

## FROM VALUES TO ACTION: EXPLORING THE IMPACT OF ETHICAL LEADERSHIP ON PRO-ENVIRONMENTAL BEHAVIOR UTILIZING DUAL MEDITATION IN EGYPTIAN GREEN HOTELS

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**Abstract:** With increasing awareness of environmental issues, the contribution of leadership in shaping employees' behavior towards sustainability confirms greater importance. The present research investigates the impact of Ethical Leadership (EL) on Pro-environmental Behavior (PEB) among Egypt's green-certified hotels. It also explores the mediating roles of Ethical Climate (EC) and Environmental Awareness (EA) between EL and PEB. Data were collected from a sample of 421 employees who work in green hotels in Egypt. A designed questionnaire was used to collect responses. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to test the hypothesized intricate relationships. The results reveal that EL positively impact PEB (H1), EC (H2), and EA (H4). Additionally, EC was found to have a positive influence on PEB (H3), though it did not adequately mediate the EL-PEB relationship (H6 not supported). Alternatively, EA positively influences PEB (H5) and functions as an effective mediator between EL and PEB (H7 supported). These findings suggest that whereas EL remains key in affecting the development of an ethical work culture, its effect on environmentally responsible behavior is nearly completely mediated through heightened awareness among workers. This study contributes to the literature on sustainability and leadership by focusing on awareness as an underlying process. It also yields practical recommendations for hotel managers seeking to instill environmental stewardship through ethical leadership and soundly crafted awareness efforts.

**Keywords:** ethical leadership, pro-environmental behavior, environmental awareness, ethical climate, Green Hotels, Egypt

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### INTRODUCTION

As there is an ever-growing concern for global environmental issues, the hospitality sector is facing mounting pressure to adopt sustainable strategies and minimize its impact on the environment. Specifically, green hotels with exemplary environmental performance are anticipated to be at the forefront of ensuring sustainability through business operations and employee engagement (Croitoru et al., 2024; Gazzola et al., 2024). These buildings incorporate green technology, employ required resources such as energy and water judiciously, reduce waste, and attempt to engage all stakeholders; primarily employees, in sustainability efforts (Erdede & Bektaş, 2024). But effective incorporation of sustainability into daily operations is heavily dependent on considerations beyond simple policies or technology; it calls for an employee community devoted, well-educated, and driven by sound ethical criteria. Of the numerous factors affecting sustainable behavior in organizations, leadership has emerged as a central motivator (Palmucci et al., 2025). Good leaders don't just impose environmental regulations; they set up organizational culture, affect employee attitudes, and lead by example regarding ethical and sustainable behavior (Zafar et al., 2025). As such, comprehending how various leadership styles, particularly ethical leadership, affect environmental behavior at the employee level is vital to advancing sustainability in green hotel operations.

Ethical Leadership (EL) is defined as leaders embodying fairness, honesty, integrity, and a sense of responsibility to others and to the common good (Bhandari & Subedi, 2024; Iqbal & Parray, 2024). These leaders not only make decisions that are

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ethically responsible but also proactively share ethical guidelines and standards of behavior with their followers. In the workplace, EL has been linked with better employee attitudes, leadership trust, and greater organizational commitment (Rai & Koodamara, 2025). Ethical leaders also promote employee development, open communication, and social and environmental responsibility. Ethical leaders in sustainability-focused environments, such as green hotels, will likely prioritize long-term environmental objectives more, incorporate sustainability into leadership behavior, and promote employees to make ecologically responsible behavior (Bhandari & Subedi, 2024). This leadership framework creates a values-driven culture in which ethical and environmental issues are treated as integral and interdependent and a part of the company's mission.

Pro-environmental Behavior (PEB) is voluntary actions taken by employees to lower their detrimental impact on the environment, such as minimizing waste, conserving energy, recycling, and championing greenness (Alherimi et al., 2024). In organizational designs, PEB transcends conformity and reflects employees' intrinsic duty to preserve the environment. Empirical work has demonstrated that leadership plays a critical role in influencing PEB via the modulation of employees' motivation, attitudes, and values (Müller et al., 2025; Owusu et al., 2025). Ethical leadership, in particular, can engage PEB by incorporating sustainability in the organizational ethical framework, rewarding environmentally friendly behavior, and fostering a culture where employees are free to act responsibly (Iqbal et al., 2025). In eco-hotels, where green practices are deliberately put into first priority, PEB becomes the key to getting environmental certification levels and staying competitive. Therefore, if employees perceive their leaders as ethical and environmentally responsible, they are more likely to embrace PEB as a naturally part of their work habit.

Contemporary research literature discusses that Ethical Leadership (EL) can affect Pro-environmental Behavior (PEB) via direct and indirect mechanisms. Among the most critical indirect pathways involves the creation of an organization's Ethical Climate (EC), which refers to the shared perception among workers regarding what is ethically acceptable behavior (Bates et al., 2025). Positive ethical climate reinforces collective norms, promotes a sense of moral responsibility, and may generate behavior in line with organizational sustainability values (Lu et al., 2025). Some scholars contend that the presence of an ethical climate, while essential, may be inadequate to arouse specific pro-environmental behavior unless employees demonstrate cognitive and affective engagement with the environment (Sookdawoor & Grobler, 2022; Wang & Yen, 2023). This emphasizes the ultimate importance of Environmental Awareness (EA), which is the employees' knowledge about environmental problems, their causes, and the possible impact of not taking action (Li et al., 2023). Ethical leaders function a key role in facilitating EA through the communication of environmental objectives, education, and mobilization of workers into sustainability-oriented activities (Piwowar-Sulej et al., 2024; Salama et al., 2025). Thus, EA can serve as a strong and more proximal mediator than general ethical norms in the transference of leadership values to specific environmental behavior.

Despite the rising scholarly attention about environmental sustainability in organizational frameworks, there is very little research that has evaluated the effect of Ethical Leadership (EL) on Pro-environmental Behavior (PEB), particularly in the hospitality industry of emerging economies such as Egypt (Iqbal et al., 2025; Nwanzu & Babalola, 2025). While the majority of the literature to date has been directed toward transformational and green approaches to leadership, ethical leadership, values-driven strategy based on principles of justice, accountability, and integrity, is underdeveloped in those green hotel environments where sustainability is increasingly becoming a strategic agenda (Akgöz et al., 2024; Tran Pham & Nguyen Le, 2023). Our research fills this gap by introducing EL as a key antecedent to PEB, thereby providing a new theoretical framework under which the impact of ethical role modeling on workers' sustainable behavior can be understood. Our research both theoretically and practically contributes. Theoretically, it enriches the leadership-sustainability body of knowledge by illustrating how ethical leadership promotes pro-environmental behavior through unique psychological and cultural mechanisms. Practically, it offers realistic approaches to hotel managers in emerging economies to leverage leadership values and awareness campaigns in developing a culture of environmental responsibility among staff.

We hold that, based on Social Learning Theory (Bandura & Walters, 1977), moral leaders not only teach employees prescriptive behavior but also serve as moral role models who encourage the modeling of environmentally friendly behavior. Furthermore, this research enhances the knowledge of the mediating processes by which EL exerts its impacts by testing empirically the role of Ethical Climate (EC) and Environmental Awareness (EA). Though EC has been extensively researched in the context of ethical behavior, its role as a determinant of environmental behavior is yet to be established. In our conceptual model where we introduce EA, we follow a more knowledge-oriented pathway by which EL could affect PEB. In this regard, EA stands out as a necessary enabler that reinforces employees' perception and adoption of sustainability objectives. The current study seeks to address these identified gaps by:

1. Investigating the influence of Ethical Leadership on employees' Pro-environmental Behavior, Ethical Climate, and Environmental Awareness;
2. Investigating the influence of Ethical Climate and Environmental Awareness on employees' Pro-environmental Behavior; and
3. Assessing the mediating roles of Ethical Climate and Environmental Awareness in the relationship between Ethical Leadership and Pro-environmental Behavior.

By addressing the theoretical and contextual gaps, the present study adds to the body of literature on sustainable leadership and offers practical implications for green hotel managers who aim to promote environmentally friendly behavior through ethical and awareness-based strategies.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### Social Learning Theory

Social Learning Theory (SLT) by Bandura & Walters (1977) states that individuals acquire new behaviors by observing

and mimicking other people, in our case, influential leaders. In organizational settings, employees learn suitable attitudes and behavior by observing the behavior of their leaders as well as the values they espouse (Masood et al., 2024). Ethical leaders who possess virtues such as integrity, justice, and responsibility make for good role models for employees. By demonstrating ethical decision-making and attention to sustainability, these leaders shape employees' behavior and attitude, including their intention towards pro-environmental behavior. SLT therefore presents a transparent theoretical model for explaining how Ethical Leadership can directly influence on employees' Pro-environmental Behavior, as shown in Figure 1, by way of transparent behavioral paradigms that are adopted by employees and encouraged to follow.

In addition to direct modeling, SLT outlines the mechanisms through which ethical leaders are able to create an organizational context that promotes sustainable behavior. Through the creation of a positive Ethical Climate, leaders establish collective norms and expectations that prompt ethical and environmentally responsible practices (Ahmed & Khan, 2025). Further, ethical leaders can amplify employees' Environmental Awareness through formal communications about valuing sustainability, promoting training, and by activating green participation (Ashraf et al., 2024). Through observational learning processes and reinforced social norms, workers become more informed and motivated to practice PEB. SLT thus validates the prediction that EC and EA mediate the association between EL and PEB because workers are not only learning from their leaders' behaviors but also from environmental and moral standards that permeate their organizational environment.

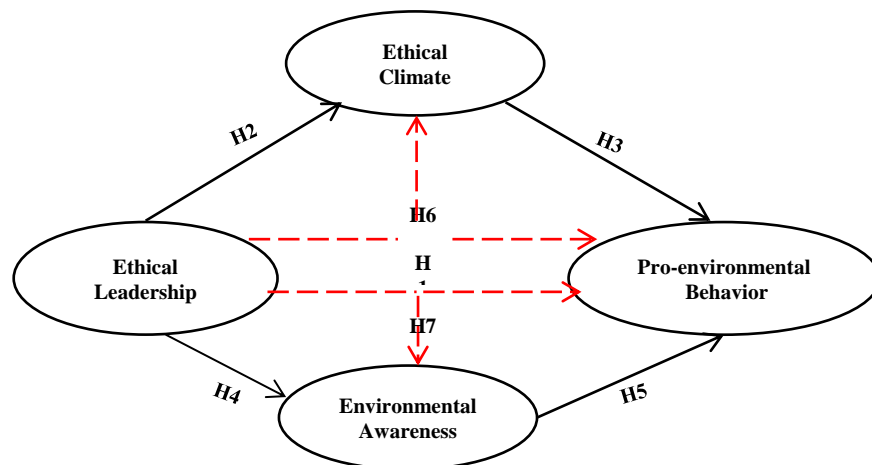


Figure 1. Proposed Model of the study

## Hypotheses Development

### Ethical Leadership and Pro-environmental Behavior

In line with Social Learning Theory Bandura & Walters (1977), members of staff are likely to copy and model the conduct and values exhibited by their leaders. When leaders consistently give precedence to moral values at the expense of environmental accountability, they encourage employees to follow suit, including actions to restrain wastage, preserve resources, and carry out sustainable operations (Erdede & Bektaş, 2024; Hasanein & Metwally, 2025). Research in the hospitality sector and other industries showed that ethical leaders encourage a stewardship and responsibility culture, which subsequently leads to the adoption of environmentally friendly practices among employees (Iqbal et al., 2025; Nwanzu & Babalola, 2025). Therefore, it is anticipated that ethical leadership positively affects the pro-environmental behavior of employees by creating sense of responsibility and driving sustainable conduct in the organization, namely in green hotel environments where environmental performance is viewed as a strategic imperative. The research, therefore hypothesizes:

**H1:** Ethical Leadership positively impacts Pro-environmental Behavior.

### Ethical Leadership and Ethical Climate

Development of a robust ethical climate in organizations is intrinsically linked to values and conduct of leaders. Anchored on Social Learning Theory by Bandura & Walters (1977), employees learn what ethical standards are through the observation of leaders who portray integrity, fairness, and accountability. These actions contribute to establishing a common concept of proper behavior, which is the foundation for an Ethical Climate (Bates et al., 2025). There is empirical evidence to support this correlation; for example, Ahmed & Khan (2025) determined that ethical leadership is a strong predictor of employees' perceptions of ethical climate. Similarly, Sookdawoor & Grobler (2022) illustrated how ethical leaders influence the ethical climate of the organization, resulting in more harmonious ethical practices. In the hospitality industry, where workers are often faced with environmental and ethical dilemmas, the establishment of a powerful EC is crucial. Evidence, based on research carried out by Al Halbusi et al. (2020) and Al Halbusi et al. (2021), pinpointed the central role of leadership in developing ethical norms to promote responsible and sustainable action in service settings. The study, therefore, proposes:

**H2:** Ethical Leadership positively impacts Ethical Climate.

### Ethical Climate and Pro-environmental Behavior

An organization's Ethical Climate functions a major role in defining employees' choices and conduct, particularly concerning environmental responsibility. EC is the common understanding of what is ethically right organizational conduct

(Wang & Yen, 2023). If employees work in an environment that emphasizes ethical standards, honesty, and accountability, they have a greater likelihood of behaving accordingly. The most recent evidence indicated that a positive ethical climate makes employees feel urged to go beyond their basic responsibilities at the workplace and, more specifically, engage in PEB practices involving conservation of resources, reducing waste, and supporting sustainable initiatives (Bates et al., 2025; Erdede & Bektaş, 2024). In such an environment, the labor force feels committed ethically to act both for the organization and for the overall welfare of the world and society. Besides, an ethical climate fosters a sense of shared responsibility and psychological safety, therefore allowing the employees to undertake environmentally responsible actions without any fear (Sookdawoor & Grobler, 2022). This means that a positive ethical climate can act as a core factor in developing a culture of sustainability for organizations, particularly green hotels. The study anticipates:

**H3:** Ethical Climate positively impacts Pro-environmental Behavior.

#### **Ethical Leadership and Environmental Awareness**

Environmental awareness is often perceived as a by-product of educational programs or professional training, new scholarly research contended that the very important role of leadership plays in the climate of employees' environmental awareness (Piwowar-Sulej et al., 2024). As stated by Goswami et al. (2020), sensitivity is intensified by ethical leaders not just through official channels of communication but through infusion of environmental values in day-to-day decision-making and practices. This observation is in accordance with SLT, believing that workers acquire attitudes and behavior demonstrated by their leaders. Ahmad et al. (2021) further assumed that ethical leaders with transparency, accountability, and care for environmental matters enhance employees' involvement and awareness regarding environmental concerns. Further, Saleem et al. (2020) concluded that employees under the banner of ethical leadership are more likely to comprehend the environmental costs of their behavior and be supportive of sustainability initiatives. In the hospitality sector, where day-to-day operations include environmental practices, ethical leadership is a powerful force to improve EA and instill a sustainability-oriented culture among employees. Therefore, the study concludes the following:

**H4:** Ethical Leadership positively impacts Environmental Awareness.

#### **Environmental Awareness and Pro-environmental Behavior**

Employees motivated by regulative and extrinsic rewards are prone to be more likely to exhibit eco-friendly behavior when they possess a positive understanding of environmental issues and their tendency to influence such matters (Handayani et al., 2021). Moreover, Si et al. (2022) concluded that awareness not only form attitudes but also reinforces an individual sense of responsibility that is essential in initiating behavioral changes. Saifulina et al. (2022) also argued the same, suggesting workers with higher EA are more likely to adopt green practices such as conserving energy, minimizing waste, and engaging in green activities. In the case of green hotels, where organisational performance for the environment is a central organisational objective, increased awareness helps employees align their behaviour with sustainability objectives (Owusu et al., 2025). Without this, even individuals who are most motivated by ethical issues may not have the knowledge or experience necessary to act. Therefore, as established in prior research, enhancing EA is not only advantageous but necessary to integrate sustainable environmental behavior into organizational culture (Aman et al., 2021). Therefore, the research hypothesizes:

**H5:** Environmental Awareness positively impacts Pro-environmental Behavior.

#### **Ethical Climate as a Mediator**

Ethical Climate (EC) is postulated as a key mediating variable between Ethical Leadership (EL) and Pro-environmental Behavior (PEB) as it reflects the common ethical norms and expectations in an organization (Wang & Yen, 2023). Ethical leaders influence EC by always demonstrating ethical behavior, reinforcing ethical behavior, and upholding fairness and honesty (Ahmed & Khan, 2025). Based on Social Learning Theory (Bandura & Walters, 1977), workers learn these behaviors through observing them and thus become accountable in the creation of a shared ethical climate. A robust ethical climate can strengthen the moral obligation of employees to engage in voluntary and long-term activities, like PEB (Wang & Yen, 2023). Past research indicates that as the ethical climate is established, employees exhibit heightened sensitivity of the organizational expectations surrounding environmental stewardship (Al Halbusi et al., 2021). EC can, thus, play the role of core psychological and contextual process for describing the transformation of EL into environmentally responsive behavior. In green hospitality environments, a best-fit ethical climate may improve daily environmental practices and increase the general sustainability culture among employees. Therefore, the study hypothesizes:

**H6:** Ethical Climate mediates the relationship between Ethical Leadership and Pro-environmental Behavior.

#### **Environmental Awareness as a Mediator**

Ethical leaders tend to emphasize values such as transparency, responsibility, and care for others and such may heighten employees' environmental awareness (Masood et al., 2024; Ren et al., 2020). Paralleling SLT by Bandura & Walters (1977), employees learn from observing their leaders. Since leaders always make eco-friendly practices, talk about sustainability publicly, and endorse green activities, their employees become increasingly well-educated and aware of environmental challenges. This awareness enhances employees' motivation and readiness to engage in pro-environmental behavior, such as minimizing waste, saving energy, and supporting green policy (Alherimi et al., 2024). A number of studies have established that EA is a reliable predictor of PEB and frequently serves as a mediator between leadership and behavioral alteration (Mansour et al., 2022). For green hotels where environmental performance matters, EA can be used to amplify the influence of ethical leadership through transforming its values into tangible sustainable practices among employees.

**H7:** Environmental Awareness mediates the relationship between Ethical Leadership and Pro-environmental Behavior.

## METHODOLOGY

### Sample and data collection

Our research uses a model that incorporates numerous constructs, which are extremely hard to examine with traditional experimental or case study methods. Hence, we believe the survey technique is the most appropriate method to our current research, as backed by (MacKenzie et al., 2011). To examine the established hypotheses stringently, we applied the random sampling technique, which is extremely popular in the social sciences, including studies targeting environmental issues (Badwy et al., 2025). Further, Figure 2 indicates the essential steps implemented in this research methodology.

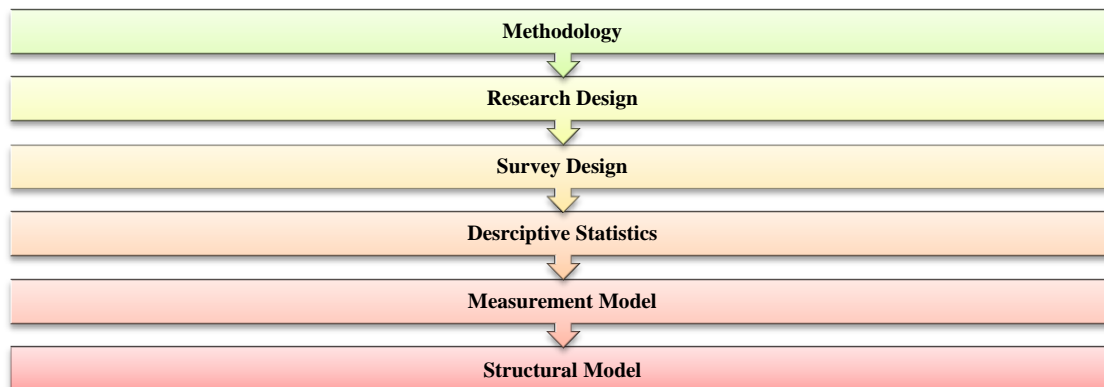


Figure 2. Methodology flowchart

The research is founded on the assessment of the hotel facilities with a high level of commitment to environmental sustainability, with specific regard to different geographical locations in Egypt. To stay relevant to the purpose of the research, data were only gathered from employees employed in green hotels, which have been certified according to their environmental performance and sustainability measures. The rationale for choosing green hotels is their increasing significance in the tourism sector, as they portray a substantial eco-friendly attraction to local and foreign tourists.

They typically possess sophisticated environmental management systems, provide sustainability training for their employees, and practice environmentally responsible operational processes—rendering them an exemplary environment for the examination of pro-environmental behaviors. Furthermore, green hotels have been known to be proactive in seeking sustainability, usually exceeding conventional hotel typologies in environmental responsiveness and ethics (Nisar et al., 2021; Rehman et al., 2023). The respondents in these hotels were sampled based on a random sampling method, thus ensuring objectivity and uniformity. This sampling methodology enhances the generalizability and ecological validity of the findings in the Egyptian sustainable hospitality context.

Data were collected through online questionnaires shared via the LinkedIn profiles of the targeted green hotels. The responses were subjected to analysis via PLS-SEM, which has been established as a suitable technique for the evaluation of intricate models and the advancement of theoretical constructs. A cross-sectional design was employed, given that it makes conceptual exploration as well as theoretical development possible in behavioral research (Kline, 2011). 500 questionnaires were distributed, and the method of data collection was intentionally made electronic in order to conserve paper, thereby echoing the environmental motif and sustainability agenda of the research. Of the surveys distributed, 421 were usable and valid, with a response rate of 84.2% that was exemplary. Eleven were rejected due to incomplete or defective data entries.

The total sample size of 421 exceeded the minimum suggested by Kline (2011), which recommends having a sample of at least 270 for a model with 27 items, following the rule of thumb of ten cases per indicator. The sample size provided sufficient statistical power for structural equation modeling. The questionnaire had been modified from a group of established instruments used in earlier research and was initially created in English. It was then translated into Arabic by the researchers to ensure clear and easy comprehension among the participants, prior to involving a professional translator to check for accuracy and consistency. The respondents targeted were senior management personnel in the sampled hotels, including general managers, human resource managers, research and development managers, and accounting managers. They were targeted because they occupy strategic roles as managers of operative processes, implementers of policy, and implementers of significant organizational decisions. As per their position and their familiarity with the hotel's green initiatives, they were deemed properly qualified to respond to the survey questionnaire in an intelligent and credible way.

### Measurements

A quantitative study design was employed in this study through the application of a well-formulated survey instrument aimed at gathering the necessary data. The survey is neatly separated into two distinct segments: the first segment, where questions concerning participants' gender, age, and experience, and the second segment, where the four variables of concern were quantified using a five-point Likert scale.

The ethical leadership construct was validated through the application of ten Nwanzu & Babalola (2025) items. The ethical climate construct was validated through seven Dey et al. (2022) items. Lastly, environmental awareness was measured through three items drawn from the research work of Saifulina et al. (2022). A seven-item scale by Iqbal et al. (2025) was also utilized in the assessment of pro-environmental behavior.

**Data analysis**

This study employs WarpPLS software version 7.0 to test the proposed model by employing the PLS-SEM method since it was found to be the most appropriate software program for analysis of the conceptual framework that the research developed (Kock, 2019). Secondly, PLS-SEM analysis is run to examine the large differences in path coefficients among the variables of interest (Alnasser et al., 2024).

**RESULTS**

**Profile of respondents**

Table 1 and Pie charts present the demographics of the participants in the study who were drawn from environmentally sustainable hotels in the Egyptian environment. The sample comprises 421 usable responses, thereby giving an inclusive representation of management-level personnel within the listed hospitality facilities. With respect to gender mix, the sample is constituted by males and comprises 258 respondents (61.3%), while for females, there are 163 respondents (38.7%).

Table 1. Profile of the sample

	Item	Frequency	Percent (%)		Item	Frequency	Percent (%)
Gender	Male	258	61.3	Experience	Below 5 years	130	30.9
	Female	163	38.7		From 5 to below 10	64	15.2
Age	Below 30 years	18	4.3		From 10 to below 15	197	46.8
	From 30 to below 40	64	15.2		Larger than 15 years	30	7.1
	From 40 to below 50	270	64.1				
	Larger than 50 years	69	16.4				

This trend reflects the long time within which gender gap of leadership in the hospitality sector in Egypt persists, thus supporting findings existing across developing economies whereby manager positions remain disproportionate to males. As indicated in Figure 3, with regard to age groups, a considerable majority (64.1%) falls into the category of 40 to less than 50 years, which suggests a very senior and experienced respondent group. Another 15.2% drop between 30 and less than 40 years, and 16.4% are above 50 years of age. A mere 4.3% are below 30 years of age, which reflects that younger professionals are not adequately represented as senior managers in green hotels. By professional experience, 46.8% have 10 to less than 15 years of work experience, reflecting a dominant presence of mid-to-senior level professionals. In addition, 30.9% possess fewer than 5 years of experience, while 15.2% possess 5 to less than 10 years, and only 7.1% report having over 15 years of experience. Overall, the sample reflects a well-experienced and qualified management team that is predominantly male, which is appropriate for scrutinizing perceptions concerning ethical leadership, environmentalism, and pro-environmental behavior within green hotels in Egypt. The following charts are presented for a more visible presentation of results:

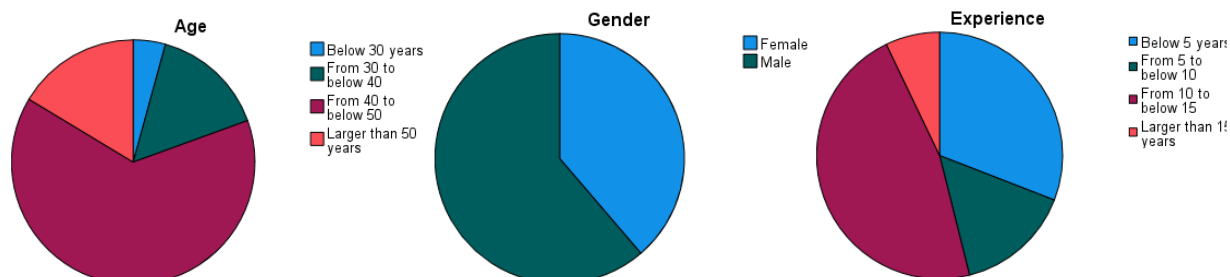


Figure 3. Gender, Age and Experience

**Measurement model**

The four-factor model of ethical leadership, ethical climate, environmental awareness, and pro-environmental behavior was tested with confirmatory factor analysis. Ten fit indices of Kock (2021) were applied to identify the model suitability as described in Table 2. Furthermore, Table 2 presents the model fitness and quality indicators applicable to the evaluation of the structural model. All reported statistics fall within the acceptable or optimal ranges, indicating that the model shows strong statistical validity and overall good fit.

Table 2. Model Fit and Quality Indices

Metrics	Result	Standard	Accepted/Not
APC	0.437, P< 0.001	p < 5%	Accepted
ARS	0.495, P< 0.001	p < 5%	Accepted
AARS	0.493, P< 0.001	p < 5%	Accepted
AVIF	2.938	Acceptable if =< 5, ideally =< 3.3	Accepted
AFVIF	2.615	Acceptable if =< 5, ideally =< 3.3	Accepted
GoF	0.527	Small => 0.1, medium => 0.25, large => 0.36	Accepted
SPR	1.000	Acceptable if => 0.7, ideally = 1	Accepted
RSCR	1.000	Acceptable if => 0.9, ideally = 1	Accepted
SSR	1.000	Acceptable if => 0.7	Accepted
NLBCCR	1.000	Acceptable if => 0.7	Accepted

The results of the reliability test presented in Table 3 describe that all the constructs of research had attained composite reliability rates above the satisfactory limit (CR>0.70). The factor loadings of individual items were significant statistically, and the convergent validity was established by the AVE estimates of environmental knowledge, environmental responsibility, environmental risk perception, and pro-environmental travel behavior, which were all more than 0.50. Besides, the research model is not prone to common method bias because the VIF values of all the latent constructs are below the cut-off level of 3.3. Table 4. substantiates the discriminant validity of the proposed study model, evidenced by elevated AVE values and correlations among variables that remain below unity. Furthermore, the validity of the constructs was corroborated through the computation of the HTMT, as illustrated in Table 5.

Table 3. The Measurement Model

Factors	FL	A	CR	AVE	VIF	Factors	FL	A	CR	AVE	VIF
<b>Ethical Leadership (EL)</b>	-	0.880	0.903	0.586	3.188	<b>Ethical Climate (EC)</b>	-	0.847	0.885	0.530	3.195
EL1	0.623					EC1	0.753				
EL2	0.710					EC2	0.651				
EL3	0.705					EC3	0.783				
EL4	0.482					EC4	0.830				
EL5	0.617					EC5	0.801				
EL6	0.798					EC6	0.733				
EL7	0.705					EC7	0.590				
EL8	0.782					<b>Pro-environmental behavior (PEB)</b>	-	0.850	0.886	0.527	2.017
EL9	0.765					PEB1	0.777				
EL10	0.726					PEB2	0.732				
<b>Environmental Awareness (EA)</b>	-	0.866	0.918	0.789	1.771	PEB3	0.768				
EA1	0.887					PEB4	0.721				
EA2	0.893					PEB5	0.758				
EA3	0.885					PEB6	0.680				
						PEB7	0.637				

Note: FL: Factor Loading; A: Cronbach alpha; CR: Composite Reliability; AVE: Average Variance Extracted; VIF: Variance Inflation Factor.

Table 4. Discriminant Validity

Variables	EL	EC	EA	PEB
EL	<b>0.820</b>	0.697	0.507	0.605
EC	0.697	<b>0.728</b>	0.542	0.586
EA	0.507	0.542	<b>0.888</b>	0.623
PEB	0.605	0.586	0.623	<b>0.726</b>

Table 5. HTMT for validity

HTMT ratios (good if < 0.90, best if < 0.85)		EL	EC	EA	PEB	P values (one-tailed) for HTMT ratios (good if <0.05)		EL	EC	EA	PEB
EL						EL					
EC	0.843					EC	<0.001				
EA	0.607	0.671				EA	<0.001	<0.001			
PEB	0.720	0.710	0.725			PEB	<0.001	<0.001	<0.001		

**Results of direct effects**

The structural model was empirically tested to explore the direct and indirect influence of Ethical Leadership (EL) on Pro-environmental Behavior (PEB) with Ethical Climate (EC) and Environmental Awareness (EA) as the mediating variables. The findings strongly confirm Hypothesis 1 (H1), to the extent that Ethical Leadership exerted a statistically significant positive direct influence on Pro-environmental Behavior ( $\beta = 0.33, p < 0.01$ ), suggesting that ethical role-modeling by leaders can have a direct influence on employees' environmentally responsible behavior. Supporting Hypothesis 2 (H2), Ethical Leadership also significantly and substantially influenced Ethical Climate ( $\beta = 0.82, p < 0.01$ ), with an R<sup>2</sup> of 0.68, indicating that leaders are instrumental in instilling common knowledge regarding ethical norms within the company. Ethical Climate in turn positively affected Pro-environmental Behavior ( $\beta = 0.09, p = 0.03$ ), thereby also supporting Hypothesis 3 (H3), although the influence was quite moderate.

For H4, Ethical Leadership significantly raised Environmental Awareness ( $\beta = 0.52, p < 0.01$ ), with an R<sup>2</sup> of 0.27, which suggests that ethical leaders have the ability to enhance the awareness and knowledge of employees about environmental issues. This heightened awareness contributed importantly to Pro-environmental Behavior ( $\beta = 0.40, p < 0.01$ ), and therefore strong support is accorded to H5. The collective, the model accounted for 51% of the variance of Pro-environmental Behavior, which shows significant explanatory power.

The results highlight the imperative significance of Ethical Leadership in cultivating a healthy ethical climate and heightened environmental sensitivity that collectively facilitate responsible environmentally sound employee behavior.

**Mediation Analysis**

The bootstrapping process proposed by Preacher and Hayes (2008) was employed to examine the mediating roles of Environmental Awareness (EA) and Ethical Climate (EC) in the Ethical Leadership (EL) - Pro-environmental Behavior (PEB) relationship, as depicted in Figure 4 and discussed in Table 6. Empirical testing confirmed a significant indirect effect of EA ( $\beta = 0.208; 0.52 \times 0.40, p < 0.01$ ), thus validating Hypothesis 7 (H7). The 95% CI for this pathway (LL = 0.128, UL = 0.291) did not lie in the zero region, validating that EA is a significant mediator of the EL-PEB relation. By comparison, the indirect effect of EC on the same relationship was insignificant statistically, although significant ( $\beta =$

0.074;  $0.82 \times 0.09$ ,  $p = 0.03$ ), therefore providing limited support for H6. The confidence interval of EC (LL = 0.008, UL = 0.153) was fairly narrow, yet nevertheless did not include zero, which suggests a significant but modest mediating role.

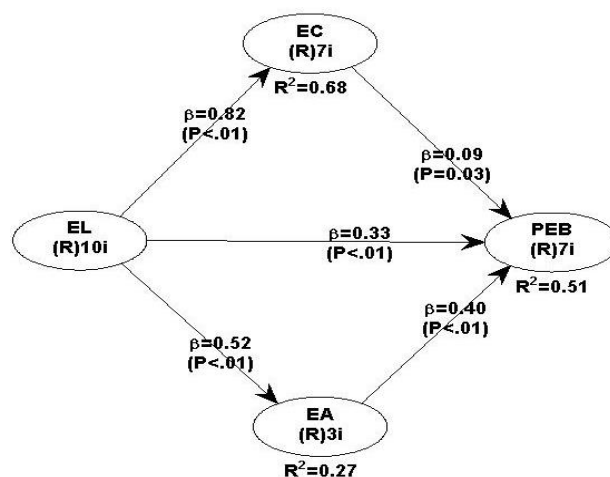


Figure 4. Final model of the study

Table 6 presents the findings of the indirect effect analysis on the mediating functions of Ethical Climate (EC) and Environmental Awareness (EA) in the link between Ethical Leadership (EL) and Pro-environmental Behavior (PEB). Concerning H6, that Ethical Climate would mediate the impact of Ethical Leadership on Pro-environmental Behavior (EL → EC → PEB), the indirect effect was statistically not significant ( $\beta = 0.074$ ,  $t = 1.538$ ,  $p > 0.05$ ), with the 95% interval between -0.020 and 0.168, inclusive of zero. H6, hence, was not supported, indicating no mediation. This finding indicates that while Ethical Leadership strongly influences Ethical Climate, the latter does not have a significant explanatory role in the path to Pro-environmental Behavior within this framework.

But H7 was confirmed, presenting a strong indirect path from Ethical Leadership to Pro-environmental Behavior via Environmental Awareness (EL → EA → PEB). The indirect impact was estimated as  $\beta = 0.208$  with  $t$ -value = 4.522 and a 95% confidence interval ranging from 0.118 to 0.298, which does not include zero, thus attesting to the statistical significance at  $p < 0.01$ . Hence, partial mediation is supported. The discovery points to the paramount mediating role of Environmental Awareness, that is, when ethical leaders purposefully develop environmental awareness, it has a very significant impact in expanding employees' engagement in environmentally friendly behavior. These findings suggest that Environmental Awareness is a good mediator between Ethical Leadership and Pro-environmental Behavior, but Ethical Climate is not. Ethical Leadership exerts its influence on sustainable behavior primarily by motivating employees' environmental awareness and knowledge, rather than on constructing the overall ethical climate of the company. This suggests promoting environmental awareness directly among employees to facilitate effective pro-environmental behavior.

Table 6. Indirect effects for hypotheses

Hypothesis	Relationship	Std Beta	Std Dev	t-value	95% CI LL	95% CI UL	Result
H6	EL → EC → PEB	0.074	0.048	1.538	-0.020	0.168	No Mediation
H7	EL → EA → PEB	0.208	0.046	4.522	0.118	0.298	Partial Mediation

## DISCUSSION

This research was purposed to test the influence of Ethical Leadership (EL) on Pro-environmental Behavior (PEB) among employees within environmentally friendly hotels in Egypt, with Ethical Climate (EC) and Environmental Awareness (EA) serving as the mediating factors. Selecting the hospitality sector, the green hotels specifically, is highly applicable given their direct involvement with resource-based operations and customer-contact service provision; both of which are strategic areas having a significant environmental impact. In these kinds of settings, leadership behaviors are not just organizationally visible but also culturally significant, as they shape day-to-day routines and environmental norms. The findings indicated a positive and robust relationship between Ethical Leadership and PEB.

This result confirms the theoretical premises of SLT (Bandura & Walters, 1977), whose assumption is that individuals tend to learn behaviors through observing and emulating models, leaders, in this case. Employees in green hotels who see their leaders emulate environmentally friendly practices and ethical behavior are likely to embrace the same and incorporate the values into their sustainable practices. Empirical research also substantiates this claim. As an example, Iqbal et al. (2025); (Nwanzu & Babalola, 2025) established that ethical leadership creates an environment in which sustainability is included in the daily responsibilities of employees. Within the realm of Egypt's luxury hospitality sector, ethical leaders drive front-line and back-of-house personnel through infusing green values into service processes, recycling practices, and energy conservation initiatives. The high level of support for H1 is therefore consistent with existing research and reinforces the key role played by leadership in creating sustainability-oriented behaviors.

The findings showed a statistically significant correlation between Ethical Climate and Ethical Leadership. This aligns with earlier work that suggests ethical leaders build climates in which trust, fairness, and ethical norms are the rules

(Ahmed & Khan, 2025). In eco-hotels, such ethical leaders as make explicit the value of acting ethically and establish fair treatment in order to facilitate the collective understanding of what is acceptable conduct—hence a positive ethical climate. Al Halbusi et al. (2020) and Al Halbusi et al. (2021) pointed out that leaders play a key role in developing and maintaining the ethical climate of an organization. This becomes especially relevant in the hotel industry, where quality of service, guest interaction, and operational processes have a tendency to mirror in-house ethical standards. Therefore, the Egyptian hotel culture substantiates that ethical leadership is a key requirement for a successful ethical climate, hence validating H2.

To the surprise of the researchers, although the direct impact from EC to PEB was significant, the indirect effect (as proved by the mediation analysis) was also not significant enough to sustain full mediation (H6) and only weak direct effect. This situational partial support for H3 is consistent with research that shows while ethical climate is likely to promote aggregate organizational citizenship behaviors, its impact on highly particular actions, such as environmental activities, may be restricted unless supplemented by training or awareness (Bates et al., 2025; Erdede & Bektaş, 2024). In Egyptian green hotels, even with a supportive ethical climate, staff might not automatically engage in PEB unless they also share knowledge and intrinsic motivation towards environmental issues. Ethical climate, therefore may be insufficient to motivate environmentally centered behaviors without the support of specific awareness programs or leadership interventions.

The empirical evidence strongly supported Hypothesis 4 (H4), namely that ethical leadership greatly enhances employees' environmental awareness. This would imply that leaders who promote ecological responsibility shape not only behavioral practices but also the cognitive models and knowledge of environmental problems among employees. It can communicate in green hospitality as the leaders share their sustainability objectives, engage employees with environmental certification programs, or instruct employees on how to minimize waste and save energy. Facilitating research, including that of Ahmad et al. (2021) and Saleem et al. (2020), proposes that ethical leaders make sustainability discussed and integrated in workplace discourse and decision-making, which can increase employee sensitivity. In the Egyptian hospitality sector—where it has become increasingly popular for hotels to be accredited as environmentally friendly by Green Star and EarthCheck—this kind of leadership is at the forefront of promoting environmental consciousness.

Aligning with theoretical expectations and existing research, Environmental Awareness (EA) was revealed to have a positive and significant influence on Pro-environmental Behavior (PEB) and thereby validating Hypothesis 5 (H5). When green hotel leaders practice environmentally beneficial behaviors and describe why sustainability matters, they make employees more sensitized to environmental issues and more likely to practice similar behavior.

Employees who are aware of the impact of neglecting the environment and of the advantages of sustainable policy are more inclined to save resources, waste less, and publicly support green programs (Handayani et al., 2021). This inclination is particularly important in Egypt's green hotel industry, where employees play an important role in achieving and sustaining sustainability objectives. In support of this assertion, Owusu et al. (2025) and Aman et al. (2021) emphasize that the involvement of leadership in awareness programs through training and communication maximizes employees' engagement in environmentally friendly behaviors. Therefore, encouraging environmental awareness via ethical leadership is central to enhancing sustainability in hospitality environments. Although Ethical Leadership had a significant impact on both Ethical Climate and Pro-environmental Behavior (PEB), the indirect effect via Ethical Climate did not attain statistical significance, thus rejecting Hypothesis 6 (H6).

This is against research such as that conducted by (Wang & Yen, 2023), who assumed that ethical climate would mediate between the leadership and ensuing behaviors. But the finding is consistent with the proposal that climate, in and of itself and without individual consciousness, may be inadequate to activate some pro-environmental behaviors. For Egyptian hotels, ethical norms could establish a generally favorable workplace climate; yet without clear-cut environmental cues, such a climate does not readily translate to observable environmental behavior.

Thereby, Ethical Climate appears to have a limited mediating function and, more likely than not, operates as an enabling context of background rather than an immediate facilitator of change in behavior. H7 was supported strongly, and Environmental Awareness was a strong mediator for the path between Ethical Leadership and PEB.

This highlights the central role awareness plays in the conversion of ethical intention into action. Ethical leaders within Egypt's environmentally conscious hotels can be expected to use formal and informal communication networks to educate employees on the environmental consequences of their behavior. This involves establishing expectations, implementing training initiatives, and engaging employees in initiatives that are green, all of which cumulate to increasing their awareness and then influence their behavioral responses.

This mediation aligns with empirical evidence presented by Mansour et al. (2022) and Alherimi et al. (2024), who identified employee awareness as a central mechanism for which ethical leadership exercises influence on environmental outcomes. Within the hospitality industry where a large portion of its environmental footprint results from routine daily operations habits this indirect effect assumes particular significance.

### **Theoretical Implications**

This research provides a number of valuable theoretical contributions to leadership, organizational behavior, and environmental sustainability fields with focuses in the hospitality industry. By investigating the influence of Ethical Leadership on Pro-environmental Behavior with the mediating functions of Ethical Climate and Environmental Awareness, this research enhances knowledge about how leadership can influence environmentally friendly behaviors in organizational contexts, specifically green hotels in Egypt. First, results contribute to SLT with empirical evidence to support the hypothesis that employees model values and behavior shown by ethical leaders. The strong direct impact of EL on PEB verifies that ethical role modeling is a key process through which sustainable behavior can be taught in companies.

This supports the theory's relevance in sustainability settings, revealing ethical leaders to not only serve as moral role models but also as key environmental role models. Secondly, the study clarifies our understanding of the role of Ethical Climate. However, preceding research has determined EC to be an important mediator of leadership and employee outcomes, the findings here challenge this assumption when it comes to pro-environmental behavior. Although EC was heavily impacted by EL, it was never a mediator within the relationship between EL and PEB. This distinction implies that although EC supports general ethical behavior, it perhaps will not adequately encourage specific environmental behavior. This calls for more theoretical differentiation between overall ethical climates and specific "green" climates.

Moreover, the research puts emphasis on Environmental Awareness as a significant cognitive mediator, hence giving support to SLT, which argues that individuals learn through observing and emulating the dispositions, actions, and outcomes exhibited by respected models, such as good leaders. The robust mediating effect of EA confirms the hypothesis that if leaders consistently exhibit environmentally friendly values and practices, employees will internalize these cues, enhance their environmental awareness, and move toward adopting sustainable practices of working. The psychological process reinforces the key role of leadership in affecting not only behaviors but also environmental thinking within the organization.

In general, the study contributes to hospitality and sustainability literature by situating such relationships in the context of green hotels within an emerging nation. The study widens the applicability of SLT by showing how ethical leadership matters in terms of environmental impacts in a non-Western, service-oriented, and sustainability-certified setting, providing practical implications for practitioners and academicians who aim to enhance sustainability performance through ethical leadership practices. In summary, the research develops theory via the integration of environmental psychology and ethical leadership, thereby providing a more expansive framework for comprehending how leadership can eventually impact sustainable employee behavior by means of consciousness as opposed to merely the application of normative climates.

### **Practical Implications**

The results of this research have several significant practical contributions to hotel managers, sustainability managers, and hospitality industry policymakers, with specific mention of green hotels in Egypt. To begin with, the strong direct and indirect impacts of Ethical Leadership on Pro-environmental Behavior mean that hotel companies ought to prioritize ethical leaders by selecting and nurturing such leaders. Managers that exhibit integrity, justice, and environmental responsibility can best stimulate workers to engage in sustainable practices, such as saving power, conserving resources, or advocating for hotel sustainability initiatives. Thus, ethical leadership should be made part of manager training courses, performance appraisal, and leadership planning succession. Secondly, the study explains that Environmental Awareness acts as a significant mediator. This implies that whenever managers imbibe good morals, employees must comprehend the drivers and methods in relation to environmental conservation if they are to conduct themselves in a responsive manner.

The green hotels must have formal sensitization schemes, which can be through workshops, in-house campaigns, and notices on staff rooms for enhancing the environmental consciousness of the staff. Those topics shall cover waste segregation, energy efficiency, ways of conserving water, and encouraging guests to become environmentally conscious too. These attempts not only increase sensitivity but also enhance employees' feelings of obligation. Furthermore, EC's limited mediating function implies that developing a generally ethical working environment, valuable as it is, is insufficient by itself to generate certain environmentally friendly behaviors. Managers must therefore refrain from simply promoting equality or transparency in firm policies and instead integrate ethical climate with explicit environmental training and activity-centered programs.

Also, this study highlights the necessity to align internal leadership and human resource practices with sustainability certification. For green hotels seeking to gain or renew eco-certification (e.g., Green Star, Green Key), the alignment of ethical leadership and awareness-raising practices with business operations can enhance sustainability measures compliance and expand service reputation. Lastly, policymakers and industry associations within Egypt's tourism industry can leverage these results in establishing industry-level training standards that highlight ethical and environmental leadership. Such harmony between organizational practice and country-level sustainability objectives can enhance the environmental performance of the hospitality industry. Finally, hotel managers must cultivate ethical leadership, encourage environmental awareness, and transcend traditional ethical climates to ensure sustained employee contributions to sustainability. Aside from organizational frameworks, the results have firm policy implications for public policymaking. Policymakers can facilitate guidelines and certification standards that integrate ethical leadership and green consciousness as fundamental requirements of accrediting green hospitality facilities. National tourism policies may also encourage leadership ethics as a fundamental part of ethical tourism development and therefore aligning with international sustainability objectives (e.g., SDG 12: Responsible Consumption and Production).

At the social level, promoting ethical leadership in service sectors can facilitate a broader cultural transition towards sustainable consumption and environmental stewardship. This can positively contribute to public attitudes, enhance the well-being of employees, and encourage community participation in sustainability initiatives, particularly in tourism-dependent regions. Economically, sustainable practices can provide cost savings in the form of better use of resources, avoid regulatory uncertainties, and build brand reputation - considerations that are of great significance to long-term financial viability. Educationally, business and hospitality schools can leverage these findings to shape the curriculum of ethics and sustainability programs such that a forthcoming generation of professionals has sensitivity to ethical issues.

### **Limitations and Future Research**

While this research has significant contributions to knowledge regarding the role of ethical leadership in building green hospitality firms' pro-environmental behavior in Egypt, it has limitations.

First, the cross-sectional design restricts the possibility of establishing causal relationships. While statistical significance among variables, the final determination of direction is out of reach. Subsequent studies may take into account the application of longitudinal approaches to monitor changes in the behavior of employees over time and in order to more effectively determine the long-term effects of ethical leadership and environmental awareness.

Second, reliance upon self-reported measures in this research runs the risk of social desirability bias—particularly in an ethical-conduct and environmental-responsibility context. Employees may have overreported their environmentally responsible behaviors to look good. Future studies should incorporate triangulated methods such as behavioral measures, manager ratings, or organizational sustainability metrics to cross-validate self-reports.

Third, the research was confined to a single setting—Egyptian green hotels—and could restrict the applicability of findings to other industries or cultures. Even though Egypt represents a suitable example of an emerging market, future studies will try to apply the model to different industries (e.g., manufacturing, healthcare) and geographical locations (e.g., Asia, Europe) to test cross-cultural validity and industry effects.

Fourth, while two of the mediators - environmental consciousness and ethical climate - were examined, there may be additional mediating or moderating variables that are similarly deserving of examination. For example, variables such as environmental values, employee involvement, green organizational climate, or perceived organizational support may better elucidate the mechanisms through which ethical leadership impacts sustainability-oriented behavior.

Finally, even though this study primarily centered on ethical leadership, subsequent research will be able to conduct comparative studies between varying leadership styles (e.g., transformational, servant, or authentic leadership) with a view to ascertaining what strategies are most effective in engendering pro-environmental action, particularly within environmentally certified organizations. In summary, with its weaknesses notwithstanding, this study creates avenues for future research in sustainability and ethical leadership. Closing such gaps that have been created will uncover improved insights into the intricate dynamics of awareness, climate, and leadership in shaping environmentally friendly behaviors across organizations.

## CONCLUSION

This research investigated the impact of Ethical Leadership (EL) on employees' Pro-environmental Behavior (PEB) within green-certified hotels situated in Egypt, with particular emphasis on the mediating roles of Ethical Climate (EC) and Environmental Awareness (EA). The results underscore that ethical leadership considerably enhances PEB, affirming that leaders play a pivotal role in cultivating sustainable practices within the workplace. In alignment with Social Learning Theory, employees observe and replicate the ethical and environmentally conscientious behaviors exhibited by their leaders, thereby integrating these practices into their routine operations. Furthermore, EL positively influence both ethical climate and environmental awareness. While a supportive ethical climate fosters positive organizational norms, it did not serve as a significant mediator in the EL–PEB relationship, indicating that ethical norms in isolation may prove inadequate in prompting specific pro-environmental actions without sufficient knowledge and awareness.

However, environmental awareness emerged as a mediator in the EL–PEB relationship. Leaders who actively articulate sustainability objectives, offer training, and involve employees in green initiatives enhance their comprehension of environmental matters, thereby motivating them to adopt sustainable behaviors. Collectively, this study emphasizes the critical role of leadership-driven awareness in advancing environmentally responsible behavior. For Egyptian green hotels, the integration of ethical leadership with structured environmental awareness programs can bolster employee engagement and support enduring sustainability goals, thereby reinforcing both organizational performance and environmental stewardship.

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