



Exploring the Influence of Green HR Practices on Employees' Environmental Behavior, Mediated by Transformational Leadership and Moderated by Employee Demographics

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Abstract

The purpose of this research study is to create a holistic model to examine the antecedent of green HR practices and consequent environmental behaviour of employees with the support of social exchange theory and transformational leadership theory. Since the research adopted the Saunders Onion Model for the selection of the research methodology, six hypotheses were developed to analyse the complex interconnections within the variables. Incorporation of these two theories helps in extending the existing knowledge base in view of offering a comprehensive theoretical foundation that explains the effusive link between Green HR practices and effected enhanced employee environments behaviors. In this study, transformational leadership is proposed as a mediator arguing that leaders with transformational characteristics can positively encourage employees to participate in sustainable behaviour. Further, the study assumes that employees' demographic characteristics can act as a moderator because implementing Green HR practices may affect individual characteristics such as age, and level of education, and the firms' environmental behaviour. In this article, the author proposes a new approach using external factors that separate them from previous studies; Environmental Training Program, Green Employee involvement, and Workplace Eco-Policies. These elements are important in determining an organization's environmental management because they concern directly the organizational employee's attitude and behaviour towards the environment. The second major contribution of this research is the use of Social Exchange Theory and Transformational Leadership Theory as moderators in improving environmental behaviour. This theoretical context enables the investigation of the relationships proposed between leadership behaviours and subordinates' commitment to environmental efforts. Moreover the moderating roles of young age and higher education level are also explored in the study that implies that these demographic factors can enhance the impact of the transformational leadership on environmental behaviour. The expected findings of the proposed model will greatly enhance the body of knowledge on Green HR practices formulated to guide organizations seeking to adopt quality Human Resource practices. In doing so, this study makes not only a theoretical contribution but also offers real-world prescriptions for organizations wishing to encourage their employees to become more environmentally sustainable. In conclusion, they point to the importance of a systemic approach for studying the directions of organizational sustainability in the workplace, focusing on management and employees' participation in attaining environmental objectives. This study model will help fuel subsequent research in this field and improve the overall understanding of ways that Green HR practices may be utilized to encourage better environmental performance by employees.

Keywords

Employees' Environmental Behavior, Transformational Leadership, Social Exchange Theory, Environmental Behavior, Environmental Training Program, Green Employee Engagement, and Eco-Friendly Workplace Policies

Background of the Study

Due to increasing concerns of environmental degradation, organizations have realized that employees are useful agents in the realization of sustainable development. ME: Employees' environmental behavior is defined as activities and measures practiced by persons in working places to support environmental conservation. These behaviors can thus embrace a broad cluster of practices which include energy saving, waste minimization, the use of recycling bins and engaging in green activities. It is, therefore, crucial for organizations seeking to improve their sustainability performance and develop an environmental culture to gain insight into what drives these behaviors.

This study found out that organizational culture is one of the main factors that influence employees' environmental behavior. A culture of sustainability is one that empowers and inspires the employees to be sustainable more often than not. A survey of green HRM practices has demonstrated that organizations with more effective green HRM practices are likely to achieve greater levels of employee engagement in environmental management (Cohen et al., 2023). Employees often adapt their behavior to match the perceived level of management commitment to environment, thus higher participation rates in green behaviors would follow if the top management is seen to have serious commitment to environmentally sustainable practices.

Another crucial element that also has embedded influence on the employees' environmental behaviors is leadership. Pro-active, win-win leadership style that involves the capability to bring transformative change and encourage a descriptive shift from basic requirement focus to organizational welfare was found to have a highly positive relationship bearing on PEB among employees (Bai et al., 2023). Leaders in transforming organizations provide distinct visions concerning organizational sustainability so as to ensure that everyone has a common goal and direction. This kind of leadership promotes green culture among the employees since they have the feeling that their leaders are backing them up in the realization of the organization's objectives of sustainability.

However, in relation to green HR practices and leadership, we also have consistent findings for age and education related to the specific behaviors pertaining to environmental issues. Analysis of Personal Values about the Environment and the actual behavior towards the Environment: A review of literature found that people were motivated to act in a particular manner when commitment was based on their personal values such as environmental conservation and sustainability. For instance, people with high value orientation towards the environment will be more willing to engage in recycling in energy conservation programs (schultz et al., 2023). Also, affording factors including education and age may have influence on individuals' perception and behaviors toward environment. According to prior study of Kollmuss and Agyeman (2023) that individuals at workplace having higher studies are more likely to participate eagerly in eco-friendly environment, and show pro-environmental behavior in all green activities.. In the same manner, sometimes there is high commitment in environmental issues within the generation of the employees which in return defines their participation in the issue of sustainability in workplace.

Green HR also has the responsibility of HR management in modifying employees' environmental conduct. Introducing the Green HRM practices include environmental training, ecological workplace policies can improve aware and commitment to sustainability among employees. The organizational training programs which aim at establishing employees' awareness of environmental concerns and personal initiatives of the company in the sphere of sustainability can result in enhanced interest in carrying out the environmentally friendly activities (Harrison and Wicks 2023). In addition, having well-defined organizational policies that support sustainability also increase employee participation in that specific activity since they know the organization cares for the environment.

This paper reveals that through positive transformational leadership that employees education and age supports Green HR practices, it becomes possible for organizations to drive Green HRM practices that will encourage the employees to become environmentally conscious.

Research Objectives

The current study pursues to accomplish the subsequent objectives.

1. To explore effectiveness of environmental training programs of employees' environmental behavior.

2. To explore the relationship between green employee engagement and employee pro-environmental behavior.
3. Evaluate the impact of eco-friendly policies at the workplace on employee environmental behavior amongst employees.
4. Explore how the application of transformational leadership mediates the various relationships between Green HRM and the employees' environmental behavior.
5. Explore how the employee demographic characteristics; education and Age moderate the outcome of transformational Leadership followed by Green HR practices, as well as environmental behavior.

Significance of the Study

It was acknowledged that there is a limited understanding of relationships between Green HR practices, transformational leadership behavior and employee environmental behavior that is imperative for organizations that seek to improve their sustainability performance. The result of this research would be beneficial to the HR practitioners and organizational leaders to understand the ways how they can create suitable plan and measures that can support sustainability culture in organizations. Additionally, this proposed model will be beneficial for anyone seeking further research in the field of green HR practices. Those intending to develop environmentally friendly behavior should consider implementing environmental training programs, engaging in activities related to green behavior, and fostering a green culture. Furthermore, this paper provides a further addition to the body of knowledge by establishing the moderating effects of demographic variables on employee environmental engagement.

Literature Review

Introduction

As a result of pressing global environmental problems in the society, some organizations have shifted their operations towards the use of sustainability strategies and one of them is the Green Human Resource Management (Green HRM). Specific Green HR practices, such as environmental training programs, green employee engagement, and eco-friendly workplace policies, have also been examined in the present literature review with regard to their effects on environmental behavior of employees. Furthermore, it explores the mediating mechanism provided by the type of transformational leadership and the moderating impact of employee demography characteristics including education level and age. Knowledge of these relationships is crucial for organizational ambitions of building a workforce inclined towards sustainability.

Green HR Practices and Employees' Environmental Behavior

1. Environmental Training Programs

Environmental training programs are learning interventions that provide knowledge on matters concerning sustainability, the organization and expected duties in preserving the environment. Studies show that such training plays a part in increasing their environmental sensitivity thereby increasing employees' interest in environmental practices (Harrison & Wicks, 2023). For instance, a prior study of Kramar (2022) indicated that those employees who had undergone comprehensive environmental training were far more likely to recycle, save energy, and practice other environmental measures than those non-experienced employees who had not gone through the training.

In addition, the environmental training initiatives assists firm in establishing 'sense of responsibility' within the employees. Employees are likely to take personal responsibilities regarding their acts when involved in environmental matters (Wang et al., 2023). This feeling of responsibility is very important to building a proactive culture with respect to sustainability within the working environment.

2. Green Employee Engagement

Green employee engagement is a study of how employees participate in sustainable activities and have an emotional connection with the cause of environmental conservation in the organization they represent. Effective employee commitment in flexible work practices is also more likely to voluntarily self-organize for increased crisply work and pro-environmental behaviors which support organizational sustainability (Ehrhart, 2009). Kim et al., (2023) notes that organizations with a culture of green engagement report improved participation rates in environmental committees or volunteer programs.

In addition, this paper looks at the correlation between green employee engagement and employee job satisfaction and organizational commitment. It supports Gonzales et al. (2023) findings that if employees perceive their sustainability contribution is valued, they will engage in positive

behaviors aligned to the firm's environmental goals. It is advantageous for the organization in terms of sustainability though provokes employee retention and enhancement of morale.

3. Eco-Friendly Workplace Policies

Sustainability policies are then defined as workplace policies that seek to support environmentally friendly policies inside the workplace. Such measures could be waste minimization measures, energy management procedures and green purchasing strategies. Findings show that they play an essential role in enhancing organizational commitment to sustainability by changing employee behavior due to policy support for environmental issues (Jabbour & Santos, 2024).

For example, López-Cabarcos et al (2023) pointed that out organizations, which well-defined environmental management policies had got higher contributions from employees to sustainable measures. The employees' knowledge of the organizations beliefs on the environment and the expectations towards its employees appear to play an important role in influencing their environmentally profound behaviors.

4. Mediating Role of Transformational Leadership

Green HR activities are the independent variable in this study while transformational leadership mediate the organizational employee environment attitude. Leadership, transformative change for organizational goals by setting personal and group interests aside with reference to sustainable practices (Bass and Riggio, 2006 p 90). A recent study conducted by Zhu et al. (2023) shows that Green HRM increases organizational effectiveness by changing the organizational culture and motivating employees in sustainable behaviors.

Transformational leaders provide vision about sustainability: this aspect comprises of the ability to add value to the visions that personal staff has, and to bring them closer to the ideals of the association. This regularity is important in relation to the promotion of PEBs, since people perform tasks according to the standards that are closest to their values relevant to organizational membership (Bai et al., 2023). Also, position of transformational leaders to support sustainable practices role models support the principles and push employees to incorporate sustainable practices too.

Moreover, a study has supported that TL increases affective commitment of the employee to the organizational sustainability. When leaders show willingness, even passion, towards sustainability, people feel connected emotionally to sustainability and therefore increase the likelihood of positive, pro-environmental action (Robertson, & Barling, 2013).

5. Moderating Role of Employee Demographics

Education as Moderator

Education is a strong demographic variable that enters into the improvement of environmental behavior of employees. Kollmuss & Agyeman, (2023) argued that educated people are more conscious towards pro-environmental behavior than the people who are less educated. These employees, being more educated may grasp the issues at environment and the concept of sustainability in a much better way as compared to their less educated counterparts.

For instance, Raineri and Paillé (2016) identified in one of their findings that employees with higher education level willingly participated in the environmental training offered to them and also followed green behavior. This implies that there is a possibility of an interaction effect between Green HR practices and education level, because engaged employees from an educated background are likely to have a positive attitude towards training and other engagement activities repeated for change in their environmental behavior.

Age as Moderator

Age is another demographic factor which is act as moderator of the study that can affect environment behavior of employees. The prior studies and their analysis supports the context of individuals generation, suggesting that employees with young age are more active and higher demonstrated towards higher environmental concern and more commitment towards sustainability while older employees demonstrated less active towards environmental behavior (Gifford, 2011). The age factors in different generations have different standards and perceptions in the direction of the environment and may be concerned as younger workers, with more awareness of when the different environmental issues developed.

Prior study of Hurst et al. (2022) presented an empirical study that young age individuals are enthusiastic to participate in the use of eco-friendly activities services and backing sustainability plans within organizations. In this study, age is demographic variable which act as second moderator that

occur in between transformational leadership followed by three independent variables of Green HR practices and the outcome variable of the study is employee environmental behavior. Studies reveals that younger employees are likely to have a positive perception about transformational leadership and green engagement strategies.

Critical Literature Review

Environmental Training Programs, Green Employee Engagement, and Eco-Friendly Workplace Policies.

a. *Environmental Training Programs and Employee Environmental Behavior*

Over the past two decades, environmental training programs have become crucial tools for organizations seeking to implement change for sustainability and to foster environmentally responsible behavior in the workplace. That is why recent works stress that these programs contribute to the increased understanding of environmental problems and employees' responsibilities for reducing organizational adverse effects on the environment. For instance, Wang et al., (2023) observed that extensive training programs enhance the awareness of business sustainability objectives and help raise consciousness about environmental impacts of people's behavior thereby promoting a culture of sustainability within organizations. This was important as it forms the basis for change in behavior that is the ultimate goal of such awareness. Some of the empirical findings demonstrate that those employees who undergo environmental training will change and adopt environmental friendly practices such as minimizing the use of resources. In their meta-analysis, Schultz et al. (2023) further support this finding that the level of environmental training stimulates environmentally friendly behaviors at the workplace. Additionally, these training programs are implemented with engagement and involvement activities like group discussion and workshop where the majority of them involve joint learning and group practice (Gonzalez et al., 2023).

b. *Green Employee Engagement and Employee Environmental Behavior*

Green employee engagement remains in the frontline in evaluating impacts of organizations in conducting environmental surveys and effective engagement of the employees on environmental matters. A number of previous researches emphasize that the staff, who is engaged, is more willing to contribute actively into sustainability activities, which in turn promotes the increase in environmental performance in organizations. For instance, Kim et al. (2023) while writing on the effects of green human resources management on work engagement, discovered that organizations with a culture of green engagement, witnessed higher levels of engagement in all things green including recycle bins and energy saving. This engagement is usually facilitated by the transformational leadership where the leaders influence the employees to promote sustainability by making the work environment support the targets toward the sustainability (Mishra et al., 2023). Moreover, stakeholder engagement rises by two quadrants to 78% because of the obligation and commitment employees give to duties that support sustainability, which keeps motivation for sustainable practices going beyond compliance (Schultz et al., 2023). Studies also show that support can significantly help green engagement; results show that when an employee realizes his/her company supports sustainability, he/she is likely to participate in green behaviors (Gonzalez et al., 2023). Furthermore, the climate and culture of the organization play a crucial role in how employees relate to sustainability engagement defining the need for an organizational systems approach to green engagement (Harrison & Wicks, 2023). All in all, existing works indicate that green employee engagement is essential to behaviors for the environment, and developing this engagement with the help of leadership and organizational culture will contribute to the improvement of sustainable performance by organizations.

c. *Eco-friendly Workplace policies and Employee Environmental Behavior*

Organizational environmental policies have received increased interest due to the increased focus and practice of environmental policies to support the sustainability programs in organizations. The studies bring evidence that, apart from creating conditions for sustainable practices, such policies also affect employees' actions in the environmental regard. For instance, López-Cabarcos et al. (2023) conclude that, if there are specific and easily understandable environmental policies particularly those concerning waste minimization or conservation of energy for instance, employees are much more willing to support ecological activities. When the employees feel that the organization is also concerned with the health of the environment, they are in a position to maintain the environment going therefore supporting pro environmentalism thus supporting sustainability culture (Harrison & Wicks, 2023). Moreover, when the work place polices are aligned with organizational culture then employees feel that they belong to the organization and have commitment to support sustainable behaviors

namely by reducing emission of greenhouse gases (Gonzalez et al., 2023). Moreover, the impact of the formulated eco-friendly policies can be doubled by training and leadership commitment to supporting such concepts, which would result in a systematic approach to environmental concerns with employee-driven initiatives (Wang et al., 2023). In addition to influencing behavioral changes, the best-of-both worlds approach also delivers organizational performance benefits, especially concerning sustainability indices, demonstrating the importance of green organizational policies as a system for influencing the employee local environment.

d. *HR practices, Mediating role of Transformational Leadership and Environmental Behavior*

New studies show that green environmental training, green employee engagement and eco-friendly workplace policies are noteworthy most affected human resource practices that enhance green employee behavior with leadership effect as a pathway. Prior studies have found that ETP provide the subjects with insights regarding the environmental constraints that exist in the business environment to enable them to develop sustainable knowledge and skills necessary to change their behavior (Wang et al., 2023). This training is more desirable when accompanied by the support of transformational leaders who create commitment towards sustainable change from organizational employees and therefore enhance environmental management within organizations (Kim et al., 2023). Furthermore, green employee engagement is a crucial factor in support of this culture since involved employees are reactive and proactive in the promotion of green performance and in their demonstration of positive and sustainable behavior (Gonzalez et al., 2023). In addition to active employee engagement, transformational leadership is also useful for integrating sustainability into the HR system because it offers the organization an openness to draw from (Harrison & Wicks, 2023). Subjectively, an integration of immediate supervision in the green organizational work practices improves the efficiency of eco-policies since leaders should lead by example and demonstrate pro-environmental behaviors that will drive the employees' corporate responsibility towards environmental conservation (Zhu et al., 2023). In sum, this study reveals that the implementation of green HR practices alongside the usage of transformational leadership further mutually supplement each other to promote the improvement of employees' environment attitude as part of the accrued recognition of comprehensiveness of the pursuit of sustainability in organizations.

The more recent research underlines the catalyst function of leadership as a mediator in promoting the impact enhancing green environmental training, Green employee engagement and eco-friendly policies to change the behaviors of employees for the better. Prior studies reveal that transformational leadership plays crucial role in building proactive behavior of employees toward sustainability, and betterment of organization. The study of Zhu et al. (2023) argued that leadership promotes sustainability and motivate individuals to act eco-environmentally to promote green HR practices. Many workplace research studies suggest that the depth of commitment to sustainability by organizational leaders create mental imagery in the employees that motivates them to engage in environmental preservation, prompting, and supporting activities (Kim et al., 2023). For example, Wang et al. (2023) have evidenced that if transformational leadership in terms of supporting environmental training takes place, the employees identify the sustainable values and contribute to practicing the environmentally friendly behaviors. Furthermore, supportive management leads to the implementation of sustainable workplace practices since leaders who are aligned to environmental conservation ensure that firm's goals can be met because of the pro-active action that employees take to practice eco-friendly polices. Such alignment is critical; in the same breadth, as transformational leaders adopt sustainable conduct, others emulate response, thereby strengthening a culture of environmental stewardship (Gonzalez et al., 2023). In particular, the relationship between HR practices and employee environmental behavior through the mediating role of transformational leadership Total, and pointed out that organizational level leadership can facilitate the synergistic effects to enhance the impact of sustainability.

e. *Moderating Role of Age and Education in Between Transformational Leadership and Employee Environmental Behavior*

The current scholarly work explores the relationships between and between transformational leadership, green HR practice, and employees' environmental behavior, mediated by transformational leadership, moderated by age and education demographic variables. Transformational leadership plays an important role of enhancing sustainability by encouraging the employees embrace sustainability initiatives through motivation (Zhu et al., 2023). But nevertheless, this can be effective and not in

some cases, depending on the demographic characteristics of the employees. For instance, younger employees have higher concerns to environmental issues; thus, transforming leadership will have a positive reaction and increase engagement on sustainability programs compared to older employees (Kim et al., 2023). Conversely, education level is another consideration; employees with higher educational background may have higher awareness and knowledge in environmental concern which will cause the influence of the transformational leadership on the employees' pro-environmental behavior to be stronger (Wang et al., 2023). It has also been found that, when employing green HR practices, leaders can adapt their plan of action depending on age and educational level with positive outcomes on organizational sustainability (Gonzalez et al., 2023). For instance, environmental training programs that allow the participants' educational level can promote increased motivation and greater overall organizational behavior change among workers (Harrison & Wicks, 2023). Specifically, the results for age suggest that it is more effective to consider moderating effects when applying TL followed by GHRR to enhance employees' environmental behavior given these results it can be concluded that education should be taken into consideration when implementing TL and GHRR to enhance employees' approaches to environmental issues (Harrison & Wicks, 2023).

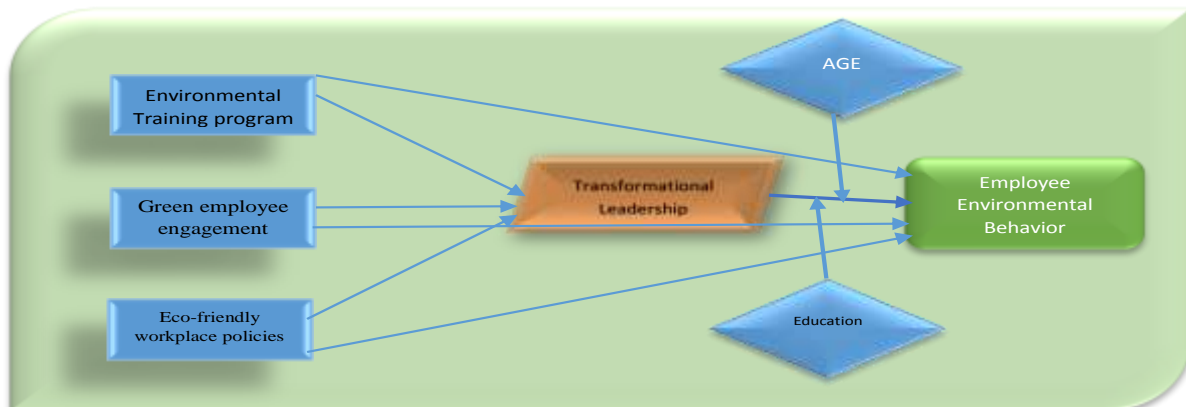
Underpinning Theory

The study model is primarily supported by two key theories: The two theories are the Social Exchange Theory (SET) and the Transformational Leadership Theory.

Socialize Exchange Theory holds the view that social behavior can be best described as the process of exchange through which benefits outweigh the costs as much as possible. In the organizational setting, this theory postulates that individuals of an organization will act in environmentally friendly ways when they believe that a particular organization recognizes, appreciates and supports environmentalism. This is where transformational leadership comes in handy, because leaders who approach their subordinates with much of reciprocation and trust can improve employee's behavior towards sustainability and environmental friendly. That is when the organization receives a positive feedback from the employees by responding to their internal environmental concerns, thereby encouraging and motivating the development of proper environmental consciousness amongst its workers.

Transformational Leadership Theory again enriches this framework by highlighting the characteristics of leaders that favor increased employee performance and organizational commitment. Sustainability comes through the vision to provide eco-friendly environment, policies and environmental training program can change the organizational culture by developing ideas, engaging and motivating subordinates to act pro-environmental behavior. This type of leadership is especially appropriate for the diffusion of green HR practices, as it ensures that business priorities are compatible with employee's ideals and expectations. When change leaders perform environmentally friendly acts and urge workers to become environmentally responsible, green behavioral change in the personnel is achievable. Combined, these theories give a clear approach on how the impact of green HR practices and the employees' environmental behavior is mediated by transforming leadership while controlling for demographics as moderators of age and education. This theoretical framework stands to underpin the thesis proposal in the endeavor of explicating the roles and the dynamics at play in the enhancement of sustainable cause both within the organizational context with specific emphasis to leadership in creating an environmentally conscious and receptive workforce.

Conceptual framework based on Social exchange theory and transformational leadership theory



Proposed Hypotheses

Based on the study and above model, concentration on the impact of green HR practices on employees' environmental behavior, mediated by transformational leadership and moderated by employee demographics (education and age), the following hypotheses are proposed:

- H1: Green HR practices include green training; green employee involvement and environmental policies in workplaces have a positive relationship with employee environmental behavior.
- H2: In the context of the present research, transformational leadership mediate the relationship between green HRM practices and employees' environmental behavior in a way that higher levels of transformational leadership will be more beneficial in amplifying the effects of green HR practices on environmental behavior.
- H3: The study establishes the green HR practices influencing employee about environment, the study revealed that the relationship between green HRM practices and employees' environmental behavior shown a higher correlation for the employees with higher education level rather than the low education level employees.
- H4: The moderating role of age indicates that younger employees are more sensitive to green HR practices than older employees that is the correlation between transformational leadership followed by green HR practices and environmental behavior is stronger for the young employees.
- H5: The study finds green HR practices to be more effective in our sample mediated by transformational leadership in predicting employee environmental behavior moderated by higher education level compared to low education level employees.
- H6: For younger employees, green HR practices and environmental behavioral intentions are better mediated by transformational leadership when compared to older employees.

Methodology

This methodology uses Saunders' Onion Model to investigate the effect of green HR practices; environmental training programs, green Employee engagement, the adoption of eco-friendly workplace policies; on employee environmental behavior, mediated by the variable of transformational leadership, moderated by the subject's education level and age. This research study is a pure quantitative one, with no emphasize on the qualitative aspects.

Research Philosophy

The research uses positivism paradigm since it relies on observations that are measurable, and testing of hypothesis. This strategy is appropriate for studying the patterns of the variables' interactions in a systematic way using evidence, which allows formulating general conclusions (Bryman & Bell, 2015).

Research Approach

A deductive approach was used whereby Social Exchange Theory and Transformational Leadership Theory will form underpinning theory for Green HR Practices, Transformational Leadership and Employee behavior while formulating Hypotheses. The study will seek to use statistical inferences to verify these hypotheses on the data gathered (Saunders et al., 2019).

Research Strategy and time horizon

For the current research study, it was necessary to use cross sectional survey research design. A structured questionnaire was administered to require quantitative data from employees that work for HR organizations that adopt green HR practices. This strategy enables the researcher to establish the correlations of the variables of interest at a given time point (Creswell, 2014).

Data Collection Methods

The level of analysis is green HR practices and data was collected through an online self-completion questionnaire completed by the workers in Pakistan's banking industry who employ green HR. Thus, targeting the identified research audience of Peshawar city, three major banks were selected as the study's respondents, namely HABIB Bank Limited, ALLIED Bank Limited, and Muslim Commercial Bank. Taking a census of the whole place was not possible thus 25 Commercial banks were selected as the study sample and every employee at the selected bank was taken as the study sample. In total, 280 workers from all 25 banks received the invitation to participate in the research. SEM-PLS was then employed to analyse the data from 253 respondents after the deletion of several extreme observations and outliers with missing values.

The survey included:

Basic questions of life: Age and Qualification.

Green HR Practices: Based on an existing scale (Daily et al., 2012); items measuring environmental training programs, green employee engagement and eco-friendly workplace policies.

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Transformational Leadership: A scale able to measure perceptions of transformational leadership (Bass & Avolio, 1995).

Environmental Behavior: This scale was adapted from Lee et al. (2013) to evaluate items of pro-environmental behavior among employees.

To get as broad a reach and different sample as possible, the survey will be shared through email and social media channels.

ANALYSIS AND RESULTS

Model Measurement

To evaluate theory of measures, and the structure of the research, the SEM-PLS framework was used to assess a model. Since the data is non-normally distributed, basic methods suggested the use of nonparametric tests (Hair et al., 2021). The measurement model of SEM-PLS evaluates Cronbach’s Alpha, composite reliability, rho_A, and the AVE. More so, it is the practice of practitioners to ensure the scores for both CA and CR are above 0.7 (Ramayah et al., 2019). AVE has to be more than 0.5 (Ringle et al., 2018). Table 1 also displays the current reliability and validity measures utilized in this research.

Figure 1|Measurement model of study

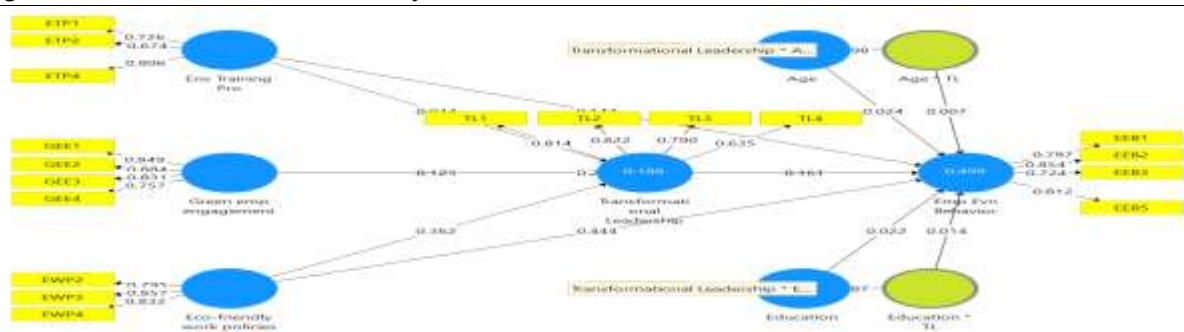


Table 1| CA, rho_A, CR and AVE

	Cronbach's Alpha	rho_A	CR	(AVE)
EWP	0.771	0.776	0.868	0.687
EEB	0.809	0.816	0.875	0.638
ETP	0.703	0.740	0.870	0.612
GEE	0.851	0.862	0.900	0.699
TL	0.765	0.772	0.882	0.622

EWP, Eco-friendly workplace policies; EEB, Employee Environmental Behavior; ETP, Environmental Training Program; GEE, Green Employee Engagement; TL, Transformational Leadership

Discriminant validity is calculated through the Fornell-Larcker criteria and cross-loadings are stated and postulated as well, following the guidelines provided by Henseler (2015). This is done to offer evidence to support discriminant validity. Henseler, Ringle, and Sarstedt (2015) argue that previous findings based on Fornell-Larcker criterion and cross loadings method are insignificant and uncertain. These researchers provided an optical method using the multitrait-multimethod matrix as an effective method. The most recently conducted investigation at HTMT has shown that there is no prejudice in that company. Consequently, the HTMT ratio, which is a measure of technical efficiency, must not be above 0.90 as espoused by Klin (2011). Conferring by Gold, (2001) the table is given below, which shows the value of score provided by the HTMT of the maxim possible index value of GT&D, which is 0.85. Table 2 below displays the HTMT values whereby none of the variable value is greater than 0.85. A fusion of constantly emerging information and the currently known HTMT scores results in a maximum score of 0.762.

Table 2| Discriminant Validity

	EWP	EEB	ETP	GEE	TL
EWP					
EEB	0.762				
ETP	0.546	0.641			
GEE	0.272	0.502	0.708		
TL	0.529	0.536	0.345	0.287	

EWP, Eco-friendly workplace policies; EEB, Employee Environmental Behavior; ETP, Environmental Training Program; GEE, Green Employee Engagement; TL, Transformational Leadership

Assessment of Structural Model

The next step of the current study after the measurement model is to establish the structural model of the study.

Testing Hypotheses

In a quantitative research study, the structural model is constructed in the view of a postulated framework that is important to facilitate the test of the relationships between the variables. According to Sarstedt et al. (2017), such phase helps understand the relationship between the external, endogenous, mediator and moderating variables. The first step in implementing this structural model is to check for the multicollinearity variance inflation factor (VIF). In a following step, the path coefficient of the relationships was studied for the two modes of organizing. In the third step, the value of t and p of the model is presented in text form. Henseler (2015) stated that, to identify the relevance of regression analysis, the direction of t score and path coefficient is important. Hair et al. (2021) have pointed out that in a one tailed test, if the calculated t score is higher than 1.64, the result is statistically significant while if the t score is higher than 1.96 in the two tailed, the result is highly significant. There were eight hypotheses under test which are outlined in the following table. Although the results of the present research do not support the hypothesis stating that transformational leadership mediates the relationship between the environmental training programs and employee environmental behavior. On the other hand, the other seven hypotheses of the investigation are supported.

Table 3| Hypotheses testing

	Sample Mean	Standard Deviation	t-values	P Values
EWP -> TL -> EEB	0.158	0.032	4.832	0.000
GEE-> TL> EEB	0.101	0.029	1.986	0.041
ETP-> TL-> EEB	0.025	0.027	0.849	0.397
EWP -> EEB	0.504	0.036	13.797	0.000
ETP -> EEB	0.157	0.061	2.511	0.012
GEE> EEB	0.226	0.056	4.051	0.000
Age * TL -> EEB	0.366	0.047	7.699	0.000
Education * TL -> EEB	0.125	0.056	2.220	0.027

EWP, Eco-friendly workplace policies; EEB, Employee Environmental Behavior; ETP, Environmental Training Program; GEE, Green Employee Engagement; TL, Transformational Leadership

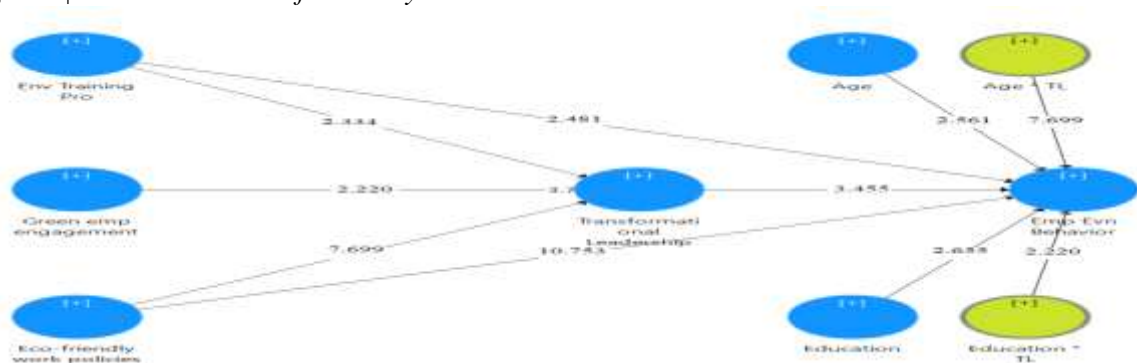
Assessment of Coefficient of Determination (R²)

Hair et al. (2019) noted that according to their provisions on analysis, the coefficient of determination is actually considered quite significant when it comes to the step of the structural model. As pointed by Hair et al., (2019), the amount of variance in the dependent variable that emerged from exogenous constructions that stands for the coefficient of determination is known as R square. The authors have determined that the range of R² is fixed at 0-1; the names coming from experts. According to the score, the range of R square is considered as weak, moderate, and strong. For instance 0.13 is taken to mean weak while 0.33 means moderate effect and 0.67+ is regarded as very strong coefficient of determination. The result of coefficient of determination is displayed on table 4, which is available at the following link. The data shown in this table suggests that while the coefficient of determination of Transformational Leadership is 0.188 as such it has a weak impact. On the other hand, the R² for employee environmental behavior is 0.499 this, therefore, has a mitigated effect.

Table 4|Coefficient of Determination

	R Square	R Square Adjusted
Employee Environmental Behavior	0.499	0.489
Transformational Leadership	0.188	0.182

Figure 2| Structural model of the study



Discussion

This research article provides a conceptual framework to explore the antecedent of green HR practices and consequent environmental behavior of employees with the support of social exchange theory and transformational leadership theory. In this study, transformational leadership is proposed as a mediator arguing that leaders with transformational characteristics can positively encourage employees to participate in sustainable behavior. Further, the study assumes that employees' demographic characteristics can act as a moderator since implementing Green HR practices may affect individual characteristics such as age, and level of education, and the firms' environmental behavior. In this article, the author proposes a new approach using external factors that separate them from previous studies; Environmental Training Program, Green Employee involvement, and Workplace Eco-Policies. These elements are important in determining an organization's environmental management because they concern directly the organizational employee's attitude and behavior towards the environment.

Theoretical Implications

The framework provides new insights into how transformational leadership theory integrated with the social exchange theory to form a new insight. The integration of the Transformational Leadership Theory together with the Social Exchange Theory presents an extensive theoretical framework for the aim of encouraging the workers' environmentally responsible behavior in enterprises. Bass and Avolio (1994) posit that it is only in this way; that through the dissemination of a culture of participation and commitment as well as having a clear vision of the possible future state of the organization that transformational leaders are able to mobilize their followers. Since leaders show support and recognition for environmentally responsible behaviors, they are more valuable in the eyes of the audience. It also supports the Social Exchange Theory which states that mutual relationship improves effort and allegiance (Blau, 1964). In addition to providing insights into the nature of the relationships between the leaders and employees when promoting such behavioral changes, this synthesis is a contribution to the current body of literature offering a framework which underlines the importance of relational aspects when orchestrating change for strategic organizational sustainability. In their study, Eisenbeiss et al. (2008) argue that increased understanding of such linkages may lead to the creation of better procedures to promote environmentally sustainable behavior of employees of an organization.

Directions for Future Studies

This article proposes some intriguing avenues for further investigation. The suggested model in the present study has not been examined in prior research. First, future study may elucidate the impact of environmental training programs, green employee involvement, and eco-friendly workplace regulations to foster environmental behavior among organizational personnel. Secondly, further study may investigate the technique of using transformational leadership theory in conjunction with social exchange theory. This might investigate the integration and expansion of theories to promote environmentally responsible behavior among employees inside the company. Third, the moderation of demographics, including age, educational attainment, and several other aspects, may provide fresh insights on the timing and manner in which demographics enhance the efficacy of transformative leadership. Subsequently, future investigations may examine the influence of gender on the dynamics between leadership and environmental behavior. This tendency is more prominent in women than in men, since women are more likely to adopt proactive actions to foster an ecologically friendly environment.

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