



The Role of Environmental Accounting Education and Renewable Energy Adoption in Advancing Sustainable Business Practices

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Abstract

This study examines the impact of environmental accounting training and renewable energy utilization on green business management in the hotel industry in Bali, Indonesia, while also exploring the moderating effect of Narcissistic Personality Disorder (NPD) traits. A structured questionnaire was administered to a sample of 222 star-rated hotels, and the data were analyzed using moderated regression analysis. The results indicate that both environmental accounting training and the adoption of renewable energy significantly contribute to the effectiveness of green business management practices. However, contrary to initial expectations, NPD traits did not moderate the relationship between the independent variables and green business management. Instead, NPD appeared to weaken the positive influence of environmental accounting training on sustainable decision-making. These findings contribute to stakeholder theory by reinforcing the importance of integrating environmental accounting principles into business strategies, while also drawing attention to the psychological dimensions that may influence managerial effectiveness. The study highlights that while technical training in sustainability remains essential, individual behavioral characteristics—particularly those associated with narcissism—may hinder the successful implementation of green initiatives. Consequently, the findings underscore the need for a more holistic approach that integrates both environmental competence and psychological awareness to advance sustainable practices within the hospitality sector.

Keywords: environmental accounting, renewable energy, greening business management, narcissistic personality disorder

Introduction

Green business management refers to the practice of managing organizations in a way that minimizes environmental harm while maintaining profitability (Sulewski et al., 2020). This involves implementing strategies to reduce waste, adopt sustainable practices, and integrate environmental concerns into operational decision-making. Effective green business management enables firms to conserve resources, reduce risks, and build long-term resilience (Zyznarska-Dworczak, 2020). Benchmarking corporate examples such as Tesla and Unilever, and supporting environmental institutions like The Nature

Conservancy, demonstrates the collective responsibility of business in preserving the planet for future generations (Duric & Topler, 2021; Veronica et al., 2020).

Within the hospitality sector, green business management is critical not only for promoting environmental sustainability but also for enhancing competitiveness (Belcher et al., 2020). Environmentally responsible practices—such as energy conservation, efficient waste management, and sustainable resource use—help reduce environmental impact while lowering operational costs (Saputra et al., 2023). Additionally, growing environmental awareness among consumers incentivizes hotels to adopt green practices to attract eco-conscious guests and comply with increasingly stringent regulations. Thus, sustainability in hospitality is not merely an ethical choice but a strategic imperative (Laksmi et al., 2023).

The academic discourse around green business has expanded, particularly in accounting and management fields. Scholars have begun to emphasize the importance of integrating green management into corporate strategy to mitigate environmental harm while remaining profitable (Demirel & Kesidou, 2019; Toscano et al., 2022). One critical element of this approach is environmental accounting—an accounting system that incorporates sustainability principles into decision-making and performance evaluation. Ali et al. (2021), drawing on stakeholder theory, found that environmental accounting training significantly influences green business outcomes. Similarly, Ardiansyah & Iskandar (2021) emphasized the triple bottom line framework—economic, environmental, and social dimensions—as central to the success of such training. In contrast, Abdou et al. (2020) argued that sustainability-focused accounting training may not directly impact the implementation of green business management.

Another key component is the adoption of renewable energy. Studies grounded in stakeholder theory have shown that renewable energy use enhances sustainable business performance (Khobai, 2021; Chang et al., 2017). For instance, incorporating solar, wind, or biomass energy can reduce environmental footprints and improve operational efficiency. However, contrasting evidence from Hou et al. (2019), Zhang et al. (2016), and Almagtome & Abdlaez (2022) suggests that renewable energy adoption alone may not guarantee improved sustainability performance. Given these divergent findings, this study re-examines the influence of environmental accounting training and renewable energy use on green business management in the hotel industry, specifically in the context of Bali, Indonesia.

A less explored but increasingly relevant dimension of green business implementation is the role of psychological traits, particularly narcissistic personality disorder (NPD). NPD is characterized by excessive self-interest, a need for admiration, and a lack of empathy—traits that may be misaligned with the collaborative and long-term orientation required for sustainable management (Erp, 2018; Bachrach et al., 2021; Scotter & Déa, 2018). Accountants and managers are central to sustainability decisions and must navigate ethical challenges while balancing profitability and environmental responsibility. NPD traits can hinder this balance, reducing the effectiveness of sustainability initiatives and potentially damaging organizational reputation (Toscano et al., 2022).

From a psychoanalytic perspective, NPD arises from internal conflicts related to self-worth and is associated with immature interpersonal behavior (Jamali & Méndez, 2019; Metallo et al., 2021). In social psychology, NPD reflects the tendency to manipulate relationships for self-enhancement and recognition (Church et al., 2020; Kalbuana et al.,

2023). Individuals with NPD often pursue short-term status or gain, potentially disregarding long-term sustainability goals. As a result, NPD may influence how accounting training and renewable energy strategies are received and implemented within organizations.

Existing research suggests mixed effects of NPD on sustainability. For example, [Scotter & Déa \(2018\)](#); and [Anjani & Priono \(2023\)](#) found that NPD could influence green decision-making, sometimes enhancing the appeal of green initiatives when aligned with personal recognition motives. However, NPD may also reduce the efficacy of environmental initiatives if individuals engage in greenwashing or prioritize image over substance ([Marquez et al., 2018](#); [Watkins et al., 2019](#)).

As a moderator, NPD may alter the strength or direction of relationships between independent variables (e.g., environmental accounting training, renewable energy adoption) and green business outcomes. Individuals with high NPD traits may devalue training or underutilize renewable energy due to self-centered goals, while those with lower NPD may more effectively internalize and act on sustainability principles ([Cooke, 2020](#); [Gordon et al., 2021](#)). Thus, incorporating NPD as a moderator offers a novel perspective on the psychological barriers to effective green business management.

This study aims to investigate the extent to which environmental accounting training influences green business management practices in the hotel sector in Bali, Indonesia. Specifically, it explores the direct effects of environmental accounting training and renewable energy utilization on green business management, and evaluates the moderating role of NPD in these relationships. The research provides strategic insights for stakeholders in the hospitality industry on how to enhance the effectiveness of environmental initiatives by accounting for individual behavioral traits. Practically, the findings can inform the design of more holistic sustainability strategies that integrate technical training with psychological awareness.

Environmental accounting training involves educating corporate actors—particularly accountants—on incorporating environmental and social considerations into economic reporting and decision-making ([Gil-Marín et al., 2022](#)). Such training equips firms to better disclose sustainability performance, thereby influencing stakeholder perceptions and investment decisions ([Silva, 2021](#)). In parallel, renewable energy use supports sustainability goals by enabling energy conservation, efficiency, and systematic resource management. These relationships are formalized in the following hypotheses.

H₁: Environmental accounting training has a positive effect on green business management.

H₂: The use of new and renewable energy has a positive effect on green business management.

Psychoanalytic theory posits that personality traits, such as those associated with NPD, emerge from developmental conflicts and significantly influence behavior. Individuals with NPD exhibit traits such as grandiosity, entitlement, and low empathy—characteristics that may hinder sustainability efforts ([Knoblauch, 2020](#); [Bailey, 2019](#)). As a moderator, NPD may weaken or shift the direction of the effects of environmental training and energy strategies on green business practices ([Metallo et al., 2021](#)). For instance, while training may promote sustainability, managers with high NPD traits may be more inclined to seek recognition rather than genuine environmental impact. These considerations lead to the following hypotheses:

H₃: Narcissistic personality disorder moderates the relationship between environmental accounting training and green business management.

H₄: Narcissistic personality disorder moderates the relationship between renewable energy utilization and green business management.

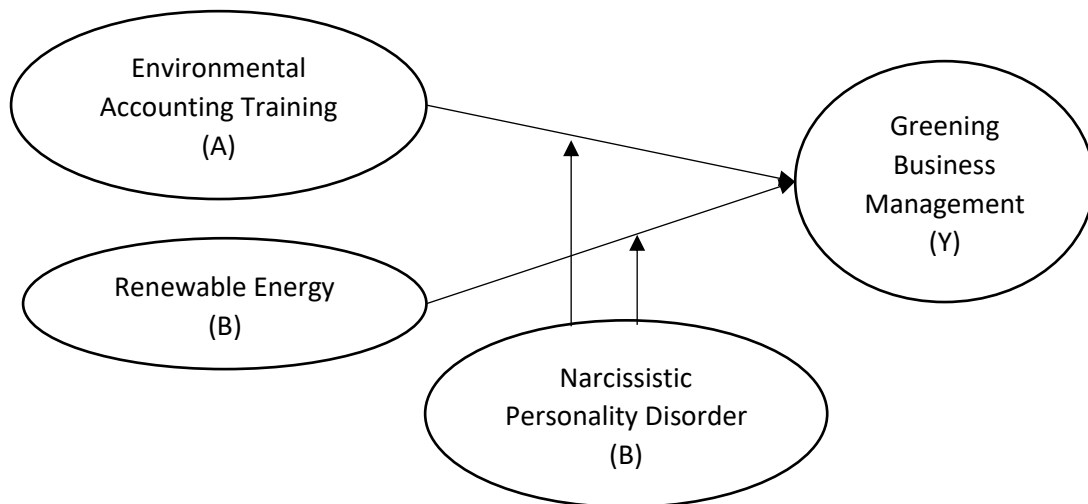


Figure 1. Research Conceptual Framework

This research is of particular significance as it offers valuable contributions to understanding the factors that influence the adoption of sustainable business practices in the hotel sector—specifically in Bali, Indonesia, a globally recognized tourism destination. By examining the impact of environmental accounting training and renewable energy utilization on green business management, and incorporating narcissistic personality disorder (NPD) traits as a moderating variable, this study advances both academic literature and managerial practice. The findings offer actionable insights for hotel industry stakeholders aiming to design more effective sustainability strategies, while underscoring the relevance of psychological traits in shaping training outcomes and managerial decision-making.

Moreover, the results have implications beyond the industry level, offering guidance for policymakers in formulating regulations that promote environmentally responsible business conduct. These contributions align with broader sustainable development goals at both local and global levels, reinforcing the strategic importance of integrating environmental and behavioral considerations in sustainability policy and practice.

The novelty of this study lies in its integration of environmental accounting and renewable energy adoption within the framework of green business management, while introducing NPD as a psychological moderator—an aspect seldom addressed in prior hospitality sector research. The study confirms that environmental accounting training and the use of renewable energy significantly influence green business management practices. More importantly, it reveals that NPD traits can attenuate the positive effects of such training on sustainability-oriented decision-making. By highlighting the influence of individual psychological characteristics, this study adds depth to stakeholder theory and provides a new lens for evaluating managerial behavior within the hospitality industry.

Research Method

This study employs a survey-based research design conducted over a four-month period. The population consists of managers from star-rated hotels in Bali, Indonesia, totaling approximately 500 establishments. A stratified random sampling technique was used to ensure proportional representation across all hotel categories, from one-star to five-star ratings. The sample size was determined using the Slovin formula, applying a 95% confidence level and a 5% margin of error. This sampling approach enhances the generalizability of the findings across the diverse segments of Bali's hospitality sector.

$$n = \frac{N}{1 + N(e^2)}$$

Where:

n = sample size

N = population size (500 hotels)

e = margin of error (0.05)

$$n = \frac{500}{1 + 500(0.0025)} = \frac{500}{2.25} \approx 222$$

Thus, the minimum sample required is 222 hotels. To ensure that the selected sample is relevant and representative, the following criteria were used. Inclusion criteria, hotels must be starred (1 star to 5 stars) and officially registered with the Bali Provincial Tourism Office, hotels must be actively operating during the study period and hotels must have management willing to participate in the study. Exclusion criteria, hotels that are not starred or have not been officially registered, hotels that are under renovation or inactive, and hotels that refuse to participate in the study.

Environmental Accounting Training refers to structured programs or activities aimed at enhancing the knowledge, awareness, and competencies of individuals—such as hotel managers or staff—in incorporating environmental considerations into accounting practices and strategic business decision-making. The training typically covers key topics, including: (1) environmental accounting principles, (2) environmental reporting, (3) environmental cost management, and (4) sustainable decision-making (Anggreni et al., 2023). This training serves as a foundational tool for integrating sustainability into financial and operational performance metrics.

Renewable Energy Use denotes the extent to which organizations utilize energy derived from naturally replenishable resources, including solar, wind, hydropower, biomass, geothermal, and ocean energy. This variable captures how effectively an entity—be it a country, company, or individual—incorporates renewable energy into its overall energy consumption portfolio. Key indicators of renewable energy usage include: (1) intensity of usage, (2) investment in renewable energy, (3) diversification of renewable energy sources, and (4) overall integration of renewable energy within operations (Almagtome & Abdlazez, 2022). These dimensions reflect an organization's commitment to reducing dependency on non-renewable energy and promoting sustainability.

Narcissistic Personality Disorder (NPD) is classified as a psychological disorder marked by persistent patterns of grandiosity, an excessive need for admiration, and a diminished capacity for empathy. These traits can significantly impair interpersonal relationships, workplace behavior, and social functioning. According to the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders) by the American Psychiatric Association, individuals are diagnosed with NPD when they exhibit several core

characteristics, including: (1) authority, (2) exhibitionism, (3) exploitativeness, (4) entitlement, (5) vanity, (6) superiority, and (7) self-sufficiency (Bazrafshan et al., 2019). These traits may influence leadership and decision-making styles, particularly in sustainability-oriented business contexts.

Green Business Management refers to the systematic incorporation of environmental sustainability principles into a company's strategic and operational practices. It encompasses initiatives aimed at minimizing environmental harm, enhancing resource efficiency, and promoting environmentally responsible products and processes. The objective is to align environmental stewardship with business profitability. The primary indicators of green business management include: (1) green management practices, (2) green product development, (3) green operational processes, and (4) community-focused environmental engagement (Duarte et al., 2020). These efforts may be led by dedicated environmental committees or designated personnel responsible for sustainability, depending on organizational structure and capacity.

To test the hypothesis carried out in this research, a multiple regression analysis model was used with an interaction test, which is often called Moderated Regression Analysis, which is a special application of linear multiple regression where the regression equation contains an element of interaction, using the following equation formula:

$$Y = \alpha + \beta_1 A_1 + \beta_2 B_2 + \beta_3 C_3 + \beta_4 A_1 * C_3 + \beta_5 B_2 * C_3 \dots \dots \dots (1)$$

Where:

- Y : Dependent variable (Greening Business Management)
- A : Variabel independen (Environmental Accounting Training)
- B : Variabel independen (Renewable Energy)
- C : Moderation variable (Narcissistic Personality Disorder)
- α : Intercept (constant)
- β : Regression coefficient

Result and Discussion

The demographic characteristics of hotels and managers in this study indicate that most of the hotels studied are mid-range hotels with urban locations and are independently managed. Most managers have intermediate experience in managing hotels, and male dominance is present in managerial positions.

Based on the data presented in [Table 1](#), the majority of hotels included in this study were mid-range establishments, with 2-star hotels comprising 27.0% and 3-star hotels accounting for 24.8% of the sample. These were followed by 1-star hotels at 22.5%. In contrast, 4-star and 5-star hotels represented a smaller portion of the sample, comprising 18.0% and 7.7%, respectively. This distribution indicates that mid-tier accommodations dominate the hotel sector in the study area.

Geographically, most hotels were located in urban areas (54.1%), with the remaining 45.9% situated in rural regions. This reflects the general pattern of hotel development in Bali, where urban centers tend to have higher concentrations of hospitality establishments. In terms of ownership structure, the majority of hotels were independently operated (67.6%), while only 32.4% were managed by corporate hotel chains. This suggests a significant presence of locally owned and managed hotels in Bali's hospitality sector.

Table 1. Demographic Characteristics

Characteristics	Category	Number	Percentage (%)
Hotel Star Type	1 Star	50	22,5%
	2 Stars	60	27,0%
	3 Stars	55	24,8%
	4 Stars	40	18,0%
	5 Stars	17	7,7%
Hotel Location	Urban	120	54,1%
	Rural	102	45,9%
Hotel Ownership	Independent	150	67,6%
	Corporate	72	32,4%
Manager Experience	< 5 Years	80	36,0%
	5-10 Years	90	40,5%
	> 10 Years	52	23,4%
Manager Gender	Male	160	72,1%
	Female	62	27,9%

Source: processed data (2024)

Regarding managerial demographics, the data indicate that most hotel managers have between 5 to 10 years of experience (40.5%), followed by those with less than 5 years (36.0%). Only 23.4% of respondents reported more than 10 years of experience, suggesting that the managerial workforce is largely composed of professionals with intermediate tenure. In terms of gender distribution, male managers dominate the sector, comprising 72.1% of the sample, while female managers account for 27.9%. This highlights a gender imbalance in managerial roles within the hospitality industry in Bali.

Table 2. Indicators and Measurements for Environmental Accounting Training

Indicators/Items	Code	Pearson Correlation	Cronbach's Alpha
Attend training that discusses the basic principles of environmental accounting.	A.1	0,617	0,713
Training on how to prepare environmental reports by international standards	A.2	0,520	
This training provides an understanding of how to identify, measure, and manage environmental costs (such as waste, emissions, or energy costs) in hotel operations.	A.3	0,711	
This training helps in evaluating the trade-off between profitability and environmental impact in operational decisions.	A.4	0,487	

Source: Results of data processing for validity and reliability testing (2024)

Prior to data analysis, instrument validity and reliability were assessed. The validity of the instrument was evaluated using the Pearson product-moment correlation, which examines the correlation between individual item scores and the total score. Reliability testing was conducted using Cronbach's alpha to determine the internal

consistency of the instrument, ensuring its suitability for measuring the constructs under investigation.

Based on Table 2 shows that the pearson correlation value for all environmental accounting training indicators is above 0,4, indicating that all question items are valid and can be used to measure environmental accounting training variables. The Cronbach's Alpha value of 0,713 ($> 0,6$) indicates that this research instrument is reliable and consistent in measuring environmental accounting training variables.

Table 3. Indicators and Measurements for the Use of New Renewable Energy

Indicators/Items	Code	Pearson Correlation	Cronbach's Alpha
The hotel's energy consumption comes from renewable energy sources (such as solar, wind, or biomass).	B.1	0,708	0,801
The hotel has long-term plans to increase investment in renewable energy.	B.2	0,727	
Have a strategy to diversify renewable energy sources to reduce dependence on one particular type of energy.	B.3	0,645	
The intensity of renewable energy use in hotels contributes to achieving sustainability goals and reporting the intensity of renewable energy use periodically to stakeholders.	B.4	0,777	

Source: Results of data processing for validity and reliability testing (2024)

Based on the analysis results in Table 3 show that all indicators of renewable energy use have a Pearson correlation value above 0,4, which indicates that all question items are valid for measuring renewable energy use variables. The Cronbach's Alpha value of 0,801 ($> 0,6$) indicates that this research instrument is very reliable and consistent in measuring renewable energy use variables.

Table 4. Indicators and Measurements of Narcissistic Personality Disorder

Indicators/Items	Code	Pearson Correlation	Cronbach's Alpha
An excessive view of oneself is related to the authority that one holds.	C.1	0,483	0,790
The tendency to draw the attention of others to oneself.	C.2	0,561	
Motivation to manipulate and exploit others for self-gratification.	C.3	0,520	
The belief that others are worthy of respect and admiration	C.4	0,491	
Excessive admiration for oneself by comparing it with others.	C.5	0,653	
An exaggerated view of oneself is related to competence.	C.6	0,690	
The belief that one can meet one's needs with their abilities.	C.7	0,700	

Source: Results of data processing for validity and reliability testing (2024)

Referring to the results of the analysis in Table 4 show that all indicators of narcissistic personality disorder have a Pearson correlation value above 0,4, indicating that all question items are valid for measuring narcissistic personality disorder variables. The Cronbach's Alpha value of 0,790 ($> 0,6$) indicates that this research instrument is reliable and consistent in measuring narcissistic personality disorder variables.

Table 5. Indicators and Measurements for Greening Business Management

Indicators/Items	Code	Pearson Correlation	Cronbach's Alpha
Reducing operating costs through efficient exploitation of natural resources	D.1	0,617	0,713
Creating a competitive advantage and maintaining customer loyalty because it can fulfill customer desires for environmentally friendly products and packaging.	D.2	0,520	
Help companies expand into global markets and minimize long-term environmental risks related to damage to natural resources, energy conservation, pollution control, and waste management.	D.3	0,711	
Improve the company's "image" and good relations with the community and provide benefits to the ecosystem and the community where the company operates	D.4	0,487	

Source: Results of data processing for validity and reliability testing (2024)

Based on the analysis results in Table 5, it show that all green business management indicators have a Pearson correlation value above 0,4, which indicates that all question items are valid for measuring green business management variables. The Cronbach's Alpha value of 0,713 ($> 0,6$) indicates that this research instrument is reliable and consistent in measuring green business management variables.

Table 5. Partial Test with Multiple Linear Regression

Variables	Unstandardized Coefficient		Standardized Coefficient	Q	Sig	Results
	B	Std. Error	Beta			
Constant	19,877	3,971		4,855	0,000	
A → Y	0,629	0,820	0,340	2,718	0,001	H ₁ Accept
B → Y	1,138	0,243	0,729	3,091	0,000	H ₂ Accept

Adjusted R² = 0,988

F_{count} = 12,572.67

Significance (F = 0,000)

Source: Processed Data, 2024

Based on Table 5 which explains the partial test results. The regression coefficient of 0,629 with a significance value of 0,001 ($<0,05$) indicates that environmental accounting training has a positive and significant effect on green business management. The first hypothesis (H_1) is accepted. The regression coefficient of 1,138 with a significance value of 0,000 ($<0,05$) indicates that the use of renewable energy has a positive and significant effect on green business management. The second hypothesis (H_2) is accepted. The Adjusted R^2 value of 0,988 indicates that 98,8% of the variation in green business management can be explained by the variables of environmental accounting training and the use of renewable energy. This indicates a very strong regression model.

Table 6. Testing with Moderated Regression Analysis

Variables	Unstandardized Coefficient		Standardized Coefficient	Q	Sig	Results
	B	Std. Error	Beta			
Constant	0,276	0,170		4,855	0,000	
A * C $\rightarrow$ Y	-1,129	0,521	-0,031	-0,138	0,891	H_3 rejected
B * C $\rightarrow$ Y	0,122	0,184	0,250	1,131	0,263	H_4 rejected

Source: Processed Data, 2024

Based on the results in Table 6, the significance value of 0.891 (> 0.05) indicates that narcissistic personality disorder (NPD) does not moderate the relationship between environmental accounting training and green business management. Consequently, Hypothesis 3 (H_3) is rejected. Similarly, the significance value of 0.263 (> 0.05) shows that NPD does not moderate the relationship between renewable energy use and green business management, leading to the rejection of Hypothesis 4 (H_4). These results suggest that NPD does not play a moderating role in the relationship between environmental accounting training or renewable energy use and green business management. Psychological traits such as narcissism, in this context, do not appear to affect the effectiveness of sustainability training or renewable energy initiatives in achieving green business goals.

The rejection of H_3 and H_4 implies that, within the hotel industry in Bali, external structural and organizational factors—such as training programs and technological adoption—are more influential in shaping green business practices than individual psychological characteristics. This highlights the need for an integrated approach that incorporates policy, education, and cultural values in promoting sustainability. Although the moderation coefficient for H_3 is negative (-1.129), indicating a tendency for NPD to weaken the relationship between environmental accounting training and green management, this effect is not statistically significant. These findings are consistent with studies such as Crespo-Cebada et al. (2021), which suggest that NPD is more relevant in the context of short-term financial behavior than in long-term sustainability efforts. Furthermore, renewable energy adoption is generally driven by technical feasibility and

cost efficiency rather than personal psychological factors, further explaining the non-significant moderation.

These results support the relevance of stakeholder theory in the context of management accounting, particularly within the hospitality industry (Yousaf et al., 2021). Stakeholder theory posits that organizations must address the expectations of diverse stakeholders—governments, local communities, and environmentally conscious consumers—by adopting sustainability-oriented practices aligned with the triple bottom line. Environmental accounting training represents a hotel's commitment to developing environmentally and socially informed control systems (Gil-Marín et al., 2022; Klymenko et al., 2021). Green business management, as part of these systems, involves standardized processes aimed at planning, implementing, and evaluating environmental performance (Saputra et al., 2022). When effectively implemented, green business strategies can reduce environmental harm while enhancing profitability (Marie et al., 2023; Merli et al., 2019). Implementation occurs in three stages: developing environmental commitments, designing supporting systems, and executing practices aligned with sustainability goals.

Environmental accounting training enables managers and accountants to integrate environmental objectives into business decision-making, thus supporting long-term organizational sustainability. The positive relationship identified between environmental accounting training and green business management supports the hypothesis and aligns with prior research (Gil-Marín et al., 2022). Firms that received Green Industry awards have demonstrated that environmental accounting training contributes to green business performance (Úbeda-garcía et al., 2021). Beyond fulfilling social responsibility, such training can serve as a strategic tool to enhance financial performance by embedding sustainability into core business functions (Abdou et al., 2020; Chung, 2020). These findings affirm that environmental accounting training is foundational to developing consistent and effective green business strategies (Ali et al., 2021; Merli et al., 2019).

Regarding Hypothesis 2, the results confirm that renewable energy use has a significant positive effect on green business management (Assaker, 2020; Chung, 2020). The Resource-Based View suggests that strategic resources, such as renewable energy, can confer competitive advantages. Renewable energy adoption reduces environmental impact, improves cost efficiency, and enhances a firm's sustainability profile. The statistical evidence supports the hypothesized relationship, affirming the environmental and economic benefits of integrating renewable energy into hotel operations. Green business management, particularly in the hotel industry, encompasses initiatives such as water and energy conservation, eco-friendly procurement, and emission reduction—contributing directly to broader sustainable tourism objectives (Abdou et al., 2020; Úbeda-garcía et al., 2021). These initiatives also align with local cultural values that emphasize harmony with nature, reinforcing the importance of renewable energy as part of green hotel operations.

Supporting this view, Gohar & Indulska (2020) found that managerial intention to adopt green business practices is positively influenced by environmental awareness and renewable energy use. Gelderman & Vijgen (2021) similarly emphasized the role of

employee awareness in advancing green initiatives. Compared with studies conducted in developed economies, this research provides context-specific insights for emerging markets, particularly in the application of renewable energy within the hospitality industry in Indonesia. The findings are consistent with [Chang et al. \(2017\)](#), who found that renewable energy use positively affects green business decision-making in hotel operations.

According to psychoanalytic theory, individuals with narcissistic personality traits are often driven by self-interest, focusing on personal recognition and short-term gains rather than collective or long-term environmental objectives ([Holmes et al., 2021](#)). This theory predicts that NPD would weaken the relationship between environmental accounting training and green business practices. While the results show a negative moderation coefficient, the effect is not statistically significant, and thus Hypothesis 3 is rejected. Similarly, the theory suggests that individuals with high NPD traits may be indifferent to the long-term benefits of renewable energy, focusing instead on immediate outcomes. However, the statistical analysis shows that NPD does not significantly moderate the relationship between renewable energy use and green business management, leading to the rejection of Hypothesis 4.

Although NPD encompasses characteristics such as grandiosity, entitlement, and lack of empathy, which may adversely influence decision-making, these traits were not sufficiently impactful in this study to alter the influence of sustainability interventions. A possible explanation lies in the moderating effect of local cultural values. In Bali, principles emphasizing the balance between humanity, nature, and spirituality—such as Tri Hita Karana—may mitigate the influence of individualistic or narcissistic behavior, thereby maintaining a focus on collective sustainability goals.

From a behavioral perspective, NPD traits may lead to resistance against sustainability initiatives due to perceptions of increased costs or complexity ([Crespo-Cebada et al., 2021](#); [Harris et al., 2021](#)). Accountants exhibiting narcissistic tendencies may view environmental accounting and renewable energy as burdensome rather than strategic. Prior research suggests that narcissistic behavior influences decisions related to external investments, innovation, and sustainability ([Filho et al., 2019](#); [Omune et al., 2021](#)). While NPD involves cognitive and motivational dimensions that could theoretically impact green business decisions, its moderating effect was not statistically significant in this context.

Conclusion

This study finds that environmental accounting training and the use of renewable energy both have significant positive effects on green business management within the hotel sector. These results underscore the critical role of trained sustainability accountants and the strategic use of renewable energy in advancing environmentally responsible hotel operations. However, narcissistic personality disorder did not significantly moderate these relationships, indicating that individual psychological traits had a limited influence compared to organizational and environmental factors.

The findings carry several implications. From a practical perspective, they emphasize the need for behavioral development among hotel accountants, particularly in

expanding competencies related to environmental accounting, as a prerequisite for green certification. Theoretically, the study contributes to the literature by integrating stakeholder theory and psychoanalytic theory within the domains of management and environmental accounting, particularly in the hospitality context.

From a policy standpoint, the results support the strengthening of regulatory frameworks that mandate sustainability compliance for hospitality businesses. These findings reaffirm the premise of stakeholder theory: external forces such as consumer expectations and government regulations are more influential than personal traits in shaping sustainability behavior. A key limitation of this study lies in its sole reliance on quantitative methods, which may overlook subjective managerial insights regarding renewable energy use. Additionally, the measurement of NPD using DSM-IV criteria may be subject to response bias, particularly given the self-reporting nature of the instrument.

Future research is encouraged to broaden the scope by including additional types of businesses (e.g., restaurants, eco-tourism operators) and expanding the geographic focus. Mixed-method approaches incorporating qualitative interviews can provide richer insight into the motivations and barriers influencing green business behavior. Finally, more advanced tools, such as Life Cycle Assessment (LCA), may be employed to measure environmental impacts in a more comprehensive and quantifiable manner.

References

- Abdou, A. H., Hassan, T. H., & Moustafa, M. (2020). A Description of Green Hotel Practices and Their Role in Achieving Sustainable Development. *Sustainability*, 12, 1–20. <https://doi.org/doi:10.3390/su12229624>
- Ali, Q., Haider, S., Ali, F., Jamshed, S., Ryu, K., & Saif, S. (2021). Green human resource management practices and environmental performance in Malaysian green hotels: The role of green intellectual capital and pro-environmental behavior. *Journal of Cleaner Production*, 311(November 2020), 127504. <https://doi.org/10.1016/j.jclepro.2021.127504>
- Almagtome, A., & Abdlaez, M. (2022). Energy Accounting and Performance: A theoretical Perspective. *Akkad Journal of Contemporary Accounting Studies*, 1(4), 232–245. <https://doi.org/10.55202/ajcas.v1i4.88>
- Anggreni, N. K. D. A., Sara, I. M., and Saputra, K. A. K. (2023). The Effects of Environmental Accounting, Work Environment, and Leadership on Employee Performance. *Journal of Entrepreneurial and Business Diversity*, 1(1), 72–77. <https://doi.org/10.38142/jebd.v1i1.73>
- Anjani, E. D., and Priono, H. (2023). The effect of an accountant's narcissistic personality on unethical professional practices. *COSTING: Journal of Economics, Business and Accounting*, 7(1), 947–957. <https://doi.org/10.31539/costing.v7i1.6353>
- Ardiansyah, I. and Iskandar, H. (2021). Implementation of Green Hotel Management 5-Star Hotel in Jakarta, Case Study: The Dharmawangsa Hotel Jakarta. *IOP Conference Series: Earth and Environmental Science*, 704. <https://doi.org/10.1088/1755-1315/704/1/012034>
- Ascani, I., Ciccola, R., & Chiucchi, M. S. (2021). A structured literature review of the role of management accountants in Environmental Accounting and reporting. *Sustainability (Switzerland)*, 13(4), 1–25. <https://doi.org/10.3390/su13042357>

- Assaker, G. (2020). The effects of hotel green business practices on consumers' loyalty intentions: an expanded multidimensional service model in the upscale segment. *International Journal of Contemporary Hospitality Management*. <https://doi.org/10.1108/IJCHM-05-2020-0461>
- Bachrach, D. G., Patel, P., Guedes, M. J., Harms, P., Bachrach, D. G., Guedes, M. J., & Harms, P. D. (2021). CEO narcissism, top management team transactive memory systems, and firm performance: an upper echelons perspective on CEO admiration and rivalry narcissism. *European Journal of Work and Organizational Psychology*, 00(00), 1–16. doi:10.1080/1359432X.2021.1926989
- Bailey, C. D. (2019). The joint effects of narcissism and psychopathy on accounting students' attitudes toward unethical professional practices. *Journal of Accounting Education* 49, 100635. <https://doi.org/10.1016/j.jaccedu.2019.08.001>
- Bazrafshan, V., Bazrafshan, A., and Salehi, M. (2019). Investigating the Influence of Managers' Narcissism on Financial Reporting Quality. *Journal of Accounting and Auditing Review*, 25(4), 457–478. <https://doi.org/10.22059/acctgrev.2019.268759.1008035>
- Belcher, B. M., Davel, R., & Claus, R. (2020). A refined method for the theory-based evaluation of the societal impacts of research. *Methods X*, 7, 100788. <https://doi.org/10.1016/j.mex.2020.100788>
- Chang, R. D., Zuo, J., Zhao, Z. Y., Zillante, G., Gan, X. L., and Soebarto, V. (2017). Evolution of theories of sustainability and firms: History, future directions, and implications for renewable energy research. *Renewable and Sustainable Energy Reviews*, 72(November 2015), 48–56. <https://doi.org/10.1016/j.rser.2017.01.029>
- Chung, K. C. (2020). Green marketing orientation: Sustainable development in green hotel management green marketing orientation: achieving sustainable. *Journal of Hospitality Marketing and Management*, 00(00), 1–17. <https://doi.org/10.1080/19368623.2020.1693471>
- Church, B. K., N. T. Dai, X. Kuang, and X. Liu. (2020). The Role of Auditor Narcissism in Auditor-Client Negotiations: Evidence from China. *Contemporary Accounting Research*, 00(00), 1–32, doi:10.1111/1911-3846.12565
- Cieri, F., & Esposito, R. (2019). Psychoanalysis and neuroscience: The bridge between mind and brain. *Frontiers in Psychology*, 10(JULY). <https://doi.org/10.3389/fpsyg.2019.01983>
- Cooke, P. (2020). Dark Entrepreneurship, the 'Dark Triad' and Its Potential 'Light Triad' Realization in Green Entrepreneurship. *Urban Science*, 4(45), 17. <https://doi.org/doi:10.3390/urbansci4040045>
- Crespo-Cebada, E., Díaz-Caro, C., Rabazo-Martín, A. E., & Rodríguez-Rivero, E. J. (2021). Do Narcissistic Managers Prefer Incentive Systems Based on Financial Instruments? Analysis Based on Choice Experiments. *Sustainability*, 13(1255), 1–13. <https://doi.org/10.3390/su13031255>
- Demirel, P., & Kesidou, E. (2019). Sustainability-oriented capabilities for eco-innovation: Meeting the regulatory, technology, and market demands. *Business Strategy and the Environment*, 28(5), 847–857. <https://doi.org/10.1002/bse.2286>
- Duarte, S., Cabrita, M. R., & Cruz-Machado, V. (2020). Business Model, Lean and Green Management, and Industry 4.0: A Conceptual Relationship. *ICMSEM*, 1001, 359–372. https://doi.org/10.1007/978-3-030-21248-3_27

- Duric, Z., & Topler, J. P. (2021). The role of performance and environmental sustainability indicators in hotel competitiveness. *Sustainability (Switzerland)*, 13(12). <https://doi.org/10.3390/su13126574>
- Eaton, T. V., & Korach, S. (2016). A Criminological Profile. *The Journal of Applied Business Research*, 32(1), 129–142. <https://doi.org/10.19030/jabr.v32i1.9528>
- Erp, J. V. (2018). Administrative sciences. The Organization of Corporate Crime: Introduction to Special Issue of Administrative Sciences. *Administrative Sciences*, 36(8), 1–12. <https://doi.org/10.3390/admsci8030036>.
- Filho, R. N. L., De Souza, A. A. C. de, & D'Souza, M. F. (2019). Narcissistic Personality Traits in The Context of Accounting Education: An Application of The Item Response Theory. *Revista Universo Contábil*, 15(2), 7–23. <https://doi.org/10.4270/ruc.2019209>
- Gelderman, C. J., & Vijgen, S. (2021). Green marketing as an environmental practice: Impact on green satisfaction and green loyalty in a business-to-business context. *Business Strategy and the Environment*, 30(January), 2061–2076. <https://doi.org/10.1002/bse.2732>
- Gil-Marín, M., Vega-Muñoz, A., Contreras-Barraza, N., Salazar-Sepúlveda, G., Vera-Ruiz, S., and Losada, A. V. (2022). Environmental Accounting Studies: A Metasynthesis. *Sustainability (Switzerland)*, 14(15), 1–15. <https://doi.org/10.3390/su14159533>
- Gohar, S.R. and Indulska, M. (2020). Environmental Sustainability through Green Business Process Management. *Australasian Journal of Information Systems*, 24, 1–30. <https://doi.org/10.3127/ajis.v24i0.2057>
- Gordon, I. M., Hrazdil, K., Jermias, J., & Li, X. (2021). The Effect of CEO Personality and Corporate Governance Structure Misalignment on Firm Performance. *Journal of Risk and Financial Management*, 14(3), 375–385. <https://doi.org/10.3390/jrfm14080375>
- Gray, R., & Milne, M. J. (2015). Critical Perspectives on Accounting: It's not what you do; it's the way that you do it. Of method and. *Critical Perspectives on Accounting*. <https://doi.org/10.1016/j.cpa.2015.04.005>
- Harris, L. L., Jackson, S. B., Owens, J., Seybert, N., and Jackson, S. B. (2021). Recruiting Dark Personalities for Earnings Management. *Journal of Business Ethics*, 0123456789. <https://doi.org/10.1007/s10551-021-04761-z>
- Holmes, R. M., Hitt, M. A., Perrewé, P. L., Palmer, J. C., and Molina-sieiro, G. (2021). Building cross-disciplinary bridges in leadership: Integrating top executive personality and leadership theory and research. *The Leadership Quarterly Journal*, 32. <https://doi.org/10.1016/j.leaqua.2020.101490>
- Hörisch, J., Schaltegger, S., & Freeman, R. E. (2020). Integrating stakeholder theory and Environmental Accounting: A conceptual synthesis. *Journal of Cleaner Production* 275, doi:10.1016/j.jclepro.2020.124097
- Hou, J., Luo, S., & Cao, M. (2019). A review of China's current situation and prospects for poverty alleviation through photovoltaic power generation. *Journal of Renewable and Sustainable Energy*, 11(1), doi:10.1063/1.5048102
- Jamali, A. P., & Méndez, T. (2019). "Know Whence You Came": Psychoanalytic Theory, Queer Theory, and the Mixed-Race Experience. *Psychoanalytic Social Work*, 26(1), 69–83. <https://doi.org/10.1080/15228878.2019.1590214>

- Johnstone, L. (2018). Theorizing and Modeling Social Control in Environmental Management Accounting Research. *Social and Environmental Accountability Journal*, 38(1), 30–48. <https://doi.org/10.1080/0969160X.2017.1422778>
- Jordão, R. V. D., and Novas, J. C. (2017). Knowledge management and intellectual capital in networks of small- and medium-sized enterprises. *Journal of Intellectual Capital*, 18(3), 667–692. <https://doi.org/10.1108/JIC-11-2016-0120>
- Kalbuana, N., Taqi, M., Uzliawati, L., and Ramdhani, D. (2023). Powerful Business & Management CEO narcissism, corporate governance, financial distress, and company size on corporate tax avoidance CEO narcissism, corporate governance, financial distress, and company size on corporate tax. *Powerful Business and Management*, 10(1). <https://doi.org/10.1080/23311975.2023.2167550>
- Khobai, H. (2021). Renewable energy consumption, poverty alleviation, and economic growth nexus in South Africa: ARDL bounds test approach. In: *International Journal of Energy Economics and Policy* 11 (5), S. 450 - 459. doi:10.32479/ijee.7215
- Klymenko, O., Halse, L. L., & Jæger, B. (2021). The enabling role of digital technologies in Environmental Accounting: Findings from Norwegian manufacturing companies. *Systems*, 9(2). <https://doi.org/10.3390/systems9020033>
- Knoblauch, S. H. (2020). Fanon's Vision of Embodied Racism for Psychoanalytic Theory and Practice. *Psychoanalytic Dialogs*, 30(3), 299–316. doi:10.1080/10481885.2020.1744966
- Laksmi, P. A. S., Arjawa, I. G. W., and Pulawan, I. M. (2023). Community Participation to Improve Tourism Industry Performance: A Case Study in the Mandalika Lombok Tourist Area. *International Journal of Social Health*, 2(6), 377–384. <https://doi.org/10.58860/ijsh.v2i6.63>
- Laviers, L. (2019). *The Effect of Pay Transparency on Narcissists: Can Personality Type Predict Reciprocity?* (Issue October). <http://dx.doi.org/10.2139/ssrn.3487157>
- Marie, T., Aysolmaz, B., Figge, L., & Joshi, A. (2023). Green business process management for business sustainability: A case study of manufacturing small- and medium-sized enterprises (SMEs) from Germany. *Journal of Cleaner Production*, 401(March), 136667. <https://doi.org/10.1016/j.jclepro.2023.136667>
- Marquez, G., Allan, I., & Zhou, L. (2018). Hear Me Write: Does CEO Narcissism Affect Disclosure? *Journal of Business Ethics*, 0123456789. <https://doi.org/10.1007/s10551-018-3796-3>
- Merli, R., Preziosi, M., Acampora, A., & Ali, F. (2019). International Journal of Hospitality Management. Why should hotels go green? Insights from guest' experiences in green hotels. *International Journal of Hospitality Management*, 81(April), 169–179. <https://doi.org/10.1016/j.ijhm.2019.04.022>
- Metallo, C., Agrifoglio, R., Briganti, P., Mercurio, L., & Ferrara, M. (2021). Entrepreneurial Behavior and New Venture Creation: The Psychoanalytic Perspective. *Journal of Innovation and Knowledge*, 6(1), 35–42. <https://doi.org/10.1016/j.jik.2020.02.001>
- Michel, J. S., and Bowling, N. A. (2013). Does Depositional Aggression Feed Narcissistic Response? The Role of Narcissism and Aggression in Predicting Job Attitudes and Counterproductive Work Behaviors. *Journal of Business Psychology*, 28, 93–105. <https://doi.org/10.1007/s10869-012-9265-6>

- Niaz, A., Stanikzai, S. M., & Sahibzada, J. (2019). Review of Freud's Psychoanalysis Approach to Literary Studies. *American International Journal of Social Science Research*, 4(2), 35–44. <https://doi.org/10.46281/aijssr.v4i2.339>
- Okoye, E. I., and D. O. (2013). An Evaluation of Forensic Accountants' Approach to Planning Management Fraud Risk Detection Procedures. *Global Journal of Management and Business Research*, 13(1), 1–17. <https://ssrn.com/abstract=2238480>
- Omune, B., Kambona, O., Wadongo, B., and Wekesa, A. (2021). Environmental management practices implemented by the hotel sector in Kenya. *World Leisure Journal*, 63(1), 98–108. <https://doi.org/10.1080/16078055.2021.1888001>
- Parmar, B. L., R. E. Freeman, J. S. Harrison, A. C. Wicks, L. Purnell, and S. de Colle, S. (2010). Stakeholder theory: The state of the art. *Academy of Management Annals*, 4(1), 403–445. <https://doi.org/10.1080/19416520.2010.495581>
- Saputra, K. A. K., Subroto, B., Rahman, A. F., & Saraswati, E. (2022). Eco-Efficiency and Energy Audit to Improve Environmental Performance: An Empirical Study of Hotels in Bali, Indonesia. *International Journal of Energy Economics and Policy*, 12(6), 175–182. <https://doi.org/10.32479/ijeep.13565>
- Saputra, K. A. K., Subroto, B., Rahman, A. F., and Saraswati, E. (2023). The Mediation Role of Environmental Management Accounting in the Effect of Green Competitive Advantage on Sustainable Performance. *Journal of Sustainability Science and Management*, 18(2), 103–115. <https://doi.org/10.46754/jssm.2023.02.008>
- Schaltegger, S., Hörisch, J., & Freeman, R. E. (2019). Business cases on sustainability: A stakeholder theory perspective. *Organization and Environment*, 32(3), 191–212. <https://doi.org/10.1177/1086026617722882>
- Scotter, J. R. Van, & Déa, K. De. (2018). CEO Bright and Dark Personality: Effects on Ethical Misconduct. *Journal of Business Ethics*, 0(0), 0. <https://doi.org/10.1007/s10551-018-4061-5>
- Shen, H., Ng, A. W., Zhang, J., & Wang, L. (2020). Environmental Accounting, management, and policy in China: recent developments and future avenues. *Environmental Accounting, Management and Policy Journal*, 11(5), 825–839. <https://doi.org/10.1108/SAMPJ-03-2020-0077>
- Silva, S. (2021). Corporate contributions to the Sustainable Development Goals: An empirical analysis informed by legitimacy theory. *Journal of Cleaner Production*, 292, 125962. <https://doi.org/10.1016/j.jclepro.2021.125962>
- Sisaye, S. (2021). The influence of non-governmental organizations (NGOs) on the development of voluntary Environmental Accounting reporting rules. *Journal of Business and Socio-Economic Development*, 1(1), 5–23. <https://doi.org/10.1108/jbsed-02-2021-0017>
- Sulewski, P., Was, A., Kobus, P., Pogodzinska, K., Szymanska, M., & Sosulski, T. (2020). Farmers' attitudes toward risk—an empirical study from poland. *Agronomy*, 10(10 October), 1–21. <https://doi.org/10.3390/agronomy10101555>
- Toscano, A., Balzarotti, M., & Re, I. (2022). Sustainability Practices and Greenwashing Risk in the Italian Poultry Sector: A Grounded Theory Study. *Sustainability (Switzerland)*, 14(21), 1–16. <https://doi.org/10.3390/su142114088>
- Úbeda-garcía, M., Claver-cort, E., Marco-Lajara, B., & Zaragoza-S´aez, P. (2021). Corporate social responsibility and firm performance in the hotel industry. The mediating role of green human resource management and environmental outcomes.

- Journal of Business Research*, 123(June 2020), 57–69.
<https://doi.org/10.1016/j.jbusres.2020.09.055>
- Veronica, S., Alexeis, G. P., Valentina, C., & Elisa, G. (2020). Do stakeholder capabilities promote sustainable business innovation in SMEs? Evidence from Italy. *Journal of Business Research*, 119(July 2019), 131–141.
<https://doi.org/10.1016/j.jbusres.2019.06.025>
- Watkins, C. E., Hook, J. N., Owen, J., DeBlaere, C., Davis, D. E., & Callahan, J. L. (2019). Creating and Elaborating the Cultural Third: A Doers-Doing Perspective on Psychoanalytic Supervision. *American Journal of Psychoanalysis*, 79(3), 352–374.
[doi:10.1057/s11231-019-09203-4](https://doi.org/10.1057/s11231-019-09203-4)
- Yousaf, Z., Radulescu, M., Sinisi, C. I., Serbanescu, L., & Paunescu, L. M. (2021). Harmonization of Green Motives and Business Strategies toward Sustainable Development of the Hospitality and Tourism Industry: Green Environmental Policies. *Sustainability*, 13. <https://doi.org/10.3390/su13126592>
- Zhang, K., Wang, Q., Liang, Q.-M., & Chen, H. (2016). A bibliometric analysis of carbon tax research from 1989 to 2014. *Renewable and Sustainable Energy Reviews*, 58, 297–310. <https://doi.org/10.1016/j.rser.2015.12.089>
- Zhao, Z. Y., Zhao, X. J., Davidson, K., & Zuo, J. (2012). A corporate social responsibility indicator system for construction enterprises. *Journal of Cleaner Production* 29–30, 277–289. <https://doi.org/10.1016/j.jclepro.2011.12.036>
- Zyznarska-Dworczak, B. (2020). Environmental Accounting—cognitive and conceptual approach. *Sustainability (Switzerland)*, 12(23), pp. 1–24, 2018.
<https://doi.org/10.3390/su12239936>