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Original Article

# Energy Conservation Practices and Performance of Hotels in Conservation Areas in Uganda. The mediating effect of Organizational Support

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### Keywords:

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Conservation Areas,  
Hotels.

Hotel operations in Uganda's conservation areas impact the surrounding ecology, influencing hotel performance. Unsustainable practices such as excessive energy use contribute to biodiversity loss and resource depletion, estimated at 10–11% per decade. These environmental challenges lead to higher operational costs, reduced revenue, lower guest satisfaction, and loss of competitive advantage. The implementation of energy conservation practices (ECP) is critical to mitigating these effects, yet research has produced mixed findings on their effectiveness. While organizational support (OS) is recognized as a key factor, its role in linking ECP to hotel performance (HP) remains underexplored. This study investigates the relationship between ECP, OS, and HP in Uganda's conservation areas. Grounded in human capital development and natural-based view theories, the study adopts a positivist paradigm and employs a quantitative, correlational research design. A sample of 265 employees from a population of 851 employees in 19 star-rated hotels was selected using Krejcie and Morgan's (1970) formula, with multistage sampling techniques applied. Data were collected via self-administered questionnaires and analyzed using SPSS 25 and SmartPLS4 for factor analysis and structural equation modelling. Findings reveal that ECP explains 60% ( $R^2 = 0.598$ ) of hotel performance variation. ECP and OS show a significant direct effect on hotel performance ( $P < 0.05$ ); both ECP ( $P < 0.05$ ) and OS ( $P < 0.05$ ) significantly improved performance. Mediation analysis confirmed OS's partial mediating role in the relationships between ECP and HP, as indicated by significant indirect effects ( $p < 0.05$ ). The bootstrapping analysis further validated these mediation effects, with bias-corrected confidence intervals not straddling zero. The study concludes that while ECP are vital, their effectiveness is significantly enhanced by strong organizational support mechanisms. Hotel management should focus on internal support structures to maximize sustainability benefits and overall performance. This study is the first to examine OS as a mediator in Uganda's conservation-area hotels and therefore makes a unique contribution to the literature. The findings offer valuable insights for policymakers and industry practitioners in shaping sustainable hotel operations. Future research should explore the long-term impact of GEP and OS using longitudinal studies, assess variations across different hotel categories, and incorporate customer perceptions to understand

their influence on satisfaction and loyalty. A mixed-methods approach, integrating quantitative and qualitative data, is recommended for a more comprehensive analysis.

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## INTRODUCTION

Energy consumption is emerging as a critical concern in the lodging industry. The accommodation services industry is among the top three least energy-efficient sectors since 1990 (Wang et al., 2023). Due to rapidly increasing demand, the hotel industry is becoming more energy-intensive. Wang et al. (2023) estimates energy consumption to double by 2050.

According to Wu et al. (2023), the hotel business is one of the tourist sector's greatest energy-intensive industries, mainly responsible for the emissions of nitrogen, sulfur oxides, carbon dioxide (CO<sub>2</sub>), and other air pollutants. Reducing energy consumption in hotels can thus lead to a significant reduction in carbon emissions and the detrimental impacts of greenhouse gas production on the hotel industry (Chan, 2021a; Dube & Nhamo, 2021). Energy use and CO<sub>2</sub> emissions may lessen the allure of travel destinations, which will negatively affect the growth of the hospitality sector for a long time (Abdou et al., 2020).

Concerns have emerged regarding the environmental impact of hotels, especially in conservation areas, where unsustainable practices, such as inefficient use of energy, lead to

biodiversity loss and ecosystem degradation at a rate of 10-11% annually (National Environmental Authority, 2016; Grace, 2022).

Energy conservation practices, aimed at reducing resource consumption and promoting sustainability, are gradually being adopted by hotels, but challenges such as uneven implementation and lack of organizational support persist. Studies on the impact of these practices on hotel performance in Uganda are limited, especially in conservation areas, creating a research gap. The role of organizational support, including leadership, resources, and policies, is vital in promoting green practices, yet its impact on the effectiveness of these practices in enhancing hotel performance remains underexplored.

Much published research on this area has problems with generalizability, as the current studies are predominantly in Western countries, with little attention paid to Uganda's unique cultural and economic context. Research needs to be conducted explicitly on the mediating role of organisational support on the nexus between green environmental practices and hotel performance in Uganda's hospitality sector.

Most literature on hospitality sustainability focuses on major hotel chains and does not consider the role of small and mid-sized hotel conservation areas in Uganda. In consideration of Uganda's diverse hotel landscape, to understand the challenges and opportunities faced in implementing sustainability practices, research involving SMEs is essential. On the contrary, some researchers (e.g. Paillé & Meija-Morelos, 2019) contend that organisational support is not always sufficient to promote workforce environmental performance.

In previous studies, there has been limited focus on internal Organizational Support, for instance, many studies focus on external factors like government regulations, suppliers, NGOs, regulations, consumer demand for sustainability practices, or market trends influencing green practices, but fail to explore the role of internal organizational support (e.g., management commitment, resource allocation, training) (Aboramadan & Karatepe, 2021a). Similarly, an increasing skills gap is currently a challenge facing the hotel industry in the implementation of green practices. Unexpectedly, despite easier access to training, the workforce still has a skills shortage in implementing green environment

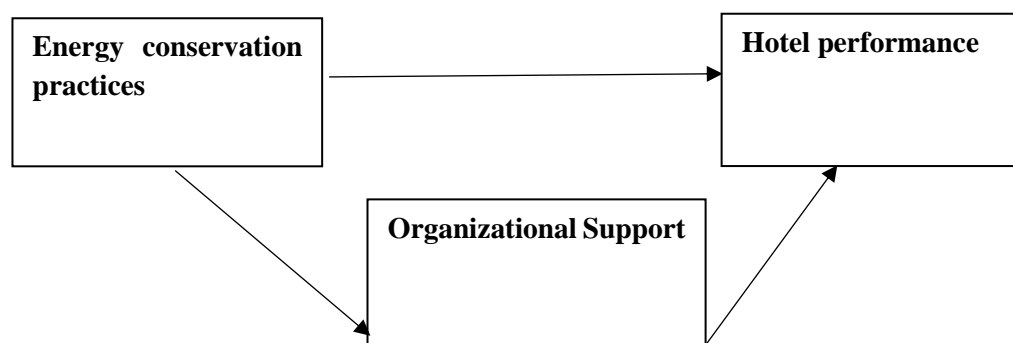
practices and hotel performance. This suggests that a general unfamiliarity with the process of transferring training into practice, rather than a deficiency of training, is the root cause of the shortage (Obonyo et al., 2023)

### Objective of the Study

The main objective of this study is to explore the effect of energy conservation practices and hotel performance in conservation areas in Uganda: a mediating role of organizational support (OS). The objectives of this study are as follows:

- To find out the impact of energy conservation practices (ECP) on Hotel Performance (HP)
- To find out the impact of energy conservation practices (ECP) on organizational support in hotels in conservation areas in Uganda (OS)
- To explore the impact of organizational support (OS) on Hotel Performance (HP).
- To explore the mediating role of organizational support on the relationship between energy conservation practices and hotel performance in conservation areas in Uganda

**Figure 1. Conceptual framework**



### THEORETICAL PERSPECTIVE

#### The Human Capital Development Theory (HCD)

The Human Capital Development (HCD) theory, proposed by Theodore Schultz in the 1960s, emphasizes investing in employee skills, knowledge, and expertise to enhance firm performance and maintain a competitive

advantage. In the hotel industry, HCD supports sustainability-focused training programs that equip employees with the knowledge to adopt green initiatives, such as energy conservation, waste management, and water conservation (Omune et al., 2021; Pham et al., 2020). Engaged and well-trained employees drive sustainability efforts, contribute innovative ideas, and align with environmental goals, fostering a corporate culture

that prioritizes eco-friendly practices (Prakash et al., 2023). Hotels that integrate HCD with sustainability initiatives can improve operational efficiency, reduce costs, and attract environmentally conscious customers, ultimately enhancing long-term competitiveness, and improving environmental and financial performance (Nisar et al., 2022).

Human Capital Development (HCD) driven training increases the incorporation of Environmental Conservation Practices (ECP) in hotels that operate in conservation areas of Uganda. The training provides the necessary skills, knowledge, and environmental awareness for the level of integration of sustainable practices into daily operations. Given the necessary training, the staff become very knowledgeable in energy use efficiency, and in ensuring eco-friendly service delivery, thereby cultivating a shared attitude of environmental benevolence. This results in compliance with conservation regulations and enhancement of hotel performance consistent with the demands of eco-conscious guests and stakeholders.

### **Natural Resource-Based View Theory (NRBV)**

Hart (1995) proposed the NRBV theory and contends that firms can increase their capacity to perform and protect the environment by investing in strategies, systems, technologies, processes, and training that focus on protecting the environment (Ali et al., 2021; Tu & Wu, 2021). NRBV theory focuses on how firms can leverage their unique resource endowments to advance their sustainable competitive edge (Yang et al., 2023; Zhang et al., 2021). For example, prevention of pollution through the implementation of waste management practices (Abdou et al., 2020a; Mensah, 2020), energy efficiency technologies, water conservation systems, as well as environmentally sound procurement practices (Abdou et al., 2022; Prakash et al., 2023) to enhance their environmental performance. These investments, other than helping to reduce environmental impact, also improve operational efficiency and cost savings, ultimately enhancing hotel

performance (Appiah et al., 2023; Omune & Beryl Atieno, 2021).

The Natural Resource-Based View (NRBV) is a relevant lens for sustainable competitive advantage notions in the conservation context of Uganda. Uganda is rich in biodiversity and home to many conservation practices, implying an increasing reliance on its natural resources by the hospitality and tourism sectors. The NRBV theory emphasizes that sustained competitive advantage can be obtained by strategically managing the rare, inimitable, and valuable environmental-based resources in Uganda's unique ecosystems. Hotels within conservation areas that implement conservation-friendly eco-lodgings and resorts, namely, those enhancing energy and water efficiency, and waste decrease, are strategically positioned to contribute to conservation goals and attract ecologically-minded travellers. By integrating environmental stewardship across their operations, these establishments are capable of contributing to conservation while gaining a marketplace differential advantage, supporting the NRBV argument that environmental responsibility is conducive to the promotion of long-term performance.

### **Empirical Review and Generation of Hypothesis**

#### ***Energy Conservation Practices and Hotel Performance***

The hospitality sector is one of the most energy-intensive service sectors, with hotels operating around the clock to provide basic services such as lighting, heating, cooling, water and sanitation. Energy consumption in hotels is further complicated in the area of energy saving, where access to sustainable energy sources is often limited. The review critically examines the impact of unsustainable energy consumption on hotel performance in conservation areas in Uganda, focusing on energy costs, environmental impacts and energy efficiency strategies.

The cost of electricity continues to rise, which has a significant impact on the profitability of the Hotels. According to Acharya et al. (2021) and

Omune et al. (2021), hotels rely mainly on gas, followed by oil and diesel, whereas the conservation areas still rely on wood and charcoal. Reliance on expensive and non-renewable energy is a financial burden, as seen in US hotels, which spend an estimated USD 2,196 per available room per year (Rajić et al., 2022; Tang et al., 2021). Given the rising costs of electricity, strategic energy management is becoming vital to sustainable energy management in the hotel sector.

Unsustainable consumption of electricity by hotels not only increases costs but also worsens environmental vandalism. The excessive and often irresponsible use of electricity and other forms of energy by hotel guests contributes to significant environmental damage (Mbasera et al., 2016). Addressing this challenge requires hotels to implement energy-saving strategies to reduce waste from the behaviour of their guests (Abdou et al., 2020b; Wang et al., 2023). Energy-saving technologies such as energy management systems, smartcards and occupancy sensors have proved their effectiveness in reducing energy consumption (Fauziah et al., 2017; Stringam & Gerdes, 2021). These technologies can reduce the consumption of electricity in the guest rooms by 20-40 percent (Chan et al., 2017).

Despite the benefits, implementing energy-saving technologies in hotels presents significant challenges. For example, occupancy sensors may not detect silent guests, unintentionally interrupting the electricity supply and reducing guests' comfort (Chan et al., 2017). Hotels are concerned that such interruptions may have a negative impact on guests' satisfaction and consequently on hotel revenues. Furthermore, initial investment in modernising energy systems and installing energy-efficient equipment may be costly, especially for hotels that are still in operation (Wang, Lou, et al., 2023). These concerns underline the trade-off between sustainability efforts and the customer experience, which makes it essential that hotels strike a balance without compromising the quality of their services.

A growing body of literature suggests that interventions to influence the behaviour of guests can support sustainable environmental behaviour in hotels (Dolnicar et al., 2017; Wang, Ren, et al., 2023). The two main intervention strategies are information-based interventions and reward-based incentives. Information-based interventions include explicit messages and incentives to consumers to reduce their energy consumption (Abrahamse & Matthies, 2018; Nisa et al., 2017). Environmental appeals, policy messages and environmental warnings are used to promote responsible energy use (Dolnicar et al., 2017).

By contrast, benefit-based incentives leverage monetary rewards to influence the behaviour of guests (Dolnicar et al., 2017, 2019). Discounts, vouchers and charitable contributions related to energy savings have been proposed as effective strategies (Wang, Lou, et al., 2023). While in some studies (Chandran & Bhattacharya, 2021) monetary incentives showed promise, in others (Huang et al., 2014; Dolnicar et al., 2017; Xu et al., 2023). The effects were mixed or insignificant. The inconsistent empirical findings suggest that the effectiveness of behavioural interventions depends on various contextual factors, including the attitudes of guests, cultural differences and hotel policies (Wang, Lou, et al., 2023; Xu et al., 2023).

Unsustainable energy consumption by hotels in conservation areas poses major financial and environmental challenges. Although technological interventions and behavioural strategies offer potential solutions, their effectiveness is hampered by concerns about guest satisfaction and financial feasibility. The diverse findings on the success of interventions highlight the complexity of energy conservation in the hospitality sector. Future research should explore the interaction between guest behaviour, technological adoption and financial viability in order to develop more efficient energy management strategies tailored to hotels in the conservation areas of Uganda.



***Organizational Support Mediating Effect***

Environmental concerns have forced businesses to focus on their overall environmental performance and implement ecologically sustainable practices, which has drawn more attention to organizations' propensity to eliminate operational waste and hazards (Bhutto et al., 2021). In line with (Haldorai et al., 2022), the performance of hotels is directly impacted by the green commitment of top management. Supporting environmentally friendly behaviours can increase affective commitment to sustainability projects. Employee engagement and task-related pro-environmental behaviour increase when they believe their companies care about the environment (Karatepe et al., 2022).

According to Aboramadan & Karatepe (2021), organisational support encompasses leadership commitment, resource allocation, and the establishment of policies and procedures that prioritize sustainability initiatives. This support is relevant because it provides the necessary framework and means for hotel staff to become environmentally friendly (Abdou et al., 2022).

Firstly, leadership commitment is vital in setting the tone for sustainability efforts in a hotel. If senior managers demonstrate a genuine commitment to environmental stewardship, it sends a clear message to the workers that sustainability is a priority (Pham et al., 2019). This commitment can manifest in various forms, such as the integration of sustainability goals into the hotel's mission statement, regular communication of sustainability objectives, and active participation in green initiatives.

Secondly, resource allocation is necessary to implement green environmental practices effectively. These include financial investments in green technologies, training programs for staff, and the allocation of dedicated personnel or green teams to oversee sustainability initiatives (Elshaer et al., 2021). Without appropriate resources, hotels might struggle to adopt and maintain environmentally friendly practices, hindering their sustainability efforts.

Furthermore, the establishment of policies and procedures provides a structured approach to implementing green environmental practices. Clear guidelines and protocols help standardize sustainability efforts across different departments within the hotel (Irani et al., 2022). For example, hotels may implement waste reduction policies, energy-saving protocols, or water conservation measures to minimize their environmental footprint (Elshaer et al., 2021, 2022).

Organisational support activities serve relevant functions in assisting hotels to successfully implement green environmental practices. Several studies underscore the significance of supportive organisational cultures in driving sustainability initiatives within an organisation (Aboramadan & Karatepe, 2021; Aboramadan et al., 2022; Hameed et al., 2022). When hotel management demonstrates commitment to sustainability and allocates resources towards environmental initiatives, it creates an environment conducive to the adoption of green environmental practices (Yang et al., 2023).

For example, Abdou et al. (2023) discovered that hotels with strong management support for sustainability were more likely to implement green inclusive behaviour in the form of energy-saving measures and waste reduction strategies. These highlight the significance of leadership participation in setting the tone for environmental stewardship within hotels. Moreover, Quan et al. (2022) emphasize senior management's role in setting guidelines and resources and incentivizing employees to participate in green environment practices while behaving greenly.

Furthermore, organisational support activities such as training programs, employee empowerment, and communication channels contribute to enhancing environmental awareness and fostering a culture of sustainability (Bhutto et al., 2021; Karatepe et al., 2022; Thabet et al., 2023). Hotels that invest in employee training efforts can provide their workforces with the information and skills needed to effectively implement green environment practices (Chang et al., 2019). Additionally, empowering employees

to participate in the process of the decision-making process that is linked to sustainability efforts increases ownership feelings as well as the commitment to environmental goals, which impact worker satisfaction, productivity and overall effectiveness, organizational success, and overall performance (Corbeanu & Iliescu, 2023; González-Gancedo et al., 2019; Karatepe et al., 2022).

Organizational support activities that prioritize sustainability can differentiate a hotel from its competitors, attract environmentally conscious guests, and enhance its brand reputation. Furthermore, green initiatives may result in cost savings attributable to reduced resource consumption, further strengthening the hotel's competitive position.

On the contrary, Paillé and Meija-Morelos (2019), contend that organisational environmental support is unlikely to affect individual environmental performance for personnel with restricted or no dispositional inclination.

### Literature Gaps

Many studies recognize the importance of green environment practices but do not specifically address how organizational support (e.g., management commitment, resource allocation) plays a role in the adoption and effectiveness of these practices and eventual hotel performance. This leaves a gap in understanding the mechanisms behind successful implementation (Pham et al., 2023).

Limited exploration of performance outcomes as seen in prior studies that explore adopting green environment practices but fail to assess how these practices directly impact overall hotel performance (e.g., financial performance, guest satisfaction, and employee engagement). The link between sustainability initiatives and business outcomes could remain under-explored.

Existing research often focuses on isolated metrics, such as environmental performance, without linking these practices to broader hotel performance measures (e.g., financial

performance, customer satisfaction, brand loyalty). This narrow focus limits understanding of how green environment practices contribute to overall success in the hotel sector (Barakagira & Paapa, 2023; Obonyo et al., 2023)

While some studies explore organizational support (e.g., leadership, resources, training) for green practices, many do not provide a comprehensive framework that examines all forms of support systematically, including financial, emotional, and knowledge-based support. Further research could examine how different types of organizational support interact and contribute to the adoption of green environment practices (Cop et al., 2020)

Numerous studies handle hotels as if they are uniform entities, ignoring the variety of operating environments they face, including variations in size, location, target market, and ownership structure. Additional investigation is required to determine how these contextual factors impact the connection between organizational support and green practice success.

Beyond financial metrics, little is known about how green environment practices affect overall performance. Non-financial metrics like customer satisfaction, brand loyalty, and employee well-being are frequently overlooked in studies (Pham et al., 2023). A more holistic view that includes social and operational performance indicators could be further developed.

Although there may be significant cultural and regional differences in green environment practices and the role of organizational support, conservation areas are still little studied. The adoption of green environment practices and their effect on performance can both be influenced by the cultural context (Haldorai et al., 2022).

Numerous studies concentrate on management viewpoints but do not adequately incorporate insights from other important stakeholders, including local communities, suppliers, customers, and employees. Gaining an understanding of their responsibilities may

provide more complex perspectives on the efficacy of green initiatives.

While there is a lot of discussion about how green environment practices are good for the environment and hotel reputation, less attention is paid to how they impact operational performance metrics like competitive advantage, customer satisfaction, and operational efficiency. There might not be a comprehensive framework in studies that connects green practices, organizational support, and multifaceted hotel performance (Raza & Khan, 2022). Finally, extant literature highlights the relevance of organisational support in determining the implementation of environmentally friendly practices and their effect on hotel management in protected areas. In Uganda's context, however, there is limited information on the role of organizational support in mediating the link between green environmental practices and hotel performance. As a result, research formulates the following hypothesis:

- **H0<sub>1</sub>:** Energy conservation practices do not significantly affect hotel performance in conservation areas in Uganda.
- **H0<sub>2</sub>:** Energy conservation practices do not significantly affect Organisational support in hotels in conservation areas in Uganda.
- **H0<sub>3</sub>:** Organisational support does not significantly affect hotel performance in conservation areas in Uganda.
- **H0<sub>4</sub>:** Organisational support does not significantly mediate the relationship between

energy conservation practices and hotel performance in conservation areas in Uganda.

## MATERIALS AND METHODS

The study used positivism as its research philosophy to determine causal relationships between variables (ECP, OS, and HP). A methodical and structured investigation that reduces biases and preserves consistency was made possible by the use of a deductive research approach (Creswell and Creswell, 2017). To collect and analyze numerical data using statistical techniques, the study adopted a quantitative methodological approach. All research ethics and other approvals beforehand were obtained. Using a self-administered questionnaire, a survey research strategy was used in conjunction with a correlational research design (Wang & Cheng, 2020). Because of this, the researcher was able to gather data objectively and methodically without affecting the participants' answers (Adu et al., 2022; Leach Sankofa, 2022; Panhwar et al., 2017). A pilot study was conducted to evaluate the validity and reliability of the questionnaire to make an accurate assessment. The questionnaire's reliability was tested with a Cronbach's  $\alpha$  criterion of 0.7. Exploratory factor analysis was performed to determine the dimensionality of the scale as well as sample adequacy. Ten items namely HP1, HP3, HP5, HP6, HP8, OS1, OS3, OS4, OS9 and OS10 were excluded from the final EFA because of low communality values of less than .5. The rest of the items had communalities values after extraction  $>.5$  implying that the items explained at least 50% of the variance in the item they loaded

**Table 1: Measurement of Study Variables**

Construct	Code	Measurement
Hotel Performance (HP)	HP2	Our guests are always happy to recommend our facility to other potential guests.
	HP4	Our customer always reports that they are satisfied with our facility.
	HP7	The costs of energy, water, and waste disposal have been reduced significantly.
	HP9	The revenue at my hotels has increased significantly because of our involvement in protecting the environment.
	HP10	Our hotel has a good image among guests due to our involvement in environmental protection.



Construct	Code	Measurement
Energy Conservation Practices (ECP)	ECP1	The hotel has installed energy consumption controls e.g., installation of occupancy sensors and light controls.
	ECP2	The hotel has adopted daylighting initiatives e.g., maximizes the use of natural ventilation and lights by both employees and guests.
	ECP3	The hotel has energy-efficient lighting initiatives in place e.g., the installation of energy-saving lighting such as LED bulbs.
	ECP4	The hotel has incorporated a biomass-fuelled system in place to power its energy needs (green energy)
	ECP5	The hotel makes use of renewable energy sources, e.g., installation of roof photovoltaic systems, wind power systems, etc., to power their energy needs.
Organizational support (OS)	OS2	My hotel allocates financial resources, personnel, and other resources to support the implementation of green environmental practices. e.g. energy-efficient technologies, and eco-friendly materials.
	OS5	My hotel promotes cross-functional collaboration and communication between departments to integrate sustainability considerations into various aspects of hotel operations.
	OS6	My hotel engages guests in sustainability initiatives by raising awareness about environmental issues and encouraging them to participate in green practices during their stay.
	OS7	My hotel collaborates with external stakeholders, including local communities, non-governmental organisations (NGOs), government agencies, and industry associations, to advance sustainability goals and address shared environmental challenges.
	OS8	My hotel works closely with suppliers and vendors to source environmentally friendly products and services and minimize the environmental footprint of their supply chain.

Multiple-stage sampling was employed (proportional, stratified, and simple random sampling) Using Krejcie and Morgan's 1970 table, a sample size of 265 participants was selected from a population of 851 employees employed by 19-star hotels in the study area, including managers and employees. The findings are more population-representative and broadly applicable. The study used PLS SEM and SPSS in a multi-analytical manner. Both partial least squares structural equation modelling and factor analysis were used in Smart PLS and SPSS, respectively.

## DATA ANALYSIS AND FINDINGS

### The Descriptive Statistics of the Sample Demographic Data

In Table 2, we have a portrait of the respondents' information. 64.6% of the sample were males, and 35.7% of the sample were females. The predominant age group within the range of 20-20

years (43.9%) followed by 30 – 39 Years (41.2%) suggests that our research captures a significant portion of participants in a stage of life associated with specific behavioural and attitudinal patterns, as well as that the distribution between other age groups is relatively balanced. In terms of education qualification, it highlights the academic diversity within the sample; most participants who hold a certificate (52.2%) and diploma (43.5%) reflect global higher education trends, while 4.7% have attained a bachelor's degree, suggesting that they are potentially informed and knowledgeable. Furthermore, most participants (44.3%) are from hotels that have existed for not more than ten years. This means that newer hotels are more likely to have been designed and constructed with modern sustainability standards in mind. They may integrate energy-efficient systems, eco-friendly materials, and waste management practices from the start, as these have become important aspects of hospitality industry trends in

recent years. New hotels often aim for operational efficiency to reduce costs and maximize profits, aligning well with the principles of sustainability, such as reducing energy consumption and minimizing waste. 29% of the employees are from the food & beverage service department, 28.2% are from the kitchen or food production department, 22.4% are from the housekeeping department, 14.1% are from the front office department, and 6.3% represent the number of general managers who participated in the study. Moreover, most employees are from three-star hotels (46.3%), followed by two-star hotels

(35.8%). The majority of responders come from operational departments that have a direct hand in waste production and resource consumption, according to the results. This offers a wealth of data for examining the adoption and perception of green practices by particular departments. The prevalence of three- and two-star hotels indicates that these establishments should be the focus of initiatives to improve green practices. They might need specialized assistance, instruction, and rewards to embrace and maintain eco-friendly behaviours.

**Table 2: Showing the Demographic Results**

Item Measurement	Number Of Respondents	Percentage (%)
Gender	Male	64.3
	Female	35.7
	Other(specify)	0
	Total	100
Age category	Below 20 Years	7.1
	20 – 29 Years	43.9
	30 – 39 Years	41.2
	40 – 49 Years	5.9
	50 – 59 Years	2
	60 Plus Years	0
	Total	100.
Education level	Certificate Level	50.2
	Diploma Level	43.5
	Undergraduate Level	4.7
	Postgraduate Level	1.6
	Others (Please Specify)	0
	Total	100
Star rating	2 star	35.3
	3 star	46.3
	4 star	7.1
	5 star	3.9
	Not star rated	7.5
	Total	100
Hotel existence	Below 10 Years	44.3
	10 – 19 Years	7.8
	20 – 29 Years	6.7
	30 Plus Years	41.2
	Total	100
Staff category	General Manager	6.3
	Front Desk	14.1
	Housekeeping	22.4
	F and B Service	29.0
	Kitchen	28.2
	Total	100

The discrepancy between the targeted sample size of 265 (determined using the Morgan table for a population of 851) and the actual responses received (255) was attributed to common survey challenges such as non-response or participant dropout. Some individuals declined to participate, failed to return the questionnaire, or submitted incomplete responses, leading to a non-response rate, a typical occurrence in survey-based research. The Morgan table assumes a 100% response rate, which is rarely achievable in practice; thus, a small shortfall is expected. Despite this, the achieved response rate of approximately 96.2% ( $\text{Response Rate} = 265/255 \times 100 = 96.2\%$ ) was considered excellent and indicates strong participation, which provided a strong basis for statistical analysis. Moreover, a

difference of just 10 responses had minimal impact on the statistical power and validity of the findings, especially in the present situation where the missing data are random and the final sample remains representative of the overall population.

### Common Method Bias

Collinearity (or multicollinearity) is an undesirable situation where the correlations among the independent variables are strong (Hair et al., 2019a). Most commonly, a value of less than 5 has been recommended as the maximum level of VIF (Hair et al., 2019b). According to the results, all indicators ranged between 2.809 and 4.535 and had a VIF value of less than 5, thus each of these variables does not represent multicollinearity.

**Table 3: Variance Inflation Factor (VIF)**

Variables	VIF
ECP1	2.857
ECP2	2.809
ECP3	2.860
ECP4	2.942
ECP5	2.849
HP10	3.713
HP2	3.859
HP6	4.483
HP7	4.535
HP9	3.862
OS2	3.393
OS5	4.179
OS6	3.196
OS7	3.883
OS8	4.106

### Measurement Model Assessment

The effectiveness of the research model was enhanced by the casualty of the Cronbach discount. The limit value for Cronbach's alpha (alpha) reliability test is greater than 0.7 (Sarstedt et al., 2022; Hair & Alamer, 2022). The Cronbach's alpha (alpha) test results ranged from 0.878 to 0.910, indicating that the scale has acceptable internal reliability. Moreover, CR should be greater than 0.70, and the results of the survey showed that CR ranged from 0.884 to 0.910 for all items, suggesting that all scales used have an acceptable internal reliability (see Table

4). Researchers assessed whether the AVE, which is the minimum acceptable level considered to be sufficient for convergent validity, was greater than 0.5 and examined the average deviation extracted (AVE) for convergent validity (Sarstedt et al., 2021). In addition, the AVE ranging between .674 and .736 is above the minimum acceptable threshold of 0.5 as suggested by (Sarstedt et al., 2021), implying that there are no collinearity issues in our model (Hair et al., 2019b).

In Table 4, the measurement items for all the latent constructs loaded highly on their respective

constructs than on other constructs, with a minimum factor loading of .843, .784, and .737 for items for Energy Conservation Practices, Hotel Performance and Organizational Support respectively. In line with Hair et al. (2019), all the cross-loadings for both the exogenous and

endogenous variables exceeded the recommended values of a cut-off value of .708. According to the statistical analysis, the research's outer model has strong validity and reliability, with consistent values across a range of measures, guaranteeing the robustness of the findings (see Table 4).

**Table 4: The Evaluation of Reliability and Validity of the Measurement Model**

Constructs/Measurement Items	Item Loading	Cronbach's alpha ( $\alpha$ )	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Energy Conservation Practices					
ECP1	0.866	0.910	0.910	0.933	0.736
ECP2	0.843				
ECP3	0.858				
ECP4	0.851				
ECP5	0.871				
Hotel Performance					
HP10	0.793	0.895	0.897	0.923	0.706
HP2	0.887				
HP6	0.873				
HP7	0.858				
HP9	0.784				
Organizational Support					
OS2	0.865	0.878	0.884	0.912	0.674
OS5	0.875				
OS6	0.849				
OS7	0.737				
OS8	0.770				

HP-Hotel Performance, OS-Organizational Support, ECP-Energy Conservation Practices

### Discriminant Validity

It is recommended that the HTMT value be below 0.85 (Franke & Sarstedt, 2019; Henseler et al., 2015). According to Table 5, the HTMT levels were not higher than 0.85 and were much lower

than the reference value. In conclusion, the use of several criteria allowed the study to effectively demonstrate sufficient discriminant validity, guaranteeing that each construct is unique from the others.

**Table 5: Showing the Heterotrait-monotrait Ratio (HTMT) – Matrix**

Construct	ECP	HP	OS
Energy Conservation Practices (ECP)			
Hotel Performance (HP)	0.636		
Organizational Support (OS)	0.639	0.692	

### Assessment of the Structural Model (Test of Hypotheses)

The beta coefficients ( $\beta$ -coefficient) of the partial differential equations (PLS) path coefficients quantitatively ranged from 0.000 to 1.000 (Hair et

al., 2017). As highlighted by Hair et al. (2017), Values lower than 0.10 are usually considered insignificant. Significant pathways in the hypothesized direction empirically support the proposed causal relationship, while non-



significant pathways or non-adverse pathways refute the previous theories (Aguirre-Urreta & Rönkkö, 2018; Hair & Alamer, 2022). A consistent PLS-SEM bootstrap procedure using Smart PLS4 was used to determine the significance of route coefficients and their related t-values for both direct and indirect associations. If the T-statistics of the two-tailed t-test are

greater than 1.96, the path coefficient is considered significant at the level of five percent significance (Wong, 2013). According to the study, the internal model path factors were statistically significant (Table 6), which indicates that the model variables have empirical support and help to explain the variability of endogenous variables.

**Table 6: Tested Null Hypotheses**

Research-Tested Hypotheses	$\beta$ -coefficient	T value	P value	$f^2$ (f-square)	VIF	Results
<b>H0<sub>1</sub></b> ECP -> HP	0.225	3.397	0.001	0.069	1.812	<b>Rejected</b>
<b>H0<sub>2</sub></b> ECP->OS	0.669	14.924	0.000	0.812	1.000	<b>Rejected</b>
<b>H0<sub>3</sub></b> OS -> HP	0.604	9.720	0.000	0.501	1.812	<b>Rejected</b>
Variance predictions	R <sup>2</sup> (R-square)	R-square adjusted	Q <sup>2</sup> predict			
Hotel Performance	0.598	0.594	0.390			
Organizational Support	0.448	0.446	0.442			

HP-Hotel Performance, OS-Organizational Support, ECP-Energy Conservation Practices. R<sup>2</sup> was used to determine how well independent variables explain the dependent variable. Q<sup>2</sup> was used to check whether the model has predictive power beyond the sample data. Both are reported together to validate the robustness of a PLS-SEM model.

### *The Effect Size (f-square)*

Effect size ( $f^2$ ) is a measure that assesses the relative impact of an independent (exogenous) variable on a dependent (endogenous) variable in terms of R<sup>2</sup> change. It helps determine the practical significance of predictor variables in explaining variance. Significant values exceed zero (Hair et al., 2019a). According to (Hair et al., 2019a) values greater than 0.02, 0.15, and 0.35 generally indicate small, medium, and large f-effect sizes. Table 6 indicates that the effect sizes fall between medium and large.

### *Assessment of Overall Model Fit*

The structural model is evaluated after the measurement model assessment is deemed satisfactory in order to evaluate the PLS-SEM results (Hair et al., 2019a). According to (Hair et al., 2021), the strength of each structural path as

indicated by the dependent variable's R<sup>2</sup> value determines how good the model is. Higher values indicate greater explanatory power in endogenous constructs, as measured by R<sup>2</sup>, which goes from 0.10 (Hair et al., 2019b). In addition, (Hair et al., 2019a) recommended that for a model to fit well, the R<sup>2</sup> value should be in the range of 0 to 1. Table 6's results demonstrate that the R<sup>2</sup> values are more than zero and less than 1. The coefficient of determination (R<sup>2</sup>) for the hotel performance endogenous latent variable was .598, implying that exogenous variables (Energy Conservation Practices and Organizational Support) explain 59.8% of endogenous factor (hotel performance). The remaining 40.2% of change in hotel performance was influenced by other factors outside the scope of this study.

A thorough grasp of the model's ability to forecast and explain the observed data is also offered by Q<sup>2</sup>. (Shmueli et al., 2016; (Shmueli et al. 2016; Shmueli et al., 2019) suggested evaluating the model's predictive power using predictive relevance (Q<sup>2</sup>). An independent variable's particular path has predictive relevance for the dependent variable if its Q<sup>2</sup> value is greater than 0 (Hair et al., 2019a). The study yielded Q<sup>2</sup> values of 0.390, indicating good predictive relevance. In

conclusion, it can be said that this research model has a good goodness of fit based on these findings.

### ***Findings on the Relationship between Energy Conservation Practices and Hotel Performance***

The findings show that energy conservation practices positively and significantly predict hotel performance ( $\beta = .225^{**}$   $p < .01$ ), hence hypothesis **H1** is not supported. (See Table 6 and Figure 2).

### ***Findings on the Relationship between Energy Conservation Practices and Organizational Support***

The findings show that energy conservation practices positively and significantly predict organizational practices ( $\beta = .669^{**}$   $p < .01$ ), hence hypothesis **H2** is not supported. (See Table 6 and Figure 2).

### ***Findings on the Relationship between Organizational Support and Hotel Performance***

The findings show that organizational support positively and significantly predicts hotel performance ( $\beta = .604^{**}$   $p < .01$ ), hence hypothesis **H3** is not supported. (See Table 6 and Figure 2).

### **Testing for Mediation**

The present study tested the null hypothesis H0<sub>4</sub>, which stated that Organisational support (OS) does not significantly mediate the link between energy conservation practices (ECP) and hotel performance (HP) in conservation areas in Uganda. The results rejected this hypothesis. The results (see Table 6) revealed a significant indirect effect of ECP on HP through OSE (H0<sub>4</sub>:  $\beta=0.405$ ,  $t=7.834$ ,  $p<0.05$ ). The total effect of ECP on HP was significant ( $\beta=0.629$ ,  $t=13.518$ ,  $p<0.05$ ), with the inclusion of the mediator, the effect of ECP on HP was significant ( $\beta=0.225$ ,  $t=3.397$ ,  $p<0.05$ ). However, the indirect effect is the focus of mediation analysis (Hayes & Scharkow, 2013), so the direct effect does not necessarily need to be significant for mediation to exist (Preacher & Hayes, 2008), where the coefficients for direct and indirect paths are calculated. Therefore, since

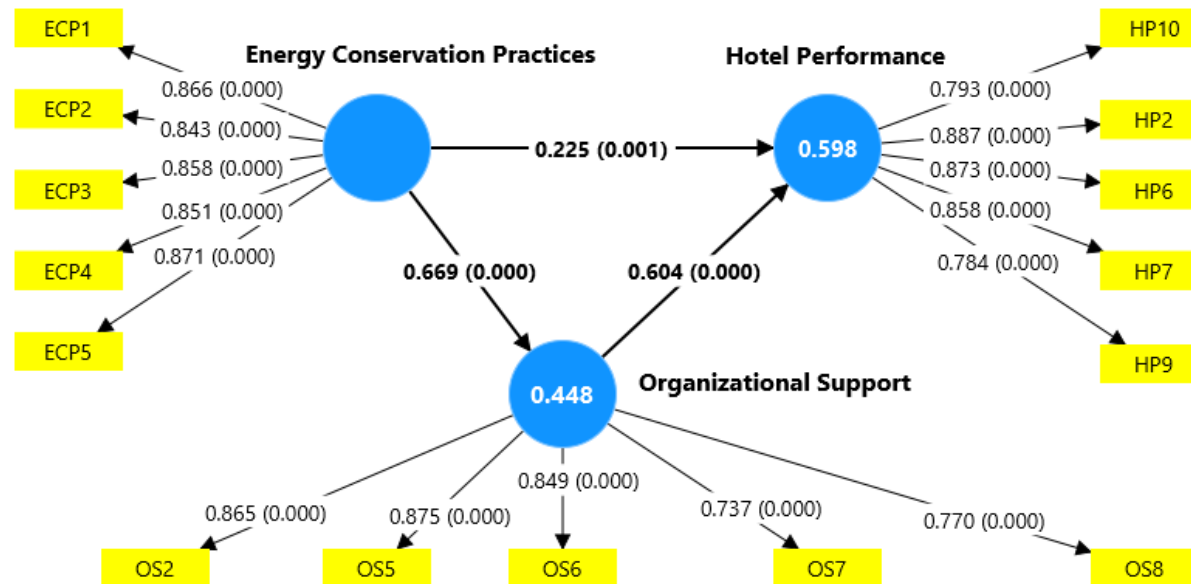
both direct and indirect relationships are significant, OS has a competitive partial mediating role in the relationship between ECP and HP. Hence, H0<sub>4</sub> was rejected.

Therefore, as shown in Table 6, the bootstrapping analysis revealed that the indirect effects of energy conservation practices (ECP) ( $\beta=0.405$ ,  $t=7.834$ ), showed a significant impact on hotel performance, indicating the presence of mediating effects. Additionally, the findings for the indirect effects' 97.5-percent bias-corrected bootstrap confidence interval. (ECP  $\rightarrow$  HP; 0.308, 0.511) did not include zero. The researcher concluded that there are statistically significant mediation effects.

**Table 7: Mediation Results for Null Hypotheses H0<sub>4</sub>**

Total Effects (ECP -> HP)			Direct Effects (ECP -> HP)			Indirect Effects of ECP on HP						97.5% Confidence intervals		Remarks
β-coefficient	T statistics	P Values	β-coefficient	T statistics	P values	Hypothesis	β-coefficient	STDEV	T statistics	P values		Lower	Upper	H05 Rejected
0.629	13.518	0.000	0.225	3.397	0.001	ECP -> OSE -> HP	0.405	0.052	7.834	0.000		0.308	0.511	

STDEV - Standard deviation, ECP- Energy conservation practices, HP- Hotel Performance, OSE- Organizational support and engagement



## DISCUSSION AND CONCLUSION

Firstly, the current study developed a null hypothesis **H0<sub>4</sub>**: Organisational support does not significantly mediate the link between energy conservation practices and hotel performance in conservation areas in Uganda. These findings suggest that Organizational support acts as a critical enabler, ensuring that energy conservation practices are effectively implemented and integrated into hotel operations. The significant mediation effect suggests that when hotel management provides the necessary support such as leadership commitment, employee training programs, resource allocation, clear communication about energy goals, and recognition of efforts related to conservation, ECP is more likely to lead to improved performance outcomes such as cost savings, guest satisfaction, and environmental compliance. This argument is consistent with the findings of Karatepe (2012) who examined the association between perceived organizational support, job performance, and service recovery performance. Career satisfaction was found to mediate the impact of this association, as per a developed and tested research model (Aboramadan and Karatepe, 2021). These results further agree well with existing studies on organizational support by Haldorai et al. (2022) who investigated the effects of green intellectual capital, green human resource management, and environmental commitments made by top hotel management on hotel environmental performance in Manila.

However, given these findings, **hotel managers** in conservation areas should prioritize fostering an environment that emphasizes organizational support. This could involve:

- Investing in continuous employee training programs, particularly on sustainable tourism practices. Energy conservation in hospitality calls for a tailor-made training program, which could be named "Sustainable Energy Use in Hospitality Operations." This should provide practical strategies related to HVAC optimization, energy-efficient lighting and

appliances, and energy monitoring systems. It also tends to include awareness creation among staff, behavioural changes, and good maintenance practices for energy savings in the long haul. Training workshops and regular refresher courses are vital to encourage staff to identify sustainable habits and take ownership of energy-saving initiatives.

- Ensuring that adequate resources are allocated to maintaining facilities and infrastructure.
- Recognizing and rewarding staff contributions to conservation and sustainability goals.
- Collaborating with conservation authorities and stakeholders to align organizational policies with broader environmental objectives.

### Policymakers Should;

- Encourage hotels to adopt green practices through incentives and support systems.
- Develop training programs to equip hotel staff with sustainable skills.
- Create certification programs to recognize and reward eco-friendly hotels.
- Offer tax incentives for hotels investing in sustainable technologies.
- Establish monitoring systems to assess green practices and performance.
- Promote public-private partnerships for shared sustainability efforts.
- Strengthen conservation guidelines for hotels in protected areas.

### Implications of the Study

**Theoretically;** The study contributes to the literature on environmental management and human capital by emphasizing their interplay in achieving sustainability, particularly in conservation-sensitive areas. This study integrates Human Capital Development Theory (HCDDT) and the Natural Resource-Based View (NRBV), with organizational



support acting as a mediator, to show how human capital and sustainable practices can improve business performance. The study extends HCDT by demonstrating that human capital not only drives productivity but is also essential for achieving sustainable practices and environmental performance, exemplified by a hotel in a conservation area.

**Practically;** It offers hotel managers doable suggestions on how to take advantage of organizational backing to optimize the advantages of sustainable practices. The study advises hotel owners and managers to make investments in robust organizational support systems, like staff incentives, resource allocation, and training initiatives, in order to optimize the advantages of energy conservation. The results confirm that regulations that promote hotels' adoption of energy-saving measures and organizational dedication to them are necessary.

### Limitations

The study had some constraints that need mentioning. First, the sample limited to star-rated hotels within conservation contexts needs to be checked for the generalizability of the finding to non-starred or independent types of hotels. While star-rated hotels can have their own practices and experiences regarding energy conservation and adjacent organizational issues, they may very well differ from non-starred hotels and hotels in urban or non-conservation settings; affirming this will require further research on non-starred hotels. Secondly, data were collected using a self-administered questionnaire, which invited hotel staff and management to provide self-reported responses that might bear the stamp of social desirability bias or simple inaccurate recall, hence compromising the veracity of the energy conservation practices, organizational support, and performance outcomes reported.

### Future Research:

Future research should conduct longitudinal studies to examine how green environmental practices and

organizational support influence hotel performance over time, considering shifts in policies and market trends. Comparative analyses across different hotel types, such as luxury, budget, and eco-lodges, could reveal how organizational characteristics mediate this impact. Incorporating customer perceptions would offer insights into how these practices affect satisfaction, loyalty, and overall performance. A mixed-methods approach, integrating quantitative surveys with qualitative case studies, could provide a deeper understanding of these dynamics. Additionally, exploring stakeholder engagement, including community and NGO involvement, would highlight its role in strengthening green initiatives and hotel success in conservation areas.

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