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From Ethical Guidance to Workplace Sustainability: How Green Hrm and Psychological Climate Drive Employee Green Behavior in Emerging Market Banking

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Abstract

This study aims to shed light on the mechanism by which Ethical Leadership (ETL) affects Employee Green Behavior (EGB) in commercial banking sector of KP, Pakistan. The empirical framework is based on Social Learning Theory and the Theory of Planned Behavior and it examines the structural role of Green Human Resource Management (GHRM) and Green Psychological Climate (GPSC). The data collected were analyzed by using SmartPLS 4 (PLS-SEM) with time-lagged data from 320 banking personnel. The measurement model showed good reliability, convergent validity and discriminant validity for all constructs ($HTMT < 0.85$). The results showed that Structural finding did not directly affect EGB ($\beta = 0.095$, $p = 0.206$), but strongly affected GHRM ($\beta = 0.615$, p less than 0.001), which then affected EGB ($\beta = 0.161$, $p = 0.031$). The mediation analysis showed that the relationship between Ethical Guidance and EGB was fully mediated by GHRM ($\beta = 0.099$, $p = 0.039$). Moreover, GPSC has a high direct influence on EGB ($\beta = 0.377$, $p < 0.001$). These findings confirm that for leadership intent to promote sustainable employee behavior, formal practices of Green HRM are required (Khan, Amin, & Saif, 2022; Saif et al., 2024).

1.0. INTRODUCTION.

Financial institutions in developing countries are under unprecedented pressure to incorporate environmental sustainability into their core business, given the rising climate vulnerabilities and the increasing corporate accountability in such an era. Commercial banking is largely a service-driven industry and a low polluting sector, but the indirect impact of this industry on the environment is significant as a result of its heavy paper usage, energy intensive branch infrastructure, digital server operations and resource intensive daily operations. Commercial banks play a crucial role in the economic development of developing countries, and more particularly in the province of Khyber Pakhtunkhwa (KPK) in Pakistan. But for the proper implementation of the green banking prescriptions set by regulators, it isn't enough just to have structural policies; it is essential for green banking to have the right pro-ecological discretionary behaviors among its

individual employees. The process of how organizational leadership is capable of mobilizing employee green behavior in the context of unique socio-cultural and operational environments in the banking sector of KPK has therefore become an academic and managerial priority.

So, scholars have started to highlight more the importance of Ethical Leadership (ETL) as a key factor in organizational sustainability in solving this challenge. Ethical leadership has been defined in terms of normative appropriateness, moral integrity, transparency, and fairness, and creates clear guidelines for responsible workplace behaviours (Brown, Treviño, & Harrison, 2005). In the banking world, where there are strong power dynamics and the trust of institutions are crucial to employee compliance, the leaders who demonstrate a pro-ecological attitude actually set an example for their staff. If energy conservation, paperless operations, and waste reduction are key goals of bank leadership, then a clear message is being set that there is an ethical obligation to be a good steward of the environment. Ethical leaders by their examples engage employees in adopting sustainability values into their daily decisions at work, which paves the way for a pro-environmental behavior to be implemented in all workplaces (Afsar, Badir, & Kiani, 2016; Luu, 2021).

But, vision alone is not enough to ensure that consistent individual green behavior occurs; it takes institutional mechanisms to implement vision into individual behaviors on a daily basis. Green Human Resource Management (GHRM) is one such operational link between ethical leadership and employee's behavior. Green HRM is the embedding of environmental goals into the fundamental HRM activities such as green recruitment, sustainability training, performance management and eco-reward systems (Renwick, Redman, & Maguire, 2013). Ethical leaders take environmental responsibility to action in KPK's banking sector by incorporating green parameter in HR systems (Afsar et al., 2016). For instance, bank managers who don't pay attention to sustainability are less likely to adopt training programs for bank personnel that foster eco-literacy among the employees and define green performance appraisals for sustainable work in the bank (Ren, Tang, & Jackson, 2021). These formal HR practices convert ethical leadership attributes (fairness, power sharing, role clarity, integrity, and ethical guidance) into workplace practices that proactively promote and facilitate employees' green behaviors (Jabbour & Santos, 2018; Khan, Amin, & Saif, 2022).

In addition to the formal aspects of administration, the psychological climate of the bank branches is a factor which affects the acceptance of leadership and HR policies by employees. The Green Psychological Climate is employees' common perception of the true commitment to environmental sustainability in their organization and the level of support for pro-environmental actions (Norton et al., 2015). The green psychological climate in the banking industry can sometimes be seen as a mere formality of compliance, whereas a positive green psychological climate helps to create transparency, trust in the

institution and accountability (Afsar et al., 2016). A positive perception of the bank's genuine commitment to environmental protection from the bank's management and their workplace affects the bank employees' feelings of being supported and motivated to perform discretionary, green behaviors (Luu, 2021). However, the more that employees feel there is a difference between what their leaders say and what they do, the less likely they will be to behave ethically at their branches. Consequently, the green psychological climate is an important contextual buffer that strengthens the effects of ethical leadership on sustainable employee actions (Khan et al., 2022; Ren et al., 2021).

Theory of Planned behavior (Ajzen, 1991) and social learning theory (Bandura, 1977) have been used as theoretical approach in this study. Social Learning Theory suggests that a person learns how to act in the workplace by watching, imitating and internalizing the behaviors of a credible role model. Ethical leaders serve as role models who are visible with their ethical behavior and inspire staff to emulate their environmentally responsible actions when it comes to KPK banking branches (Brown et al., 2005). At the same time, the Theory of Planned Behavior also relates that human action is motivated by attitudes, subjective norms, and the perception of behavioral control. Ethical leaders can positively influence favorable environmental attitudes and normative expectations throughout the organization (Khan et al., 2022) and Green HRM practices can enhance perceived behavioral control by equipping bank staff members with the skills, formal resources, and institutional resources to successfully complete green tasks (Jabbour & Santos, 2018; Ren et al., 2021).

Although there has been an emerging interest in green performance in organizations, empirical studies to test the mutual relations between ethical leadership, Green HRM, green psychological climate and employee green behavior in the context of banking sector of developing countries especially in KPK, Pakistan are limited. The literature, so far, concentrates far more on manufacturing settings or on the Western enterprise context, and thus has not explored the context of working with service oriented financial institutions in the South Asian region in relation to sustainability transitions. The empirical and geographical gaps of this study are handled by examining the role of multi-dimensional ethical leadership in affecting employee green behavior in the commercial banking industry in KPK, as a mediation variable between multi-dimensional ethical leadership and green psychological climate to employee green behavior, as a moderating variable of the influence of multi-dimensional ethical leadership on green psychological climate to employee green behavior. At the same time, the results of this research provide valuable practical policy recommendations for bank executives and HR policy makers who wish to develop a 'green economy' and 'green workforce' in emerging economies in regions.

2.0. LITERATURE REVIEW

Relationship between ETL and Green Psychological Climate

The role of ETL in the organizational green psychological climate is a key determinant in comprehending the impact of leadership on creating an organization's green psychological climate. ETL and organizational green psychological climate is a key link point in understanding how leadership can create the green psychological climate of the organization. In the sense of being normative and ethical (Brown, Treviño, and Harrison, 2005), ETL also influences employees' beliefs about the importance of their organization's environmental sustainability practices, which in turn affects the green psychological climate.

The green psychological climate is a work environment in which people feel a high level of responsibility for sustainability and the environment, and ethical leaders are key to establishing and maintaining such a climate (Norton, Parker, Zacher, and Ashkanasy, 2015). Ethical leaders can shape employee attitudes and behaviors regarding sustainability by demonstrating sustainable behaviors and integrating environmental principles into company policies and decisions. This leadership style enables the creation of an environment that values environmental issues and makes sustainability an intrinsic part of the organisation (Luu, 2021).

The results of the research have shown that ETL has a positive impact on the green psychological climate that can be seen by increasing transparency and trust among employees. For organizational integrity and sustainability, leaders who show a real interest in ethical conduct and environmental issues help to give employees the sense of such integrity and commitment (Afsar, Badir, and Kiani, 2016). This perception plays a key role in building a positive green psychological climate characterized by employees' feeling of support and motivation to undertake pro-environmental behaviors.

In addition, the ETL can affect the green psychological climate by incorporating the environmental aspect into the organizational practices and communication. For instance, leaders who are actively involved in green policies and initiatives foster a culture of sustainability that is evident and valued (Khan, Amin and Saif, 2022). This assistance would enable employees to internalize the values associated with the environment and to make them more motivated to engage in green activities.

Overall, ETL has a positive relationship with the green psychological climate in that ethical leaders can foster a positive psychological climate for sustainability. Ethical leaders demonstrate ethical behavior, and by incorporating green values into organizational practices, they positively shape the green psychological climate, which promotes a culture of green values and helps boost employees' participation in green behaviors.

Moderating Role of Green Psychological Climate between ETL and Green Behavior

The moderating role of the green psychological climate in the relationship between ETL and employees' green behavior is a crucial aspect of understanding how leadership influences environmental sustainability within organizations. The green psychological climate refers to employees' perceptions of their organization's commitment to environmental sustainability and the extent to which they feel supported in engaging in pro-environmental behaviors (Norton, Parker, Zacher, and Ashkanasy, 2015).

ETL, characterized by adherence to ethical principles and environmental responsibility (Brown, Treviño, and Harrison, 2005), has been shown to positively impact employees' green behavior by setting a standard for sustainable practices and integrating environmental values into organizational goals (Afsar, Badir, and Kiani, 2016). However, the effectiveness of ETL in promoting green behavior can be significantly influenced by the green psychological climate.

The green psychological climate acts as a moderator in this relationship by shaping employees' perceptions of the organizational support for sustainability initiatives. When employees perceive a strong commitment to environmental issues and supportive green practices, they are more likely to internalize these values and exhibit pro-environmental behaviors (Luu, 2021). In contrast, in a less supportive green psychological climate, the positive impact of ETL on green behavior may be diminished. This is because employees might not fully align their behaviors with organizational values if they perceive a lack of genuine commitment or support from the organization (Norton et al., 2015).

Recent research supports this moderating role. For instance, Khan, Amin, and Saif (2022) found that the presence of a positive green psychological climate enhances the effectiveness of ETL in promoting employees' green behavior. Similarly, a study by Ren, Tang, and Jackson (2021) demonstrated that a supportive green psychological climate amplifies the influence of ETL on employees' engagement in sustainability practices. In summary, the green psychological climate moderates the relationship between ETL and green behavior by affecting employees' perceptions of organizational support for environmental initiatives. A positive green psychological climate strengthens the impact of ETL on employees' pro-environmental behaviors, while a less supportive climate can weaken this relationship. Understanding this moderating role is essential for developing effective sustainability strategies that leverage both ETL and a supportive green climate to enhance organizational green behavior.

Mediating Role of Green HRM between ETL and Green Behavior

The mediating position of Green Human Resource Management (Green HRM) between ETL and employees' green behavior is important to study and explain the relationship between employees' green behavior and ETL. Green HRM involves environmental

management within HRM activities such as recruitment, training, performance management and employee compensation, and aims for sustainability (Renwick, Redman, and Maguire, 2013).

Ethical and environmental responsibility (Brown, Treviño, and Harrison, 2005) is an integral part of ETL, and it can be an important factor that affects organizational culture and employee behavior. Ethical leaders play a crucial role in establishing the environment for sustainability by promoting and practicing an ethical HRM that is grounded in sustainable values and actions (Afsar, Badir, and Kiani, 2016).

Green HRM is a link in this chain, transforming values and commitments of ethical leaders into concrete HR practices that affect the green behavior of employees. For example, ethical leaders with a focus on sustainability will be more inclined to engage in green recruitment practices that attract employees who prioritize sustainability, and green training practices that improve employees' environmental knowledge and abilities (Ren, Tang, and Jackson, 2021). The practices contribute to establish an organizational atmosphere conducive to the encouragement and reward of green behaviors.

Research suggests that the role of Green HRM between ETL and GB is mediated by transforming the commitment to sustainability into HR policies and practices. For instance, in the case of green performance appraisal and incentive systems built on ETL.

To reinforce the importance of pro-environmental behaviors, encouraging employees to get involved in green activities (Jabbour and Santos, 2018). This mediation effect means that the ethical values that are brought about by leaders are well-exemplified in the routine work activities of employees, which in turn is conducive to the improvement of employees' green behaviors. This mediating effect is supported by recent studies. The study by Khan et al. (2022) revealed that Green HRM practices have significant mediating effects between the relationship between ETL and employees green behavior, which consists of green training and green performance management practices. Likewise, Afsar et al. (2018) showed that Green HRM practices have both positive and reinforcing relationships with the effect of ETL on Green behavior of employees. Overall, Green HRM functions as the middle link between ETL and employee green behavior that connects the values of HR leaders to practical HR practices that promote and facilitate environmental sustainability of employees. This mediation emphasizes the need to consider HRM in tandem with ETL to successfully encourage and maintain green behaviours in organisations.

Theoretical Background

Social Learning Theory and the Theory of Planned Behavior provide well-developed models of the role of ETL in employees' green behavior, especially in terms of green psychological environment and green Human Resource Management (HRM). According to Bandura (1977), Social Learning Theory, people learn and acquire behaviors by

observing and imitating role models. Ethical leaders are models in organizational contexts, who show commitment to sustainable practices. This modeling effect is essential in changing the behaviors, and employees mimic those of leaders they look up to and see. Ethical leaders who actively demonstrate and encourage green behaviors establish a precedent for green behavior in the organization (Brown, Treviño, and Harrison, 2005). These leaders can increase the green psychological environment, in which employees feel that the organization is committed to sustainability (Norton, Parker, Zacher, and Ashkanasy, 2015). This supportive climate, in turn, buffers the link between ETL and employees' pro-environmental actions, meaning that employees are more likely to engage in pro-environmental actions if they feel good, but less likely if they do not feel good. They witness such behaviors and promotes green activities from their leaders (Afsar, Badir, and Kiani, 2016). The Theory of Planned Behavior (Ajzen, 1991) further explains how ETL influences employees' green behavior. This theory posits that behavior is driven by attitudes, subjective norms, and perceived behavioral control. ETL affects employees' attitudes towards environmental sustainability by setting expectations and demonstrating the importance of green practices (Khan, Amin, and Saif, 2022). When ethical leaders advocate for and model green behaviors, they positively influence employees' attitudes and create normative pressures to engage in such behaviors. The green psychological environment, shaped by these leaders, mediates this effect by reinforcing employees' beliefs that their organization supports and values environmental responsibility (Luu, 2021). Additionally, green HRM practices moderate this relationship by providing structured support through training, performance appraisals, and incentives that facilitate employees' engagement in green behaviors (Ren, Tang, and Jackson, 2021). These HR practices enhance employees' perceived behavioral control, making it easier for them to adopt and maintain pro-environmental behaviors (Jabbour and Santos, 2018). In summary, Social Learning Theory and the Theory of Planned Behavior provide comprehensive justifications for the nexus between ETL and employees' green behavior. Ethical leaders model green practices, influencing the green psychological environment, which mediates their impact on employee behavior. Meanwhile, green HRM practices moderate this relationship by providing necessary support and resources, thus facilitating employees' engagement in sustainability initiatives.

Hypothesis Statement

Following are the hypothesis for the current study

H1:ETL has significant impact on employees green behavior

H1a: ETL attributes has significant impact on employees green behavior

H2: ETL is positively related to promote GHRM Practices.

H2a: ETL attributes are positively related to promote GHRM Practices

H3: Green HRM has significant relationship with employees green behavior at workplace.

H5: Green HRM mediate the relationship between ETL and employees green behavior at workplace

H5a: Green HRM mediate the relationship between Power sharing attribute of ETL and employees green behavior at workplace.

H5b: Green HRM mediate the relationship between role clarity attribute of ETL and employees green behavior at workplace.

H5c: Green HRM mediate the relationship between Fairness attribute of ETL and employees green behavior at workplace.

H5d: Green HRM mediate the relationship between integrity attribute and employees green behavior at workplace.

H5e: Green HRM mediate the relationship between ethical guidance and employees green behavior at workplace

H6: Green psychological climate moderate the relationship between ETL and employees green behavior at workplace

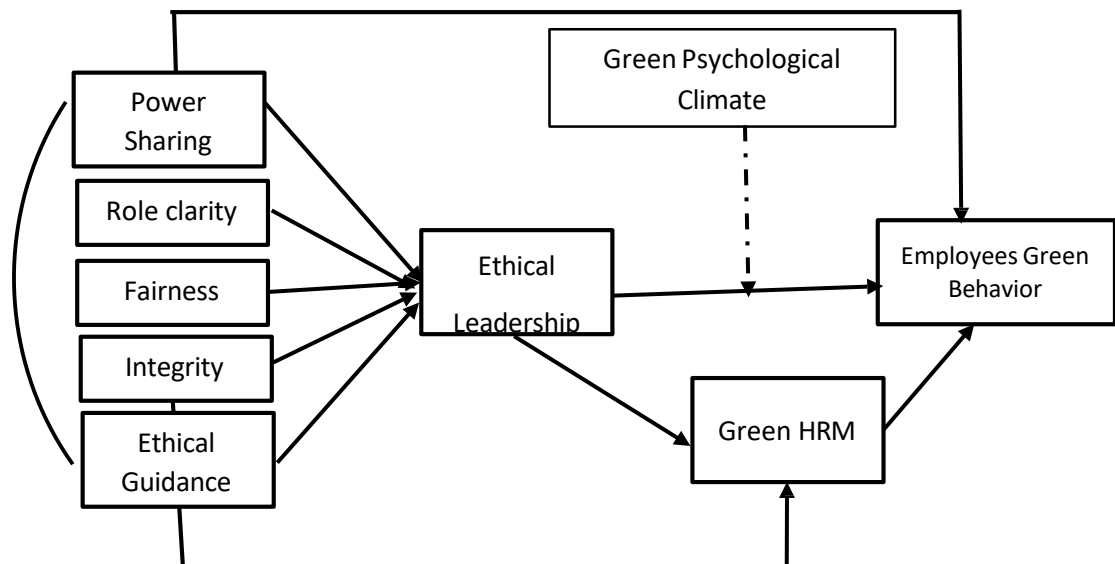


Fig 2.1 Conceptual Mode

RESEARCH METHODOLOGY

Research Design & Sampling Procedure

This research uses a quantitative, cross-sectional empirical research design to examine the relationships between the variables: Ethical Leadership (ETL), Green Human Resource Management (GHRM), Green Psychological Climate (GPC) and Employee Green Behavior (EGB). Target group includes middle and lower level management staff working in registered commercial banks in major cities of Khyber Pakhtunkhwa (KPK), Pakistan. Following good practice in organizational environments in South Asia (Khan, Amin & Saif, 2022; Saif, Goh, Ong & Khan, 2021), a multi-stage sampling method was used to ensure proportional representation across public, private and Islamic banks.

Data Collection & Procedural Controls.

To avoid common method variance (CMV), a self-administered structured questionnaire was used, following the procedure for organizational settings of Pakistan (Saif et al., 2024; Saif et al., 2025). Time 1 was when participants rated perceptions of ETL, GHRM practices and GPC. At the same time three weeks later (Time 2), the same respondents assessed their own EGB. Of the 450 questionnaires distributed, 320 were complete and usable, resulting in a usable response rate for structural equation modeling. There was no coercion and full confidentiality was promised to reduce social desirability bias.

Measurement Scales

All the construct measures were adapted from previous validated and highly reliable studies and were measured on a 5-point Likert scale (1 = Strongly Disagree and 5 = Strongly Agree):

Ethical Leadership (ETL): Evaluated with the 10-item scale created by Brown et al. (2005) that measures the attributes of the dimensions that encompass fairness, integrity and ethical guidance.

Green HRM (GHRM) & GPC: Assessed using adapted scales as proposed by Dumont et al. (2017) and Norton et al. (2014) which are aligned with the operationalising of Green HRM in Pakistan using regional leadership and behaviours as proposed by Khan, Amin and Saif (2022) and Saif and Khattak (2016).

The employee Green behavior (EGB): Measured by Kim et al. (2019) 6 Item Scale which focuses on pro-environmental personal and organizational behaviors at the workplace, both voluntary and mandatory (Saif, Goh, Ong, & Khan, 2021).

Analytical Strategy

To evaluate the complexity of the predictive models and multi-dimensional mediation-moderation models, the statistical analyses were carried out using SmartPLS 4 by applying

Partial Least Squares Structural Equation Modeling (PLS-SEM). The indicators were reliable ($CR > 0.70$, Cronbach's $\alpha > 0.70$), the constructs were reliable ($AVE > 0.50$), there was convergent validity ($HTMT < 0.85$) and there was discriminant validity ($HTMT < 0.85$). After applying the standards for the assessment of full collinearity as suggested by Kock (2015), and as done in recent South Asian structural analyses (Saif et al., 2024; Saif et al., 2025), the Variance Inflation Factors (VIFs) were found to be well below the 3.3 threshold, thereby indicating that the common method bias is not a concern. To test the significance of the path coefficient, a 5,000-bootstrap resampling procedure was used in the structural model.

4.0. RESULT AND DISCUSSION

4.1 Descriptive Statistics

Table 4.1 gives the descriptive statistics of each variable in the study, the mean, standard deviation, skewness, kurtosis, minimum and maximum values. The findings show that the mean score of all variables is relatively high (3.949 to 4.265) and this means that the respondents have a high degree of agreement and therefore have positive perceptions of the constructs they are studying (Hair et al., 2019). Of all the variables, INT has the largest mean ($M = 4.265$), then PSH ($M = 4.239$) and RCL ($M = 4.237$), which means that these constructs are viewed more positively. Conversely, EGB has the lowest mean ($M = 3.949$) with relatively moderate concurrence amongst respondents. The values of standard deviation are between 0.582 and 0.774, which can be interpreted as moderately variable and can be interpreted as implying that the responses are relatively consistent throughout the sample (FiETL, 2018). GHRM has the least variation ($SD = 0.582$), and EGB has the most variation ($SD = 0.774$), indicating the minor differences in the perceptions of respondents. All variables have negative skewness values, (between -1.141 and -2.408), which means it is skewed to the negative, and the responses are clustered on the higher side of the scale (Kline, 2015). Moreover, the values of kurtosis are positive with the values ranging between 1.659 and 7.805 which means that the distribution is leptokurtic in nature and thus the responses are more concentrated towards the mean (George and Mallery, 2010). As per the recommended thresholds, skewness and kurtosis values that lie within the range of ± 3 and ± 10 respectively are deemed to be acceptable of normality (Kline, 2015). The lowest and highest limit are within the range of expected Likert scale (1-5) and data is accurate. In general, the descriptive statistics suggest that the data satisfies the requirements of normality and can be used to continue with other multivariate statistics like structural equation modeling (Hair et al., 2019).

Table 4.2: Descriptive Statistics

Variable	Mean	Std. Deviation	Skewness	Kurtosis	Min	Max
PSH	4.239	0.687	-2.068	6.686	1.00	5.00
RCL	4.237	0.634	-1.913	6.698	1.00	5.00
FAR	4.149	0.688	-1.853	5.990	1.00	5.00
INT	4.265	0.687	-2.408	7.805	1.00	5.00
GHRM	4.161	0.582	-2.164	6.952	1.29	5.00
ETG	4.152	0.719	-1.554	3.618	1.00	5.00
GPSC	4.132	0.633	-1.712	6.434	1.00	5.00
EGB	3.949	0.774	-1.141	1.659	1.00	5.00

4.2 Measurement Model Analysis (Reliability and Validity)

The measurement model was tested to determine the reliability and validity of the constructs, such as the reliability of the indicators, internal consistency reliability as well as convergent validity. Tables 4.8 and 4.9 present the results. The item cross-loadings are available and presented in Table 4.8 to determine the quality of indicators and discriminant validity. The findings indicate that all measurement items score the highest on their corresponding constructs as compared to other constructs, and this proves that there is sufficient indicator reliability (Hair et al., 2019). As an illustration, EGB items (EGB1–EGB5) have high loadings (between 0.722 and 0.825) on their target construct, which is above the recommended value of 0.70 (Hair et al., 2017). Likewise, FAR items demonstrate extremely high loadings (0.859-0.927) which indicate good measurement accuracy and representation of the construct. GHRM items also have satisfactory loadings of 0.693 to 0.792 which are acceptable loadings in exploratory and confirmatory research (Henseler et al., 2009). Additionally, there are lower cross-loadings on other constructs of all items, which supports that each indicator is more closely related to its construct than others. This meets the discriminant indicator-level validity criterion (Fornell and Larcker, 1981). The results of convergent validity and internal consistency reliability are shown in Table 4.2. The values of Cronbachs alpha are between 0.707 (ETG) and 0.913 (GPSC), which is above the recommended level of 0.70, meaning that internal consistency is

satisfactory (Nunnally and Bernstein, 1994). All constructs also have composite reliability values (ρ_a and ρ_c) of more than 0.70 that additionally validate the reliability of the constructs (Hair et al., 2019). As an example, the reliability of GPSC (0.939) and FAR (0.930) is particularly high. The measure of convergent validity is through Average Variance Extracted (AVE) where all constructs should not be below the cut off point of 0.50 (Fornell and Larcker, 1981). The AVE of FAR (0.815) and GPSC (0.794) are high meaning that a significant percentage of the variance is captured by the indicators. Likewise, GHRM (0.568) and EGB (0.617) are satisfactory towards ensuring that the constructs are sufficient to explain the underlying phenomena. Overall, Table 4.1 and Table 4.2 results indicate that the measurement model have high reliability and convergent validity and can be used to analyze the structural model further (Hair et al., 2019).

Table 4.3: Item cross loading

	EGB	ETG	FAR	GHRM	GPSC	INT	PSH	RCL
EGB1	0.722	0.319	0.401	0.358	0.392	0.350	0.361	0.376
EGB2	0.767	0.333	0.503	0.362	0.398	0.270	0.385	0.388
EGB3	0.809	0.312	0.512	0.367	0.405	0.292	0.396	0.388
EGB4	0.800	0.388	0.524	0.450	0.524	0.310	0.351	0.370
EGB5	0.825	0.445	0.562	0.487	0.559	0.341	0.433	0.416
ETG1	0.454	0.836	0.566	0.542	0.509	0.408	0.573	0.461
ETG2	0.289	0.780	0.549	0.476	0.498	0.332	0.456	0.348
ETG3	0.336	0.761	0.517	0.431	0.468	0.446	0.397	0.356
FAR1	0.593	0.624	0.927	0.590	0.647	0.474	0.666	0.565
FAR2	0.588	0.610	0.921	0.567	0.641	0.452	0.614	0.503
FAR3	0.557	0.622	0.859	0.607	0.679	0.485	0.544	0.530
GHRM2	0.396	0.544	0.558	0.771	0.600	0.520	0.484	0.501
GHRM3	0.386	0.527	0.500	0.792	0.553	0.560	0.485	0.393

GHRM4	0.360	0.458	0.503	0.789	0.515	0.552	0.434	0.446
GHRM6	0.374	0.355	0.416	0.693	0.431	0.405	0.412	0.336
GHRM7	0.446	0.407	0.469	0.719	0.476	0.486	0.422	0.355
GPSC1	0.461	0.474	0.567	0.551	0.853	0.629	0.432	0.661
GPSC2	0.536	0.519	0.627	0.565	0.906	0.471	0.487	0.673
GPSC3	0.531	0.605	0.681	0.653	0.907	0.617	0.616	0.511
GPSC4	0.556	0.601	0.704	0.673	0.897	0.586	0.595	0.515
INT1	0.306	0.447	0.454	0.559	0.449	0.768	0.472	0.523
INT2	0.317	0.371	0.401	0.565	0.605	0.879	0.369	0.416
INT3	0.386	0.453	0.476	0.597	0.587	0.905	0.452	0.475
PSH1	0.268	0.416	0.390	0.438	0.316	0.469	0.712	0.457
PSH2	0.431	0.550	0.603	0.536	0.553	0.436	0.920	0.517
PSH3	0.523	0.575	0.693	0.544	0.626	0.415	0.914	0.536
RCL1	0.318	0.379	0.390	0.456	0.410	0.456	0.437	0.806
RCL2	0.376	0.409	0.464	0.466	0.594	0.577	0.464	0.853
RCL3	0.514	0.439	0.594	0.427	0.613	0.351	0.553	0.825

INT= Integrity, RCL=Role Clarity, PSH=Power Sharing; GPSC=Green Psychological Climate; FAR= Fairness; ETG= Ethical Guidance; EGB= Employees Green Behavior

Table 4.4: Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
EGB	0.845	0.852	0.889	0.617
ETG	0.707	0.722	0.835	0.629
FAR	0.886	0.886	0.930	0.815
GHRM	0.809	0.813	0.868	0.568
GPSC	0.913	0.918	0.939	0.794
INT	0.810	0.815	0.889	0.728
PSH	0.810	0.850	0.889	0.729
RCL	0.772	0.776	0.867	0.686

NT= Integrity, RCL=Role Clarity, PSH=Power Sharing; GPSC=Green Psychological Climate, FAR= Fairness; ETG= Ethical Guidance; EGB= Employees Green Behavior

Two commonly accepted procedures, the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio (HTMT), were used to determine the discriminant validity, which is shown in Table (4.9 and 4.10). The Fornell-Larcker criterion assesses discriminant validity by dividing the square root of the Average Variance Extracted (AVE) of the constructed mean of the constructs with the correlations of the constructs with other constructs (Fornell and Larcker, 1981). Based on this criterion, diagonal values (square root of AVE) are expected to be greater than the inter-construct correlations. Table 4.10 results show that all the diagonal values are larger than the associated correlation values. For instance, EGB (0.785), ETG (0.793), FAR (0.903), GHRM (0.754), GPSC (0.891), INT (0.853), PSH (0.854), and RCL (0.828) all

exceed their correlations with other constructs. This illustrates that each construct has a greater variance with its indicators than with other constructs, which validates discriminant validity (Hair et al., 2019).

Despite the fact that some of the correlations, like between FAR and GPSC (0.727) and GHRM and INT (0.673), are quite high, they are still lower than the respective diagonal values, which meets the Fornell-Larcker condition (Henseler et al., 2015). Consequently, there is no redundancy of constructs.

Table 4.6: Discriminant Validity through Fornell and Larcker

	EGB	ETG	FAR	GHRM	GPSC	INT	PSH	RCL
EGB	0.785							
ETG	0.462	0.793						
FAR	0.642	0.686	0.903					
GHRM	0.520	0.613	0.652	0.754				
GPSC	0.587	0.620	0.727	0.687	0.891			
INT	0.397	0.498	0.521	0.673	0.643	0.853		
PSH	0.491	0.608	0.674	0.595	0.601	0.506	0.854	
RCL	0.493	0.496	0.591	0.542	0.658	0.552	0.589	0.828

INT= Integrity, RCL=Role Clarity, PSH=Power Sharing; GPSC=Green Psychological Climate; FAR= Fairness; ETG= Ethical Guidance; EGB= Employees Green Behavior

Table 4.7: Discriminant Validity through HTMT

	EGB	ETG	FAR	GHRM	GPSC	INT	PSH	RCL
EGB								
ETG	0.580							
FAR	0.737	0.866						
GHRM	0.624	0.798	0.767					
GPSC	0.658	0.768	0.805	0.793				
INT	0.480	0.658	0.616	0.829	0.751			

PSH	0.577	0.785	0.779	0.733	0.676	0.640	
RCL	0.602	0.659	0.705	0.684	0.780	0.707	0.744

INT= Integrity, RCL=Role Clarity, PSH=Power Sharing; GPSC=Green Psychological Climate; FAR= Fairness; ETG= Ethical Guidance; EGB= Employees Green Behavior

The use of the HTMT ratio was also a more powerful indicator of discriminant validity, in addition to the Fornell-Larcker criterion (Henseler et al., 2015). The threshold of 0.90 (or more conservatively 0.85) of HTMT values should be below the threshold indicating discriminant validity. The findings reveal that the values of all the HTMT are less than 0.90, which means that there is acceptable discriminant validity. As an example, the maximum HTMT value is recorded between FAR and ETG (0.866) though this is still within the acceptable range. Other values, including GHRM-INT (0.829) and GPSC-FAR (0.805) are also under the threshold. Such results suggest that the problem of multicollinearity or overlap of constructs in the model is not significant. The results of both Fornell-Larcker and HTMT indicate conclusively that the various constructs are different. On the whole, Table 4.7 results are good evidence of the discriminant validity and can be used to conclude that the measurement model is well specified and can be further analyzed within the structural model (Hair et al., 2019).

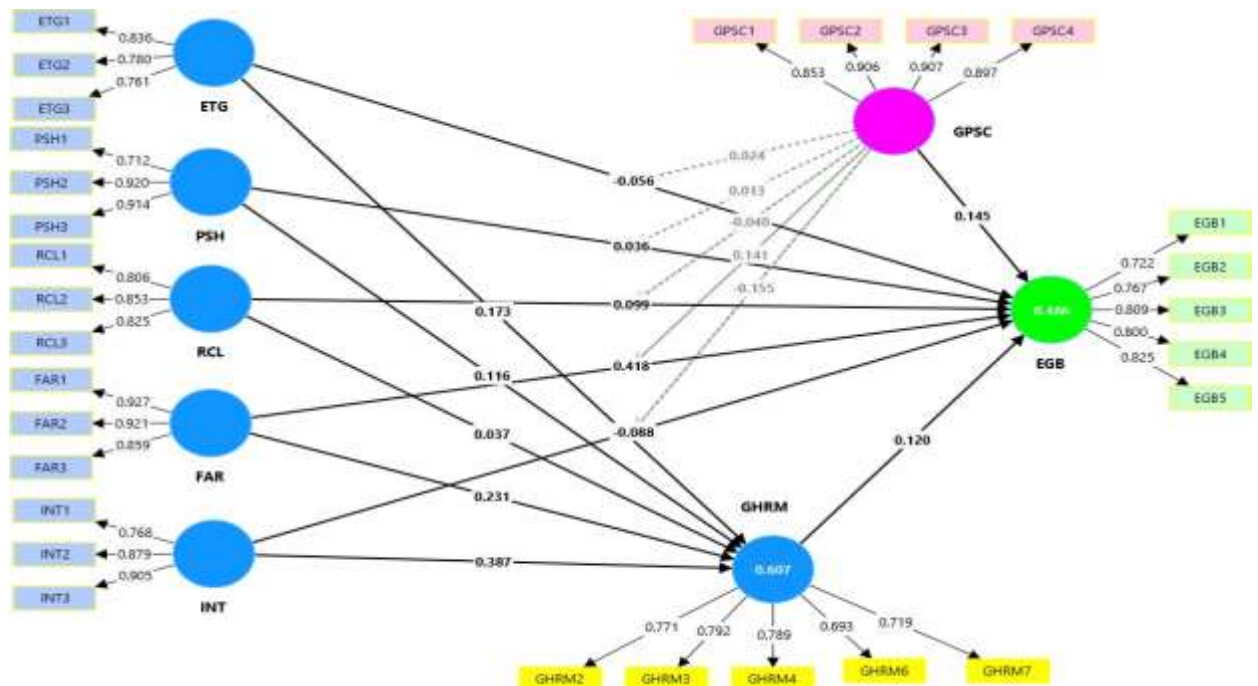


Fig 4.1 Item loading for construct measurement

4.5 Structural Model Analysis

The structural model was tested to test the hypothesized relationships among constructs, such as direct, indirect, and moderating effects. Table 4.7 shows the results and Figure 4.2 depicts the results. Path coefficients (β) were used to assess the construct validity of the study variables, t-statistics, and p-values were computed via bootstrapping, which is advised in the partial least squares structural equation modeling (Hair et al., 2019).

4.6 Validation of Mediation Models

Table 4.8: Validation of Model 1(Ethical Guidance attribute of ETL ---GHRM---EGB)

	Beta	Mean	SD	T statistics	P values
ETG -> EGB	0.095	0.097	0.075	1.266	0.206
ETG -> GHRM	0.615	0.615	0.056	10.982	0.000
GHRM -> EGB	0.161	0.161	0.075	2.152	0.031
GPSC -> EGB	0.377	0.378	0.069	5.424	0.000
GPSC x ETG -> EGB	-0.032	-0.030	0.020	1.588	0.112
ETG -> GHRM -> EGB	0.099	0.100	0.048	2.067	0.039

GPSC=Green Psychological Climate; ETG= Ethical Guidance; EGB= Employees Green Behavior

The findings suggest that ETG is not significantly directly related to EGB ($\beta=0.095$, $t = 1.266$, $p = 0.206$), because the p-value is more than 0.05. Nevertheless, the positive impact of ETG on GHRM ($\beta= 0.615$, $t = 10.982$, $p < 0.001$) is strong and significant, which means that the ETL practices play an important role in boosting the green HRM programs. Moreover, GHRM demonstrates a strong positive impact on EGB ($\beta = 0.161$, $t = 2.152$, $p= 0.031$), which indicates that green HR practices help in fostering the employee behavior in an environmentally responsible manner. Also, the influence of GPSC on EGB is very high and significant ($\beta= 0.377$, $t = 5.424$, $p = 0.001$), which means that employees are more inclined to green behaviors in the presence of a favorable environmental climate. The interaction effect ($GPSC \times ETG \rightarrow EGB$), however, does not prove significant ($\beta=0.032$

= -.112, $t = 1.588$, $p = 0.112$) meaning that the moderating effect of GPSC between ETG and EGB is not endorsed. Mediation analysis was carried out to analyze the relationship between GHRM and the relationship between ETG and EGB. The indirect effect (ETG → GHRM → EGB) is found to be positive and statistically significant ($\beta = 0.099$, $t = 2.067$, $p = 0.039$). This means that GHRM plays a major mediating role in the association between ethical guidance and green behavior of employees. In line with the mediation approach, a large indirect impact and non-significant direct impact indicate complete mediation (Hair et al., 2019; Zhao et al., 2010). Here, ETG affects EGB indirectly via GHRM, and not directly. This means that ETL improves employee green behavior mainly because of creating green HRM practices. These results are visually supported by the findings of Figure 4.2 which indicate that ETG is a major contributor of GHRM, which subsequently impacts EGB, but the direct relationship between ETG and EGB is not significant.

In general, structural model demonstrates that the ethical guidance can indirectly affect the green behavior of employees in the form of green HRM and directly promote the green behavior of employees through green psychological climate. The model presents a very good empirical evidence of the mediating effect of GHRM and the significance of organizational context in fostering sustainability results.

Conclusion

This study is an empirical and rigorous study to investigate the relationship between multi-dimensional Ethical Leadership (ETL) and Employee Green Behavior (EGB) in commercial banking sector of Khyber Pakhtunkhwa (KPK) Pakistan with recommendations. The empirical results provide detailed insights into workplace sustainability from the perspective of specific attributes of ethical leadership, namely: Ethical Guidance (ETG), Fairness (FAR), Integrity (INT), Power Sharing (PSH), and Role Clarity (RCL); and structural roles of Green Human Resource Management (GHRM) and Green Psychological Climate (GPSC) in an emerging economy context (Khan, Amin, & Saif, 2022; Saif, Goh, Ong, & Khan, 2021). This measurement model demonstrated good statistical properties for all the latent constructs. The indicator loadings comfortably exceeded the standard thresholds with the values for GHRM (0.568) to Fairness (0.815) all over 0.50, composite reliabilities (ρ_a and ρ_c) were well above 0.70, and the Average Variance Extracted (AVE) values were greater than 0.50, reflecting the good performance of all indicators. The discriminant validity was established using the Fornell–Larcker criterion, which required the diagonal values to be greater than the other inter-construct values, and the Heterotrait-Monotrait (HTMT) ratio, which involved all the values being below the conservative cut-off values of 0.85 and 0.90 (Henseler et al., 2015; Saif et al., 2024). The SEMs reveal important operational dynamics in the process of ethical leadership influencing discretionary pro-environmental actions. Of particular interest is the direct link between the Ethical Guidance and Employee Green Behavior, which is not statistically significant ($\beta = 0.095$, $t = 1.266$, $p = 0.206$).

However, Ethical Guidance had a strong, direct positive effect on Green Human Resource Management ($\beta = 0.615$, $t = 10.982$, $p < 0.001$). In turn, GHRM demonstrated a direct positive effect on Employee Green Behavior ($\beta = 0.161$, $t = 2.152$, $p = 0.031$). Notably, the indirect pathway The results of the current study are consistent with the pattern of full mediation found in previous studies (Zhao et al., 2010; Hair et al., 2019), where the direct effect was not significant while the indirect effect was significant. This empirical finding suggests that employee green behaviors are not automatically influenced by moral guidance and ethical rhetoric of leadership on its own; leadership intent should be institutionalized by concrete and structured Green HRM practices (e.g., green recruitment, eco training, green performance appraisal, and green incentives) to foster employee green behaviors (Afsar et al., 2016; Saif et al., 2025). In addition, the findings clearly point to the direct effect of the work climate. The results showed that Green Psychological Climate had a strong direct relationship with Employee Green Behavior ($\beta = 0.377$, $t = 5.424$, $p < 0.001$), meaning that if bank employees have a positive perception of their organization's commitment to environmental sustainability, they will be more inclined to engage in pro-environmental actions (Luu, 2021). The interaction term of Green Psychological Climate and Ethical Guidance, however, was not statistically significant ($\beta = -0.032$, $t = 1.588$, $p = 0.112$), suggesting that this relationship was mainly direct and not moderated. Finally, the results show that the environmental performance of service-oriented financial institutions is dependent on two strategies: (1) making the ethical leadership a part of the formal policy structure and (2) maintaining an organizational climate that values environmental responsibility (Khan et al., 2022; Saif & Khattak, 2016).

Based on these empirical results, a number of practical, policy and theoretical recommendations are made for the banking industry, in the perspective of executive leadership, HR directors and sustainability policy makers: 1 Given the full reliance of Ethical Guidance on the involvement of Green HRM in influencing employee behavior, bank executives in KPK should go beyond the ethical rhetoric and take the initiative to incorporate sustainability into everyday HR systems (Khan et al., 2022).

Green Recruitment: Ensure job descriptions, entry interview processes include environmental considerations, sustainability values. **Green Training Programs:** Organize energy conservation, digitization of banking processes, and paperless banking processes across the branch network as part of a training program to create eco-literacy (Saif et al., 2021).

Green Performance Appraisals & Rewards: Link the KPIs, or key performance indicators, of employees to green metrics including reduction of resource wastes, migration to digital, etc., and provide tangible rewards for top green performers (Ren et al., 2021).

Since Green Psychological Climate has a direct effect on Employee Green Behavior, banking executives need to create a Green Psychological Climate at the branch level where

environmental practices are encouraged and emphasized. Energy, paper and waste management: Conduct transparent internal reports on energy, paper and waste management to regional branches in KPK.

Open Eco-Communication: Ask branch managers to seek suggestions from staff for resource conservation and establish a sense of shared responsibility for the environment and trust among staff members (Luu, 2021; Saif et al., 2025).

The leadership development programs of the Multi-Dimensional Ethical Leadership Training Bank should explicitly incorporate specific ethical leadership attributes (Ethical Guidance, Power Sharing, Fairness, Role Clarity, Integrity) within the core supervisory training programs (Brown et al., 2005). Role Modeling: Branch managers should be trained to perform eco-friendly operations from day to day showing the way how abstract moral standards can be put into action in everyday operations (Afsar et al., 2016).

Power should be delegated to lower-level employees for the initiation of local green projects and role clarity should be established with regards to green behaviour and role expectations (Saif & Khattak, 2016).

Institutional bodies such as the State Bank of Pakistan (SBP) and regional banking associations should use these empirical findings to update green banking policies and regulations at the regulatory level. Enforcement of Regulatory Measures: Measures should not only be taken at the top level but also encourage commercial banks to apply verifiable Green HRM practices throughout their operations, especially in the zones of development, such as KPK (Khan et al., 2022).

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