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Determinants of workplace pro-environmental behavior in the hotel industry: An empirical study of service employees at five-star hotels in Da Nang, Vietnam

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Abstract

In the context of growing global concern for sustainable development, employees' pro-environmental behavior in the workplace has become a vital factor for organizational sustainability in the hospitality industry. This study examines the factors that influence workplace pro-environmental behavior among service employees in five-star hotels in Da Nang, Vietnam. Based on existing literature, the research develops a conceptual model where local environmental policy and green organizational culture act as independent variables, while employees' environmental intention and environmental commitment serve as mediators affecting workplace pro-environmental behavior. A quantitative research approach was used, employing survey data collected from hotel employees. The data were analyzed through Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM). The results show that both local environmental protection policies and green organizational cultures positively influence employees' environmental intention and environmental commitment. However, environmental intention did not significantly predict workplace pro-environmental behavior, whereas employees' environmental commitment had a strong positive effect. The model explained 61.8% (R^2 = 0.618) of the variance in workplace pro-environmental behavior, and both local policies and green organizational culture exerted significant indirect effects through employees' commitment. These findings highlight the crucial role of organizational culture and local policies in promoting sustainable practices within the hotel industry. The study enhances the theoretical understanding of workplace pro-environmental behavior in service organizations and offers practical insights for hotel managers and policymakers to promote green practices among employees.

Keywords: Workplace pro-environmental behavior, green organizational culture, environmental policy, hotel industry, sustainability, Vietnam.

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1. Introduction

In recent years, the severe issues of environmental pollution, resource depletion, and climate change have had significant impacts on the natural environment, human health, and the sustainable development of many nations and regions. According to the report of the Intergovernmental Panel on Climate Change (IPCC), scientists have affirmed that the causes of current climate change and environmental pollution primarily stem from irrational human activities in daily life

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and production, accounting for more than 90% of the contributing factors. [1].

Businesses are also considered to be among the significant contributors to climate change and environmental pollution. In response, many tourism establishments have begun to implement both formal and informal environmental management systems [2]. However, the adoption of such systems alone is not sufficient. Since human activities primarily drive climate change and environmental pollution, and the success of environmental programs often depends on employee behavior [3], promoting pro-environmental behavior among employees in organizations has become increasingly important. The hotel industry has also recognized this issue, and the successful implementation of ISO 14001 environmental management systems requires the active involvement of employees [4].

As of 2025, Da Nang City recorded approximately 2,261 tourist accommodation establishments with more than 65,939 rooms. Of these, 163 establishments are rated 4–5 stars, providing nearly 30,400 rooms. The tourism workforce in the city is estimated at over 65,000 employees. This workforce represents a significant factor influencing environmental behaviors in tourism activities across the city [5].

The tourism sector of Da Nang has made concrete preparations to implement recovery measures, demonstrating a strong commitment to fulfilling the city's development resolutions toward 2030. Da Nang is oriented toward developing tourism in the direction of sustainable green growth, with a focus on expanding green initiatives in hotels, homestays, and resorts, while strengthening communication efforts regarding the ASEAN Clean Tourist City and ASEAN Green Hotel standards. This is considered a necessary step in the context of recent years, as tourist trends, demands, and behaviors have undergone significant changes. Accordingly, travelers are increasingly concerned with factors such as safety, health, hygiene, and the environment. This requires local authorities as well as accommodation establishments in Da Nang to adopt appropriate environmental protection policies, while fostering changes in both the awareness and behaviors of tourism employees, thereby contributing to the development of a green, clean, beautiful, and sustainable tourism environment [6].

Given the rapid growth of the hospitality sector in Da Nang and its environmental challenges, understanding how to foster employees' workplace pro-environmental behavior becomes both timely and necessary.

From a theoretical perspective, although numerous studies have been conducted to identify the factors influencing pro-environmental behavior, most previous research has mainly focused on tourist behavior [7]. Few studies have paid attention to exploring and testing the factors that influence service employees' workplace pro-environmental behavior, particularly in the context of developing economies such as Vietnam. This study aims to explore service employees' pro-environmental behavior in the workplace, with a specific focus on hotel employees in Da Nang city.

2. Literature Review

2.1. Workplace Pro-Environmental Behavior

Workplace pro-environmental behavior (WPEB) refers to the voluntary actions undertaken by employees to reduce negative environmental impacts and foster sustainability within organizational contexts [8]. In the hospitality sector, WPEB encompasses practices such as energy conservation, waste reduction, and support for green initiatives, which are vital to achieving hotels' environmental objectives [9]. Frontline employees, in particular, play a crucial role in operationalizing eco-friendly practices because of their direct involvement in day-to-day service delivery and resource management [10].

Drawing from the broader concept of Organizational Citizenship Behavior (OCB) [11], Daily et al. [3] introduced the notion of Organizational Citizenship Behavior for the Environment (OCBE). They defined it as "voluntary employee behaviors within the organization that are neither formally rewarded nor explicitly required, aimed at improving the environment" (p. 246). Boiral et al. [4] further expanded this conceptualization, demonstrating how OCB dimensions such as altruism, helping, organizational loyalty, personal initiative, and self-development can serve as bridges toward greening organizations. These discretionary behaviors enable employees to contribute meaningfully to environmental performance beyond their formal job responsibilities.

Within the hospitality industry, employee engagement in OCBE is indispensable, regardless of organizational size, ownership, or type [34]. For instance, employees may participate in waste sorting, assist colleagues in adopting eco-friendly practices, or proactively suggest green improvements to management. Such actions, although voluntary, play a significant role in shaping hotels' sustainability trajectories.

Moreover, Orlitzky and Swanson [13] emphasized that strengthening employees' commitment to corporate social responsibility is a key mechanism for encouraging workplace pro-environmental behavior. By aligning individual values with organizational sustainability goals, corporate social responsibility initiatives can enhance employees' willingness to adopt and maintain pro-environmental behaviors.

This aligns with the definition proposed by Kollmuss and Agyeman [14], who argued that: "Pro-environmental behavior can be considered as a type of behavior that consciously seeks to minimize the negative impact of one's actions on the natural and built environment."

This definition is particularly relevant to the hospitality sector, as it not only emphasizes the behavioral dimension of minimizing environmental harm but also underscores the proactive role individuals must take in creating sustainable workplaces. Collectively, prior studies underscore that WPEB is not merely a matter of policy or structure but fundamentally driven by employees' voluntary

and value-based actions that align personal responsibility with organizational sustainability goals.

In this context, workplace pro-environmental behavior is shaped not only by employees' personal values and voluntary initiatives but is also closely connected to external conditions and organizational orientation. Specifically, local environmental protection policies provide the overarching regulatory framework, while a green organizational culture fosters an internal environment that encourages sustainable practices. However, the influence of these factors on employees' workplace pro-environmental behavior is often indirect, being mediated by employees' environmental intention and environmental commitment, which ultimately translate into concrete workplace behaviors.

2.2. Related Studies and Proposed Research Model

2.2.1. Related Studies

Several previous studies have investigated employees' pro-environmental behavior. As the leaders of organizations, managers significantly influence employees' behaviors, including their pro-environmental actions [15]. Green human resource management practices are considered one of the key drivers of pro-environmental behavior among hotel employees [16,17]. Employees' environmental motivation has also been found to be related to their attitudes and awareness toward environmental protection [18]. Additionally, corporate social responsibility plays a crucial role in shaping employees' pro-environmental behavior [19].

In the context of Vietnam, particularly in Da Nang — a city positioning itself as a "Green Tourism Destination" — local authorities have introduced various environmental policies, including waste classification programs, plastic reduction campaigns, and green tourism standards for hotels. These initiatives reflect the importance of Local Environmental Protection Policies in guiding and encouraging environmentally responsible workplace practices.

At the organizational level, many five-star hotels in Da Nang, including those along My Khe Beach and Son Tra Peninsula, have adopted a green organizational culture by implementing eco-friendly practices such as energy-saving technologies, water conservation systems, and employee training on sustainability. These actions foster shared values and norms that support environmental protection.

On the individual side, employees' pro-environmental intention and environmental commitment play crucial roles in translating external policies and organizational culture into concrete pro-environmental behaviors. This combination of contextual, organizational, and individual factors provides the theoretical foundation for the research model proposed in this study.

2.2.2. Proposed Research Model

Hypotheses development

This study proposes a model examining factors influencing employees' workplace pro-environmental behavior in the hotel industry. The determinants include Local Environmental Protection Policies, Green Organizational Culture, Employees' Environmental Intention, and Employees' Environmental Commitment.

Local Environmental Protection Policy

Environmental issues are often addressed through public policies. Local environmental protection policies play a role in communication, education, and guiding citizens' environmental behaviors. According to Tummers [20], local policy can drive behavioral change through four instruments: incentives, prohibitions and regulations, communication, and promotion. In Da Nang, initiatives such as waste classification, plastic reduction campaigns, and green tourism certification programs create a supportive external environment that has contributed to enhancing environmental awareness and commitment among both citizens and hotel employees. Therefore, this study proposes the following hypotheses:

- H1: Local environmental protection policies positively influence employees' pro-environmental intention.
- H2: Local environmental protection policies positively influence employees' environmental commitment.

Green Organizational Culture

Organizational culture is the representation of the shared values, beliefs, and behaviors of the members of an organization [21]. Behaviors are how individuals act towards others, and they are based on the values and beliefs of the individuals in a society. Organizational culture is shaped by employees' behaviors that are exhibited through their habits that are developed in performing their daily routine workplace tasks according to the organizational philosophy [22]. GO is the result of organizational culture extending its philosophy to green environmental objectives. Thus, GO encompasses the values, beliefs, and behaviors of employees in the organization concerning the green aspects of the environment in performing organizational tasks; this guides the adoption of eco-friendly behavior to conserve and protect the environment [23].

Organizational culture is an important intangible asset and plays a vital role in building organizational strength. According to Hatch [24], organizational culture is broadly understood as a set of fundamental values and belief systems. Building on this, green organizational culture addresses environmental issues as part of organizational values, expressed through assumptions, values, symbols, and artifacts that reflect environmental sustainability [25].

Green organizational culture shapes employees' behavior in environmentally friendly ways, such as minimal use of printing materials, turning off electrical devices when not in use, and using recyclable materials for personal food or water consumption [26,27]. Employees learn about the green culture of their organization through the top leadership's

efforts to educate and train them through seminars and workshops [28]. GO enculturates the way employees think, adopting green behavior is crucial for individuals and organizational groups, and the way employees feel this philosophy is adopted in the organization. The employees' conscious efforts to go green and adopt green behavior is not only beneficial for themselves but also for the prospects that GO alters the employees' behavior and attitude, and induces them to make efforts to preserve nature [29].

Although few studies have examined the direct impact of green organizational culture on employees' pro-environmental behavior, Paillé and Mejía-Morelos [30] highlighted that when employees perceive organizational support for engaging in environmental behaviors—such as through the provision of resources - they are more likely to exert additional efforts toward environmental goals. In the context of green human resource management, companies with environmentally oriented strategies and policies encourage employees to act more positively toward the environment at the workplace [30]. Furthermore, Chan et al. [31] emphasized that top management's green messages can enhance employees' environmental awareness, intention, and commitment. Green organizational culture also involves leadership support through training systems, performance evaluation, and incentive programs to encourage employees to propose green initiatives [32]. This fosters positive changes in employees' environmental knowledge, awareness, and skills, which in turn enhance both environmental intention and commitment.

Thus, the following hypotheses are proposed:

- H3: Green organizational culture positively influences employees' pro-environmental intention.
- H4: Green organizational culture positively influences employees' environmental commitment.

Employees' Pro-Environmental Intention Employees' Workplace Pro-Environmental Behavior

Employees' environmental intention is a key predictor of their pro-environmental behavior [15]. EGB occurs when individuals adopt environmental behaviours related to their work. Based on a systematic literature review, Kollmus and Agyeman defined pro-environmental behaviour as a kind of behaviour that consciously seeks to minimise the negative impact of one's actions on the natural and built environment [33]. The environmental behaviour of employees plays an important role in the conservation of the company's resources as well as in the protection of the environment and natural resources and their sustainability [34]. There are several reasons to believe that environmental intention leads to pro-environmental behavior. First, environmental intention reflects a highly energized and emotionally positive state that motivates individuals to contribute to environmental conservation, which translates into actual pro-environmental actions. Second, moral behavior has been linked to pro-environmental behavior, and environmental intention can be considered a moral drive [35]. Third, previous studies suggest that positive emotions such as joy, happiness, satisfaction, and psychological well-being are associated with employees' pro-environmental behavior, and according to Robertson and Barling [15], environmental intention reflects such positive affect. Fourth, Vallerand et al. [36] indicated that when individuals experience a strong desire, they become energized, motivated, and inspired to make a difference, which in the environmental context translates into pro-environmental actions.

Based on this reasoning, the following hypothesis is proposed:

- H5: Employees' environmental intention positively influences employees' workplace Pro-environmental behavior.

Employees' Environmental Commitment Employees' Workplace Pro-Environmental Behavior

Commitment as a term is used both as a process and as an outcome of the members of the organisation having demonstrated their environmental concerns [37]. Employees' environmental commitment reflects their intrinsic motivation to pursue environmental goals [38]. According to Raineri and Paillé [39], commitment to social and environmental goals arises from psychological attachment to organizational values and creates a sense of responsibility. Cantor et al. [40] defined environmental commitment as "an intrinsic motivation based on obligation to preserve the natural environment." Similarly, Perez et al. [38] described it as "an individual's affective attachment, identification, and involvement with environmental practices."

When employees are committed to organizational environmental goals, they tend to adjust their attitudes and behaviors accordingly. Their belief in the inherent value of environmental commitment strengthens their willingness to exert additional effort in achieving the organization's green objectives. Moreover, employees' environmental commitment represents an essential component of organizational commitment to sustainability and contributes significantly to overall corporate performance [41]. When pro-environmental behaviour is aligned with personal priorities, such as an individual's commitment to the environment, it increases their motivation to act, but when it is not aligned with personal commitment, pro-environmental behaviour is less likely to occur [42].

Thus, the following hypothesis is proposed:

- H6: Employees' environmental commitment positively influences employees' workplace Pro-environmental behavior.

Proposed Model

Based on the hypotheses, the proposed research model is as follows:

- Independent variables: Local Environmental Protection Policies, Green Organizational Culture.
- Mediating variables: Employees' Pro-Environmental Intention, Employees' Environmental Commitment.

- Dependent variable: Employees' Workplace Pro-Environmental Behavior.

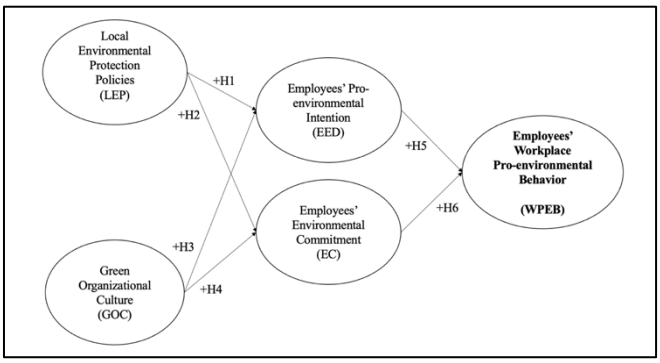

Figure 1. Proposed Research Model

3. Research Methodology

3.1 Data Collection Methods and Measurement Scales

The study was conducted by surveying 500 service employees of 5-star hotels located in Da Nang City. Hair et al. [43] suggested that the sample size for exploratory factor analysis (EFA) should be based on a minimum observation-to-measure ratio of 5:1, meaning that each measurement item requires at least five observations, with a ratio of 10:1 or higher being preferable. This study includes 28 measurement items; therefore, an appropriate sample size would be over 300. Regarding structural equation modeling (SEM), although it is difficult to establish precise criteria for the required sample size, a large sample is generally recommended because SEM relies on large-sample distribution theory. Empirical guidelines indicate that a minimum sample size of 200 is acceptable, 300 is good, and 500 is very good [43]. Service employees in hotels in Da Nang City completed the questionnaire using the measurement scales presented in Table 1.

Table 1. Measurement Scales Employed in the Study

Factor(s)	Measurement Scales	Source
Local Environmental Protection Policy (LEP)	LEP1: My locality has many environmental protection programs and activities. LEP2: My locality consistently promotes the conservation of natural resources and energy, recycling, reusing, and waste reduction. LEP3: My locality offers rewards and incentives for environmentally friendly behaviors of residents. LEP4: My locality regards residents' environmentally friendly behaviors as one of the important criteria for evaluating cultural neighborhoods and cultural families. LEP5: Residents fully understand the local environmental policies, objectives, and responsibilities. LEP6: My locality encourages residents to propose initiatives for environmental protection and improvement.	Tummers [20]
Green Organizational Culture (GOC)	GOC1: Environmental issues are regarded as one of the top priorities of my hotel. GOC2: The hotel's vision and mission/objectives include environmental protection programs. GOC3: Top management emphasizes information and values related to environmental management throughout the organization. GOC4: The hotel's management imposes penalties for non-compliance with environmental protection practices. GOC5: Top management actively supports environmental activities. GOC6: Top management encourages employees to propose initiatives for environmental protection and improvement. GOC7: Top management always considers employees' proposals/initiatives for implementing environmental protection improvements.	Lange and Dewitte [44]; Peng et al. [45]
Employees' Pro-environmental Intention (EED)	EED1: I desire to protect the environment. EED2: I enjoy engaging in environmentally friendly behaviors. EED3: I gain joy from protecting the environment. EED4: I am enthusiastic about discussing environmental issues with others. EED5: I encourage others to be more responsible toward the environment.	Robertson and Barling [15]; Graves and Sarkis [46]
Employees' Environmental Commitment (EC)	EC1: I genuinely care about my hotel's environmental issues. EC2: I would feel guilty if I did not support my hotel's environmental protection efforts.	Okumus et al [47]; Graves and

	EC3: My hotel's environmental concern is highly meaningful to me. EC4: I feel responsible for supporting my hotel's environmental initiatives.	Sarkis [46]
Employees' Workplace Pro-Environmental Behavior (WPEB)	WPEB1: I save electricity at the hotel (e.g., turning off lights or air conditioning when leaving the room, taking the stairs to lower floors). WPEB2: I conserve water at the workplace. WPEB3: I use materials and office supplies economically (e.g., double-sided printing) and recycle/reuse whenever possible. WPEB4: I share knowledge, information, and propose ideas to reduce the hotel's environmental impact. WPEB5: I actively participate in environmental events initiated by the hotel (e.g., tree planting, "Green Sunday," etc.). WPEB6: I encourage/persuade colleagues and guests to support pro-environmental behaviors (e.g., maintaining cleanliness, saving materials and food, etc.).	Okumus et al [47]; Robertson and Barling [15]; Zhang and Huang [18]

3.2 Data Analysis and Processing Methods

In this study, data were analyzed using a series of statistical techniques to ensure the validity and reliability of the research model. First, descriptive statistical analysis was used to summarize the sample's characteristics. The measurement scales' reliability was then assessed, followed by an Exploratory Factor Analysis (EFA). Although the measurement scales were adopted from prior studies, EFA was conducted before Confirmatory Factor Analysis (CFA) to verify the factor structure in the current research context and dataset. Subsequently, CFA was performed to validate the measurement model. Finally, Structural Equation Modeling (SEM) was applied to test the research hypotheses proposed in the conceptual model.

4. Research Results

4.1. General Description

A total of 500 questionnaires were distributed to hotel employees between August 2025 and September 2025, of which 449 were returned, yielding a response rate of 89.8%. After data screening, 69 responses were excluded for the following reasons: respondents were not employed at five-star hotels (n = 64), straight-lining or identical responses across scale items (n = 1), excessive missing data exceeding 20% (n = 1), and duplicate or inconsistent submissions (n = 3). As a result, 380 valid responses were retained for subsequent analysis.

The survey was administered directly by the research team to hotel staff and managers, with most respondents completing the questionnaire under the guidance of trained surveyors. Comparative analyses (chi-square and t-tests) between retained and excluded cases revealed no statistically significant differences in key demographic characteristics ($p > .05$), indicating that the data-cleaning process did not introduce systematic bias.

Regarding sample characteristics, female respondents accounted for a higher proportion of the sample (67.9%) than males. The majority of respondents were aged between 18 and 25 years (76.4%). In terms of work experience, most participants had worked for less than one year or between one and less than three years, suggesting that the sample comprised employees with relatively early-stage tenure in the hotel industry. The final sample size falls within the recommended range for the applied analytical techniques. Measurement scales were adapted from prior studies and refined through qualitative research to ensure content completeness and contextual relevance.

Reliability Test of Measurement Scales

The results of the Cronbach's Alpha test (Table 2) indicate that all five measurement scales were retained, with coefficients greater than 0.7. All items demonstrated item–total correlations above 0.3, and the Cronbach's Alpha if item deleted values remained lower than the overall Cronbach's Alpha.

Table 2. Reliability Test Results of Measurement Scales

Construct	Observed Variables	Cronbach's Alpha Coefficient
Local Environmental Protection Policy (LEP)	6	0.886
Green Organizational Culture (GOC)	7	0.907
Employees' Pro-environmental Intention (EED)	5	0.872
Employees' Environmental Commitment (EC)	4	0.835
Employees' Workplace Pro-Environmental Behavior (WPEB)	6	0.899

4.2. Exploratory Factor Analysis (EFA)

Since the measurement items were adapted from prior international studies and adjusted to fit the research context, Exploratory Factor Analysis (EFA) was conducted. According to Hair et al. [38], the factor loading is the key

indicator to ensure the practical significance of EFA. The conditions for conducting EFA must satisfy the following requirements:

Table 3. Factor Loadings

Items	Factor Loading				
	1	2	3	4	5
EC1	0.835				
EC2	0.797				
EC3	0.876				
EC4	0.761				
EED1		0.764			
EED2		0.828			
EED3		0.815			
EED4		0.810			
EED5		0.848			
GOC1			0.771		
GOC2			0.803		
GOC3			0.807		
GOC4			0.792		
GOC5			0.833		
GOC6			0.833		
GOC7			0.764		
LEP1				0.822	
LEP2				0.814	
LEP3				0.784	
LEP4				0.799	
LEP5				0.799	
LEP6				0.767	
WPEB1					0.779
WPEB2					0.818
WPEB3					0.831
WPEB4					0.820
WPEB5					0.826
WPEB6					0.820

EFA results confirmed that all factor loadings exceeded 0.50, indicating satisfactory construct validity. The KMO value was 0.975 and Bartlett's test of sphericity was significant ($\chi^2(378) = 7600.15$, $p < .001$), supporting the suitability of the data for factor analysis. The five extracted factors explained 65.95% of the total variance, exceeding the recommended threshold of 50% (Table 3).

4.3. Confirmatory Factor Analysis (CFA)

CFA results indicated acceptable model fit: SRMR (saturated) = 0.067 and NFI = 0.807. The SRMR of the estimated model was 0.094, slightly above the commonly recommended threshold of 0.08; however, complementary indices (d_ULS, d_G) fell within acceptable limits based on bootstrap diagnostics. All constructs achieved satisfactory reliability and convergent validity (CR > 0.70; AVE > 0.50) (Table 4).

Table 4. Composite Reliability (CR) and Average Variance Extracted (AVE) of the Constructs

Construct	Composite Reliability (CR)	Average Variance Extracted (AVE)
Local Environmental Protection Policy (LEP)	0.886	0.636
Green Organizational Culture (GOC)	0.909	0.641
Employees' Pro-environmental Intention (EED)	0.872	0.662
Employees' Environmental Commitment (EC)	0.841	0.670
Employees' Workplace Pro-Environmental Behavior (WPEB)	0.900	0.666

Convergent validity was confirmed as all factor loadings exceeded 0.5 ($p < 0.05$) and AVE values met the recommended threshold (> 0.5). Discriminant validity was also established since the square roots of AVE for all constructs were greater than their inter-construct correlations, and none of the correlations exceeded 1

4.4. Results of the PLS-SEM Structural Model

In the structural model evaluation, the primary assessment concern is evaluating the value of R2, the significance level value of the path coefficient, and measuring the model fit of the structural model [48] [49] [50]. Then, the results of the structural model test of the present study are exhibited in Figure 2. The first concern is to evaluate the coefficient of determination, that is, the R2 value. The value of R2 reflects the amount of variance in the dependent variable, explained by all the independent variables linked to it. According to Figure 2, the R2 value of the dependent variables is EC (0.470), EED (0.543), and WPEB (0.618). The above R2 value shows that the suitability of the current structural model in terms of R2 is relatively good.

The second concern is to examine the structural model relationship, which represents the hypothesised relationship among the research constructs. Hair et al. (2017a, b) stated that the path coefficients have standardized values approximately between -1 and +1. In other words, the closer the path coefficient values are to 0, the weaker the relationship among the constructs [49] [50]. Whereas, if the path coefficient values are closer to 1, the relationship of the constructs is stronger. As can be seen from Table 6 and Figure 2, the relationship between EC and WPEB is the strongest, with a path coefficient value of 0.751. Then, to ensure that the coefficient is significantly ultimate, Hair et al. (2011) and Hair et al. (2017a, b) proposed that the commonly used critical values for the two-tailed test at the significance level of 5% are 1.96 [43][44][46]. Thus, when an empirical t

value is more significant than the critical value (1.96), it can be concluded that the path coefficient is statistically significant at the level of 5%. According to Table 6 and Figure 2, it can be inferred that all path coefficients of the structural model are statistically significant at the level of 5%, except for the hypothesis of H5 (EED → WPEB), which is the relationship between EED and WPEB, with a t value of 0.720 < 1.96 (p-value = 0.471 >0.05). At this point, H5 is rejected.

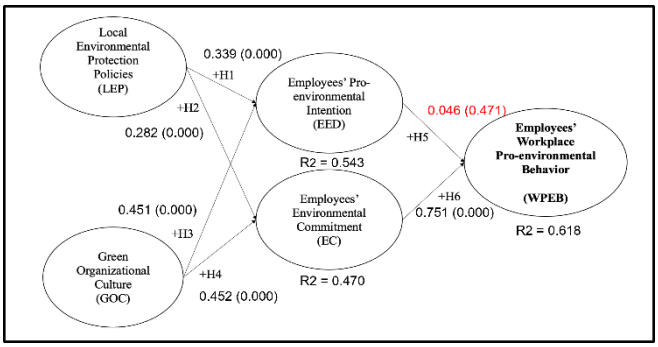

Figure 2. Results of the PLS-SEM Structural Model

The results of the study indicate that the relationships derived from the hypotheses have p-values less than 0.05 (Table 5). Therefore, it can be concluded that hypotheses H1, H2, H3, H4, and H6 are supported. However, hypothesis H5 has a p-value greater than 0.05 and is thus not supported. This insignificant finding suggests that intention alone may not be sufficient to drive actual behavior unless it is accompanied by a strong sense of commitment, which aligns with previous research indicating the intention–behavior gap in sustainability contexts.

Table 5. Summary of the Structural Model Path Coefficients

Path relationship	Path coefficient (β)	T value	P
EC→WPEB	0.751	13.119	0.001
EED→WPEB	0.046	0.720	0.471
GOC→EC	0.452	7.073	0.001
GOC→EED	0.451	6.871	0.001
LEP→EC	0.282	4.328	0.001
LEP→EED	0.339	5.002	0.003

4.5. Indirect Effects of "Local Environmental Protection Policies" and "Green Organizational Culture" on Employees' Workplace Pro-Environmental Behavior

Both Local Environmental Protection Policies and Green Organizational Culture exhibited significant indirect effects on WPEB through employees' environmental intention and commitment. The standardized indirect effect coefficients were 0.227 for LEP ($p < 0.001$) and 0.360 for GOC ($p < 0.001$), confirming the mediating roles of these psychological factors (Table 6).

Table 6. Results of the Indirect Effects of Local Environmental Protection Policies and Green Organizational Culture on Employees' Workplace Pro-Environmental Behavior

Path relationship	Path coefficient (β)	P
GOC → WPEB	0.360	0.001
LEP → WPEB	0.227	0.001

5. Conclusion and Implications

The present study examined the influencing factors of employees' workplace pro-environmental behavior (WPEB) in hotels in Da Nang city, Vietnam, by applying the PLS-SEM approach. The results confirmed that both Local Environmental Protection Policies (LEP) and Green Organizational Culture (GOC) significantly affect employees' pro-environmental behavior through mediating variables. Specifically, LEP positively influences employees' environmental commitment (EC) and employees' pro-environmental Intention (EED). Similarly, GOC exerts a strong positive effect on both EC and EED. Among the mediators, EC shows a significant and robust effect on WPEB, while EED does not demonstrate a significant direct impact. Consequently, hypotheses H1, H2, H3, H4, and H6 are supported, whereas H5 is rejected.

These findings highlight the importance of organizational culture and external policy frameworks in shaping sustainable workplace practices. Notably, employees' commitment emerges as a crucial mechanism through which organizational and policy-related factors translate into concrete pro-environmental behaviors at work.

The fact that employees' pro-environmental intentions do not translate into actual pro-environmental behavior, while environmental commitment has a significant impact, reflects a widely recognized phenomenon in research on environmentally friendly behavior, often referred to as the "value-action gap." This finding does not imply that environmental intentions are unimportant, but rather shows that mere intention is insufficient to motivate behavior in an organizational context with numerous structural and operational constraints.

In the context of hotels in Vietnam, this gap can be explained through several contextual mechanisms. First, organizational barriers play a significant role in limiting the realization of individual intentions. Although employees may

be willing to engage in environmentally friendly practices, the lack of appropriate infrastructure, inflexible operating systems, or the absence of behavioral norms exemplified by leaders and colleagues can make it difficult to translate these intentions into concrete actions in daily work practices.

Furthermore, perceived costs and convenience contribute to widening the gap between intention and behavior. Environmentally friendly behaviors often require extra time, effort, or attention, while the hospitality industry's work environment is under high pressure for service speed, efficiency, and KPI targets. Therefore, employees tend to prioritize quick, convenient actions over resource-intensive environmental practices, leading to a conflict between work performance and environmental protection.

From a behavioral psychology perspective, the perceived limited impact of individual efforts in large organizations, coupled with the dispersion of responsibility where environmental costs are borne by the organization, can diminish employee motivation. Furthermore, a lack of specific information and guidance on how to implement environmentally friendly behaviors can prevent positive intentions from translating into appropriate actions, even when employees are well-intentioned.

Importantly, these analyses help explain why environmental commitment, rather than environmental intention, emerges as a significant predictor of environmentally friendly behavior in the workplace. Commitment reflects the internalization of environmental values and a perceived ethical obligation toward organizational environmental goals, thereby enabling employees to maintain environmentally friendly behaviors even when faced with contextual and operational barriers. Therefore, this study not only clarifies how the gap between intention and behavior manifests itself in the context of the hospitality industry in Vietnam, but also expands on existing theories by emphasizing the central role of environmental commitment in bridging this gap in service organizations in developing countries.

5.1. Theoretical Implications

This research contributes to the growing body of literature on sustainable tourism and organizational behavior by empirically validating the mediating role of employees' commitment in the relationship between green-oriented organizational and policy factors and workplace pro-environmental behavior. The study also clarifies the limited role of employees' pro-environmental intention (EED), suggesting that commitment rather than emotional inclination drives consistent pro-environmental behavior in the workplace.

5.2. Practical Implications

For practitioners and hotel managers, the results imply that fostering a green organizational culture and aligning with local environmental protection policies are essential to promote employees' sustainable behavior. Specifically:

- Hotels should invest in building a workplace culture that values and rewards pro-environmental practices.
- Training programs and awareness campaigns can strengthen employees' environmental commitment, turning values into daily actions.
- Collaboration with local authorities on environmental initiatives can reinforce employees' perception of organizational legitimacy and responsibility, thereby enhancing commitment.
- Managers should prioritize strategies that cultivate long-term commitment rather than relying solely on short-term emotional appeals to influence employee behavior.

The findings offer actionable guidance for hotel managers and policymakers. Hotels should design comprehensive training programs to foster employees' environmental knowledge and moral responsibility, implement incentive and reward systems to reinforce commitment, and establish clear policies to integrate sustainability into daily operations. Collaboration with local authorities can enhance alignment with city-wide environmental initiatives, supporting Da Nang's strategy of becoming a Green Tourism Destination by 2030.

5.3 Policy Implications

The findings also suggest that local governments should continue to develop and enforce clear environmental protection policies that directly engage businesses in the hospitality sector. Such policies not only guide organizational practices but also indirectly motivate employees to adopt pro-environmental behaviors through strengthened organizational commitment.

In conclusion, this study underscores the vital role of both organizational culture and environmental policy in driving workplace pro-environmental behavior. By integrating these insights, hospitality businesses in Da Nang and beyond can move toward more sustainable and responsible tourism practices.

5.4 Limitations and Future Research

This study has some limitations. Data were collected only from hotels in Da Nang, so the findings may not fully represent other contexts. In addition, the cross-sectional design restricts causal interpretation. Future research could expand the scope to other regions or hospitality sectors, apply longitudinal methods, and incorporate additional factors such as green leadership or customer pressure to provide a more

comprehensive understanding of employees' workplace pro-environmental behavior.

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