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## The Impact of Green Training on Employee Performance: Mediating Role of Green Motivation and Green Innovation: Evidence from Public Health Sector of Pakistan

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### ABSTRACT

This study seeks to evaluate the influence of Green Training (GT) on Employee Performance (EP) in Pakistan's public health sector, with a special emphasis on the mediating roles of Green Motivation (GM) and Green Innovation (GI). This study uses Signaling Theory (ST) and the Ability-Motivation-Opportunity (AMO) Theory to investigate how green training programs improve employee performance and organizational sustainability. A quantitative research technique was used to examine survey data acquired from 297 personnel in Pakistan's public health sector using convenience sampling. The study evaluated the direct influence of Green Training on Employee Performance and investigated the mediating roles of Green Motivation and Green Innovation. In addition, reliability and validity tests were performed to confirm the resilience of the measurement model and the correctness of the results. The findings showed that green training had a favorable impact on employee performance, both directly and indirectly, through green motivation and green innovation. Green Innovation has a larger mediation impact than Green Motivation. These findings back up the AMO Theory, which states that well-trained people perform better when given incentive and opportunity to innovate. Furthermore, Signaling Theory demonstrates that firms that prioritize Green Training give a strong signal of their commitment to sustainability, which leads to increased employee engagement and performance. The study emphasizes the significance of Green Training programs for improving staff skills, motivation, and inventive capacities. Structured sustainability training should be implemented in public healthcare facilities, as well as a work atmosphere that encourages motivation and creativity.

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Furthermore, policymakers should establish incentive-based programs to encourage employees to embrace environmentally friendly habits, which would eventually improve individual and organizational performance. This study adds to the current body of information by looking into the mediating processes of Green Motivation and Green Innovation in the link between Green Training and Employee Performance. The study applies AMO and Signaling Theories to give theoretical and practical insights into the importance of environmental training in Pakistan's public health sector. The findings have important implications for legislators, healthcare administrators, and HR practitioners who want to improve organizational sustainability through employee development efforts.

**Keywords:** Green Training, Employee Performance, Green Motivation, Green Innovation, Public Health Sector of Pakistan, AMO Theory, Signaling Theory, Sustainability.

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## INTRODUCTION

Employee performance is a key aspect in determining an organization's overall success, efficiency, and sustainability (Lukito et al., 2025). It refers to how successfully people carry out their responsibilities, achieve organizational objectives, and contribute to corporate growth. High-performing workers give businesses a competitive edge across a range of sectors by increasing productivity, creativity, and service quality (Joseph Tawk, 2021). Employee performance is influenced by multiple factors, including training and development (Arulsamy et al., 2023), motivation (Riski & Rino, 2023), leadership styles (Wuryani et al., 2021), job satisfaction (Jabid et al., 2023), and workplace culture (Obeng et al., 2024). Organizations that promote skill development and provide a favorable work environment encourage employees to be more engaged, efficient, and committed to their jobs. Furthermore, assessing employee performance using important indicators such as job completion, work quality, and employee engagement enables firms to make more informed decisions about workforce effectiveness (Imran, Sultana, & Ahmed, 2023; Yao et al., 2022).

In the modern business environment, organizations are increasingly implementing innovative strategies to improve employee performance. According to the Azhar, Iqbal and Imran (2025), in order to increase employee productivity and organizational sustainability, one emerging approach is Green Human Resource Management Practices (GHRMP), which incorporates sustainability strategies such as eco-friendly workplace activities, green training, and green motivation (Y. Wang et al., 2025). Green practice training tends to increase employee engagement, motivation, and alignment with company goals, all of which have a favorable impact on performance (Gupta & Jangra, 2024). Additionally, by fostering an atmosphere where workers feel appreciated and encouraged to provide their best efforts, leadership support, recognition initiatives, and technology developments all help to improve performance (Celestin et al., 2024).

Green training has modern concept of Green Human Resource Management

(GHRM), aimed at preparing employees with the information, skills, and incentive to embrace ecologically sustainable practices within organizations (Das & Dash, 2023). By encouraging environmental awareness and supporting eco-friendly behaviors, green training not only helps to corporate sustainability objectives but also has the potential to boost employee performance (Gomes et al., 2024; Akhtar, et al., 2020). Green training prepares employees to integrate sustainability into their everyday duties, which leads to increased productivity, innovation, and job satisfaction (Faeni et al., 2025). Furthermore, green training may increase employee motivation by connecting their job to larger environmental principles, generating a feeling of purpose and engagement. When connected with sustainability goals, this drive turns into green motivation, in which employees are encouraged to engage in ecologically responsible activities that benefit both business performance and employee performance.

Green motivation and green innovation are emerging concepts in sustainable human resource management that are essential for improving employee performance. The term "green motivation" describes the internal and external forces that push workers to embrace ecologically friendly practices at work. Organizations that integrate green motivating approach, such as incentives, user friendly environmentally, rewards, recognition, well leadership can prioritize sustainability, and staff involvement in environmental regulations, frequently see increases in employee dedication and work satisfaction (Dash & Das, 2024). Green initiatives inspire employees to take the initiative to adopt sustainable practices, which boosts productivity, lowers resource waste, and improves overall performance (Liaquat et al., 2024). As firms increasingly prioritize sustainability, understanding the impact of green motivation on employee performance is critical for developing HR policies that encourage long-term commitment to environmental stewardship.

Similarly, green innovation is an important driver of improved employee performance since it entails developing and implementing environmentally friendly behaviors, technology, and work processes. Green innovation promotes a culture of continuous development, encouraging people to create and implement new ideas that decrease environmental impact while preserving or increasing productivity (Shahzad et al., 2022). Green innovation-focused organizations encourage employees to think creatively, cooperate on sustainability projects, and contribute to corporate efficiency (Cheng et al., 2023). Furthermore, green innovation improves employees' problem-solving abilities and flexibility, which are critical for remaining competitive in a continually changing company environment (Alshammari & Alshammari, 2023). Given the increased focus on sustainability throughout the world, it is imperative to investigate how green innovation affects worker performance, especially in industries like healthcare where sustainable practices may result in better service delivery and more effective use of resources. Organizations may develop strategies that improve worker productivity and advance more general environmental sustainability goals by looking at the relationship between green innovation, green motivation, and employee performance (Saba, Fatima, Farooq, & Zafar, 2021; Saba, Tabish, & Khan, 2017).

The Pakistan's healthcare sector has faced several issues, such as ineffective waste management, excessive carbon emissions, and unsustainable resource utilization. Green Training has the potential to improve employee performance and encourage sustainable workplace, there has been little study on its efficacy in Pakistan's public health sector. Furthermore, the effect of green motivation and green innovation in mediating the relationship between green training and employee performance is remains largely unexplored. Similar to this, companies are incorporating green practices into their operations as a result of the increased emphasis on sustainability, which has a unique impact on worker motivation and performance. Comprehensive study on the effects of these new trends, notably Green Human Resource Management Practices (GHRMP), on worker performance is lacking, nevertheless, especially in organizational and culturally diverse settings. This disparity emphasizes the need for more study to offer useful information to businesses looking to improve performance in a world that is changing quickly. Therefore, the objective of this study is to explore how green training can be strategically designed and implemented to enhance its influence on employee performance, with a specific focus on the mediating roles of Green Motivation (GM) and Green Innovation (GI). By examining these relationships, the study aims to provide actionable insights into how organizations can leverage green training to foster employee motivation, drive innovative sustainable practices, and ultimately improve overall performance of employees working in public health sector in Pakistan. By filling up these gaps, this study aims to contribute to the existing body of knowledge and provide useful suggestions for enhancing employee performance in particular contexts, like the public health sector of Pakistan. Based on the above discussion, this study is conducted to address the following research questions:

- What is the impact of Green Training and Development on Employee Performance in the public health sector of Pakistan?
- How does Green Motivation mediate the relationship between Green Training and Employee Performance?
- How does Green Innovation mediate the relationship between Green Training and Employee Performance?

## **LITERATURE REVIEW**

The theoretical framework and a thorough literature review on the said topic are presented in this section, which lays the foundation for this study.

### **Theoretical Foundation**

Signaling Theory (ST), introduced by Spence (1973), explains how organizations convey information to employees and external stakeholders through visible signals, such as investment in training programs, sustainability initiatives, and green practices. In the context of Green Human Resource Management (GHRM), green training serves as a signal to employees that the organization is committed to sustainability and employee development (Amjad et al., 2021). Employees interpret these signals as an indicator of the organization's values, which, in turn, influences their attitudes and behaviors toward environmental sustainability and work

performance. Green training increases workers' capacity to support sustainability projects by enhancing their knowledge and abilities, which eventually improves overall employee performance (Din et al., 2024).

The Ability-Motivation-Opportunity (AMO) Theory provides a solid framework for understanding how green training affects employee performance by mediating the roles of green motivation and innovation. According to theory, employee performance is determined by three factors: ability (skills and knowledge), motivation (willingness to perform), and opportunity (organizational support and resources) (Pandey & Risal, 2025). In this study, green training improves employees' abilities by providing them with the knowledge and skills required to implement sustainable practices. This enhanced skill promotes green motivation by making employees feel more secure and capable of contributing to environmental goals. Furthermore, green training allows employees to participate in green innovation by motivating them to create and execute sustainable solutions. These three elements—ability, motivation, and opportunity—work in concert to improve employee performance. Because it offers a thorough framework for comprehending the ways in which green training affects performance results, AMO Theory is extremely pertinent to our investigation (Sarfraz, Raja, & Malik, 2022; Raja, Raju, & Raja, 2021; Sarfraz, Raju, & Aksar, 2018).

Both signaling theory and AMO theory give a solid theoretical framework for this study by describing how green training, motivation, and innovation affect employee performance. Signaling theory sheds light on how employees view green training as a sign of corporate commitment, whereas AMO theory explains how training improves ability, develops motivation, and opens up opportunities for innovation. This study adds to the literature by giving empirical data on the effect of green training in molding employee motivation, encouraging green innovation, and enhancing performance in a resource-constrained industry such as healthcare. This report provides a comprehensive view of how firms may use green training to enhance employee engagement, sustainability, and performance results in Pakistan's healthcare industry.

### **Green Training and Employee Performance**

Green Human Resource Management (GHRM) has gaining popularity as businesses seek for sustainability. One of its key components is green training, which provides personnel with environmental knowledge, skills, and competencies to improve sustainability as well as the individual performance (Pham et al., 2020). Effective green training may boost employee performance by encouraging pro-environmental behaviors, enhancing enthusiasm, and increasing job efficiency (Sey & Rachmawati, 2025). Employee performance is the extent to which people meet their job-related objectives, complete their obligations, and contribute to the organization's goals (Saidin et al., 2024). It includes both task performance (completing particular job obligations) and contextual performance (behaviors that benefit the organizational environment, such as cooperation and initiative) (Luitel & Poudel, 2024). High employee performance is linked to higher productivity, efficiency, and organizational success. On the other hand, green training is the process of providing employees with

the information, skills, and attitudes required to implement environmentally sustainable practices within an organization (Faeni, 2024). It entails educating workers about environmental concerns, training them how to reduce their ecological impact, and motivating them to contribute to the organization's sustainability objectives. Therefore, the existing literature shows relationship between green training and employee performance.

Gull & Idrees, (2022), studied the textile manufacturing industry and discovered that green training improves organizational efficiency by fostering green competences in personnel. Their findings indicate that environmentally conscious firms may achieve efficient resource usage through targeted green training programs. Same like the study of Evina et al., (2024), investigated the retail industry and found that green training improves employee performance. The report emphasizes that green training provides employees with the knowledge they need to apply sustainable practices, which improves overall performance. Another study of Akram et al., (2025), explored the function of responsible leadership in the context of green training and discovered that, in cultures with substantial power distances, such as Pakistan, responsible leadership did not significantly influence the association between green training and overall performance. This research shows that cultural influences can impact the efficiency of green training programs. However, several studies have shown inconsistent results regarding the influence of green training on employee performance, necessitating further investigation. Thus, this has led to the development of first hypothesis for this study which is as follows:

**H<sub>1</sub>** Green Training has significant impact on Employee Performance in Public Health Sector of Pakistan.

### **Green Training and Green Motivation**

The interplay between green training and green motivation is very important in achieving organizational sustainability goals. In addition to imparting essential information and skills, successful green training programs foster intrinsic motivation in staff members to adopt eco-friendly behaviors (Barakat et al., 2023). Green training refers to educational activities designed to improve employees' environmental knowledge and abilities, whereas green motivation refers to the internal and external elements that inspire employees to engage in pro-environmental actions. This literature review investigates the link between green training and green motivation, focusing on empirical data from recent research. Yafi et al., (2021), investigated the effect of green training on environmental performance, taking green competences and green motivation into account as mediating variables. Their research found that green training improves both green competences and green motivation, which has a favorable impact on environmental performance. Another study of Wu et al., (2021), explored that how green training affects employees' green creativity via the mediating roles of green values and intrinsic motivation. The findings revealed that green training has a beneficial impact on green values, which in turn improves green intrinsic motivation, resulting in enhanced green creativity among employees. Further in the study of Zhang & Sun, (2021), the author used a mediated moderation model to investigate the impact of green remuneration and green training on



employees' green motivation. The study discovered that when individuals perceive a discrepancy between their self-standards and organizational norms, cognitive dissonance might emerge, resulting in a drop in green motivation. Given the arguments above, research examining the connection between green training and green motivation is imperative, taking into account both the advantages and possible drawbacks of green training programs. Based on the evidence above, the study suggests the following hypothesis:

**H<sub>2</sub>** Green Training has significant impact on Green Motivation in Public Health Sector of Pakistan.

### **Green Training and Green Innovation**

In the framework of sustainable development, firms are increasingly using green practices to reduce environmental impact and increase competitiveness. Green training and green innovation are two key components of Green Human Resource Management (GHRM). Green training teaches employees about environmental principles, whereas green innovation is the creation and execution of eco-friendly goods, services, or processes. This review of the literature uses new empirical research to investigate the connection between green training and green innovation. In the study of Su et al., (2020), the author explored the relationship between environmental leadership and business performance, emphasizing the mediating role of green innovation. Their findings show that leaders who promote environmental principles and give green training generate a culture of green innovation, which ultimately improves overall performance of employees (Azhar, 2024). According to a literature analysis by Li et al., (2022), organizational and environmental variables are what propel green innovation. They discovered that in order to enhance environmental performance and organizational legitimacy, businesses are motivated to use green innovation methods by both internal organizational practices, such as green training, and external environmental forces.

Wang et al., (2021), investigated how stakeholders' attitudes influence green innovation methods and their implications for environmental and organizational performance. According to the author, green training connects employee activities with stakeholder expectations, allowing for the adoption of green innovation techniques that benefit both the environment and the organization (Azhar, 2024). By giving employee, the information, skills abilities, and awareness they need to embrace and put into practice ecologically friendly activities, green training is essential to promoting green innovation inside businesses. Employees get the skills necessary to participate in the development and implementation of environmentally friendly procedures, goods, and services through organized learning initiatives (Nawaz, et al., 2024). Nevertheless, despite its importance, little is known about the connection between green training and green innovation across a range of sectors and organizational settings, particularly in Pakistan's health sector. Therefore, in order to determine the degree to which green training promotes creative environmental practices and to identify potential obstacles that can impede this process, it is imperative that research be conducted to examine this connection. Based on the existing literature, and discussion following hypothesis was derived:

**H<sub>3</sub>** Green Training has significant impact on Green Innovation in Public Health Sector of Pakistan.

#### **Green Training, Green Motivation and Employee Performance**

In the framework of sustainable development, firms are increasingly incorporating environmental issues into their operations via Green Human Resource Management (GHRM) methods. Green training, green motivation, and green innovation are key components of GHRM, and they have all been related to improved employee performance. Green training refers to organizational programs designed to improve employees' environmental knowledge and abilities. Yafi et al., (2021), studied the effect of green training on environmental performance, focusing on the mediating effects of green competences and motivation. Their findings show that green training considerably improves green competences and motivation, which have a beneficial impact on environmental performance (Nawaz, et al., 2024; Akhtar, et al., 2021).

Green motivation includes both inner and extrinsic elements that motivate employees to engage in pro-environmental practices. Surakarta et al., (2024), investigated the impact of green motivation, ability, and training on employee performance. The study found that green motivation has a considerable impact on employee performance and serves as a mediator between green ability and performance. Green training and motivation have a big impact on employee performance (Khan & Hassan, 2020). Yafi et al., (2021) and Haq (2012) found that green training improves environmental performance by increasing competences and motivation. Similarly, Surakarta et al., (2024) found that green motivation plays a mediating role in the association between green ability and employee performance. These studies indicate that establishing a green culture via training and encouragement can boost employee performance. Recent research emphasizes the value of green training and incentives in improving employee performance. Organizations that engage in green HRM practices are better positioned to meet sustainability objectives and enhance overall performance. Future study should investigate these links across industries and cultural contexts to provide a comprehensive knowledge of effective green HRM methods. Therefore, following hypotheses were developing on the basis of the above discussion.

**H<sub>4</sub>** Green Motivation has significant impact on Employee Performance in Public Health Sector of Pakistan.

**H<sub>5</sub>** Green Motivation significantly mediates the relationship between Green Training and Employee Performance in Public Health Sector of Pakistan.

#### **Green Training, Green Innovation and Employee Performance**

In the quest of sustainability, firms are increasingly implementing Green Human Resource Management (GHRM) techniques to improve environmental performance and employee outcomes. Green training and green innovation are key components of GHRM, and both have been related to increased employee performance. This literature review looks at current research that investigate the links between green training, green innovation, and employee performance. Green innovation refers to the creation and implementation of environmentally friendly



products, services, or processes. Awwad Al-Shammari et al., (2022), investigated the link between green innovation and environmental performance in big industrial enterprises. The study discovered that green innovation improves environmental performance, which is an important component of total organizational success.

Green training and innovation have a big impact on staff performance. Yafi et al., (2021), found that green training improves environmental performance by increasing competences and motivation. Similarly, Awwad Al-Shammari et al., (2022), found that green innovation had a beneficial influence on environmental performance, implying that cultivating a green culture via training and innovation can lead to enhanced employee performance. Thus, this will formulate following hypotheses:

**H<sub>6</sub>** Green Innovation has significant impact on Employee Performance in Public Health Sector of Pakistan.

**H<sub>7</sub>** Green Innovation significantly mediates the relationship between Green Training and Employee Performance in Public Health Sector of Pakistan.

Green motivation and green innovation were chosen as mediator variables to explain the indirect processes by which green training affects employee performance. Green motivation is a psychological motivator that pushes employees to apply their environmental knowledge and abilities, in line with AMO Theory. Employees that are motivated to implement green practices are more likely to demonstrate pro-environmental behaviors, which leads to higher job performance. Green innovation, on the other hand, is a practical application of green training that allows employees to create and execute environmentally friendly procedures and solutions (Khan, Sarfraz & Afzal, 2019). According to the Signaling Theory innovation work as good signal that a firm use to gain a competitive advantage by using internal skills, such as workers' sustainability knowledge. Empirical research (e.g. Yafi et al., (2021); Awwad Al-Shammari et al., (2022)) show that green training improves employee performance indirectly through motivation and creativity, making it an important mediator. By adding these factors, the study admits that the influence of green training on employee performance is not just direct, but also dependent on employees' willingness to embrace green practices and ability to innovate in sustainable ways.

### **Research Framework**

The current study investigates the direct influence of green training (GT) on employee performance (EP), taking into account the mediating function of green innovation (GI) and green motivation (GM). In this study model (Figure 1), green training is an independent variable, whereas green employee performance is a dependent variable. Finally, green innovation and green motivation serve as a mediator.

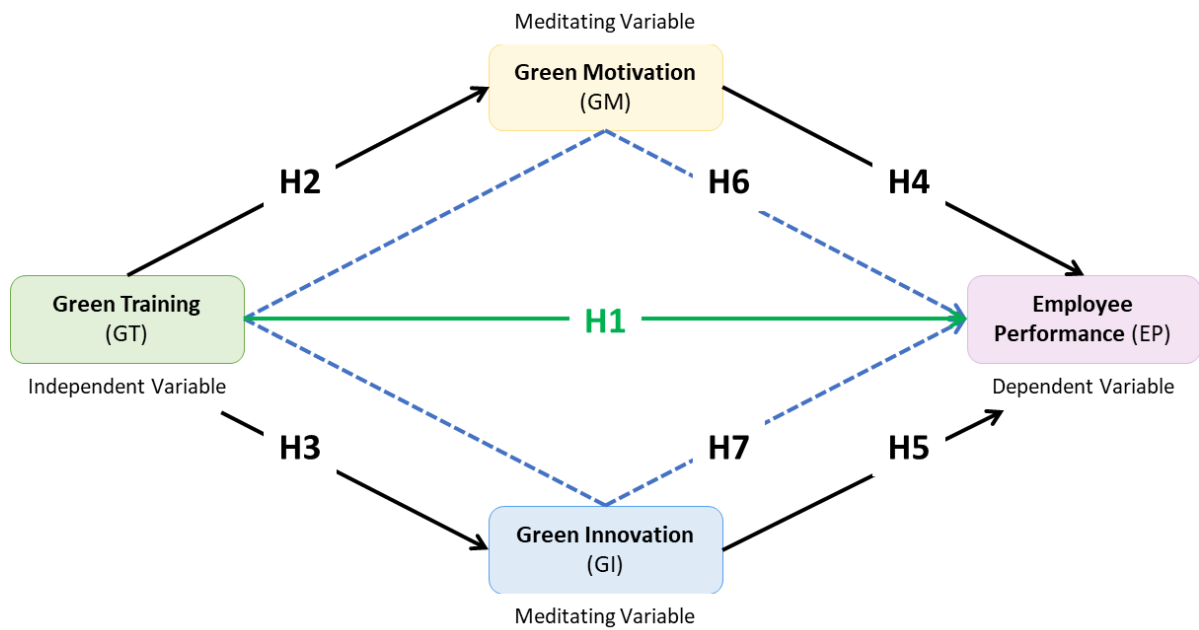


Figure 1: Research Framework

The above research model is presented graphically in Smart PLS 4.0, which is shown below in the following Figure 2;

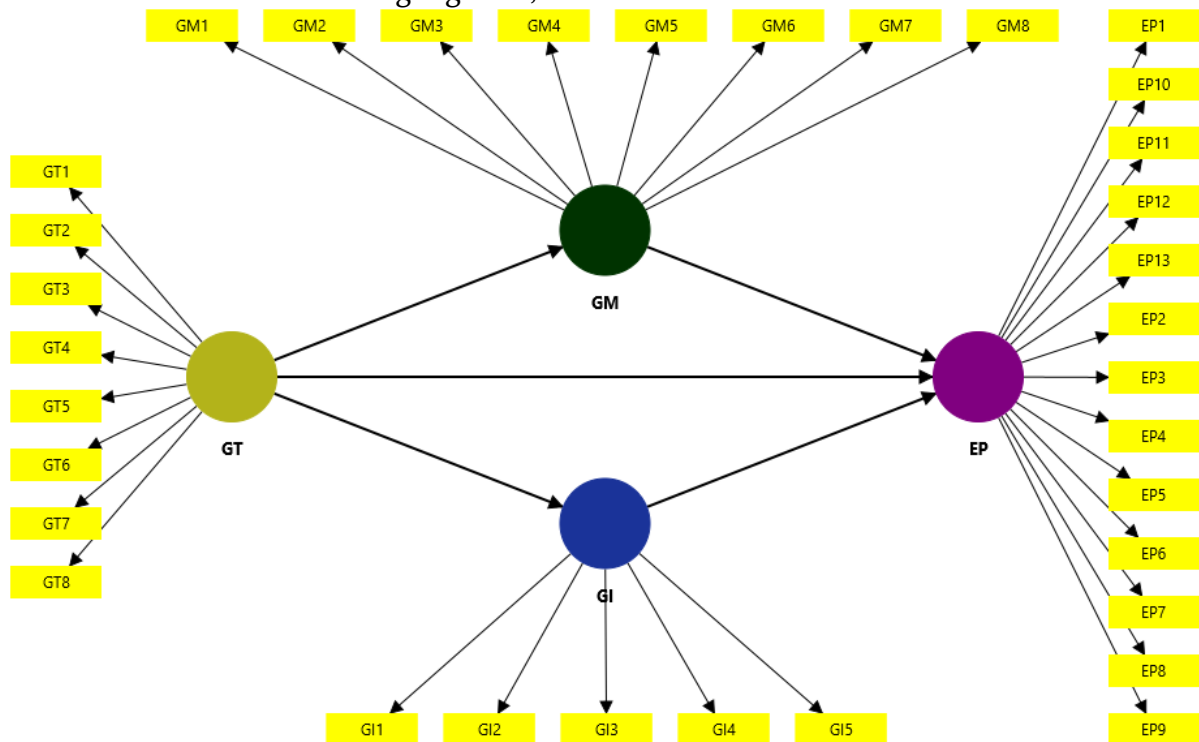


Figure 2: Research Framework (Source: Authors Created via SmartPLS 4)

## METHODOLOGY

The current study employed a quantitative research method and was exploratory in nature. Explanatory study seeks to understand the "why" and "how" of a relationship within a specific context. As a result, this study used a causal/relational research design to investigate the influence of green training (GT) on employee performance (EP), taking into account the mediating roles of green innovation (GI)

and green motivation (GM).

### Participants and Sampling

A variety of public hospital professionals, including physicians, nurses, administrative staff, and other staff members, were the focus of the study. To make sure they were available and to promote their involvement without fear or reluctance, participants were approached during their working hours. The objective of this approach was to guarantee a varied sample representation and optimize the quantity of answers. According to Roussel, (2005), the sample size needs to be at least ten times the total population of questions in the questionnaire, which in this case required approximately 250 responses. This study exceeded set criteria by distributing 400 questionnaires, of which 297 valid replies were preserved after excluding incomplete submissions. Convenience sampling was used to get the data from several Pakistani governmental hospitals.

### Data Collection and Instrumentation

Data was collected using structured questionnaires adapted from prior literature, with sources listed in Table 1. The questionnaires were physically given to participants in order to collect data quickly and increase response rates. questionnaires were developed in English and used a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) to assess all factors. The questionnaire consisted of 34 items, covering the following constructs:

- **Green Training (GT):** Measured using an **8-item** scale.
- **Employee Performance (EP):** Assessed with a **13-item** scale.
- **Green Motivation (GM):** A second-order construct, measured with **8-items** scale.
- **Green Innovation (GI):** Measured with a **5-item** scale.

Table 1: Sources of Study Variables

Sr. No.	Variables	CODE	References
1	Green Training	GT	(Correia et al., 2024)
2	Green Motivation	GM	(Duong et al., 2023)
3	Green Innovation	GI	(Correia et al., 2024)
4	Employee Performance	EP	(Zaman et al., 2022)

### Reliability and Data Analysis

The study used Smart PLS 4 to analyze the data using the Structural Equation Modeling (SEM) method. This approach was chosen because it works well for both exploratory and confirmatory research. PLS-SEM is perfect for large models with numerous components and higher-order correlations since it is especially helpful for structural modeling and covariance-based analysis (Sarstedt et al., 2014). PLS-SEM was used to evaluate the hypotheses in accordance with the standard protocols described by (Hair & Alamer, 2022). The ability of Smart PLS-SEM to effectively handle small sample numbers while offering simple calculation of all parameter estimations is one of its benefits.

Cronbach's alpha, a measure of a measuring scale's reliability, was used to

evaluate the constructs' internal consistency. For dependability, a Cronbach's alpha value of 0.70 or above is usually regarded as adequate.

## RESULTS AND ANALYSIS

### Background Information of the Respondents

The demographic profile of the research participants revealed that 197 respondents (68%) were male and 93 respondents (32%) were female, indicating a greater number of male participations. The age distribution found that the majority of respondents, 85 (29%), were between the ages of 15 and 25, with 69 (24%) falling between the ages of 26 and 35. In addition, 56 responders (19%) were between the ages of 36 and 45, with 47 (16%) falling between the ages of 46 and 55. A lower fraction, 33 responders (11%), were older than 55 years. In terms of educational credentials, 151 respondents (52%) possessed an MBBS degree, whereas 56 respondents (19%) had finished both an MBBS and an MPH.

Furthermore, 83 respondents (29%) have earned an LHV Diploma. In terms of job experience, 83 respondents (29%) had 1-5 years of experience, whereas 76 respondents (26%) had worked for 6-10 years. In addition, 53 respondents (18%) had 11-15 years of experience, while 47 respondents (16%) had 16-20 years of service. The least experienced group consisted of 31 respondents (11%) with more than 20 years of job experience. These figures demonstrated the respondents' different backgrounds in terms of gender, age, education, and experience, resulting in a well-represented sample for the study.

Table 2: Demographic Profile of the Respondents

Demographics	Groups	Frequency	%Age
Gender	Male	197	68%
	Female	93	32%
Age (Years)	15 - 25	85	29%
	26 - 35	69	24%
	36 - 45	56	19%
	46 - 55	47	16%
	Above 55	33	11%
Education Level	MBBS	151	52%
	MBBS + MPH	56	19%
	LHV Diploma	83	29%
Experience	1 - 5 years	83	29%
	6 - 10 years	76	26%
	11 - 15 years	53	18%
	16 - 20 years	47	16%
	20 or above years	31	11%

### Measurement Model

The measuring model determines how accurately the observable indicators (items) match the underlying latent variables. It is computed to guarantee that the

measurement scales are valid and reliable. This includes:

- **Internal consistency reliability** is assessed using Cronbach's alpha and Composite Reliability (CR) to guarantee that all items consistently measure the same concept.
- **Convergent Validity** is measured using Average Variance Extracted (AVE), which ensures that the concept explains at least half of the variance in its indicators.
- **Discriminant validity** is assessed using the Fornell-Larcker Criterion to ensure that constructs are different from one another.

Table 3: Result of Factor Loading of Constructs (Source: Analysis Result of SmartPLS)

Variables	Constructs	FL	$\alpha$	CR	AVE
Green Training	GT1	0.863	0.983	0.986	0.840
	GT2	0.978			
	GT3	0.817			
	GT4	0.958			
	GT5	0.954			
	GT6	0.979			
	GT7	0.722			
	GT8	0.980			
Green Motivation	GM1	0.906	0.962	0.965	0.868
	GM2	0.825			
	GM3	0.886			
	GM4	0.823			
	GM5	0.907			
	GM6	0.889			
	GM7	0.886			
	GM8	0.823			
Green Innovation	GI1	0.914	0.954	0.960	0.755
	GI2	0.915			
	GI3	0.953			
	GI4	0.915			
	GI5	0.958			
Employee Performance	EP1	0.870	0.969	0.975	0.830
	EP10	0.804			
	EP11	0.955			
	EP12	0.955			
	EP13	0.972			
	EP2	0.797			
	EP3	0.975			
	EP4	0.956			
	EP5	0.875			
	EP6	0.979			
	EP7	0.972			

EP8	0.884
EP9	0.971

#### Abbreviations:

Factor Loading (FL), Cronbach's Alpha ( $\alpha$ ), Composite Reliability (CR) and Average Variance Extracted (AVE).

The factor loadings for **Green Training (GT)** varied between 0.722 and 0.980, showing that all elements made a significant contribution to the construct. The Cronbach's alpha ( $\alpha$ ) of 0.983 and Composite Reliability (CR) of 0.986 indicate high internal consistency. The AVE of 0.840 indicated strong convergent validity. **Green Motivation (GM)** exhibited factor loadings of 0.823 to 0.906, indicating high indication reliability. Cronbach's alpha was 0.962 and CR was 0.965, indicating great dependability. Furthermore, the AVE of 0.868 indicated that the construct captured a significant amount of variation. **Green Innovation (GI)** has factor loadings ranging from 0.914 to 0.958, demonstrating high indication reliability. The Cronbach's alpha was 0.954, and the CR was 0.960, indicating internal consistency. The factor loadings for **Employee Performance (EP)** ranged from 0.697 to 0.979, indicating that all indicators made substantial contributions. Cronbach's alpha of 0.969 and CR of 0.975 indicated a good level of internal consistency.

The AVE of 0.755 suggested that the concept satisfactorily explained the variance in its indicators. The AVE of 0.830 demonstrated high convergent validity. Overall, all constructs had factor loadings larger than 0.7, Cronbach's alpha greater than 0.7, CR greater than 0.7, and AVE better than 0.5, indicating that the measurement model is reliable and valid. These findings confirmed the study's premises and ensured that the variables adequately measured the desired theoretical notions.

Table 4: Fornell–Larcker Criterion (Source: Analysis Result of SmartPLS)

Demographics	EP	GI	GM	GT
EP	0.916			
GI	0.985	0.931		
GM	0.960	0.942	0.869	
GT	0.994	0.969	0.954	0.911

The discriminant validity tests Fornell–Larcker Criterion using square root of Average Variance Extracted (AVE) values demonstrated that each variable surpassed its correlation with the other constructs. The square root AVE for Employee Performance amounted to 0.916 while exceeding its relationships with Green Innovation (0.985), Green Motivation (0.960) and Green Training (0.994). The square root AVE for Green Innovation (GI) amounted to 0.931 while remaining above its relationships with Green Motivation (GM) (0.942) and Green Training (GT) (0.969). The square root AVE of 0.869 for Green Motivation (GM) surpassed its correlation value of 0.954 with Green Training (GT). Green Training achieved the square root AVE of 0.911 which confirmed its separate nature from the remaining constructs. All



constructs demonstrated appropriate discriminant validity through the obtained results which proved that each theoretical concept measured distinct variables without double counting. The graphical representation of the Smart PLS 4.0 analysis of factor loadings is illustrated in Figure 3 below.

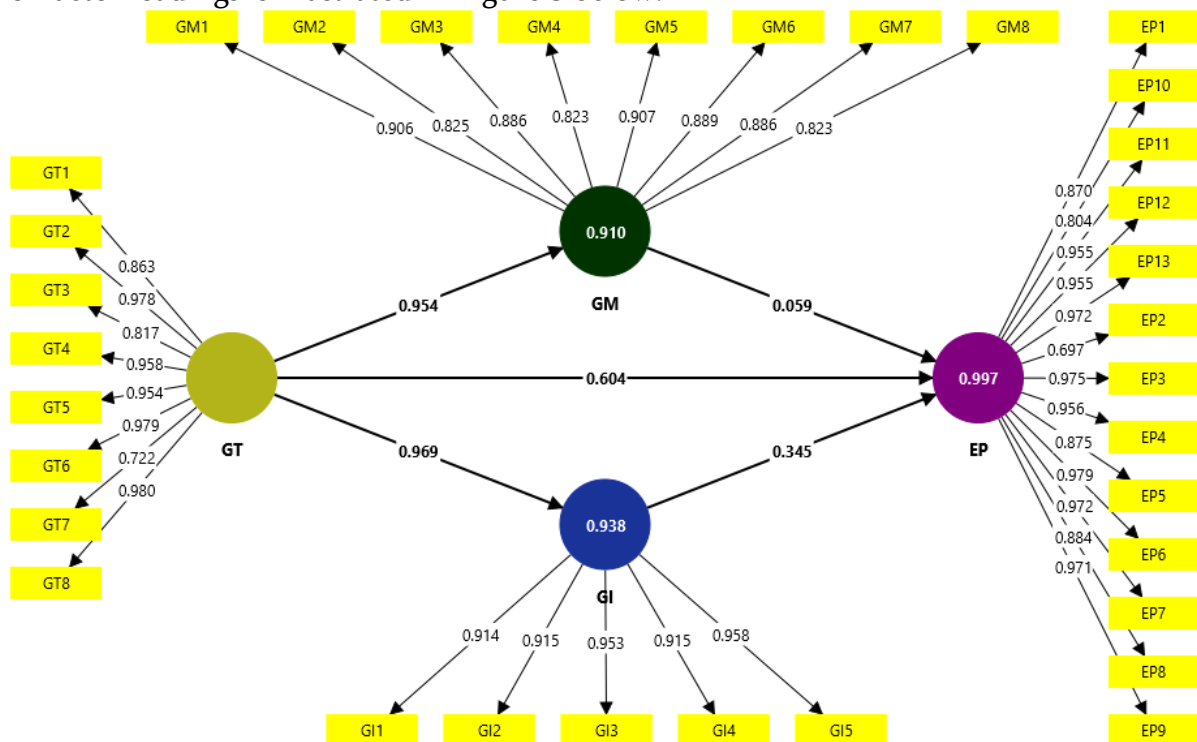


Figure 3: Result of Factor Loading of Constructs (Source: Analysis Result of SmartPLS) **Structural Model**

Once the measurement model has been confirmed, the structural model is used to investigate the links between latent constructs. This stage assesses the predictive strength and relevance of relationships. The structural model is examined using:

- **Path coefficients ( $\beta$ )** indicate the intensity and direction of links between variables.
- **Bootstrapping analysis** was performed to determine the significance of path coefficients using t-values and p-values.

### Hypotheses Testing

Table 5: Results of Hypotheses Testing (Source: Authors Created via SmartPLS 4)

H'	Path	$\beta$	Standard Deviation	T Statistics	p Values	Decision
H <sub>1</sub>	GT -> EP	0.994	0.001	713.581	0.000	Supported
H <sub>2</sub>	GT -> GI	0.969	0.006	149.042	0.000	Supported
H <sub>3</sub>	GT -> GM	0.954	0.007	138.316	0.000	Supported
H <sub>4</sub>	GM -> EP	0.059	0.028	2.134	0.033	Supported
H <sub>5</sub>	GI -> EP	0.345	0.032	10.671	0.000	Supported
H <sub>6</sub>	GT x GM -> EP	0.056	0.026	2.138	0.033	Supported
H <sub>7</sub>	GT x GI -> EP	0.334	0.031	10.640	0.000	Supported

The path analysis findings revealed significant correlations between the

variables in the research, with hypotheses supported at p-values less than 0.005. Green Training (GT) significantly improved Employee Performance (EP) ( $\beta = 0.994$ ,  $T = 713.581$ ,  $p = 0.000$ ), supporting H1 and aligning with prior research on the function of training in boosting employee performance (Evina et al., 2024; Gomes et al., 2024). Green Training (GT) showed a significant effect on Green Innovation (GI) ( $\beta = 0.969$ ,  $T = 149.042$ ,  $p = 0.000$ ) and Green Motivation (GM) ( $\beta = 0.954$ ,  $T = 138.316$ ,  $p = 0.000$ ), confirming H2 and H3, which are consistent with past studies stressing the role of training on motivation and creativity (Huang et al., 2024; Surakarta et al., 2024).

Green Innovation (GI) had a substantial impact on Employee Performance (EP) ( $\beta = 0.345$ ,  $T = 10.671$ ,  $p = 0.000$ ), supporting H5, which is consistent with previous research showing that innovation improves performance (Amjad et al., 2021). Similarly, the indirect path from GT to EP through GI ( $\beta = 0.334$ ,  $T = 10.640$ ,  $p = 0.000$ ) was statistically significant, corroborating H7 and demonstrating innovation's mediation function in training-performance correlations (Zameer et al., 2022). Green Motivation (GM) had an impact on EP ( $\beta = 0.059$ ,  $T = 2.134$ ,  $p = 0.033$ ) and mediated the GT-EP link ( $\beta = 0.056$ ,  $T = 2.138$ ,  $p = 0.033$ ). However, the p-value was more than 0.005, suggesting a lower statistical significance. Despite this, these hypotheses (H4 and H6) were validated, indicating that motivation continued to have a role in employee performance, albeit with a smaller influence (Yafi et al., 2021).

Overall, the data revealed that Green Training improved employee performance considerably, both directly and indirectly, via Green Innovation and Green Motivation. These findings were consistent with prior research, which emphasized the value of long-term training programs in generating creativity, motivation, and performance increases inside businesses. The analysis carried out using Smart PLS 4.0 has been depicted graphically as shown the following figure 5.

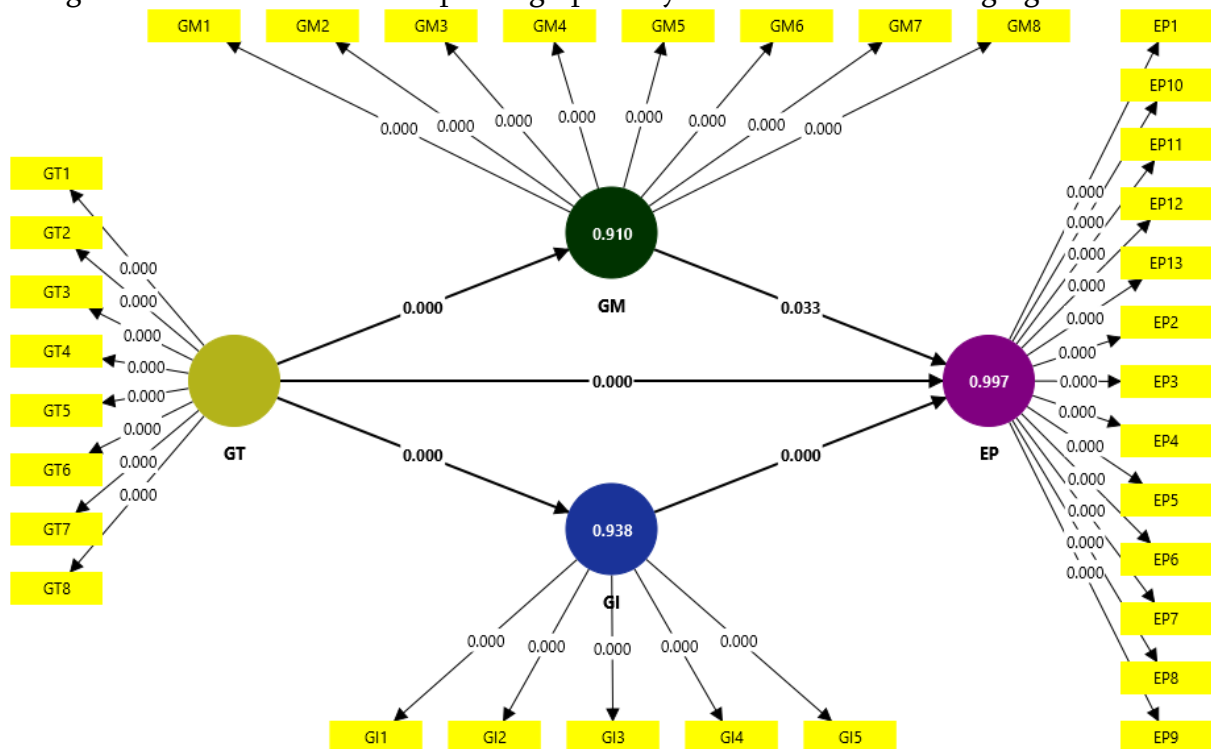


Figure 4: Hypothesis Testing Results (Source: Data Processed with Smart PLS 4)

## DISCUSSION

This study studied the influence of Green Training (GT) on Employee Performance (EP) in Pakistan's public health sector, taking into account the mediating roles of Green Motivation (GM) and Green Innovation (GI). The data strongly suggested that Green Training improves employee performance, both directly and indirectly, via motivation and inventiveness. Addressing the first research goal, the findings demonstrated that Green Training improves employee performance in the public health sector. Employees that got specific environmental training improved their abilities, awareness, and sustainable work habits, resulting in greater performance. These findings are consistent with the Ability-Motivation-Opportunity (AMO) Theory, which states that training improves employees' talents and equips them with the skills they need to operate effectively. Furthermore, Signaling Theory (ST) confirms these findings, since businesses who engage in Green Training convey a strong signal of sustainability commitment, fostering a culture of responsibility and better job performance.

Regarding the second research objective, the study discovered that Green Motivation has a mediation function in the GT-EP link. While green training enhanced employee performance, its impact was greater when individuals were truly driven to promote environmental sustainability. This is consistent with the AMO Theory, which claims that motivation is a critical factor in transforming acquired skills into performance results. However, the relatively low statistical significance of this mediation implies that other factors, such as organizational culture or leadership, may also influence employee motivation levels. For the final research objective, the study found that Green Innovation strongly mediates the association between Green Training and Employee Performance. Employees who were taught in sustainable practices were more likely to create innovative solutions that improved organizational efficiency and performance. This conclusion is consistent with Signaling Theory, since firms that engage in sustainability training foster a creative mentality among staff. Furthermore, AMO Theory emphasizes the importance of opportunity in encouraging innovation, arguing that when employees have enough training and a supportive atmosphere, they may develop innovative and sustainable work practices.

The personal aspect of the author, the study emphasizes the importance of organized Green Training programs in Pakistan's public health sector. Given the growing environmental concerns, hospitals and healthcare institutions must implement sustainability-focused training to improve both staff skills and organizational performance. However, the data indicate that training alone is insufficient motivation and creativity must be fostered via strong leadership, reward schemes, and a culture of sustainability.

## CONCLUSION

Overall, the study confirms that Green Training's efficacy in improving employee performance while stressing the role of motivation and creativity as mediators. These findings support AMO Theory and Signaling Theory, demonstrating

that when people are well-trained, motivated, and given the opportunity to innovate, their performance rises dramatically. Future study should look into additional elements, such as leadership support and organizational policies, to help improve the green training-performance link in the public health sector.

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