

The Role of Public Relations in Achieving Environmental Sustainability in Hotels

Ashraf Esmael Abo Elkasem Prof. Mohamed Abou Taleb Prof. Rania Hafez Prof. Yasser Abdel-Aty

Faculty of Tourism and Hotels, University of Sadat City

Abstract

In light of the increasing international interest of public relations (PR) in the hospitality industry, this research was conducted with the aim of investigating the role of public relations in supporting and developing sustainability in hotels. For this purpose, an empirical study has been conducted on a sample of the marketing department which includes (public relations) PR in five-star hotels at Greater Cairo to identify the impact of Public Relations PR on environmental sustainability. The study also assessed the practices of public relation PR and environmental sustainability in hotels. This study applied close-ended questionnaires (questions) on the participants of the study to gather credible information collect data regarding on the role of public relation in supporting and developing sustainability in hotels to understand how public relations influences hotel environmental sustainability. The finding demonstrate that public relations significantly and positively impact environmental dimension receiving the strongest influence. Public relations exhibit the strongest impact on environmental sustainability efforts, with a particularly high path coefficient (0.924). Successful initiatives include collaboration with environmental organizations (mean: 4.17) and encouraging water conservation practices among guests and staff (mean: 4.16). Nonetheless, areas such as waste management and recycling (mean: 3.67) and the use of eco-friendly products (mean: 3.81) require more attention. These findings emphasize the importance of expanding environmentally responsible practices to align with global sustainability standards.

Keywords: Public Relations, Sustainability, Environmental, Hotel

1. Introduction

Organization is a big system, it built up by different departments, which we known as subsystem. Each department play their own role to ensure the operation of organization run smoothly, such as marketing department, finance department etc. However, the importance of Public Relations has been ignored as many organizations tend to merge it with other departments. organizational ignorance and ineffective of the roles of Public Relations efforts towards organizational efforts (DeSanto and Moss, 2011). It Is not to assist in building and not protecting an organization's image and in communicating sustainability to guests through not increasing the prospective client's awareness of sustainable products on offer, as well as to inform customers about the value and benefits the company brings to its clients by fulfilling environmental sustainability criteria, motivate customers' pro-sustainable consumption (Elshaer et al., 2022). It will decrease the request and achieve loss to hotel and customers are not make decision about hotel and do not make competitive advantage or not make satisfaction and loyalty to customer. The management do not fully recognize the importance of Public Relations in organization. Due to the limited scope of operation of Public Relations in organization, it often replaced or encroached by another department.

The aim of the study is to investigate the role of public relations in supporting and developing environmental sustainability in hotels. To attain the aim of the study, the following objective was attempted: To recognize the current practices of environmental activities in hotels

2. Literature Review

2.1 Public Relations

Jethwaney (2024) defined PR as a systematic, intentional, and continuous process aimed at fostering mutual understanding between an organization and its stakeholders. A key role of PR is to build and sustain a positive image for the organization. This function involves addressing the needs of both internal stakeholders (e.g., shareholders, management, employees, and their families) and external stakeholders (e.g., customers, society, government bodies, media, banks, and other organizations).

Meanwhile, Theaker and Curran (2004) identified PR as a management function that fosters mutually beneficial relationships between organizations and the stakeholders critical to their success. Lawrence and Weber (2014) added that PR influence audience perceptions through the actions of organizational management. According to Marconi (2004), public relations professionals are central to shaping and maintaining an organization's image, often earning them the label of "image-makers." In the hospitality sector, the perception of a hotel's image significantly impacts customer decision-making.

The importance of PR has long been recognized by scholars and industry practitioners as an essential component of organizational success. In the hospitality sector, particularly in hotels, PR assumes a vital role in shaping stakeholder perceptions, building brand loyalty, and managing reputational risks. This dynamic sector relies heavily on customer relationships, making the principles and practices of PR especially critical. Effective PR aligns a hotel's identity with its public image, mitigating risks and fostering trust (Wilcox et al., 2015).

The functions of PR in hotels are shaped by organizational objectives, societal attitudes, and industry-specific demands. Abebe et al. (2022) observed that PR roles can vary significantly across organizations, with their effectiveness closely tied to their adaptability to these factors. In hotels, these roles are pivotal in managing communication strategies and ensuring consistent guest satisfaction. For example, PR efforts in a hotel setting often extend beyond traditional media engagement to include direct interactions with guests, such as resolving complaints, hosting events, and creating personalized experiences (Elshaer and Marzouk, 2024).

Steyn (2000) highlighted that PR roles represent standardized behaviors expected of professionals, which are crucial in determining their contributions at both strategic and operational levels. In hotels, these roles are closely tied to creating memorable guest experiences, maintaining brand image, and responding swiftly to guest feedback. This aligns with Grunig's (2006) assertion that PR fosters positive relationships with strategic stakeholders, helping organizations align their goals with stakeholder expectations for greater effectiveness.

A key aspect of PR excellence in hotels, as noted by Grunig (2006), is whether the lead PR professional functions as a manager or a technician. Managerial PR roles in hotels include overseeing strategic initiatives, such as crisis management plans, community engagement, and long-term brand positioning. Conversely, technical roles focus on executing specific tasks, such as drafting press releases, managing social media accounts, or coordinating with event planners. Both roles are indispensable, but a balance between the two ensures a hotel's PR efforts are both strategic and actionable.

Heerden and Rensburg (2005) emphasized that PR roles in organizations encompass behavioral patterns expected within specific contexts. For hotels, this involves understanding and anticipating guest needs, managing cultural nuances, and fostering an inclusive environment for diverse clientele.

In addition, guest relationships are at the heart of PR activities in hotels. Noffytasari (2010) detailed actions PR professionals can take to strengthen these relationships, such as promptly addressing guest concerns, organizing exclusive events for loyal customers, and

empowering employees to resolve issues effectively. These activities contribute to higher levels of guest satisfaction and foster long-term loyalty (Abdelaal and Elshaer, 2020). For instance, hosting a gala dinner for returning guests or sending personalized thank-you notes after a stay can leave lasting impressions, enhancing the hotel's reputation.

2.2 Sustainability

Sustainability is defined as the complete plan of ethical action for an organization which is attempting attempt to transform itself into sustainable, i.e. to become pro-environmental, pro-social, and traditional traditionally pro-economic, both internally within the organization and externally across the supply chain (Zhu and Sarkis, 2004). Weder and Eriksen (2023) described sustainability as more than a trend; it is a guiding principle urging action and holding the potential to become a universally embraced value. It represents a transformative force, offering a roadmap for individuals and organizations addressing complex socioeconomic and ecological challenges.

Reem et al. (2022) confirmed that sustainability is a vital and crucial factor, not only to safeguard the natural environment, but also to maintain the competitive edge of the hotel industry. The paradigm of sustainability is complex, incorporating environmental, economic and social dimensions. The social dimension is defined via satisfaction level, social well-being, and stakeholder relations while the economic aspect involves economic benefits to all stakeholders, employment, income-earning and profitability. The environmental dimension concerns the extent of natural resource consumption, recycling and reuse, land use, and pollution (Ghoochani et al., 2020).

According to Holden et al. (2017), the concept of sustainability is built on three Pillars: environmental, economic, and social. These three pillars are interdependent, and sustainability requires addressing all of them simultaneously. The sustainability concept is often depicted in a diagram or a triangle, representing the interconnectedness of these three dimensions. This model emphasizes that progress in one dimension (e.g., the economy) should not come at the expense of others (e.g., environmental, or social aspects). It highlights the need for development that supports environmental protection and social equity alongside economic growth.

Organizations that maintain their focus on environmental sustainability are likely to achieve both social and economic sustainability. Therefore, businesses should not only focus on maximizing profits but also address environmental and social concerns equally to ensure long-term sustainability (Arya et al., 2020). Overall, the three pillars of sustainability are the foundation for achieving complete sustainability. By pursuing this comprehensive approach, Holden et al. (2017) mentioned that organizations can achieve several improvements:

Environmental Protection: This involves fostering a clean and healthy environment by safeguarding biodiversity, natural resources, and ecosystems.

Economic Development: Economic sustainability ensures current generations' comfort without compromising future generations' ability to enjoy similar economic benefits.

Social Development: This involves providing equitable access to basic resources, healthcare, education, infrastructure, and clean water for all members of society.

2.3 Environmental Sustainability

Environmental sustainability refers to creating and maintaining conditions in which both people and nature can coexist harmoniously, ensuring that the social, economic, and environmental needs of future generations are met. It involves addressing human needs without compromising the health of ecosystems (Morelli, 2011). Environmental sustainability relies on the principle that human activities should not harm air, water, or soil

resources, recognizing that the Earth's regeneration and carrying capacities are finite. As population growth, high consumption rates, and industrialization increase, environmental integrity becomes threatened. Human activities such as biodiversity loss, ozone depletion, greenhouse gas accumulation, waste management issues, and deforestation all have significant negative effects on the environment. When ecosystems are endangered, fundamental resources like air, water, and food — essential for human life — are also jeopardized. The concept of strong sustainability stresses that when human development exceeds the planet's carrying capacity, no form of economy can replace the environmental limits, indicating that human development has clear boundaries (Prasad et al., 2019).

Furthermore, the environmental dimension of sustainability also includes a company's efforts to reduce its carbon footprint, improve work environments, and enhance air and water quality within the company's premises and surrounding communities. Environmental sustainability is about leaving a better environment for future generations (Elshaer et al., 2022). Companies can strengthen their environmental performance through sustainable practices such as beneficial products, anti-pollution measures, recycling, clean energy initiatives, and other environmentally friendly actions. However, concerns such as hazardous waste, regulatory issues, ozone-depleting chemicals, emissions, agricultural chemicals, and climate change continue to pose challenges (Rezaee et al., 2019).

Notably, Prasad et al. (2019) confirmed that environmental sustainability is integral to development. The actions of businesses, consumers, and governments influence the environment in numerous ways. Key drivers for addressing environmental challenges include ecological responsibility, legitimacy, and competitiveness. Environmental sustainability can be defined as creating and maintaining a balance in which human needs are met without damaging ecosystems.

Therefore, environmental sustainability control is essential for executing business strategies to enhance performance. Many companies are now implementing environmentally responsible mission statements, and financial reporting includes annual environmental reports. By adopting eco-friendly policies, businesses can increase operational efficiency, gain competitive advantages, and enjoy benefits like tax reductions, subsidies, enhanced brand reputation, market share growth, and compliance with regulations (Danso et al., 2019).

Undoubtedly, environmental sustainability has gained significant importance over time, particularly due to resource scarcity and the need to reduce environmental damage. It involves making decisions that positively impact all living beings, natural resources, and the climate (Johnson et al., 1997). In this sense, Hussen (2000) argued that environmental sustainability must be a central focus in resource allocation decisions. Research in this area must consider biophysical limits, time frames, social value systems, and uncertainties regarding technology and human welfare. Achieving environmental sustainability is critical because certain environmental damages are irreversible, and protecting the environment and human capital is crucial for sustaining long-term economic growth.

In addition, Fozoonia et al. (2023) defined environmental sustainability as maintaining the productivity and resilience of the natural environment to support human life. It depends on ecosystem integrity and the environment's capacity to provide economic resources and absorb waste. The impact of climate change on sustainability emphasizes the need for actions to address significant environmental challenges, such as warming temperatures, rising sea levels, ocean acidification, and increased greenhouse gas concentrations (Lucia et al., 2022). In this sense, Moldan et al. (2012) argued that environmental sustainability contributes to human welfare by preserving natural resources needed for human survival and preventing the overuse of water systems. A sustainable environment involves actions to protect the natural world to ensure human life can continue to thrive. Consumers are increasingly demanding environmentally friendly products and are

willing to pay a premium for green products. These consumers prefer items made from recycled or recyclable materials and will switch brands if environmental concerns are not addressed (Guckian et al., 2017).

Within the hotel's context, Hotel companies are increasingly addressing the expectations of environmentally aware stakeholders and the challenges posed by ecological crises, all while striving to maintain profitability and market growth. The environmental dimension of sustainability focuses on an organization's impact on ecosystems, including flora and fauna. Its key objectives are to prevent environmental harm, both in the short and long term, and to protect and promote biodiversity (Legrand et al., 2022).

The hotel industry significantly impacts the environment, contributing to global warming and the depletion of natural resources. Research suggests that up to 75% of hotels' environmental impact stems from excessive resource consumption (Bohdanowicz, 2005). This overconsumption not only depletes resources but also leads to unnecessarily high operational costs (Kularatne et al., 2019), making environmental management essential. A critical innovation in sustainability for resorts is the development of environmental strategies and management plans. Approximately 80% of European hoteliers are engaged in some form of environmentally focused activity (Legrand et al., 2009).

Environmental strategies in the hotel industry encompass various areas, including product and service use (e.g., environmentally friendly supplies), pricing (e.g., integrating environmental compliance costs), distribution (e.g., partnering with environmentally responsible suppliers), and promotion (e.g., ecological messaging in marketing campaigns). Larger hotels are more likely to adopt strategic environmental management practices (Mensah, 2006), while smaller hotels tend to rely on the personal values and beliefs of their managers to drive sustainability (Tzschentke et al., 2008). Notably, chain-owned hotels often have greater financial resources and structured environmental policies compared to independent hotels, where sustainability efforts typically depend on individual managers (Legrand et al., 2022)

Today, waste management is a critical function in hotels across all star ratings. This involves identifying various types of waste and addressing them at different stages of the hotel supply chain, including suppliers, logistics, operations, services, and even guests. Waste generation is especially pronounced in hotel activities such as accommodation, dining, laundry, and events. The focus is primarily on tangible waste (physical waste), rather than inefficiencies or delays captured in the Japanese concept of "Muda." Implementing green practices helps reduce tangible waste across the supply chain (Hussain et al., 2016).

Key categories of sustainable practices include solid waste management, energy efficiency, water conservation, emissions reduction (Hussain et al., 2016), sustainable materials and purchasing, sustainable site development (Shanti, 2016), and facility management (Mensah, 2006). This discussion will now focus on specific sustainable practices related to site development, materials, water, waste, and energy as the following:

Water

Water scarcity affects a third of the global population, with growing demands exacerbated by modern lifestyles, including garden pools, resource-intensive diets, and increasing tourism. Tourism further strains water resources, especially in arid regions with seasonal influxes of visitors. Hotels, which consume more water per capita than local residents, face significant pressure to optimize water use (Legrand et al., 2022).

Jauhari (2014) Explained efficient water use offers financial benefits, with returns on investment for green technology like water treatment systems achieved within one to three years. Key strategies for water conservation include:

- Staff training:** Regular education on simple water-saving practices.

- Leak repairs:** Addressing small leaks promptly to prevent significant water loss (Legrand et al., 2022).
- Efficient landscaping:** Using native plants and high-efficiency irrigation systems with 100% recycled water.
- Sewage treatment plants (STP):** Recycling water for gardening and flush systems.
- Guest engagement:** Encouraging linen reuse with water-saving posters.
- Efficient plumbing systems:** Reducing water pressure to minimize usage.
- Water-saving fixtures:** Installing flow controllers, tap aerators, and low-flow showerheads.
- Sustainable toilets:** Adopting dual-flush or low-flush systems to halve water consumption.
- Laundry operations:** Using front-loading machines that save water and energy.
- Swimming pools and spas:** Employing covers and adjusting temperatures carefully to reduce evaporation (Jauhari, 2014).

Waste

Waste management in the hospitality industry now integrates the principles of reuse, recycling, and reduction. Sustainable waste management is a vital aspect of green supply chain management (Hussain et al., 2016). Strategies include creating recycling programs, sourcing local goods, and using environmentally friendly cleaning products, all while maintaining high guest satisfaction (Legrand et al., 2022).

Hotel waste is categorized as:

- Biodegradable:** Organic matter such as food and plant waste.
- Non-biodegradable:** Plastics, glass, and metals.
- Biological:** Human sewage.
- Hazardous:** Chemicals, solvents, and batteries containing heavy metals like mercury (Legrand et al., 2022).

Food and beverage operations generate pre-consumer waste (e.g., spoiled kitchen goods), post-consumer waste (e.g., leftover food), and packaging waste. Efforts to minimize waste include sourcing biodegradable alternatives, composting, and reducing packaging reliance (Legrand et al., 2022).

Energy

The hospitality sector is highly energy-intensive due to 24/7 operations. Hotels can significantly cut costs and environmental impacts by adopting energy-efficient technologies and practices. For instance:

- Smart Systems:** Use automation for chilled water systems, timers, and motion sensors to optimize energy use.
- Efficient Equipment:** Switch to LED lighting, double-glazed windows, and energy-efficient appliances.
- Natural Light and Heat Recovery:** Maximize daylight use and install heat pumps for water heating.

Additionally, renewable energy sources such as solar, wind, and biomass can further enhance sustainability. Solar energy, whether through water heating systems or photovoltaic panels, and wind turbines provide clean alternatives. Similarly, biomass fuels like biogas from organic waste or ethanol for vehicles offer eco-friendly solutions (Legrand et al., 2022). Despite the perception that energy-saving initiatives require costly technologies, many improvements can be achieved with practical, cost-effective measures (Legrand et al., 2022).

Based on literature, this study proposes the following hypothesis:

H1: There is a significant impact of public relations on hotel's environmental activities.

3. Methodology

The population of this study is the public relations and marketing employees working at the Greater Cairo five-star hotels. composed of employees of the marketing department in five-star hotels in Greater Cairo which almost employees of public relations working in the marketing department in hotels. this study depends on five-star hotels in Greater Cairo to distribute the sample, because it is as they are known as Supporting supporters and implementing to sustainability principles. The survey distributed in A convenience sample of (23-238 employees) representing 23) five-star hotels was considered to collect the needed data. As mentioned previously, the main objective of this study is to measure the impact of public relations on sustainability. To achieve this goal, a questionnaire was developed and directed to explore the relationships between public relations and environmental sustainability. A sample of 300 distribution, return 238, representing 79% of the total employees in the Marketing department in the investigated hotels.

Data were analyzed by using the Statistical Packages for Social Sciences SPSS V.22 and Smart PLS 4 for Windows. Descriptive statistics (frequencies and percentage) were used to examine the respondents' individual demographic data.

4. Results and Discussion

Table 1 presents the demographic profile and work-related information of the public relations and marketing employees working in hotels.

Table 1. Demographic and Work-related Information

Demographic Characteristics	Statement	Freq.	%
Gender	Male	139	58.4%
	Female	99	41.6%
Age	18- less than 25 years	48	20.2%
	25- less than 35 years	112	47.1%
	35- less than 45 years	68	28.6%
	45- less than 55	10	4.2%
Education	High school	40	16.8%
	Bachelor's degree	179	75.2%
	Master's degree	7	2.9%
	Doctorate	3	1.3%
	Others studies	49	20.6%
Years of work experience in hotels	Less than 1 year	86	36.1%
	1-3 years	49	20.6%
	4-7 years	39	16.4%
	8-10 years	37	15.5%
	more than 10 years	27	11.3%
Position	Manager	14	5.9%
	Supervisor	39	16.4%
	Employee	185	77.7%
Total		238	100%

▪ **Gender:**

The data reveal that the majority of respondents are male, accounting for 58.4% of the total sample (139 individuals), while females make up 41.6% (99 individuals). This distribution suggests a slight male dominance in the hotel sample.

▪ **Age:**

The largest age group falls between 25 and less than 35 years, representing 47.1% of the sample (112 individuals), followed by those aged between 35 and less than 45 years, who make up 28.6% (68 individuals). Younger participants, aged between 18 and less than 25 years, account for 20.2% (48 individuals), while the smallest age group consists of those aged between 45 and less than 55 years, making up only 4.2% (10 individuals). This indicates that the hotel workforce is predominantly young, with most employees under the age of 35.

▪ **Education:**

A significant portion of respondents holds a bachelor's degree, accounting for 75.2% of the total sample (179 individuals), indicating a highly educated workforce. Additionally, 16.8% (40 individuals) have completed high school, showing that some of employees enter the hotel industry with secondary education. Notably, 37.3% of respondents are pursuing postgraduate studies. Meanwhile, those with a master's degree (2.9%, 7 individuals) and doctorate (1.3%, 3 individuals) represent a smaller percentage of the workforce.

▪ **Years of Work Experience in Hotels:**

The majority of respondents (36.1%, 86 individuals) have less than one year of experience working in hotels, indicating that many employees are fresh in the hotel industry. About 20.6% (49 individuals) have 1 to 3 years of experience, while 16.4% (39 individuals) have between 4 and 7 years. A smaller portion has 8 to 10 years of experience (15.5%, 37 individuals), and only 11.3% (27 individuals) have more than 10 years of experience. This distribution reflects a mix of newcomers and experienced professionals in the industry.

▪ **Position:**

Most of respondents (77.7%, 185 individuals) hold employee positions, highlighting the operational nature of the hotel industry. Supervisors account for 16.4% (39 individuals), while managers represent only 5.9% (14 individuals), illustrating a typical hierarchical structure where a few individuals hold managerial roles overseeing a larger number of employees.

4.2 Validity and Reliability

The measurement model presented in Table (2) aims to evaluate the reliability and validity of the constructs being measured, specifically public relations activities in hotels and environmental dimension. The analysis uses key metrics such as factor loadings, Cronbach's alpha, Composite Reliability (CR), Average Variance Extracted (AVE), and Full Collinearity Variance Inflation Factor (VIF).

Table 2. Measurement Model

<i>Items</i>	<i>Factor Loading</i>	<i>Cronbach's alpha</i>	<i>Composite Reliability</i>	<i>Average Variance Extracted (AVE)</i>	<i>Full collinearity VIF</i>
<i>Public Relations Activities in Hotels</i>		<i>0.847</i>	<i>0.912</i>	<i>0.710</i>	<i>1.00</i>
Public relations enhance the hotel's image in the market.	<i>0.720</i>				

<i>Items</i>	<i>Factor Loading</i>	<i>Cronbach's alpha</i>	<i>Composite Reliability</i>	<i>Average Variance Extracted (AVE)</i>	<i>Full collinearity VIF</i>
Public relations efforts foster trust between the hotel and its guests.	0.758				
Our hotel's public relations promote transparency and communication.	0.772				
Public relations focus on building positive relationships with the community.	0.721				
Public relations activities help the hotel manage crises effectively.	0.748				
Public relations play a role in promoting the hotel's sustainability initiatives .	0.738				
Public relations help build loyalty and repeat visits from customers .	0.789				
Public relations support the hotel in engaging with stakeholders on sustainability issues.	0.716				
Public relations encourage collaboration with local businesses and organizations.	0.784				
Public relations strategies are crucial in enhancing the hotel's corporate social responsibility.	0.720				
The public relations department promotes the hotel's efforts in supporting the local economy.	0.782				
Public relations ensure open communication with employees about sustainability efforts.	0.754				
Public relations strategies help improve employee satisfaction and engagement.	0.750				
Public relations help enhance the hotel's visibility in sustainable tourism networks.	0.794				
Public relations play a role in maintaining a positive reputation for the hotel in the global market .	0.789				
<i>Environmental Dimension</i>		0.957	0.964	0.790	1.00
The hotel implements energy-efficient technologies in its operations	0.834				
The hotel has policies to minimize waste and promote recycling	0.802				
The hotel uses eco-friendly products and materials.	0.855				
The hotel encourages water conservation practices among guests and staff.	0.865				
The hotel actively participates in environmental awareness campaigns.	0.879				
The hotel has a sustainability policy in place for long-term environmental impact.	0.861				
The hotel uses renewable energy sources where	0.911				

<i>Items</i>	<i>Factor Loading</i>	<i>Cronbach's alpha</i>	<i>Composite Reliability</i>	<i>Average Variance Extracted (AVE)</i>	<i>Full collinearity VIF</i>
possible.					
The hotel ensures proper disposal of hazardous materials.	0.897				
The hotel encourages guests to participate in environmentally friendly practices (e.g., reusing towels, reducing water usage).	0.936				
The hotel collaborates with environmental organizations to support conservation efforts.	0.753				

Factor Loadings

According to Hair et al. (2011), factor loadings greater than 0.5 are considered acceptable. In this table, all items for the Public Relations and Environmental dimensions exceed this threshold, with loadings ranging from **0.716 to 0.794**. This indicates that the individual items are well-correlated with their respective constructs.

- **Environmental Dimension:** These dimensions show high loadings, with values ranging from 0.753 to 0.936, indicating excellent construct representation.

Cronbach’s Alpha and Composite Reliability (CR)

Cronbach’s alpha values range from 0.847 to 0.957, which exceeds the recommended minimum of 0.70 (Kock, 2024). This suggests strong internal consistency across the items for each construct. Likewise, the Composite Reliability (CR) values range from 0.912 to 0.964, well above the recommended threshold of 0.70 (Manley et al., 2021), confirming the constructs' reliability.

- **Environmental Dimensions:** These dimensions show similarly high reliability, with CR values of **0.957** and 0.964, respectively. This reinforces that the items are consistent and valid for measuring their respective constructs.

Average Variance Extracted (AVE)

The AVE values range from 0.503 to 0.727, exceeding the minimum criterion of 0.50, which is necessary for convergent validity (Hair et al., 2020). This indicates that more than 50% of the variance in the items is explained by the latent constructs.

- **Environmental Dimension:** These constructs have AVE values of 0.790 indicating strong convergent validity.

Full Collinearity Variance Inflation Factor (VIF)

The Full Collinearity VIF values are all 1.00, which is far below the threshold of 3.3, indicating the absence of multicollinearity or common method bias (Kock, 2022). This ensures that each construct is distinct and free from redundancy, further supporting discriminant validity.

Discriminant Validity

The study's discriminant validity was assessed using the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio. According to Fornell and Larcker (1981), discriminant validity is confirmed when the square root of the Average Variance Extracted (AVE) for each variable is greater than its correlations with other variables. Additionally, the HTMT ratio, as recommended by Ringle, Sarstedt and Henseler (2020), should be below the conservative threshold of 0.85 to ensure adequate discriminant validity between constructs.

The following tables present the results for these two tests, supporting the establishment of discriminant validity.

Table 3 shows that the square root of AVE (diagonal values) for each construct exceeds its correlations with other constructs (off-diagonal values), confirming adequate discriminant validity between Public Relations and Environmental factors.

Table 3. Fornell-Larcker criterion

	PUBLIC RELATIONS	ENVIRONMENTAL
PUBLIC RELATIONS	0.710	
ENVIRONMENTAL	0.630	0.790

Table 3 shows that HTMT values are all below the 0.85 threshold, except for a few cases nearing this limit, which indicates satisfactory discriminant validity across the constructs. The very low value between Public Relations and Environmental factors suggests minimal overlap, further supporting distinctiveness between these variables.

Table 4. Heterotrait-monotrait ratio (HTMT) - Matrix

	PUBLIC RELATIONS	ENVIRONMENTAL
PUBLIC RELATIONS		
ENVIRONMENTAL	0.097	

Cross loading

Table 5 presents the cross-loadings of the measurement items on their respective latent variables. Cross-loading analysis is used to assess discriminant validity by ensuring that each item loads more highly on its intended construct than on any other construct. This helps in verifying that the items are distinctively associated with their corresponding factors, confirming the model's discriminant validity. The public relations and environmental constructs show good discriminant validity.

Table 5. Cross-Loading

	PUBLIC RELATIONS	ENVIRONMENTAL
PUBLIC 1	0.834	0.714
PUBLIC 2	0.785	0.683
PUBLIC 3	0.760	0.624
PUBLIC 4	0.819	0.693
PUBLIC 5	0.826	0.786
PUBLIC 6	0.776	0.613
PUBLIC 7	0.815	0.733
PUBLIC 8	0.798	0.758
PUBLIC 9	0.676	0.521
PUBLIC 10	0.707	0.718
PUBLIC 11	0.743	0.840
PUBLIC 12	0.756	0.746
PUBLIC 13	0.763	0.848
PUBLIC 14	0.807	0.942
PUBLIC 15	0.939	0.796
ENVIRONMENTAL 1	0.356	0.432
ENVIRONMENTAL 2	0.743	0.840
ENVIRONMENTAL 3	0.643	0.791
ENVIRONMENTAL 4	0.641	0.879
ENVIRONMENTAL 5	0.636	0.660

ENVIRONMENTAL 6	0.636	0.736
ENVIRONMENTAL 7	0.732	0.857
ENVIRONMENTAL 8	0.749	0.873
ENVIRONMENTAL 9	0.714	0.832
ENVIRONMENTAL 10	0.736	0.874

Sustainability in Five-Stars Hotels

Sustainability is a crucial aspect of operations in five-star hotels in Greater Cairo, as highlighted by the analysis of data obtained using a five-point Likert scale. The findings illustrate the hotels' commitment to social, economic, and environmental sustainability with a total mean (3.89) and standard deviation (.691).

Environmental Dimension

Table 6 provides descriptive statistics for the environmental dimension of sustainability within hotel operations, focusing on various initiatives related to energy efficiency, waste management, and conservation practices. The data are derived from a five-point Likert scale, with higher mean scores indicating stronger agreement with each statement.

Table 6. Descriptive statistics for the Environmental Dimension

Statements		Mean	SD	Rank
1	The hotel implements energy-efficient technologies in its operations	4.15	.514	3
2	The hotel has policies to minimize waste and promote recycling	3.67	.484	10
3	The hotel uses eco-friendly products and materials.	3.81	.522	9
4	The hotel encourages water conservation practices among guests and staff.	4.16	.632	2
5	The hotel actively participates in environmental awareness campaigns.	4.10	.656	4
6	The hotel has a sustainability policy in place for long-term environmental impact.	4.08	.614	6
7	The hotel uses renewable energy sources where possible.	3.85	.480	8
8	The hotel ensures proper disposal of hazardous materials.	4.09	.602	5
9	The hotel encourages guests to participate in environmentally friendly practices (e.g., reusing towels, reducing water usage).	3.97	.768	7
10	The hotel collaborates with environmental organizations to support conservation efforts.	4.17	.727	1
The Environmental Dimension		4.00	0.720	

The statement *"The hotel collaborates with environmental organizations to support conservation efforts"* has a mean score of 4.17. This high score reflects a strong recognition among respondents of the hotel's commitment to work with external organizations, underscoring the importance of partnerships in enhancing environmental sustainability and conservation initiatives. Following closely, the statement *"The hotel encourages water conservation practices among guests and staff"* ranks second with a mean of 4.16. This indicates that the hotel actively promotes responsible water usage, which is vital in addressing global water scarcity issues and fostering sustainable practices among both employees and guests.

In third place, the statement *"The hotel implements energy-efficient technologies in its operations"* has a mean score of 4.15. This suggests that the hotel is perceived as proactive in adopting energy-efficient measures, contributing to reduced energy consumption and environmental impact.

The fourth-ranked statement, *"The hotel actively participates in environmental awareness campaigns,"* scores a mean of 4.10. This demonstrates the hotel's involvement in initiatives that raise awareness about environmental issues, indicating a commitment to educating both staff and guests on the importance of sustainability. The statement *"The hotel ensures proper disposal of hazardous materials"* ranks fifth with a mean score of 4.09. This suggests that respondents recognize the hotel's efforts in managing hazardous waste responsibly, an essential aspect of maintaining safety and environmental integrity. In sixth place, *"The hotel has a sustainability policy in place for long-term environmental impact"* has a mean of 4.08. This indicates that the hotel is guided by a clear sustainability framework, which is crucial for ensuring ongoing commitment to environmentally responsible practices.

Ranking seventh, the statement *"The hotel encourages guests to participate in environmentally friendly practices (e.g., reusing towels, reducing water usage)"* has a mean of 3.97. This score suggests that while the hotel promotes eco-friendly behaviors among guests, there may be opportunities to enhance engagement in these practices further. The eighth-ranked statement, *"The hotel uses renewable energy sources where possible,"* has a mean score of 3.85. This indicates a moderate acknowledgment of the hotel's efforts to integrate renewable energy, suggesting that there may be room for improvement in expanding the use of such sources. In ninth place, the statement *"The hotel uses eco-friendly products and materials"* ranks with a mean of 3.81. This score reflects a recognition of the hotel's commitment to sustainability in its product choices, although it suggests that further emphasis on eco-friendly options could enhance its environmental credentials. Finally, the lowest-ranked statement is *"The hotel has policies to minimize waste and promote recycling,"* with a mean score of 3.67. This score indicates that while waste management is acknowledged, it is seen as an area requiring significant improvement to enhance the hotel's overall environmental sustainability efforts.

In conclusion, the table indicates a generally positive perception of the hotel's environmental sustainability practices, with a mean score of 4.00 overall. The highest-rated initiatives, such as collaboration with environmental organizations and encouragement of water conservation, highlight the hotel's proactive approach to sustainability. However, there are critical areas—such as waste management and the use of eco-friendly products—that could benefit from greater focus and development. Enhancing these aspects will further strengthen the hotel's environmental performance and commitment to sustainability.

In summary, the statistical analysis of the three sustainability dimensions can be summarized as follows:

In the social dimension, the results indicate that hotels place significant emphasis on creating an inclusive and equitable work environment, focusing on promoting work-life balance and encouraging community engagement. However, there is a notable need for improvement in providing equal opportunities for all employees. Regarding the economic dimension, the findings demonstrate that hotels actively contribute to the local economy through job creation and support for small and medium-sized enterprises (SMEs). Nonetheless, there is a clear need to enhance the reinvestment of profits into community development to further strengthen the positive impact of hotels on the local economy.

Concerning the environmental dimension, the results reveal that hotels adopt eco-friendly practices, such as collaborating with environmental organizations and promoting water conservation initiatives. However, there is an urgent need to improve waste management and increase the use of eco-friendly products. Overall, the findings suggest that while five-star hotels in Greater Cairo show a strong commitment to sustainability, there are areas requiring improvement to maximize their positive impact on the community and the environment.

Testing the Study Hypotheses

In this section, the results of the hypotheses formulated for the study are summarized, aiming to explore the relationship between Public Relations and hotel environmental sustainability. The results from the path analysis provide significant insights into these relationships.

Table 8. Testing the Study Hypotheses

N.	Hypothesis	Sig.	Result
H1.	There is a significant impact of Public Relations on a hotel's environmental activities.	.000	Accepted

The results presented in Table 8 provide a comprehensive analysis of the study's hypotheses regarding the relationship between Public Relations (PR) and hotel environmental sustainability.

For the study hypothesis, which examines the overall impact of Public Relations on a hotel's environmental sustainability, the findings support a significant influence across environmental sustainability:

- H1. highlights a significant impact of PR on the environmental activities of hotels ($p = .000$).

These results indicate that PR plays a vital role in supporting sustainability efforts across multiple facets of hotel operations, reinforcing the importance of communication strategies in promoting sustainability initiatives in social, economic, and environmental areas. In conclusion, the results underline the positive role of PR in enhancing sustainability across environmental dimensions. Furthermore, while most demographic variables do not significantly affect perceptions of PR and sustainability, work experience stands out as a key factor, highlighting the need for tailored approaches based on employee experience levels in promoting and executing sustainability efforts in hotels.

5.Recommendation

Based on the study's findings, several opportunities emerge to strengthen the role of public relations in advancing sustainability. This section offers practical recommendations aimed at enhancing performance across environmental dimension, with a focus on addressing identified gaps and ensuring alignment with global sustainability standards.

1.Promote Equal Opportunities and Diversity

Senior management and HR departments should implement policies to ensure equal opportunities and foster inclusivity within the workforce. Strategies such as unbiased recruitment practices, diversity training, and leadership development programs will create an equitable environment. Regular assessments of workforce diversity and targeted initiatives can further enhance inclusivity across all levels of the organization.

2. Improve Environmental Sustainability Practices

Operations and environmental teams should prioritize waste reduction and the adoption of eco-friendly products. Implementing comprehensive waste management programs and transitioning to renewable energy solutions will align hotels with global environmental standards. Collaborating with environmental organizations and incorporating these efforts into public relations campaigns can enhance the hotel's reputation as a sustainable business.

6. Limitations and Future Research

While the study provides significant insights, it is not without limitations. The focus on five-star hotels in Greater Cairo may limit the generalizability of the findings to other regions or types of hotels. Future research could explore the role of public relations in sustainability across different hotel categories and geographical locations. Additionally, examining guest perceptions of sustainability and the impact of PR communications on consumer behavior would provide a deeper understanding of how these efforts influence customer loyalty and satisfaction.

References

- Abdelaal, E., & Elshaer, A. (2020). Investigating the effect of VSM on the performance of quick-service restaurants. *Journal of Association of Arab Universities for Tourism and Hospitality*, 19(3), 228-250.
- Abebe, S., Kebede, K., Kelemework, Y., Seifu, M., & Dumessa, A. (2022). Investigating the Practices of the Roles and Functions of Public Relations' Practitioners in Ethiopian Higher Education Institutions: Eight First Generation Public Universities in Focus. *Eight first generation public universities in focus*, 9 (1), 79_100.
- Arya, P., Srivastava, M., & Jaiswal. (2020). Modelling Environmental and Economic Sustainability of Logistics. *Asia-Pacific Journal of Business*, 12 (1), 73-94.
- Bohdanowicz, P. (2005). European hoteliers' environmental attitudes: Greening the business. *Cornell hotel and restaurant administration quarterly*, 46(2), 188-204.
- Danso, A., Adomako, S., Lartey, T., Amankwah-Amoah, J., & Owusu-Yirenkyi, D. (2020). Stakeholder integration, environmental sustainability orientation and financial performance. *Journal of business research*, 119, 652-662.
- Elshaer, A. M., Al-Abyadh, M. H. A., Alsetoohy, O., Marzouk, A. M., & Agina, M. F. (2022). COVID-19 pandemic: a motive for pro-environmental behaviors (Pebs) in the Egyptian tourism and hospitality industry. *Rocznik Ochrona Środowiska*, 24.
- Elshaer, A. M., & Marzouk, A. M. (2024). Memorable tourist experiences: the role of smart tourism technologies and hotel innovations. *Tourism Recreation Research*, 49(3), 445-457.
- Fornell, C., & Larcker. (1981). *Structural equation models with unobservable variables and measurement error: Algebra and statistics*. Sage Publications.
- Fozooni, A., Nazari, S., & Jamalpur, A. (2024). Prioritizing big data applications in e-commerce considering sustainable development indicators. *Journal of Future Sustainability*, 4(3), 169-178.
- Ghoochani, O. M., Ghanian, M., Khosravipour, B., & Crotts. (2020). Sustainable tourism development performance in the wetland areas: A proposed composite index. *Tourism Review*, 75(5), 745–764.
- Grunig, J. E. (2006). Furnishing the edifice: Ongoing research on public relations as a strategic management function. *Journal of Public Relations Research*, 18, 151–176.

- Guckian, M., De Young, R., & Harbo. (2017). Beyond green consumerism: Uncovering the motivations of green citizenship. *Michigan Journal of Sustainability*, 5(1), 73-94.
- Hair, J. F., Ringle, C. M., & Sarstedt. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Heerden, G., & Rensburg. (2005). Public relations roles empirically verified among public relations practitioners in Africa. *Communicare*, 24(1),69-88.
- Holden, E., Linnerud, K., and Banister. (2017). The Imperatives of Sustainable Development. *Sustainable Development*, 25(3), 213-226.
- Hussain, M., Khan, M., & Al-Aomar, R. (2016). A framework for supply chain sustainability in service industry with Confirmatory Factor Analysis. *Renewable and sustainable energy reviews*, 55, 1301-1312.
- Hussen, A. M. (2000). *Principles of environmental economics: economics, ecology and public policy*. Routledge.
- Jethwaney, J. (2024). *Corporate Communication: Concepts and Practice*. Taylor & Francis.
- Johnson, D. L., Ambrose, S. H., Bassett, T. J., Bowen, M. L., Crummey, D. E., Isaacson, J. S., & Winter-Nelson. (1997). Meanings of environmental terms. *Journal of environmental quality*, 26(3), 581-589.
- Kock, N. (2025). Methods showcase—using PLSF-SEM in business communication research. *International Journal of Business Communication*, 62(1), 187-205.
- Kularatne, T., Wilson, C., Månsson, J., Hoang, V., & Lee, B. (2019). Do environmentally sustainable practices make hotels more efficient? A study of major hotels in Sri Lanka. *Tourism Management*, 71, 213-225.
- Lawrence, A., & Weber. (2014). *Business and Society: Stakeholders, Ethics, Public Policy* 14th ed, New York, NY: McGraw-Hill, ISBN9780078029479.
- Legrand, W., Chen, J. S., & Laeis, G. C. (2022). *Sustainability in the hospitality industry: Principles of sustainable operations*. Routledge.
- Lucia, U., Fino, D., & Grisolia. (2022). A thermo economic indicator for the sustainable development with social considerations. *Environment, Development and Sustainability*, 24, 2022–2036.
- Manley, S. C., Hair, J. F., Williams, R. I., & McDowell. (2020). Essential new PLS-SEM analysis methods for your entrepreneurship analytical toolbox. *International Entrepreneurship and Management Journal*, 1–21. <https://doi.org/10.1007/s11365-020-006876>
- Manley, S. C., Hair, J. F., Williams, R. I., & McDowell. (2020). Essential new PLS-SEM analysis methods for your entrepreneurship analytical toolbox. *International Entrepreneurship and Management Journal*, 1–21. <https://doi.org/10.1007/s11365-020-006876>
- Marconi, J. (2004). *Public relations: The complete guide*.
- Mensah, I. (2006). Environmental management practices among hotels in the greater Accra region. *International journal of hospitality management*, 25(3), 414-431.
- Moldan, B., Janoušková, S., & Hák, T. (2012). How to understand and measure environmental sustainability: Indicators and targets. *Ecological indicators*, 17, 4-13.
- Morelli, J. (2011). Environmental sustainability: A definition for environmental professionals. *Journal of environmental sustainability*, 1(1), 2.
- Noffyatasari, P. (2010). The activities of public relations in Sahid Jaya Hotel Surakarta.
- Pan, S. (2018). *Managing sustainability in the hospitality and tourism industry: Paradigms and directions for the future*, Vinnie Jauhari (Ed.), Apple Academic Press.

- Prasad, M., Mishra, T., & Bapat. (2019). Corporate Social Responsibility And Environmental Sustainability: Evidence From India Using Energy Intensity As An Indicator Of Environmental Sustainability. *IIMB Management Review*, 31 (4), 374-384.
- Reem, M., Rasoolimanesh, S. M., & Wijesinghe Sara. (2022). Sustainability indicators in hotels: A systematic literature review. *Asia-Pacific Journal of Innovation in Hospitality and Tourism*, 11(1), 149–178.
- Rezaee, Z., Tsui, J., Cheng, P., & Zhou. (2019). Environmental Dimension of Sustainability. Available online: <https://doi.org/10.1002/9781119502302.ch9>
- Ringle, C.M., Sarstedt, M., Mitchell, R., & Gudergan. (2020). Partial least squares structural equation modeling in HRM research. *The International Journal of Human Resource Management*, 31(12), 1617–1643
- Shanti, J. (2016). A study on environmental sustainability practices of star hotels in Bangalore. *Asian Journal of Business Ethics*, 5(1–2), 185–194. <https://doi.org/10.1007/s13520-016-0063-5>
- Steyn, B. (2000). CEO expectations in terms of PR roles. *Communicare Journal for Communication Sciences in Southern Africa*, 19(1), 20-43.
- Theaker, A., & Curran, J. (2004). *The public relations handbook* (Vol. 2). Abingdon: Routledge.
- Tzschentke, N., Kirk, D., & Lynch. (2008). Going green: decisional factors in small hospitality operators. *International Journal of Hospitality Management*, 27, 126–133.
- Weder, F., & Erikson, M. (2023). CSR communication and cultures of sustainability.
- Wilcox, D. L., Cameron, G. T., & Reber. (2015). *Public relations: Strategies and tactics* (11th ed.). Upper Saddle River, NJ: Pearson.
- Zhu, Q., & Sarkis. (2004). An inter-sectoral comparison of green supply chain management in China: drivers and practices. *Journal of Cleaner Production*, 14 (5), 472-486.

دور العلاقات العامة في تحقيق الاستدامة البيئية في الفنادق

أشرف إسماعيل أبو القاسم أ.د. محمد أبو طالب أ.د. رانيا حافظ. أ.د. ياسر عبد العاطي
كلية السياحة والفنادق جامعة مدينة السادات

المخلص

في ضوء الاهتمام العالمي المتزايد بالعلاقات العامة في صناعة الضيافة، تم إجراء هذا البحث بهدف دراسة دور العلاقات العامة في دعم وتطوير الاستدامة في الفنادق. ولهذا الغرض تم إجراء دراسة ميدانية على عينة من أقسام التسويق والتي تشمل (العلاقات العامة) بالفنادق ذات التصنيف خمس نجوم بالقاهرة الكبرى للتعرف على تأثير العلاقات العامة على الاستدامة البيئية. كما قامت الدراسة بتقييم ممارسات العلاقات العامة والاستدامة البيئية في الفنادق. طبقت هذه الدراسة استمارات استبيان مقتصرة على عينة الدراسة لجمع معلومات دقيقة عن دور العلاقات العامة في دعم وتطوير الاستدامة في الفنادق ولفهم كيفية تأثير العلاقات العامة على الاستدامة البيئية للفنادق.

الكلمات الدالة : العلاقات العامة، الاستدامة، البيئة، الفنادق.