure that employees have complete access to resources that are important for their support. Access

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to technologies and materials that are eco-friendly would help them to act upon green practices. If employee ends up implementing on those green practices and their efforts can be seen, green performance management and green compensation would include rewards and incentives that would further motivate them to continue with their green behavior (Aggarwal and Agarwala, 2023).

Although significant emphasis is placed on the influence of Green performance management and compensation on organizational success, research examining the direct effect of GPMC on BP is limited. This study addresses a significant prior gap by examining the direct influence of Green Performance Management and Compensation on Business Performance. Consequently, the following hypothesis may be inferred:

**H3:** *Green Performance Management and Compensation has a significant and positive impact on Business Performance.*

AMO theory can be applied between association of green hiring and environmental performance. According to the understanding of green hiring, this process involves selecting those candidates having necessary abilities, skills and expertise that is related to sustainability of environment. These individuals possess skills, knowledge, and experience that enable them to contribute effectively to environmental initiatives within the organization. Employees who are hired for their commitment towards environmental sustainability are naturally motivated to take initiatives that are eco-friendly. Green hiring ensures that values and motivation of employees are aligned with the environmental goals of industry. Researchers in the Palestinian manufacturing sector discovered a positive and statistically significant correlation between green hiring and environmental performance (Masri & Jaaron, 2017). After looking at how six distinct Green HRM constraints affected environmental performance, the researchers concluded that "Green Recruitment" had the greatest impact. Zaid et al. (2018) cites prior research showing that green hiring improves industry environmental performance. Green hiring significantly improves environmental performance (Martins et al., 2021). In line with previous findings, the following hypothesis may be deduced:

**H4:** *Green Hiring has a significant and positive impact on Environmental Performance in telecommunication industry of Pakistan.*

The influence of green training and engagement on environmental performance has been examined through the AMO theory (Anwar et al., 2020). Green training equips industry employees with the skills and knowledge necessary to comprehend environmental issues and select optimal practices. These individuals can recognize opportunities to enhance environmental performance through the implementation of sustainable solutions. Green training programs enable individuals to cultivate expertise in various domains, including waste reduction, energy efficiency, and pollution prevention. In Pakistan, researchers have demonstrated that green HR practices, including green training and green involvement, significantly increase employees' willingness to engage in green initiatives. This also positively influences environmental performance (Umrani et al., 2020). Consequently, the following hypothesis may be inferred.:

**H5:** *Green Training and Involvement has a significant and positive impact on environmental performance in telecommunication industry of Pakistan.*



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Both AMO theory as well as RBV theory can be applied for the understanding of this theoretical framework. Green performance management focuses on those environmental performance targets and metrics and further provides employees with a clear framework so they can understand their responsibilities for achievement of environmental goals. Green performance management and compensation consists of inclusion of rewards and incentives that is tied to achievement of environmentally friendly targets and green behavior (Muisyo et al., 2021). The purpose of those compensation is to motivate employees to engage in environmental friendly activities. This would further motivate them to excel in environmental performance. When the impact of green performance management and compensation was studied on environmental performance in healthcare organization of Palestine, significant and positive relationship was discovered between them (Mousa & Othman, 2020). Researchers claimed that industries should evaluate initiatives taken by employees for the sustainability of environmental performance. Furthermore, improvement and achievement of environmental goals can take place if organizations are compensating for green practices and the commitment of employees towards their environment. Green compensation in hotel industry of Malaysia further leads to increase in the environmental performance of employees (Yusoff et al., 2020). From above discussion, the following hypothesis may be deduced:

**H6:** *Green Performance Management and Compensation has a significant and positive impact on Environmental Performance in the Telecommunication industry of Pakistan.*

In line with consideration of previous scholars NRBV theory can be best applied to the relationship of these constraints (Ghouri et al., 2020). According to this theory, rare capabilities further contribute to the competitive advantage of the organization. In terms of EP, this could be referred to as the implementation of sustainable practices that are rare and difficult to be replicated by competitors. Furthermore, minimizing negative impacts and maximizing the positive impact on the environment could further lead to improvement in business performance. Moreover, environmental performance such as decreased levels of energy use, carbon emission, and any other waste management is positively associated with the business performance (Ghouri et al., 2020). Environmental Performance has its importance in the protection of nature from negative impact and for the maintenance of the overall performance of the industry (Kim et al., 2019; Singh et al., 2020). In line with the above discussion, following hypothesis may be deduced:

**H7:** *Environmental Performance has a significant and positive impact on Business Performance in the Telecommunication Industry of Pakistan.*

Based on previous studies, NRBV theory can be employed to the present theoretical model. The last theory is the Natural Resource Based View which is a further development of RBV theory asserting that the capabilities and resources' utilization can contribute to attaining competitive advantage (Melkonyan et al. , 2019). This theory also concentrates on the endeavours of environment that would further aim in the enhancement of performance of the organisation. It was also found through the assessment of green HRM practices' impact on environmental performance in manufacturing industry of Pakistan that through recruitment and selection of those employees who have better understanding

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and awareness about environment accountability and sustainability, the green performance would be more concerned and productive also enhancing the overall manufacturing industry performance (Afzal et al. , 2023). While previous scholars have categorized green HRM antecedents and has examined the research about the moderating role of environmental performance between green HRM and business performance (Ghouri et al. , 2020), existing research has not revealed the unique and direct relationship between the green hiring and organizational success.

**H8:** *Environmental Performance mediates the association between Green Hiring and Business Performance in Telecommunication industry of Pakistan.*

Natural Resource-Based-View theory is recognized in academia. This theory is evolving with specific importance in the literature of sustainable operations (Rehman et al., 2021). Although the theory of NRBV is initially applied to those natural resources which are tangible, it can be further extended to include human capital resources and relate it to the environmental sustainability. In line with this theory, green training and involvement can positively impact business performance, with mediation of environmental performance. This would contribute towards competitive advantage as well as organizational success. Green training can be utilized to enhance abilities and skills, increase motivation level through involvement and awareness as well as providing opportunities for valuable participation in green practices (Aggarwal and Agarwala, 2023).

However, study proving mediation of environmental performance between the association of green training and involvement and business performance is limited. This hypothesis would be dealing with the major previous gap where impact of Green Training and Involvement large previous gap as while there exist studies focusing on the correlation between these variables at an individual level, the moderation of environmental performance on green hiring and business performance is wanting. While previous scholars have categorized green HRM antecedents and has examined the research about the moderating role of environmental performance between green HRM and business performance (Ghouri et al. , 2020), existing research has not revealed the unique and direct relationship between the green hiring and organizational success. In consideration of above discussion following hypothesis may be deduced:

**H8:** *Environmental Performance mediates the association between Green Hiring and Business Performance in Telecommunication industry of Pakistan.*

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skills, increase motivation level through involvement and awareness as well as providing opportunities for valuable participation in green practices. This author also stated that integration of financial development and sustainable development is a great challenge in today's world (Amjad et al.,2021). As proven in previous discussion of this literature, there are studies which examines therelationship between GTI and EP as well as between EP and BP.

H9: *Environmental Performance mediates the association between Green Training and Involvement on Business Performance in Telecommunication industry of Pakistan.*

In the context of GPMC, practices related to environmental sustainability can be considered as intangible natural resources. If these resources are managed effectively, industries will have competitive advantage and this would be in line with understanding of Natural Resource-Based-View framework. As organizations implement green performance management practices and compensation schemes that encourage environmentally responsible behaviors, this can lead to improvements in environmental performance indicators(Aggarwal and Agarwala,2023). Improved environmental performance, in turn, can positively influence various aspects of business performance, such as cost savings, risk reduction, enhanced reputation, and market competitiveness.In textile industry of Pakistan, green compensation has a significant and positive impact onenvironmental performance which further enhances organizational sustainability and ensures the success of the performance of the industry (Amjad et al., 2021).

When the impact of green performance management and green compensation was studied in the Indian automobile industry, the author revealed that such practices further helps the industry in dealing with the challenges of sustainability of the environment. Furthermore, by adopting these practices employees would be engaged in environmentally friendly practices and this might also contribute further to the improvement of their attitude. This behavior further contributes to the reduction in carbon footprints by industries which leads to increased competitive advantage for industry (Chaudhary, 2019). Despite precursory studies having proven significant and conclusive impact among these variables separately, the study examining the mediating role of environmental performance between Green Performance Management and Compensation with BusinessPerformance is rare. This study will tackle with major previous gap by determining the following hypothesis:

H 10: *Environmental Performance mediates the association Between Green Performance Management and Compensation on Business Performance Telecommunication industry of Pakistan*

When explaining the AMO theory, as cited in (Al-Shahwani & Mutunga (2020) correlate it with the human resource practices that focus on training, compensation and performance supervision as a way to bring out the big picture that showcases superior level duty accomplishment and decision making as an opportunity. High employee ability, knowledge, & skills result in increased employee desire for development as well as being empowered thereby enhancing commitment (Hashim, 2020). Thus, it could be suggested that practices like post progressive performance monitoring, progressive staff acquisition and selection, progressive remuneration etc of green HRM may also

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improve capacity, incentive, and opportunity of the employees to achieve companies green objectives (Amrutha & Geetha, 2020). As Boselie et al stated (2005), Appelbaum et al (2000), Uppal (2021), and Anwar et al., (2020) SHRM is one of the widely embraced theories which can be used empirically to explain how HR practices influence the organisational performance in general and more specifically, how the green HR and the impact of this approach can affect organisational EP.

First, (Appelbaum et al. (2000) emphasised that the distinguished but associated HR strategies are qualified by AMO theory in terms of ability, motivation, and opportunity. Being known as abilities, green methods such as green recruiting and selection, green training, and green development afford green abilities that will enable employees to possess the required skills and knowledge to execute and complete tasks implemented for successful green organizational development. Analyzing the impact of organizational motivation, the role of the senior management, and the level of the employees' engagement to a sustainable extended producer responsibility- a conceptual framework and empirical analysis by (Cheema and Javed 2017). The AMO perspective is also used by (Yu et al. , 2020) since analyzing the effects of GHRM in China. In their study (Anwar and colleagues 2020), the authors have found that green practices enhancing competencies, desire and motivation for environmental activities in employees improve their OCB, which in turn enhances EP. By asserting that the above factors on the AMO theory, it is evident that the theory affects business performance.

The same study revealed that through green entrepreneurship, the entrepreneurial intention of university students who in turn brings social change through the influence of the AMO theory Mia et al. Cooperative planning systems, gross and staff acquisition, training and development, the approval systems people adopt, and the like are the human resource strategies that influence how people transform their mind-set and behavior and organizational performance based on the AMO theoretical model (Muisyo et al., 2021). The Resource-Based View (RBV) is a management theory which states that the competitive advantage of a firm that is sustainable depends upon its unique and important capabilities and resources that suggests that a firm's sustainable competitive advantage derives from its unique bundle of valuable resources and capabilities. Basically the core concept of the RBV is that all the resources of the organization consists of a valuable, unique, rare and that organizational asset which cannot be imitated (Barney, 1991). Therefore, it is important for organizations to invest in human resource management so that industries can further enhance the capabilities of their employees to support implementation of strategic objectives. In this study, Green HRM is considered to be valuable, unique and not imitated resources with the help of which industries can sustain its competitive advantage.

Getting involved into environmentally friendly initiatives further improves the chances of minimization of emissions, less wastage of water, improvement in efficiency, and minimization of total environment footprint of enterprise operation. Hart (1997) has proposed the theory of Natural Resource View where importance is given to those resources that are environmentally oriented (Anthony, 2019). In consideration of the theory of Natural Resource View theory, in the uncertain environment of today, organizations are searching to capture those business

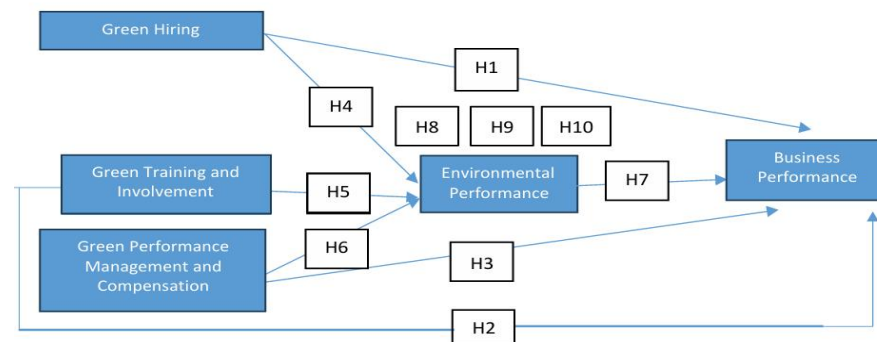
opportunities that would lead towards the creation of sustainability regarding competitive advantage and further help in the improvement of environmental performance (Rehman et al., 2021).

Previous studies have supported this argument that by facilitating organizations with green practices would help in the improvement of environmental performance. Previous studies have supported the application of this theory in the relationship of environmental performance with other variables that may have an impact on the success of firm (Makhloufi et al., 2022). Therefore, this theory is applicable in the impact of both Green HRM and environmental performance on the business performance of the industry.

**Theoretical framework:** Figure 1 shows the theoretical framework of the study

*Methodology*

Based on the positivist philosophy, which emphasizes measurable, observable phenomena and the scientific method as the best way to comprehend the universe, the positivist approach to research methodologies is a model.



(Figure1: Theoretical framework of the study )

In research and scientific inquiry, the deductive approach is a popular reasoning technique. This study uses a logical strategy that follows a top-down logic to apply the positivist approach effectively (Kraska et al., 2020)

**Sampling**

This research's studied population is the telecom industry that operates in the geographical areas of Rawalpindi and Islamabad. It consists of all the major players, regulatory agencies, and organizations involved in the telecom industry's provision, management, and operation. This

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study looked at other significant telecom providers in addition to regulatory agencies including the Pakistan Telecommunication Authority (PTA). The main players, including Ufone, Jazz, Telenor, Zong, and the Pakistan Telecommunication Company Limited (PTCL), were the center of attention. The sampling frame is created by removing these five organizations from the population. The selection of sample size required taking into account several methods. First, a minimum sample size of 314 was obtained by using the Krejcie and Morgan table, our population consists of N=1700 because in our research we have selected telecommunication sectors namely Ufone, Zong, Telenor, and Jazz. According to their websites the employees of top management and middle management the population consist of around 1700. This decision is in line with accepted research practices and guarantees that the sample size is large enough to yield adequate statistical power. This study's methodical approach strengthens the validity and conclusiveness of the conclusions drawn from the data gathered.

### **Method**

Convenience sampling method, mostly using personal networks in the telecom industry in Rawalpindi and Islamabad. The sample size extracted also follows to the convenience sampling (Sekeran & bougie, 2016). Although this made data gathering easier, it might have led to a smaller representation of the overall population. The approach that is being proposed in this research employs quantitative methodologies. For quantitative analysis, we have utilized statistical programs like smart pls and SPSS. Complex structural equation models (SEM) with latent variables and many paths are especially beneficial to analysis with SMART PLS. For non-normal data or small sample sizes, it is frequently the favored method. In comparison to previous SEM techniques, SMART PLS uses a component-based estimating strategy that can process data more quickly, particularly for big or complicated datasets. The skill levels ranging from beginner to expert in statistics can utilize SMART PLS because of its intuitive interface, which makes model construction and interpretation easier. ANOVA, regression analysis, factor analysis, descriptive statistics, inferential statistics, and many more statistical analyses are supported by the flexible software program SPSS.

### **Data Collection**

The item was adopted for Green recruitment and selection, Green training and development, Green performance and appraisal (Masri and Jaaron ,2017), Business performance, and Environmental performance (Daily et al,2012; Ritala, 2012). The main data was collected online using a Google Form, therefore the answers were downloaded into an Excel document and then imported into SPSS. To identify and address outliers and missing results and establish normalcy, a thorough screening process was first employed, adhering to the guidelines provided by (Hair et al (2006). To ensure the accuracy and reliability of results, these academics suggest data cleaning. Our study carefully applied data-cleaning techniques to enhance the quality of the dataset.

### **Data analysis**

To perform the statistical analysis, the software used is SPSS whereas for PLS-SEM the software used is Smart PLS 4. Several assessment tools

are employed to assess the study model and gain information from it. SPSS offers tests such as descriptive, correlational, as well as demographical tests among others. Among the tests that are conducted in Smart PLS 4, the new tests include; They are the measurements model analysis and the structural model outcomes examination with the figure of zero.

*Demographic and character analysis* - After the data-cleaning process was complete, a comprehensive descriptive Analysis was performed utilizing SPSS to examine the demographics of the survey participants. The characteristics included in this analysis included qualification, age, gender, and total work experience.

*Descriptive Statistics* - The fundamentals of descriptive statistics include sample size, mean, and standard deviation numbers. Descriptive statistics are a vital tool for finding and condensing significant information about the variables under investigation.

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis	Std. Error
Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
GRS	301	1.00	5.00	4.0824	0.64321	3.733	0.280
GTD	301	1.60	5.00	4.1130	0.61795	1.287	0.280
GPA	301	2.00	5.00	4.0950	0.55486	1.922	0.280
BP	301	2.17	5.00	4.1633	0.58070	0.610	0.280
EP	301	2.40	5.00	4.1688	0.58625	0.565	0.280
Valid N (listwise)	301						

(Table 1: *Descriptive Statistics*)

The table gives a comprehensive overview of the descriptive statistics for five variables: GRS, GTD, GPA, BP, and EP, derived from a sample size of 301 respondents. Each variable is measured on a 5-point scale, ranging from 5 to 1, allowing for a nuanced examination of participant responses. The descriptive statistics include the minimum and maximum values, mean scores, and standard deviations for each variable. For GRS, the mean score is 4.0824, and the standard deviation is 0.64321. GTD shows a mean score of 4.1130 and a standard deviation of 0.61795. GPA is characterized by a mean score of 4.0950 and a standard deviation of 0.55486. BP demonstrates a mean score of 4.1633 and a standard deviation of 0.58070. Lastly, EP has a mean score of 4.1688 and a standard deviation of 0.58625. Moreover, Positive kurtosis values indicate a distribution with peaked and thick tails.

### **Correlation Analysis**

Karl Pearson laid the groundwork for correlation analysis through his contributions in the late nineteenth century. He formulated the Pearson correlation coefficient ( $r$ ), which quantifies the strength of a linear relationship between variables. (Pearson 1907) indicates that the coefficient may take values ranging from -1 to +1. A positive coefficient indicates a positive correlation, while a negative coefficient signifies a negative relationship, and a coefficient of zero indicates the absence of association. Correlation is a powerful analytical instrument that reveals the strength and direction of relationships, enabling further inquiry.

	GRS	GTD	GPA	BP	EP
GRS	1	.751**	.648**	.599**	.551**
GTD	.751**	1	.744**	.648**	.571**
GPA	.648**	.744**	1	.701**	.585**
BP	.599**	.648**	.701**	1	.696**
EP	.551**	.571**	.585**	.696**	1

(Table 2: Correlation Analysis)

Green Recruitment and Selection and Green Training and Development were positively and significantly correlated ( $r=.751$ ,  $p<0.000$ ), as demonstrated in Table 4.7. Environmental performance ( $r=0.551$ ,  $p<0.000$ ), business performance ( $r=0.599$ ,  $p<0.000$ ), and green performance and assessment ( $r=0.648$ ,  $p<0.000$ ) were the following correlations found in the study. There is strong evidence from research that green training and development is positively correlated with green performance and assessment ( $r=0.744$ ,  $p<0.000$ ), business performance ( $r=0.648$ ,  $p<0.000$ ), and environmental performance ( $r=0.571$ ,  $p<0.000$ ). Green performance is positively and substantially correlated with both firm performance ( $r=0.701$ ,  $p<0.000$ ) and environmental performance ( $r=0.585$ ,  $p<0.000$ ), according to the findings. Also, with a  $p$ -value less than 0.000 and a correlation coefficient ( $r$ ) of 0.696, there was a strong positive relationship between environmental performance and corporate performance.

### **Data Normality**

Whether the data follows a normal distribution is an important question to ask when doing regression analysis or structural equation modeling (SEM). Two statistical methods were employed to verify the normalcy of the data: \*\* Kurtosis and the Cramer-von Mises test\*\* For a rundown of the test's findings, which demonstrated that every value was significant enough to dismiss the idea of normally distributed data, refer to Table 3. We performed additional tests for skewness and kurtosis to ascertain if the data follows a normal distribution. The data is probably not normal if the skewness and kurtosis values are greater than -1 and less than -1, respectively. The results showed that the data was out of



the ordinary due to the presence of numerous values exceeding the cutoff. Good news, because inflation typically results from extremely unusual data, the results demonstrated that the data was not significantly out of the ordinary.

Name	No.	Missings	Mean	Median	Standard deviation	Excess kurtosis	Skewness	Cramér-von Mises p value
Age	1	0	2.047	2	0.603	-0.245	-0.02	0
gender	2	0	1.575	2	0.494	-1.92	-0.304	0
education	3	0	2.867	3	0.426	6.065	-2.048	0
sector	4	0	1.11	1	0.312	4.336	2.511	0
experience	5	0	3.538	4	0.634	0.01	-1.05	0
GRS1	6	0	4	4	0.692	3.346	-1.211	0
GRS2	7	0	4.123	4	0.726	1.574	-0.874	0
GRS3	8	0	4.136	4	0.781	2.743	-1.212	0
GRS4	9	0	4.136	4	0.865	1.993	-1.287	0
GRS5	10	0	4.017	4	0.821	1.588	-0.972	0
GTD1	11	0	3.99	4	0.731	0.683	-0.548	0
GTD2	12	0	4.106	4	0.748	1.251	-0.845	0
GTD3	13	0	4.179	4	0.739	0.439	-0.647	0
GTD4	14	0	4.216	4	0.809	0.729	-0.944	0
GTD5	15	0	4.073	4	0.82	0.036	-0.681	0
GPA1	16	0	4	4	0.687	2.039	-0.866	0
GPA2	17	0	4.01	4	0.704	1.887	-0.877	0
GPA3	18	0	4.1	4	0.74	0.885	-0.704	0
GPA4	19	0	4.239	4	0.664	1.684	-0.859	0
GPA5	20	0	4.126	4	0.69	0.67	-0.599	0
BP1	21	0	4.076	4	0.66	0.028	-0.292	0
BP2	22	0	4.169	4	0.683	0.383	-0.543	0
BP3	23	0	4.279	4	0.717	0.003	-0.689	0
BP4	24	0	4.219	4	0.772	0.249	-0.792	0
BP5	25	0	4.159	4	0.743	0.418	-0.705	0
BP6	26	0	4.076	4	0.732	0.176	-0.529	0
EP1	27	0	4.073	4	0.632	0.944	-0.456	0
EP2	28	0	4.156	4	0.641	0.322	-0.381	0
EP3	29	0	4.229	4	0.718	-0.34	-0.535	0
EP4	30	0	4.186	4	0.81	1.433	-1.069	0
EP5	31	0	4.199	4	0.769	0.062	-0.711	0

(Table 3: Data Normality)

Multiple datasets, each with 301 data points, are statistically represented in the results. Median values, which show the middle ground or central tendency, can be positive or negative depending on the dataset. The magnitudes of the standard deviations, which show how dispersed the data is, vary. Positive values for excess kurtosis indicate distributions with heavy tails, while negative values indicate distributions with lighter tails. Depending on the dataset, skewness can be either negative or positive, indicating an uneven distribution. When the Cramer-von Mises test statistics and p-values are consistently reported as 0, it means that the data is significantly different from what is expected theoretically. This raises the possibility that the datasets do not conform precisely to the assumed distribution and that there may be

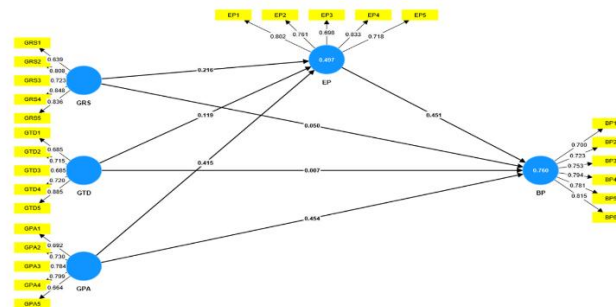
discrepancies in the fundamental data attributes. Understanding the features of these outliers and assessing their consequences for the applicable datasets would benefit from further research and analysis.. Validity Evaluations: The p-value and the Cramér-von Mises statistic How well the data follows a normal distribution is assessed by these metrics. The data shows a significant deviation from normality when the p-value is low, usually below 0.05.

### PLS-SEM Approach

Declared that while evaluating parameters (measurement model) and testing hypotheses (structural relationships), the SEM should be utilized. According to [Heseler \(2013\)](#), PLS-SEM is frequently utilized in studies on customer behavior. To illustrate complex interactions, for example, PLS works well. A dataset with an irregular data distribution can also be handled by PLS, aside from that. Researchers can quantify heterogeneity within path modeling with PLS, which is also an effective method. Phase one of the two-stage SEM method entails evaluating the measurement model, and phase two involves conducting structure relationship analysis, also known as path analysis. established by [Henseler and Chin \(2010\)](#). This study employed Smart PLS software version 4 to conduct PLS-SEM analysis. Details are illustrated in the figure.

### Measurement Framework

The measurement model assesses the measurement properties of latent constructs and illustrates their evaluation through observable variables. The criteria of the measurement model must be satisfied prior to advancing to the structural model. Five reflective constructs were employed in this study, four for each reflective construct. The validity and reliability of the estimation model are generally evaluated (Hair et al., 2014). Confirmatory Factor Analysis (CFA) can be employed to evaluate the validity and reliability of all scales. The model is depicted in the figure, with circles representing the constructs and rectangles indicating the items utilized to measure these constructs.



(Figure 2): Measurement Model Used for CFA

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After the model was developed in SmartPLS software, PLS algorithm was used to estimate the basic statistics with the settings of maximum iteration = 301 and Path Weighting Scheme. The process is known as measurement model (outer model) assessment. An examination was conducted to assess the capacities of the items in the scale by measuring their outer loadings. All external loadings must have values greater than zero, as this is a requirement for factor analysis. The value can be either 70 (Hair et al., 2010) or 0. In their study, (Hair et al,2010) have defined organisational commitment as the strength of an individual's identification.

### ***Convergent Validity***

We are comparing the convergent validity of alpha with the composite reliability (CR), which is measured by the average variance extracted. Since composite reliability is based on factual information during its development, it is the preferred indicator of internal consistency reliability. Verifying that the composite reliability score is greater than 0.7 is suggested as a means of evaluating the constructs' reliability by Chin (2010) and Gefen et al. (2000). Consistent with previous research (Hair et al. 1998), this study found that all constructs had composite reliability (CR) values greater than 0.7, indicating strong convergent validity. If the reliance measure explains more than half of the construct's variability (score > 0.5), then the measurement is said to be well-constructed. With AVE values over 0.5 and alpha and CR values over 0.7, the table shows a satisfactory level of convergent validity and internal consistency.

### ***Discriminant Validity***

Templates of discriminant validity tell what and how the constructs are different from each other. It was assessed by three measures: The initial evaluation focused on Criteria: 1) Fornell and Lacker; 2) Cross loadings and 3 Hetrotrait-Monotrait ratio (HTMT) proposed by Henseler et al. SmartPLS has the results for all these criteria of discriminant validity assessment. Discriminating validity is determined by a measurement model that has a squared value of the AVE of a construct that stands more than the inter-item correlation. Indicators should have higher loadings on the corresponding construct compared to other constructions. The cross-loadings are generated by the Smart PLS method. The HTMT method is a superior approach for detecting discriminant validity. HTMT is a statistical measure that quantifies the average correlation between indicators that measure distinct constructs, divided by the geometric average of correlations between indicators that measure the same construct. SmartPLS presented the HTMT values in the table below. The criterion threshold for assessing discriminant validity is 0.85 percent. Kline (2011) or Gold et al. (2001) both state that values of 0.90 indicate discriminant validity. One more recommendation for a standard is to In order to ensure that the HTMT value confidence interval for the structural paths is not equal to 1, it is necessary to conduct an assessment (Henseler et al., 2015). To evaluate the model, a bootstrap confidence interval of 90% was used. The second criterion was met because no interval contained a value of 1.

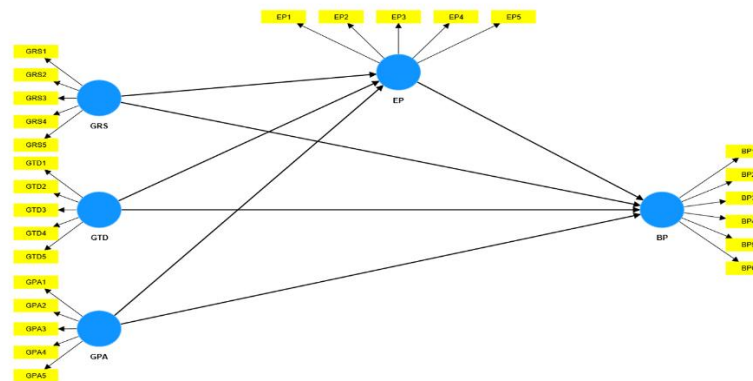
### ***Assessment of Structural Model***

Reason being, inner (structured path) model estimates can only be evaluated with the help of correct and dependable outer model estimates

(Henseler et al., 2013). It is also important to distinguish between measurement theory and the processes by which methods like PLS-SEM infer model parameters. Researchers can define measurement models that are reflectively and formatively specified which PLS-SEM can estimate in a very simple manner. On the other hand, the scholars in PLS make use of the bootstrap method to test the flow of variables (Gefen et al., 2000).

### Assessment of Collinearity

The results which are deduced in PLS-SEM are on the basis of OLS regression of an individually endogenous latent variable on its number one parallel construct. Hence, chi-square test is crucial in determining the level of collinearity of predictors. Another problem is - collinearity of the predictor variables, which can result in the biased estimates (Hair et al., 2017). Multicollinearity presence is checked by using Variance inflation factor (VIF) values which are obtained in SmartPLS. (Petter et al., 2007) also explained that VIF value greater than 3.3 signs high collinearity.



(Figure 3: PLS Structural Model)  
Path Coefficient ( $\beta$ ) and  $t$ -values

Using the bootstrapping method, we test the hypothesised connection between the components. The  $t$ -value,  $p$ -value, and path coefficient ( $\beta$ ) are used to assess the correlation. Each relationship in the model has its path coefficient values ( $\beta$ ) displayed in the figure. The specified  $p$ -value and  $t$ -value are also included. The  $\beta$ ,  $p$ -value, and  $t$ -values are computed using SmartPLS's bootstrap method with the help of the 5000 samples.

	relationship	Beta	Sample mean (M)	Standard deviation (STDEV)	T statistics	P values	Decision
H1	GRS -> BP	0.163	0.169	0.066	2.457	0.014	Supported
H2	GTD -> BP	0.191	0.19	0.077	2.475	0.013	Supported
H3	GPA -> BP	0.455	0.452	0.055	8.253	0	Supported
H4	GRS -> EP	0.208	0.213	0.081	2.585	0.01	Supported
H5	GTD -> EP	0.189	0.187	0.082	2.302	0.021	Supported
H6	GPA -> EP	0.313	0.313	0.073	4.265	0	Supported
H 7	EP -> BP	0.398	0.396	0.052	7.597	0	Supported

*(Table 4 : Findings from Testing Hypotheses and Structural Models)*

*Results of Structural Model and Hypotheses Testing*

H1 (GRS -> BP): Analyzes the impact of GRS on BP. The beta value of 0.163 signifies a weak positive correlation. Importance: A p-value of 0.014 indicates a statistically significant association; however, the effect size is minimal. This indicates that despite a positive correlation, the rise in BP scores corresponding to elevated GRS scores is minimal.

H2 (GTD -> BP): Analyzes the impact of GTD on BP. The beta value of 0.191 signifies a weak positive correlation, marginally stronger than H1. A p-value of 0.013 indicates a statistically significant relationship, albeit with a weak effect size. Analogous to H1, the augmentation of BP scores corresponding to elevated GTD scores is minimal.

H3 (GPA -> BP): Analyzes the influence of GPA on BP. The beta value of 0.455 signifies a moderate positive correlation, the most robust among all hypotheses pertaining to BP. A p-value of 0 indicates a highly statistically significant association. Elevated GPA scores correlate with increased BP scores, exhibiting a more significant effect size in comparison to GRS and GTD.

H4 (GRS -> EP): Analyzes the impact of GRS on EP. A beta value of 0.208 signifies a weak positive correlation. A p-value of 0.01 indicates a statistically significant association; however, the effect size is minimal. Analogous to H1, the augmentation of EP scores with ascending GRS scores is minimal.

H5 (GTD -> EP): Analyzes the impact of GTD on EP. A beta value of 0.189 signifies a weak positive correlation. A p-value of 0.021 indicates a statistically significant association, albeit with a minimal effect size. Analogous to H2, the augmentation of EP scores corresponding to rising GTD scores is minimal.

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H6 (GPA → EP): Analyzes the impact of GPA on EP. A beta value of 0.313 signifies a moderate positive correlation. A p-value of 0 indicates an exceedingly statistically significant correlation. Elevated GPA scores correlate with increased EP scores, exhibiting a moderate effect size.

H7 (EP → BP): Analyzes the influence of EP on BP. The beta value of 0.398 signifies a moderate positive correlation, more robust than GRS and GTD, yet less so than GPA. A p-value of 0 indicates a highly statistically significant relationship. Elevated EP scores correlate with increased BP scores, exhibiting a moderate effect size.

### **Mediation Analysis**

For a lengthy amount of time, the casual approach developed by Baron and Kenny (1986) has been a very popular way for testing mediation. There are several procedures involved in this process to determine the mediation effect. However, because of its low power and type 1 error rate, new work has explored a number of shortcomings of the Baron and Kenny's method (Rungtusanathan et al., 2014). Another commonly used measure to evaluate mediation is the Sobel test. The basis for this test is the presumption that the indirect impact sampling distribution is normal. It is also not advised to use the Sobel test to examine the mediation effect because the distribution assumptions do not apply to the indirect effect. In order to establish mediation, Preacher and Hayes (2004:2008) have proposed a single inferential test for an indirect effect, criticizing Baron and Kenny's casual step process. Direct effect need not be considerable in order to analyze mediation. The mediation effect was analyzed using the Bias-Corrected and Accelerated (BCa) bootstrapping procedure with a Two-Tailed test.

H8 (GRS → EP → BP): This hypothesis investigates the indirect influence of GRS on BP through the mediation of EP. A beta value of 0.083 signifies the magnitude of this indirect effect. A positive value signifies a positive indirect effect, indicating that elevated GRS scores correlate with marginally increased BP scores, presumably due to their influence on higher EP scores. The T-statistic of 2.563 and a p-value of 0.01 validate the statistical significance of this indirect effect.

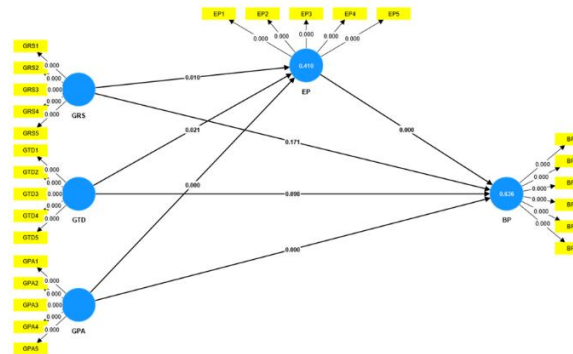
H9 (GTD → EP → BP): This hypothesis investigates the indirect influence of GTD on BP through the mediation of EP. The beta coefficient of 0.075 signifies the magnitude of this indirect effect. Analogous to H8, it represents a positive value signifying a positive indirect effect. Elevated GTD scores correlate with marginally increased BP scores, presumably due to their impact on EP scores. The T-statistic of 2.184 and p-value of 0.029 validate the statistical significance of this indirect effect; however, the effect size is diminished relative to H8 due to the lower beta value.

H10 (GPA → EP → BP): This hypothesis investigates the indirect influence of GPA on BP through the mediation of EP. The beta value of 0.125 signifies the magnitude of this indirect effect, which is the most substantial of the three. The positive value signifies that elevated GPA scores correlate with the greatest enhancement in BP scores, presumably mediated by their effect on EP scores. The T-statistic of 3.481 and p-value of 0.001 affirm the substantial statistical significance of this indirect effect.

The analysis demonstrates statistically significant indirect effects of all three independent variables (GRS, GPA, GTD) on BP, mediated by EP. The magnitude of these indirect effects, however, differs. The Grade Point Average (GPA) exerts the most significant impact on Blood Pressure (BP) via Emotional Processing (EP) (beta = 0.125), followed by Genetic Risk Score (GRS) (beta = 0.083), and subsequently Genetic Trait Diversity (GTD) (beta = 0.075). This indicates that although all three variables may exert some indirect influence on performance (BP) via another variable (EP), GPA seems to be the most significant factor.

hypothesis	Relationship	Beta	Sample mean (M)	Standard deviation (STDEV)	T statistics	P values	Decision
H8	GRS -> EP -> BP	0.083	0.084	0.032	2.563	0.01	supported
H9	GTD -> EP -> BP	0.075	0.074	0.034	2.184	0.029	supported
H10	GPA -> EP -> BP	0.125	0.125	0.036	3.481	0.001	supported

(Table 5 Hypothesis Testing for mediation )



(Figure 4 : Mediation analysis)

### **Explanatory Power of the Model**

The coefficient of determination ( $R^2$ ) serves as a metric to evaluate reliability of the model's predictions.  $R^2$  is a metric that quantifies the degree to which the model can elucidate the dissimilarity in the dependent variables, including the collective influence of all independent

variables. R2 can range from 0 to 1, with higher values suggesting greater precision in predictions. When attempting to determine the value of R2, there are additional guidelines that must be adhered to. The values of 0.26, 0.13, 0.02, 0.67, 0.33, 0.19, and 0.75, 0.50, 0.25, respectively, indicate a satisfactory level of accuracy in predicting outcomes, as stated by [Cohen \(1988\)](#), [Chin \(1998\)](#), and [Hair et al. \(2017\)](#).

### **Effect Size $f^2$**

The magnitude of the predictor construct can be evaluated utilizing the  $f^2$  statistic. ([Cohen, 1988](#)). This is crucial because the internal hidden factor in certain models is influenced by a significant number of external variables. Subsequently, it is necessary to compute the effect size for each variable. An approach to accomplish this is by calculating the quotient of the difference between the R2 included and R2 removed, divided by one minus the R2 included.

### **Effect size for Constructs**

The table you provided shows a correlation matrix, which summarizes the relationships between multiple variables. Here's an interpretation of the correlations between each pair of variables **BP (Performance): EP:** A positive correlation of 0.252 indicates a weak to moderate positive relationship. Higher scores on EP is generally correlated with marginally elevated BP scores. The GPA exhibits a weak positive correlation of 0.119. Elevated GPA scores are generally correlated with marginally higher BP scores; however, the strength of this correlation is less robust than that with EP. **GRS:** A minimal positive correlation of 0.007 indicates an almost insignificant relationship. There is virtually no correlation between GRS and BP scores. **GTD:** A minimal positive correlation of 0.012 indicates an almost insignificant relationship. There is virtually no correlation between GTD and BP scores. The GPA exhibits a weak positive correlation of 0.071. Elevated GPA scores are generally correlated with marginally higher EP scores; however, the strength of this correlation is weak.

### **Goodness of Fit**

The standards of the overall model fit is utilized to assess the extent to which proposed the models align with the data.

	Saturated model	Estimated model
SRMR	0.068	0.068
d_ULS	1.614	1.614
d_G	0.774	0.774
Chi-square	1332.344	1332.344
NFI	0.768	0.768

*(Table 6: Model fit value)*

The comparison between the saturated model and the estimated model involves several fit indices, providing insights into the goodness of fit for each model.



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- **SRMR (Standardized Root Mean Square Residual):** Both saturated and estimated models have an SRMR of 0.068. This value is generally considered acceptable for SEM, suggesting a reasonable fit between the model and the data. A lower value indicates a better fit. Since both models have the same value, it doesn't help differentiate between them.
  - **d\_ULS (Normed Fit Index - Unweighted Least Squares):** Both models have a d\_ULS of 1.614. **Interpretation:** This index doesn't have a clear threshold for good fit. It compares the chi-square statistic of the model to a chi-square statistic from a baseline model with no relationships specified. Since both models have the same value, it's not informative for comparison.
  - **d\_G (Gehrig's d):** Both models have a d\_G of 0.774. Similar to d\_ULS, this index doesn't have a definitive cut-off for good fit. It compares the model's chi-square to a theoretical chi-square based on sample size and number of estimated parameters. Again, with identical values in both models, it's not helpful for comparison.
  - **Chi-square ( $\chi^2$ ):** Both saturated and estimated models have a Chi-square value of 1332.344. Chi-square is used for hypothesis testing, but its value depends on sample size. A high chi-square with a low p-value might suggest the model doesn't fit the data well. However, in SEM, chi-square is often considered alongside other fit indices due to its sensitivity to sample size. Since both models have the same Chi-square value, it's not useful for comparison here.
  - **NFI (Normed Fit Index):** Both saturated and estimated models have an NFI of 0.768. NFI compares the chi-square of the model to a baseline model with no relationships specified. A value closer to 1 indicates a better fit. Here, even though both models have the same NFI, it suggests a potential issue with the model fit, as NFI values above 0.9 are generally preferred.

### Discussion

This study has examined the conceptual framework in which company performance is considered the dependent variable. Academic research Green hiring, green training, green involvement, and green performance management and pay are the distinct concepts. Environmental performance is the variable that acts as a mediator or intermediary in nature. Upon the completion of our research, we administered questionnaires to 301 employees in the twin cities of Rawalpindi and Islamabad. The results of our study align with the prior findings. Research has shown that the effects of green hiring, green training, and involvement, green performance management, and pay on employee business performance are impressive and favorable. The findings of this study align with previous research undertaken by different academics ([Afsar et al., 2019](#); [Alam et al., 2023](#); [Al-Hadrami et al., 2024](#)). these findings have confirmed results that align with the studies conducted by scholars who have investigated similar variables in their research ([Martins et al., 2021](#); [Roscoe et al., 2019](#); [Yusoff et al., 2020](#)). The confirmation of Hypothesis 7 involved analyzing the impact of environmental performance (mediating construct) on company performance (dependent construct). Additionally, the mediation analysis conducted in this study has also yielded good and statistically significant results. [Ghouri et al. \(2020\)](#) A comprehensive study has been conducted on the correlation between green human resource management and employee business

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performance. They have investigated the function of environmental performance as an intermediary in this relationship. This study enhances prior research by illustrating robust and positive correlations among various antecedents of green HRM and corporate performance, with environmental performance serving as the mediating variable.

(Amjad et al., 2021).

### **Practical implications**

The results of this study further recommend that managers of the telecommunication industry of Pakistan should involve their employees in green practices if they want to increase trust level as well as improve competitiveness globally. Green practices become the source of motivation for employees to further manage their moral and monetary goals. There is also a requirement for awareness programs by the government to further inculcate performance related to green environment. This would lead towards enhancement of determination of an individual to show improvement in their performance. Furthermore, this model becomes the source of guidance for managers to implement these green HRM where reduction related to energy, waste, and emissions would be reduced from the organization.

### **Limits and recommendations for further research**

Nevertheless, it is important to acknowledge the following constraints associated with study: Due to time the constraints limited financial resources, the study only done in the twin cities of Islamabad and Rawalpindi. Subsequent investigations could be carried out in additional Pakistani cities, as well as in other countries, to examine the patterns and trends. Furthermore, we may expand this research by conducting the longitudinal study, which would provide a more in-depth understanding of the arguments provided. Secondly, this research was limited by only focusing on the telecommunication industry of Pakistan. For generalization of this study for future works, researchers can consider varying industries for both developed and developing countries. There is also the advantage that this study focused on only one mediator in the proposed model and therefore, future research might consider multiple mediators between the autonomous and subordinate constructs. Furthermore, the researcher can utilize the Stakeholder theory by Freeman (1984) which suggests that organizations should consider the interest and impact of all stakeholders and argues that an organization can make decisions with the concerns of stakeholders to achieve long-term sustainability.

### **Conclusion**

Green HRM practices have become crucial for ecological sustainability. It additionally assists organizations in attaining environmental performance and securing a competitive edge in both national and global markets. This study investigates the correlation between the implementation of Green Human Resource Management and its resultant effect on Environmental Performance. An elevation in EP subsequently improves the organization's Business Performance. Results have shown that practices related to Green HRM would further lead to behavior related to the environment among employees. Specifically, if employees are given training that is linked with awareness related to

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the environment as well as giving preference to those candidates during the hiring process who give great consideration to the sustainability of the environment, then their behavior would further lead towards an increase in motivation to perform better in their organization (Amjad et al., 2021). Furthermore, by giving training to employees and involving them in taking green initiatives, such employees would further recover their contribution to eco-friendly sustainability (Pham et al., 2020), which subsequently resulted in an elevation of blood pressure. Finally, through the augmentation of sustainable performance management and workforce engagement compensation, where employees are aligned with objectives related to green initiatives as well as their compensation is also tied with green practices for the organization, such practices always lead towards achievement of the environmental performance (Amjad et al., 2021). As a key facilitator of both environmental and BP, managers can benefit from implementing Green Human Resource Management (GHRM) practices, according to this study's empirical evidence, which adds to the existing body of knowledge on green HRM.

### References

- Afsar, B., Masood, M., & Umrani, W. A. (2019). The role of job crafting and knowledge sharing on the effect of transformational leadership on innovative work behavior. *Personnel Review*, 48(5), 1186-1208.
- Afzal, C. M., Khan, S. N., Baig, F. J., & Ashraf, M. U. (2023). Impact of green human resource management on environmental performance: the mediating role of green innovation and environmental strategy in Pakistan. *Review of Applied Management and Social Sciences*, 6(2), 227-242.
- Aggarwal, P., & Agarwala, T. (2023). Relationship of green human resource management with environmental performance: mediating effect of green organizational culture. *Benchmarking: An International Journal*, 30(7), 2351-2376.
- Ahakwa, I., Yang, J., Tackie, E. A., & Asamany, M. (2021). Green human resource management practices and environmental performance in Ghana: the role of green innovation. *SEISENSE Journal of Management*, 4(4), 100-119.
- Ahakwa, I., Yang, J., Tackie, E. A., & Asamany, M. (2021). Green human resource management practices and environmental performance in Ghana: the role of green innovation. *SEISENSE Journal of Management*, 4(4), 100-119.
- Ahmad, S. (2015). Green human resource management: Policies and practices. *Cogent business & management*, 2(1), 1030817.
- Al-Alawneh, R., Othman, M., & Zaid, A. A. (2023). Green HRM impact on environmental performance in higher education with mediating roles of

- 
- management support and green culture. *International Journal of Organizational Analysis*.
- Alam, M. N., Campbell, N., Das, S., Hashim, F., Hidayat ur Rehman, I., & Iqbal, J. (2023). Green training and development revolutionizing organizational performance: the moderating role of green employee involvement in the Bangladeshi pharmaceutical industry. *International Business Research*, 36-49.
- Aldaas, R., Mohamed, R., Hareeza Ali, M., & Ismail, N. A. (2022). Green supply chain management and SMEs environmental performance: green HRM practices as antecedent from service sector of emerging economy. *International Journal of Emergency Services*, 11(3), 422-444.
- Al-Hadrami, A. H., Sakti, M. R. P., & AlKhalifa, F. M. (2024). Do Green Human Resource Practices Affect Firm's Performance: The Case of the Telecommunication Companies in Bahrain. In *Artificial Intelligence-Augmented Digital Twins: Transforming Industrial Operations for Innovation and Sustainability* (pp. 185-197). Cham: Springer Nature Switzerland.
- Al-Shahwani, T. (2020). Impact of AMO enhancing human resource management practices on sustainable competitive advantage in insurance companies in Qatar. *Management Science Letters*, 10(8), 1827-1834.
- AlZgool, M., Ahmed, U., Shah, S., Alkadash, T., & AlMaamary, Q. (2021). Going green during COVID-19: Examining the links between green HRM, green supply chain and firm performance in food Industry of Bahrain: The moderating role of lockdown due to COVID-19. *Uncertain Supply Chain Management*, 9(1), 79-88.
- Alzyoud, A. A. Y. (2021). The impact of green human resource management practices and knowledge sharing on sustainable performance: a conceptual framework. *International Journal of Education Humanities and Social Science*, 4(2), 115-132.
- Amjad, F., Abbas, W., Zia-Ur-Rehman, M., Baig, S. A., Hashim, M., Khan, A., & Rehman, H. U. (2021). Effect of green human resource management practices on organizational sustainability: the mediating role of environmental and employee performance. *Environmental Science and Pollution Research*, 28, 28191-28206.

- 
- Amrutha, V. N., & Geetha, S. N. (2020). A systematic review on green human resource management: Implications for social sustainability. *Journal of Cleaner production*, 247, 119131.
- Anser, M. K., Yousaf, Z., Awan, U., Nassani, A. A., Qazi Abro, M. M., & Zaman, K. (2020). Identifying the carbon emissions damage to international tourism: turn a blind eye. *Sustainability*, 12(5), 1937.
- Anthony Jr, B. (2019). Green information system integration for environmental performance in organizations: An extension of belief–action–outcome framework and natural resource- based view theory. *Benchmarking: An International Journal*, 26(3), 1033-1062.
- Anwar, N., Mahmood, N. H. N., Yusliza, M. Y., Ramayah, T., Faezah, J. N., & Khalid, W. (2020). Green Human Resource Management for organisational citizenship behavior towards the environment and environmental performance on a university campus. *Journal of cleaner production*, 256, 120401.
- Anwar, N., Mahmood, N.H.N., Yusliza, M.Y., Ramayah, T., Faezah, J.N. and Khalid, W. ( 2020), “Green Human Resource Management for organisational citizenship behaviour towards the environment and environmental performance on a university campus”, *Journal of Cleaner Production*, Vol. 256, p. 120401.
- Appelbaum, E., Bailey, T., Berg, P., Kalleberg, A.L. and Bailey, T.A. (2000), *Manufacturing Advantage: Why High-Performance Work Systems Pay off*, Cornell University Press, Ithaca, NY.
- Banerjee, S. B., Iyer, E. S., & Kashyap, R. K. (2003). Corporate environmentalism: Antecedents and influence of industry type. *Journal of marketing*, 67(2), 106-122.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.
- Bebbington, J. (2001), “Sustainable development: a review of the international development, business and accounting literature”, *Accounting Forum*, Vol. 25 No. 2, pp. 128-157

- 
- Bhatti, S. H., Saleem, F., Murtaza, G., & Haq, T. U. (2022). Exploring the impact of green human resource management on environmental performance: the roles of perceived organizational support and innovative environmental behavior. *International Journal of Manpower*, 43(3), 742-762.
- Boselie, P., Dietz, G. and Boon, C. (2005), "Commonalities and contradictions in HRM and performance research", *Human Resource Management Journal*, Vol. 15 No. 3, pp. 67-94.
- Bryman, A. and Bell, E. (2007) *Business Research Methods*. Revised Edition, Oxford University Press, Oxford.
- Bulmer, M. (2004). Sage Benchmarks in Social Science Research Methods. *Questionnaires, 1st edition edited by: Bulmer, M., Sage Publications, London*, 354.
- Chaudhary, R. (2019). Green human resource management in Indian automobile industry. *Journal of Global Responsibility*, 10(2), 161-175.
- Cheema, S., Durrani, A. B., Pasha, A. T., & Javed, F. (2015). Green human resource practices: Implementations and hurdles of SMEs in Pakistan. *Journal of Business Studies Quarterly*, 7(2), 231.
- Cheema, S. and Javed, F. (2017), "The effects of corporate social responsibility toward green human resource management: the mediating role of sustainable environment", *Cogent Business and Management*, Vol. 4, p. 1310012.
- Chiu, C. L., Zhang, J., Li, M., Wei, S., Xu, S., & Chai, X. (2020). A study of environmental disclosures practices in Chinese energy industry. *Asian Journal of Sustainability and Social Responsibility*, 5(1), 9.
- Chiu, C. N. (2023). The impact of environmental management on business performance: evidence from the hotel industry.
- Comte, A. (1858). *The positive philosophy of Auguste Comte*. Blanchard.
- Daily, B. F., Bishop, J. W., & Massoud, J. A. (2012). The role of training and empowerment in environmental performance: A study of the Mexican maquiladora industry. *International Journal of operations & production management*, 32(5), 631-647.
- Daily, B. F., Bishop, J. W., & Steiner, R. (2007). The mediating role of EMS teamwork as it pertains to HR factors and perceived environmental performance. *Journal of Applied Business Research (JABR)*, 23(1).

- 
- Daily, B.F. and Huang, S.-C. (2001), "Achieving sustainability through attention to human resource factors in environmental management", *International Journal of Operations & Production Management*, Vol. 21, pp. 1539-1552.
- Darnall, N., Henriques, I. and Sadowsky, P. (2008), "Do environmental management systems improve business performance in an international setting?", *Journal of International Management*, Vol. 14 No. 4, pp. 364-376
- Ghouri, A. M., Mani, V., Khan, M. R., Khan, N. R., & Srivastava, A. P. (2020). Enhancing business performance through green human resource management practices: an empirical evidence from Malaysian manufacturing industry. *International Journal of productivity and Performance management*, 69(8), 1585-1607.
- Ghouri, A. M., Mani, V., Khan, M. R., Khan, N. R., & Srivastava, A. P. (2020). Enhancing business performance through green human resource management practices: an empirical evidence from Malaysian manufacturing industry. *International Journal of productivity and Performance management*, 69(8), 1585-1607.
- Gilal, F. G., Ashraf, Z., Gilal, N. G., Gilal, R. G., & Channa, N. A. (2019). Promoting environmental performance through green human resource management practices in higher education institutions: A moderated mediation model. *Corporate Social Responsibility and Environmental Management*, 26(6), 1579-1590.
- GILL, D. A. A., ANSARI, R. H., MALIK, S., & AKHTAR, N. (2021). Examine The influence of green human resource management on environmental performance: mediating role of organizational focused citizenship behaviour towards the environment. *The journal of contemporary issues in business and government*, 27(2), 1922-1933.
- Gull, S., & Idrees, H. (2022). Green training and organizational efficiency: mediating role of green competencies. *European Journal of Training and Development*, 46(1/2), 105-119.
- Hameed, Z., Khan, I. U., Islam, T., Sheikh, Z., & Naeem, R. M. (2020). Do green HRM practices influence employees' environmental performance?.

- 
- International Journal of Manpower*, 41(7), 1061-1079.
- Hart, S. L. (1997). Beyond greening: strategies for a sustainable world. *Harvard business review*, 75(1), 66-77.
- Hashim, H. A. (2020). RECRUITMENT AND SELECTION CHALLENGES IN NIGERIAN CIVIL SOCIETY ORGANISATIONS, CAN TRAINING HR STAFF CONTRIBUTE TO ADDRESSING THESE CHALLENGES? (Master's thesis).
- Iftikar, T., Hussain, S., Malik, M. I., Hyder, S., Kaleem, M., & Saqib, A. (2022). Green human resource management and pro-environmental behaviour nexus with the lens of AMOtheory. *Cogent business & management*, 9(1), 2124603.
- Jabbour, C.J.C. and Jabbour, A. (2016), "Green human resource management and green supply chain management: linking two emerging agendas", *Journal of Cleaner Production*, Vol. 112, pp. 1824-18
- Zaid, A. A., Jaaron, A. A., & Bon, A. T. (2018). The impact of green human resource management and green supply chain management practices on sustainable performance: Anempirical study. *Journal of cleaner production*, 204, 965-979.
- Zhao, W., & Huang, L. (2022). The impact of green transformational leadership, green HRM, green innovation and organizational support on the sustainable business performance:Evidence from China. *Economic research-Ekonomska istraživanja*, 35(1), 6121-6141.
- Pearson, K. (1907). On further methods of determining correlation (Vol. 16). Dulau and Company.
- Hair, E., Halle, T., Terry-Humen, E., Lavelle, B., & Calkins, J. (2006). Children's school readiness in the ECLS-K: Predictions to academic, health, and social outcomes in first grade. *Early Childhood Research Quarterly*, 21(4), 431-454.
- Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial management & data systems*, 117(3), 442-458.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates



- 
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–336). Lawrence Erlbaum Associates.
- Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial management & data systems*, 117(3), 442-458
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717–731.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Rungtusanathan, M., Dean, D. L., & Liker, J. K. (2014). University technology transfer: Network fit in the industry–university–government triad. *Journal of Engineering and Technology Management*, 34, 112–130.
- Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (3rd ed.). Routledge.
- Gefen, D., Straub, D., & Boudreau, M. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems*, 4(1), 7.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43, 115-135.
- Gefen, D., Straub, D., & Boudreau, M. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems*, 4(1), 7.

- 
- Uppal, N. (2021), "Mediating effects of person–environment fit on the relationship between high-performance human resource practices and firm performance", *International Journal of Manpower*, Vol. 42 No. 3, pp. 356-371.
- Veerasamy, U., Joseph, M. S., & Parayitam, S. (2023). Green Human Resource Management and Employee Green Behaviour: Participation and Involvement, and Training and Development as Moderators. *South Asian Journal of Human Resources Management*, 23220937221144361.
- Yafi, E., Tehseen, S., & Haider, S. A. (2021). Impact of green training on environmental performance through mediating role of competencies and motivation. *Sustainability*, 13(10),5624.
- Yong, J. Y., Yusliza, M. Y., Ramayah, T., Chiappetta Jabbour, C. J., Sehnem, S., & Mani, V. (2020). Pathways towards sustainability in manufacturing organizations: Empirical evidence on the role of green human resource management. *Business Strategy and the Environment*, 29(1), 212-228.
- Yusoff, Y. M., Nejati, M., Kee, D. M. H., & Amran, A. (2020). Linking green human resource management practices to environmental performance in hotel industry. *Global Business Review*, 21(3), 663-680.
- Yu, W., Chavez, R., Feng, M., Wong, C.Y. and Fynes, B. (2020), "Green human resource management and environmental cooperation: an ability-motivation-opportunity and contingency perspective", *International Journal of Production Economics*, Vol. 219, pp. 224-235.