



## Employee organisational citizenship behaviour for the environment in hospitality firms: The role of environmental responsibility, leadership and empathy

 Olawale Fatoki

Department of Business Management, University of Limpopo, Mankweng, South Africa.

Email: [olawale.fatoki@ul.ac.za](mailto:olawale.fatoki@ul.ac.za)



### ABSTRACT

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behaviour for the environment.

The aim of the study is to investigate the effects of corporate environmental responsibility, green transformational leadership and environmental empathy on employee organisational citizenship behaviour for the environment (OCBE). This study examines the mediating effects of employee environmental commitment. The impact of OCBE on firm environmental performance is explored. The study adopts a quantitative research design and a cross-sectional survey method is used to collect data. The study uses the convenience sampling method and the survey participants are middle-level managers of hotels. The Partial Least Square-Structural Equation Modelling (PLS-SEM) is used for data analysis. The study's findings indicate the positive effects of environmental responsibility, leadership and empathy on OCBE. In addition, environmental commitment is a mechanism through which the three factors can affect OCBE. The relationship between OCBE and firm environmental performance is positive. The study's findings have important implications for policy and practice in the hospitality industry. According to the study's results, corporate environmental responsibility, environmental empathy, and green transformational leadership should be developed. There is a need for hotels to adopt green practices and incorporate ecological concerns in their strategy and operation. The study contributes to a deeper understanding of the links between organisational, leadership and personal factors in explaining employee OCBE in the workplace.

**Contribution/Originality:** Research that has explored the interplay of individual, leadership and organisational factors in promoting employee OCBE is sparse. The study's original contribution is the testing of a new theoretical model that links environmental empathy, green transformational leadership and corporate environmental responsibility to employee OCBE and firm performance.

### 1. INTRODUCTION

The world faces important environmental challenges such as natural resource depletion, global warming, and climate change (Santhakumari & Sagar, 2020). Anthropogenic greenhouse gas emissions have led to climate change with significant harmful impacts worldwide (Santos, Ferreira, & Pedersen, 2022). In addition, the negative effects of businesses on the environment are diverse and wide-ranging (Panwar, Ober, & Pinkse, 2023). Tourism (especially hotels) is one of the business sectors that extensively consumes natural resources, generates waste and carbon dioxide and contributes to climate change (Khatter, 2023). The hotel industry minimizes its dependence on natural resources and detaches itself from greenhouse gas emissions (Holden, Jamal, & Burini, 2022). Investor and

consumer preferences, government regulations and competition have led many hotels to pay attention to environmental sustainability (Karatepe, Hsieh, & Aboramadan, 2022).

Businesses and employees have recognised the severity of environmental challenges and are establishing a sustainable operating environment (Wang, Zhou, & Liu, 2018). Employees are an important stakeholder in a firm's environmental sustainability efforts (Azam et al., 2022). Employee organisational citizenship behaviour for the environment (OCBE) describes environmental actions that are voluntary and beyond employee work requirements (Boiral & Paillé, 2012; Liu & Yu, 2023). Identifying the factors that motivate employees' voluntary workplace green behaviours is crucial due to the vital part that green behaviour plays in a company's sustainability objectives (Chen & Wu, 2022). The predictors of employee green behaviour in the workplace include organisational, leadership style and personal factors (Khan & Khan, 2022; Wesselink, Blok, & Ringersma, 2017).

Previous studies on employee OCBE have tended to focus on the effect of one of these factors. Lavy (2019) focused on the role of support (supervisor and colleague support) on employee OCBE. In addition, the study explored the effect of OCBE on positive and negative emotions. Han, Wang, and Yan (2019) explored the impact of responsible leadership on OCBE with autonomous and external motivations as mediators. However, an individual factor does not capture most of the variations in employee green behaviour. The examination of different factors can improve a study's explanatory power and identify multiple variables that can shape employee green behaviour (Chen & Wu, 2022). Therefore, it is important to understand the joint effects of many factors in understanding employee pro-environmental behaviour (Al-Swidi, Gelaidan, & Saleh, 2021). It is no longer viable to consider individual determinants but an interplay of many factors to understand the complexity of pro-environmental behaviour (Blankenberg & Alhusen, 2019). Research on individual pro-environmental behaviour is still at the stage of vigorous development. The determinants, consequences and theoretical basis for pro-environmental behaviour continue to enjoy constant exploration with no consistent conclusion (Tian & Liu, 2022). Studies that have explored the interplay of individual, leadership and organisational factors in promoting employee OCBE are sparse. This study draws on green transformational leadership (a leadership factor), corporate environmental responsibility (an organisational factor) and environmental empathy (a personal factor) as the factors that can affect employee OCBE. Corporate environmental responsibility is derived from corporate social responsibility and describes goals and policies that are adapted by an organisation with the goal of reducing its negative environmental impact (Ruepert, Keizer, & Steg, 2017). Green transformational leadership is a leadership style that motivates subordinates to achieve a firm's environmental objectives (Farrukh, Ansari, Raza, Wu, & Wang, 2022). Environmental empathy describes the sharing and understanding of the emotional experience of the natural environment (Tam, 2013; Yin, Ma, Gong, Chen, & Zhang, 2021). To the best of the author's knowledge, no study has examined the joint effects of these three factors in enhancing employee OCBE.

In addition, the mechanisms through which organisational, leadership and personal factors can affect OCBE have been underexplored in pro-environmental research (Liu & Yu, 2023). The study by Anwar et al. (2020) examined the effects of green human resource management on OCBE. The study explored the relationship between OCBE and environmental performance with OCBE as a mediator. Al-Swidi et al. (2021) investigated the effects of environmental concern, green human resource management and green leadership behaviour on green employee behaviour with green organisational culture as the mediator. The study by Liu and Yu (2023) focused on how organisational climate can affect the relationship between green transformational leadership and OCBE. This study draws on employee environmental commitment as a mechanism through which the three identified factors can affect employee OCBE. Employee environmental commitment can be described as a frame of mind that supports a sense of attachment and responsibility of an employee to workplace environmental issues (Paillé & Valéau, 2021). Commitment forms the basis for psychological action and the internalization of an organization's goals and values. Environmental commitment is a sort of internal motivation and an identification, involvement and emotional attachment with environmental issues (Raineri & Paillé, 2016). This suggests that employee environmental

commitment can be a mechanism through which environmental leadership, corporate environmental responsibility and environmental empathy can affect OCBE. The indirect effects of employee environmental commitment in the relationship between leadership, organisational and personal factors and OCBE have not been explored.

The aim of the study is to investigate the mediating effects of employee environmental commitment in the relationships between corporate environmental responsibility, green transformational leadership, and environmental empathy and OCBE. The study addresses the following research questions to achieve this aim: (RQ1) What are the direct effects of corporate environmental responsibility, green transformational leadership and environmental empathy on employee OCBE? (RQ2) What are the mediating effects of employee environmental commitment in the relationships identified in RQ1? (RQ3) What is the impact of employee OCBE on environmental performance?

The study provides important implications for hospitality firms and researchers in understanding the determinants of employee OCBE. First, the study examines the joint effects of organisational, leadership and personal factors on OCBE thus providing a more comprehensive understanding of the antecedents of employee discretionary workplace green behaviour. Second, the study examines the mechanism through which these factors can affect OCBE. Third, the effect of employee OCBE on firm environmental performance has not enjoyed considerable empirical attention. Fourth, the study extends research on the antecedents of OCBE in hospitality firms in developing countries with sparse empirical literature (Takshe et al., 2023). The paper is structured as follows: Sections two and three focus on literature review and research methodology. The results, discussion and conclusion are presented in sections four, five and six respectively.

## 2. LITERATURE REVIEW

### 2.1. Theoretical Background

The resource-based view (Barney, 1991) claims that firm performance and competitive advantage are achieved using strategic resources that are unique, rare and difficult to imitate. In the context of firm pro-environmental behaviour, employees can be considered as a critical resource (Lathabhavan & Kaur, 2023). Furthermore, the study used the Social Exchange Theory (SET) and the Social Identity Theory (SIT) to connect the arguments and hypotheses of the study. The SET posits that the exchange process drives the social behaviour of individuals. When leaders treat followers favourably, followers feel the obligation to respond by working hard (Blau, 1964). The SET suggests that the interaction between a leader and a subordinate is symbiotic and reciprocal with positive actions triggering positive reactions (Wang, Zhou, Bao, Zhang, & Ju, 2020). A transformational leader through visionary approaches, ethical conduct and charisma can stimulate the behaviour of employees. In the context of pro-environmental behaviour, a green transformational leader can stimulate and inspire employees to follow his or her pro-environmental behaviour (Ding, Su, & Hahn, 2023). The SIT (Tajfel & Turner, 1986) advises that individuals originate a portion of their self-concept from their affiliation with social groups. The SIT pursues to elucidate the cognitive procedures and social settings underlying intergroup deeds especially those related to preconception, bias and discernment. The SIT is a useful theory in the contexts of corporate social and environmental responsibility, environmental empathy, and environmental commitment. Employees perception of corporate environmental responsibility leads to an increase in their identification with the firm and this increases their commitment, job satisfaction and organisational citizenship behaviour (Sahar, Zawawi, Jaharuddin, & Abbasi, 2023). The identification of an individual with higher social units such as community, nation and world can strengthen empathy and in turn, commitment to engage in environmental protection (Brieger, 2019).

### 2.2. Green Transformational Leadership

Chen and Chang (2013) propose one of the most popular definitions of green transformational leadership. Green transformational leadership involves motivating and inspiring subordinates to achieve green goals and

environmental performance beyond expected levels (Chen & Chang, 2013). A green transformational leader shapes employee green vision and helps to promote green change in an organisation (Du & Yan, 2022). A green transformational leader conveys the norms to subordinates about environmental protection through the stimulation of green attitude and behaviour (Liu & Yu, 2023).

### 2.3. *Corporate Environmental Responsibility*

Corporate environmental responsibility depicts actions and commitments by organisations to reduce the effects of organisational and production processes on the environment and society (Moisescu & Gică, 2020). Corporate environmental responsibility refers to organisational efforts to improve and protect environmental quality (Dang, Nguyen, Bu, & Wang, 2019; Karassin & Bar-Haim, 2016). Corporate environmental responsibility implies that environmental goals are included in the mission and vision of an organisation and that strategies are implemented to ensure the realization of environmental goals and the monitoring of environmental performance (Robertson & Barling, 2017). The degree to which an individual perceives their organisation to endorse corporate environmental responsibility tends to affect their behaviour rather than the actual level (Robertson & Barling, 2017).

### 2.4. *Environmental Empathy*

Empathy as sympathetic and distribution of emotional experiences of other people in psychological research primarily focuses on humans (Kim & Cooke, 2021). However, empathy with nature has also been developed as a theoretical construct (Geiger, Geiger, & Wilhelm, 2019; Tam, 2013). Environmental empathy describes the manner an individual understands and shares an emotional experience of the natural world (Tam, 2013; Yin et al., 2021). Environmental empathy refers to the ability of an individual to feel issues that are related to the natural environment and is a significant factor in environmental protection (Kim & Cooke, 2021; Tam, 2013).

### 2.5. *Environmental Commitment*

Environmental commitment refers to an individual's long-term alignment towards the natural environment (Sun, Tian, Wang, & Su, 2022). Cantor, Morrow, and Montabon (2012) define environmental commitment as an internal and obligation-based identification, emotional attachment and involvement in green behaviour. Raineri and Paillé (2016) describe employee environmental commitment as an individual state of mind that denotes a sense of responsibility and accountability with respect to ecological issues at work.

### 2.6. *Organisational Citizenship Behaviour for the Environment*

Organisational citizenship behaviour for the environment (OCBE) depicts environmental actions that are voluntary and reward-free and beyond employee work requirements (Boiral & Paillé, 2012; Liu & Yu, 2023). OCBE describes a type of citizenship in the workplace that promotes environmental protection and corporate environmental goals (Sahar et al., 2023). According to Boiral and Paillé (2012) OCBE is a three-dimensional construct consisting of eco-civic engagement, eco-initiatives, and eco-helping. Eco-civic engagement depicts the voluntary participation of employees in ecological events and programs that are organised by an organisation (Boiral & Paillé, 2012). Eco-initiatives describe discretionary pro-environmental behaviours in an organisation (Boiral & Paillé, 2012). Eco-helping describes voluntary actions by an employee that help colleagues at work to adopt environmental consciousness (Boiral & Paillé, 2012).

### 2.7. *Environmental Performance*

Environmental performance can be described as the results of a firm's environmental management system (Albertini, 2016). A firm's environmental performance includes reusable and recyclable packaging and products,

reduction of hazardous emissions, reduction of energy consumption, waste reduction and resource efficiency (Ahmad, Yaqub, & Lee, 2024).

## 2.8. Hypotheses

### 2.8.1. Green Transformational Leadership, Employee Environment Commitment and OCBE

The study by Chen and Wu (2022) explored how green transformational leadership can influence the green behaviour of employees in China. The argument of the study is that green transformational leadership through personalized care, intellectual stimulation and motivation can positively affect employee pro-environmental behaviour. The study finds a significant and positive relationship between green transformational leadership and the green behaviour of employees. Priyadarshini, Chatterjee, Srivastava, and Dubey (2023) investigate the impact of green transformational leadership on employee OCBE. The findings of the study revealed that green transformational leadership positively impacts the OCBE of employees. The findings of the study by Liu and Yu (2023) indicate that green transformational leadership is positively related to OCBE. These findings are consistent with the results of other studies on the effect of green transformational leadership on OCBE (Li, Xue, Li, Chen, & Wang, 2020; Peng, Yin, Hou, Zou, & Nie, 2020).

The study by Iqbal, Shahzad, and Donia (2023) finds that environmentally specific transformational leadership positively affects employee environmental commitment. Green transformational leadership enhances employee environmental commitment through the creation of an eco-conscious work environment and environmentally stimulating intellectual engagement. Green transformational leadership can stimulate environmental training with a positive impact on employee environmental commitment (Gurmani et al., 2021; Iftikhar, Zaman, Rehmani, Ghias, & Islam, 2021; Pham, Vo-Thanh, Shahbaz, Huynh, & Usman, 2020). Nurul Alam, Mashi, Azizan, Alotaibi, and Hashim (2023) find that environmental commitment positively affects employee green behaviour. According to Abbas et al. (2022), environmentally committed employees tend to positively respond to signals from their firms in the context of environmental protection and green practices. Commitment towards the environment motivates employees to take pro-environmental initiatives that result in discretionary pro-environmental behaviours.

*H<sub>1</sub>: Employee perception of green transformational leadership is positively related to their environmental commitment.*

*H<sub>2</sub>: Employee perception of green transformational leadership is positively related to their OCBE.*

### 2.8.2. Corporate Environmental Responsibility, Employee Environment Commitment and OCBE

Ruan, Chen, and Zhu (2022) note that corporate environmental responsibility (or environmental social responsibility) depicts environmentally responsible policies and practices that satisfy different stakeholders. Employees that perceive their firms as environmentally responsible tend to develop green commitment based on the social identity theory. In addition, organisations that are recognised for high levels of corporate environmental responsibility tend to attract and retain employees with high levels of environmental values and commitment. The study finds that corporate environmental responsibility is positively related to employee environmental commitment. Employees' environmental commitment positively affects their pro-environmental behaviour. Sharpe, Ruepert, van der Werff, and Steg (2022) point out that corporate environmental responsibility affects employee green behaviour by strengthening their intrinsic motivation. The findings of the study indicate a significant and positive relationship between the perception of corporate environmental responsibility and employee green behaviour. Chen and Zhang (2023) remark that corporate environmental responsibility conveys environmental values and nurtures the environmental sensitivity, involvement and curiosity of employees. These factors lead to the development of employee environmental commitment. It is hypothesised that

*H<sub>3</sub>: Employee perception of corporate environmental responsibility is significantly and positively related to their environmental commitment.*

*H<sub>4</sub>: Employee perception of corporate environmental responsibility positively influences their OCBE.*



### 2.8.3. Environmental Empathy, Environmental Commitment and OCBE

Swim and Bloodhart (2015) remark that environmental empathy can affect environmental citizenship behaviour because inducing empathy can lead to the improvement of an individual's attitude towards different subjects and objects. Therefore, inducing the environmental empathy of employees can advance their approaches toward the environment, thus promoting environmental citizenship behaviour (Dolby, 2019; Kim & Cooke, 2021; Musitu-Ferrer, Esteban-Ibañez, León-Moreno, & García, 2019). Thus, environmental empathy can positively impact the environmental citizenship behaviour of employees (Yin et al., 2021). Chen, Zou, Ran, Yan, and Li (2023) find that environmental empathy is positively related to revisit the intention of tourists. Brown et al. (2019) argue that sustainability science understands the necessity to include emotional and cultural dimensions in understanding how anticipated transformations are shaped by societies. The effect of empathy on sustainability depicts a major advance in human interactions with the environment. Lack of environmental empathy is a key barrier to environmental protection. The findings of the study by Jing, Qi, Mei, and Chen (2022) specify that empathy with nature leads to a reduction in decision conflict by consumers when buying green products and the promotion of green purchase behaviour. Wang, Sheng, She, and Xu (2023) find that empathy with nature positively affects commitment to the environment and pro-environmental behaviour. It is hypothesised that

*H<sub>5</sub>: Employee environmental empathy is positively related to their environmental commitment.*

*H<sub>6</sub>: Employee environmental empathy is positively related to their OCBE.*

### 2.8.4. Environmental Commitment and OCBE

Sun et al. (2022) find that consumer environmental commitment positively impacts their green behaviour. Individuals exhibit green behaviour because they want to satisfy their self-values. Individuals with high levels of green commitment tend to exhibit green behaviour because it satisfies their self-values (Lee, Huang, Hu, & Chang, 2023). The study by Lee et al. (2023) finds a significant and positive relationship between green commitment and green behaviour. Foster et al. (2022) point out that individuals with a high level of environmental commitment take action to protect the environment and prioritize environmental issues. The study finds that environmental commitment positively impacts employee pro-environmental behaviour. Tang, Ma, and Ren (2022) note that individuals with high levels of environmental commitment are more likely to develop higher levels of environmental responsibility and environmental actions. Therefore, environmental commitment can positively affect pro-environmental behaviour (Sahabuddin, Tan, Hossain, Alam, & Nekmahmud, 2021). It is hypothesised that

*H<sub>7</sub>: Employee environmental commitment is positively related to their OCBE.*

### 2.8.5. OCBE and Environmental Performance

Al-Swidi et al. (2021) remark that firms whose employees are engaged in discretionary green behaviour are able to protect the environment and improve their organisational performance. The study finds a significant and positive relationship between employee green behaviour and organisational performance. Elshaer, Sobaih, Aliedan, and Azazz (2021) find that employee proactive environmentally friendly behaviour positively influences the environmental performance of small tourism firms. The findings of the study by Anwar et al. (2020) show that employee OCBE positively influences the environmental performance of a Malaysian university. Sobaih, Hasanein, and Elshaer (2020) find that employee pro-environmental behaviours such as energy conservation, recycling and implementation of environmental projects positively impact organisational environmental performance. The findings are consistent with the results of Malik et al. (2021) that OCBE positively impacts organisational sustainable performance (environmental, social and financial). It is hypothesised that

*H<sub>8</sub>: Employee OCBE positively impacts firm environmental performance.*

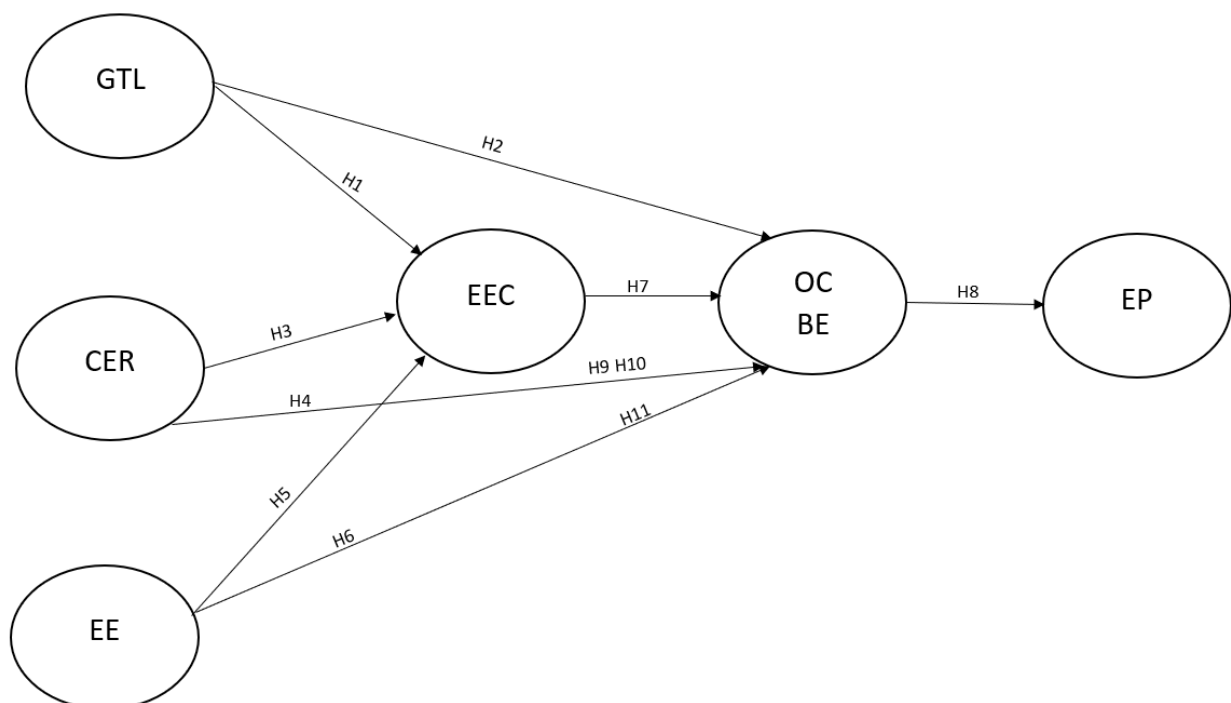
### 2.8.6. Mediating Effects of Employee Environmental Commitment

The study by Afsar et al. (2020) explored the indirect effect of employee environmental commitment in the relationship between responsible leadership and employee environmentally friendly behaviour and finds an insignificant effect. The findings of the study by Ansari, Farrukh, and Raza (2021) indicate that employee environmental commitment mediates the effect of green human resource management on pro-environmental behaviour. Sugiarto and Huruta (2023) find that the relationship between green human resource management and employee green creativity is mediated by environmental commitment. The findings of the study by Graves, Sarkis, and Gold (2019) indicate that environmental commitment of top leadership is a mechanism through which immediate managers can affect employee pro-environmental behaviour. The relationship between green human resource management and employee green service recovery performance is mediated by environmental commitment (Iftikhar et al., 2021). In addition, the relationship between adolescent spirituality and positive youth development is mediated by environmental commitment (Mathew & Parameswari, 2023). The findings of the study by Wang et al. (2023) indicate that the relationship between empathy with nature and pro-environmental behaviour is indirectly affected by commitment to the environment. Chen and Zhang (2023) find that the relationship between environmental corporate social responsibility and green innovative work behaviour is indirectly affected by environmental commitment. Employees can influence organisational sustainability through their environmental commitment. Thus, employee environmental commitment can play an indirect role in linking individual and corporate environmental initiatives to employee green work outcomes (Chen & Zhang, 2023). It is hypothesised that:

*H<sub>5</sub>: Employee environmental commitment mediates the relationship between green transformational leadership and OCBE.*

*H<sub>10</sub>: Employee environmental commitment mediates the relationship between corporate environmental responsibility and OCBE.*

*H<sub>11</sub>: Employee environmental commitment mediates the relationship between environmental empathy and OCBE.*



**Figure 1.** Conceptual model.

**Note:** GTL=Green transformational leadership; CER= Corporate environmental responsibility; EE= Environmental empathy, EEC=Employee environmental commitment; OCBE=Organisational citizenship behaviour for the environment; EP=Environmental performance.

**Conceptual Model:** Figure 1 illustrates a new, self-developed and previously untested theoretical model that links personal, leadership and organisational factors to employee OCBE and firm performance. Blankenberg and

Alhusen (2019) argue that research to understand the complexity of pro-environmental behaviour should no longer consider individual determinants but an interplay of many factors. In addition, Tian and Liu (2022) remark that research on individual pro-environmental behaviour is still at the stage of vigorous development. The determinants, consequences and theoretical basis for pro-environmental behaviour continue to enjoy constant exploration with no consistent conclusion. A thorough review of extant studies showed that no study has explored the joint impact of organisational, leadership and personal factors in stimulating employee OCBE. Studies on the mechanism through which these factors affect OCBE are sparse. The model links green transformational leadership, corporate environmental responsibility and environmental empathy to OCBE. The study also examines the indirect effect of employee environmental commitment and the effect of OCBE on firm environmental performance. The uniqueness of the model is in understanding the mechanism through which leadership, organisational and individual factors can affect OCBE. This deepens knowledge on OCBE. This model is different from other models used in OCBE studies. The study by Anwar et al. (2020) focused on green human resource management and OCBE. In addition, the study explored the relationship between OCBE and EP with OCBE as a mediator. Al-Swidi et al. (2021) investigated the effects of EE, GHRM and GLB on green employee behaviour with green organisational culture as a mediator. The study by Liu and Yu (2023) focused on how organisational climate can affect the relationship between green transformational leadership and OCBE.

### 3. METHODOLOGY

#### 3.1. Research Design and Technique

The study followed the positivist philosophy and a deductive research approach. The quantitative research method was adopted for the study with descriptive and causal research approaches. Data was collected from the respondents through the cross-sectional survey method using self-administered and email methods. A structured questionnaire was used to collect data from survey respondents.

#### 3.2. Participants

The study focused on three, four and five-star graded hotels. Afsar et al. (2020) remark that large hotels tend to develop a clear environmental strategy compared to small hotels. The study was done in Pretoria and Johannesburg. Pretoria is the administrative capital of South Africa. Johannesburg is the economic capital of South Africa. The study focused on middle-level managers. These are employees that are managers or supervisors of different departments or work units. Wang, Shen, Chen, and Carmeli (2021) point out that leadership theories explain the important role of middle-level managers in translating the efforts of organisational and apex leadership into improved outcomes at numerous levels of the organisation. Organisational strategies and decisions tend to be translated into acceptable outcomes by middle-level managers who manage their day-to-day implementation (Friesl, Stensaker, & Colman, 2021). Middle-level managers are likely to understand the environmental strategy and performance of their organisations. Moreover, middle-level managers tend to have direct close working relationships with top managers. This allows them to have an informed perception of the environmental leadership styles of top managers, usually the chief executive officers or owners. In addition, middle-level managers also have close relationships with junior staff members. The success or failure of sustainability initiatives often depends on an organization's middle-level executives and team leaders (Winston, Polman, & Seabright, 2023).

#### 3.3. Population, Sampling and Sample Size

The list of participating three-, four- and five-star hotels was obtained from the website of the Tourism Grading Council of South Africa. There is no population list or sampling frame of middle-level hotel employees in the study area and the study adopted the non-probability convenience sampling method. The 10-times rule was



used to determine the appropriate sample size based on the formative indicators that are used to quantify the constructs of the investigation (Hair, Risher, Sarstedt, & Ringle, 2019).

### 3.4. Data Collection Tool and Process

The study used a structured questionnaire. Before data collection, the human resource managers or general managers of hotels were contacted to explain the purpose of the study and their approval to collect data. This helped to identify the various functional departments. Data collection was done through a pilot study and an actual survey between June 2023 and December 2023. For the pilot study, five hotels were identified, and questionnaires were distributed to twenty-five middle-level managers. The participants in the pilot study did not take part in the main survey. In addition, two experts in the field of strategy and sustainability were requested to examine the questionnaire. Their comments were used to improve the questionnaire. A permission letter was given to each participant during actual data collection and the questionnaire administered. Each participant was given two weeks to complete the questionnaire, and their emails and phone numbers were obtained at this stage. Survey participants were regularly reminded through telephone calls and emails messages to complete the questionnaires. The collection of questionnaires was done through self-collection or email. Three trained assistants assisted in the data collection process by distributing questionnaires, sending reminders and collecting completed questionnaires.

### 3.5. Measures

Perception of green transformational leadership is measured by a five-item scale (Likert scale 1-5 strongly disagree to strongly agree) adopted from Li et al. (2020). Items include “my top management displays confidence regarding environmental issues”. The coefficient reliability for the scale is 0.806. Perception of corporate environmental responsibility is measured by an eight-item scale (Likert scale 1-5 strongly disagree to strongly agree) adapted from Sharpe et al. (2022). Items include “my firm cares about reducing its environmental impact”. The coefficient reliability for the scale is 0.833. Environmental empathy is measured by a three-item scale (1 not at all to 5 extremely) adapted from Kim and Cooke (2021). Items include “how compassionate do you feel about the earth’s environmental condition”. The coefficient reliability for the scale is 0.792. Employee environmental commitment is measured by a five-item scale (Likert scale 1-5 strongly disagree to strongly agree) adapted from Raineri and Paillé (2016). Items include “the environmental concern of my firm means a lot to me”. The coefficient reliability for the scale is 0.794. OCBE is measured by a ten-item scale (1-5 strongly disagree to strongly agree) adapted from Boiral and Paillé (2012). Items include “I voluntarily carry out environmental actions and initiatives in my daily activities at work”. The coefficient reliability for the scale is 0.822. Environmental performance is measured by a five-item scale (Likert scale 1-5 strongly disagree to strongly agree) adapted from Al-Swidi et al. (2021). Items include “environmental management in my firm has increased energy conservation”. The Cronbach’s alpha for the scale is 0.868.

### 3.6. Data Analysis

The Partial Least Square-Structural Equation Modelling (PLS-SEM) using the Smart 4 software was used for data analysis. The evaluation and testing of relationships between latent variables can be done using the PLS SEM (Hair et al., 2019).

## 4. RESULTS

### 4.1. Response Rate and Demographic Details

650 questionnaires were distributed to the participants of the survey. 372 questionnaires were returned, duly completed and found usable. 12 questionnaires were not included in data analysis because the respondents did not complete many important parts of the questionnaire. The gender composition of the respondents showed 194 males

and 178 females. 26 respondents are in the 21-30 age group, 184 respondents are in the 31-40 age group, 148 respondents are in the 41-50 age group and 14 respondents are in the 51-60 age group. 336 respondents have post-matric qualifications while 36 respondents have matric qualifications.

#### 4.2. Common Method Variance

The results of the post hoc Harman's one factor test suggest the negligible effect of common method variance. Based on the unrotated factor matrix structure, the outcomes indicate that 39% of the variance in the data is explained by one factor. This is lower than the suggested 50% threshold (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

#### 4.3. PLS SEM

##### 4.3.1. Measurement Model

Hair et al. (2019) point out that it is important to analyse the measurement and structural models when using PLS-SEM. The measurement model considers the factor loading, the Cronbach's alpha, the composite reliability and the variance extracted. In addition, the heterotrait-monotrait ratio of correlations (HTMT) should be examined to ensure discriminant validity with a threshold of 0.9 recommended. Table 1 depicts the measurement model while Table 2 shows the HTMT.

**Table 1.** Measurement model.

Constructs	Construct	Loading	Cronbach's alpha	Composite reliability	AVE
Green transformational leadership (GTL) (Mean 4.35; SD 1.01)	GTL1	0.835	0.806	0.901	0.649
	GTL2	0.793			
	GTL3	0.785			
	GTL4	0.824			
	GTL5	0.777			
Corporate environmental responsibility (CER) (Mean 4.20, 0.99).	CER1	0.739	0.833	0.902	0.568
	CER2	0.801			
	CER3	0.729			
	CER4	0.734			
	CER5	0.406d			
	CER6	0.725			
	CER7	0.804			
	CER8	0.740			
Environmental empathy (EE) (Mean 3.95, 1.02)	EE1	0.759	0.792	0.823	0.608
	EE2	0.778			
	EE3	0.803			
Organisational citizenship behaviour for the environment (OCBE) (Mean 4.05, SD 0.97)	OCBE1	0.747	0.822	0.913	0.566
	OCBE2	0.801			
	OCBE3	0.729			
	OCBE4	0.743			
	OCBE5	0.735			
	OCBE6	0.505d			
	OCBE7	0.738			
	OCBE8	0.801			
	OCBE9	0.530d			
	OCBE10	0.728			
Employee environment commitment (EEC) (Mean 4.02, SD 1.04)	EEC1	0.805	0.794	0.840	0.579
	EEC2	0.777			
	EEC3	0.741			
	EEC4	0.739			
	EEC5	0.809			
Environmental performance (EP) (Mean 3.96, SD 1.07)	EP1	0.807	0.868	0.887	0.613
	EP2	0.762			
	EP3	0.749			
	EP4	0.826			
	EP5	0.761			

Table 2. HTMT.

Constructs	GTL	CER	EE	EEC	OCBE	EP
GTL						
CER	0.792					
EE	0.625	0.577				
EEC	0.602	0.647	0.764			
OCBE	0.709	0.527	0.648	0.692		
EP	0.584	0.683	0.792	0.608	0.644	

Table 2 presents the results of HTMT as a measure of discriminant validity. Henseler, Ringle, and Sarstedt (2015) remark that the HTMT is superior to the Fornell Larcker criterion when assessing discriminant validity. The results of the HTMT show that all values are below the recommended threshold (Henseler et al., 2015).

#### 4.3.2. Structural Model

The Variance Inflation Factor (VIF) was used to detect the existence of multicollinearity issues before the examination of the structural model (Kock & Lynn, 2012). The VIFs for all the constructs are below 3.3. This suggests that there is an absence of multicollinearity issues. The  $R^2$  values are 0.481 for employee environmental commitment, 0.574 for OCBE and 0.519 for environmental performance suggesting moderate explanatory power of the proposed model. The  $Q^2$  values are greater than zero and this indicates the predictive relevance of the endogenous constructs. The effect sizes range from 0.237 to 0.291 with environmental commitment being the best predictor. The goodness of fit (GOF) value of 0.559 suggests a significant predictive power of the model. The standardised root mean square residual (SRMR) value is .04 indicating a well-fitting model. The results of the structural model are depicted in Table 3.

Table 3. Hypothesis testing.

Path	Coefficient	T-statistics	Decision
H1 GTL- EEC	0.319	6.793*	Supported
H2 GTL-OCBE	0.285	5.992*	Supported
H3 CER—EEC	0.167	3.609**	Supported
H4 CER —OCBE	0.189	9.558*	Supported
H5 EC — EEC	0.217	6.902*	Supported
H6 EC —OCBE	0.164	7.288*	Supported
H7 EEC-OCBE	0.169	11.295*	Supported
H8 OCBE-EP	0.274	5.962*	Supported

Note: \* $p < 0.01$ ; \*\*  $< 0.05$ .

The results depicted by Table 3 show that green transformational leadership is significantly and positively related to both employee environmental commitment and OCBE supporting hypotheses one and two. The results also indicate that corporate environmental responsibility is significantly and positively related to both employee environmental and OCBE supporting hypotheses three and four. The outcomes show that environmental empathy is significantly positively related to both employee environmental commitment and OCBE supporting hypotheses five and six. In addition, the results depict a significant and positive relationship between employee environmental commitment and OCBE supporting hypothesis seven. Similarly, OCBE positively impacts environmental performance supporting hypothesis eight.

Table 4. Mediation effects.

Path	Indirect effects	Total effects with T-statistics	Confidence interval	VAF	Result
			LLUL		
H9: GTL→EEC→OCBE	0.172*	0.213* (3.837)	0.047 0.069	80.75%	Accepted (Full mediation)
H10 CER→EEC→OCBE	0.148*	0.233* (2.199)	0.055 0.073	63.52%	Accepted (Partial mediation)
H11 EE→EEC→OCBE	0.137**	0.168** (4.008)	0.071 0.275	81.55%	Accepted (Full mediation)

Note: \*P<0.01; \*\* <0.05.

The results of mediation analysis are presented in Table 4. The results show that employee environmental commitment mediates the relationship between green transformational leadership and OCBE supporting hypotheses nine. In addition, employee environmental commitment mediates the relationship between corporate environmental responsibility and OCBE supporting hypothesis ten. The mediating effect of employee environmental commitment in the relationship between environmental empathy and OCBE is significant supporting hypothesis eleven.

## 5. DISCUSSION

Businesses and their employees can reduce the environmental problems faced by the world through strategies that support the environment and through behavioural changes. The study explored the influences of green transformational leadership, corporate environmental responsibility and environmental empathy in promoting the organisational citizenship behaviour for the environment (OCBE) of hotel employees. In addition, the study examined the indirect effects of employee environmental commitment and how OCBE affects firm environmental performance.

The findings indicate that corporate environmental responsibility, green transformational leadership, and environmental empathy positively impact employee environmental commitment and OCBE. The results suggest that a green transformational leader can stimulate the environmental commitment and OCBE of employees through influence and motivation. The findings are consistent with prior empirical results such as Chen and Wu (2022), Priyadarshini et al. (2023) and Liu and Yu (2023) that green transformational leadership can positively affect employee OCBE. The findings indicate that green transformational leadership can stimulate employee environmental commitment through environmental engagement and environmental training in line with the results of Pham et al. (2020), Iftikhar et al. (2021) and Iqbal et al. (2023). Moreover, environmental commitment can positively influence OCBE as environmentally committed employees tend to take pro-environmental initiatives and engage in discretionary pro-environmental behaviour. The findings are similar to the results of Abbas et al. (2022) and Nurul Alam et al. (2023).

The findings showed that employee perception of corporate environmental responsibility can positively affect employee environmental commitment and OCBE. The results suggest that when employees perceive corporate environmental responsibility in their firms, this can stimulate their environmental commitment and discretionary pro-environmental behaviour. The findings are consistent with prior empirical results by Sharpe et al. (2022); Duarte and Mouro (2022) and Chen and Zhang (2023). The findings indicate that environmental empathy positively affects employee environmental commitment and OCBE. The findings suggest that empathy towards the environment can positively influence employee environmental commitment and discretionary pro-environmental behaviour. These findings are supported by past empirical research of employee environmental commitment and pro-environmental behaviour (Chen et al., 2023; Kim & Cooke, 2021). The findings indicate that employee environmental commitment is significant and positively related to OCBE. This suggests that employees with high

levels of environmental commitment are likely to engage in discretionary pro-environmental behaviour and initiatives. Empirical studies by Foster et al. (2022) and Lee et al. (2023) obtained similar findings.

The findings indicate a significant and positive relationship between OCBE and firm environmental performance. The findings indicate that employees' discretionary pro-environmental behaviour can positively impact firm EP. These findings are consistent with those of Anwar et al. (2020) and Al-Swidi et al. (2021).

The findings indicate that employee environmental commitment mediates the relationship between green transformational leadership, corporate environmental responsibility, environmental empathy and OCBE. The findings suggest that employee environmental commitment is a mechanism through which organisational, leadership and individual factors can affect OCBE. Afsar et al. (2020) find that employee environmental commitment can indirectly affect the relationship between responsible leadership and employee environmentally friendly behaviour. The findings of the study by Ansari et al. (2021) show that employee environmental commitment is a mechanism through which green human resource management can affect employee pro-environmental behaviour. Wang et al. (2023) find that commitment to the environment can influence the relationship between empathy with nature and pro-environmental behaviour. In the context of corporate environmental responsibility, Chen and Zhang (2023) find that environmental commitment can indirectly affect the relationship between environmental CSR and green innovative work behaviour.

## 6. CONCLUSION

### 6.1. Theoretical Implications

The study investigated the factors that can affect the OCBE of hotel employees in South Africa. Specifically, the study inspected the joint effects of organisational, leadership and individual factors in promoting employee OCBE. Furthermore, the study examined the mechanism through which these three factors can affect employee OCBE. The findings indicated that employee environmental commitment is a mechanism through which corporate environmental responsibility, green transformational leadership and environmental empathy can affect OCBE. The relationship between OCBE and firm environmental performance is positive. The study offers two significant contributions to extant literature on OCBE. First, it links organisational, leadership and personal factors together to understand the factors that can affect employee OCBE in the workplace through the testing of a new model. Second, the study explored the mechanism through which leadership, organisational and individual factors can affect OCBE by examining the indirect effects of employee environmental commitment.

### 6.2. Managerial Implications

The findings of the study have important implications for policy and practice in the hospitality industry. There is a need for hotels to adopt green practices and incorporate ecological concerns in their strategy and operation to improve green transformational leadership, corporate environmental responsibility and environmental empathy. Training leaders and employees on the ecological challenges the world faces and how environmental leadership can help to mitigate these problems is crucial. Institutions of higher education should include ecological issues in their curricula as this will help to develop employees and leaders that are environmentally conscious and how firms can develop environmentally friendly operations and strategy. Hotels should develop green organisational policies, strategies, orientation and culture to stimulate the environmental consciousness of leaders and employees.

### 6.3. Limitations and Areas for Further Research

The limitations of the study include the following: Data collection focused on middle-level employees in two cities and this may affect the generalisability of the findings. Other studies can include employees from other sectors such as manufacturing and education. The study adopted a cross-sectional research method and the use of the longitudinal method would help to better confirm cause and effect as this allows for the assessment of changes in



participants' responses because of changes in time. The study focused only on green transformational leadership. The effect of other leadership styles such as green empowering leadership, green servant leadership and GEL can be investigated. In addition, the effects of other organisational factors such as green human resource management, green organisational culture and environmental orientation can be examined. Similarly, the effects of other personal factors such as environmental concern and environmental awareness can be explored. The study did not include moderating variables. The moderating effects of environmental passion and attitude in the relationship between green transformational leadership and OCBE can be examined. Data was collected only from middle-level managers. Data can be collected from both middle- and top-level managers in phases to reduce the effects of common method bias. The study adopted the quantitative research approach with data collected through close-ended questions that limit the information from the participants. Future research can adopt the mixed-method approach to provide more information for in-depth analysis.

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**Transparency:** The author states that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

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## REFERENCES

- Abbas, A., Chengang, Y., Zhuo, S., Bilal, Manzoor, S., Ullah, I., & Mughal, Y. H. (2022). Role of responsible leadership for organizational citizenship behavior for the environment in light of psychological ownership and employee environmental commitment: A moderated mediation model. *Frontiers in Psychology*, 12(1), 756570. <https://doi.org/10.3389/fpsyg.2021.756570>
- Afsar, B., Maqsoom, A., Shahjehan, A., Afridi, S. A., Nawaz, A., & Fazliani, H. (2020). Responsible leadership and employee's proenvironmental behavior: The role of organizational commitment, green shared vision, and internal environmental locus of control. *Corporate Social Responsibility and Environmental Management*, 27(1), 297-312. <https://doi.org/10.1002/csr.1806>
- Ahmad, H., Yaqub, M., & Lee, S. H. (2024). Environmental-, social-, and governance-related factors for business investment and sustainability: A scientometric review of global trends. *Environment, Development and Sustainability*, 26(2), 2965-2987.
- Al-Swidi, A. K., Gelaidan, H. M., & Saleh, R. M. (2021). The joint impact of green human resource management, leadership and organizational culture on employees' green behaviour and organisational environmental performance. *Journal of Cleaner Production*, 316, 128112. <https://doi.org/10.1016/j.jclepro.2021.128112>
- Albertini, E. (2016). Environmental performance. In book: The SAGE encyclopedia of corporate reputation. In (1st ed., pp. 275-281), Thousand Oaks, CA: SAGE Publications.
- Ansari, N. Y., Farrukh, M., & Raza, A. (2021). Green human resource management and employees pro-environmental behaviours: Examining the underlying mechanism. *Corporate Social Responsibility and Environmental Management*, 28(1), 229-238. <https://doi.org/10.1002/csr.2044>
- Anwar, N., Mahmood, N. H. N., Yusliza, M. Y., Ramayah, T., Faezah, J. N., & Khalid, W. (2020). Green human resource management for organisational citizenship behaviour towards the environment and environmental performance on a university campus. *Journal of Cleaner Production*, 256, 120401. <https://doi.org/10.1016/j.jclepro.2020.120401>
- Azam, T., Malik, S. Y., Ren, D., Yuan, W., Mughal, Y. H., Ullah, I., . . . Riaz, S. (2022). The moderating role of organizational citizenship behavior toward environment on relationship between green supply chain management practices and sustainable performance. *Frontiers in Psychology*, 13, 876516. <https://doi.org/10.3389/fpsyg.2022.876516>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.

- Blankenberg, A. K., & Alhusen, H. (2019). *On the determinants of pro-environmental behavior: A literature review and guide for the empirical economist*. Cege Discussion Papers, No. 350, University of Göttingen, Center for European, Governance and Economic Development Research (Cege), Göttingen.
- Blau, P. M. (1964). Justice in social exchange. *Sociological Inquiry*, 34(2), 193-206.
- Boiral, O., & Paillé, P. (2012). Organizational citizenship behaviour for the environment: Measurement and validation. *Journal of Business Ethics*, 109, 431-445. <https://doi.org/10.1007/s10551-011-1138-9>
- Brieger, S. A. (2019). Social identity and environmental concern: The importance of contextual effects. *Environment and Behavior*, 51(7), 828-855. <https://doi.org/10.1177/0013916518756988>
- Brown, K., Adger, W. N., Devine-Wright, P., Anderies, J. M., Barr, S., Bousquet, F., . . . Quinn, T. (2019). Empathy, place and identity interactions for sustainability. *Global Environmental Change*, 56, 11-17. <https://doi.org/10.1016/j.gloenvcha.2019.03.003>
- Cantor, D. E., Morrow, P. C., & Montabon, F. (2012). Engagement in environmental behaviors among supply chain management employees: An organizational support theoretical perspective. *Journal of Supply Chain Management*, 48(3), 33-51.
- Chen, G., Zou, M., Ran, N., Yan, B., & Li, S. (2023). The effects of environmental empathy and sustainable intelligence on wetland tourists' revisit intention using an extended model of goal-directed behavior. *Journal of Cleaner Production*, 419, 138288. <https://doi.org/10.1016/j.jclepro.2023.138288>
- Chen, J., & Zhang, A. (2023). Exploring how and when environmental corporate social responsibility impacts employees' green innovative work behavior: The mediating role of creative self-efficacy and environmental commitment. *Sustainability*, 16(1), 234. <https://doi.org/10.3390/su16010234>
- Chen, T., & Wu, Z. (2022). How to facilitate employees' green behavior? The joint role of green human resource management practice and green transformational leadership. *Frontiers in Psychology*, 13, 906869. <https://doi.org/10.3389/fpsyg.2022.906869>
- Chen, Y., & Chang, C. (2013). The determinants of green product development performance: Green dynamic capabilities, green transformational leadership, and green creativity. *Journal of Business Ethics*, 116, 107-119. <https://doi.org/10.1007/s10551-012-1452-x>
- Dang, V. T., Nguyen, N., Bu, X., & Wang, J. (2019). The relationship between corporate environmental responsibility and firm performance: A moderated mediation model of strategic similarity and organization slack. *Sustainability*, 11(12), 3395. <https://doi.org/10.3390/su11123395>
- Ding, H., Su, W., & Hahn, J. (2023). How green transformational leadership affects employee individual green performance—a multilevel moderated mediation model. *Behavioral Sciences*, 13(11), 1-22.
- Dolby, N. (2019). Nonhuman animals and the future of environmental education: Empathy and new possibilities. *The Journal of Environmental Education*, 50(4-6), 403-415.
- Du, Y., & Yan, M. (2022). Green transformational leadership and employees' taking charge behavior: The mediating role of personal initiative and the moderating role of green organizational identity. *International Journal of Environmental Research and Public Health*, 19(7), 4172. <https://doi.org/10.3390/ijerph19074172>
- Duarte, A. P., & Mouro, C. (2022). Environmental corporate social responsibility and workplace pro-environmental behaviors: Person-organization fit and organizational Identification's sequential mediation. *International Journal of Environmental Research and Public Health*, 19(16), 10355. <https://doi.org/10.3390/ijerph191610355>
- Elshaer, I. A., Sobaih, A. E. E., Aliedan, M., & Azazz, A. M. (2021). The effect of green human resource management on environmental performance in small tourism enterprises: Mediating role of pro-environmental behaviors. *Sustainability*, 13(4), 1956. <https://doi.org/10.3390/su13041956>
- Farrukh, M., Ansari, N., Raza, A., Wu, Y., & Wang, H. (2022). Fostering employee's pro-environmental behavior through green transformational leadership, green human resource management and environmental knowledge. *Technological Forecasting and Social Change*, 179, 121643. <https://doi.org/10.1016/j.techfore.2022.121643>

- Foster, B., Muhammad, Z., Yusliza, M. Y., Faezah, J. N., Johansyah, M. D., Yong, J. Y., . . . Fawehinmi, O. (2022). Determinants of pro-environmental behaviour in the workplace. *Sustainability*, 14(8), 4420. <https://doi.org/10.3390/su14084420>
- Friesl, M., Stensaker, I., & Colman, H. L. (2021). Strategy implementation: Taking stock and moving forward. *Long Range Planning*, 54(4), 102064. <https://doi.org/10.1016/j.lrp.2020.102064>
- Geiger, S. M., Geiger, M., & Wilhelm, O. (2019). Environment-specific vs. general knowledge and their role in pro-environmental behavior. *Frontiers in Psychology*, 10, 718. <https://doi.org/10.3389/fpsyg.2019.00718>
- Graves, L. M., Sarkis, J., & Gold, N. (2019). Employee proenvironmental behavior in Russia: The roles of top management commitment, managerial leadership, and employee motives. *Resources, Conservation and Recycling*, 140, 54-64.
- Gurmani, J. K., Khan, N. U., Khaliq, M., Yasir, M., Obaid, A., & Sabri, N. A. A. (2021). Do environmental transformational leadership predicts organizational citizenship behavior towards environment in hospitality industry: Using structural equation modelling approach. *Sustainability*, 13(10), 5594. <https://doi.org/10.3390/su13105594>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24.
- Han, Z., Wang, Q., & Yan, X. (2019). How responsible leadership motivates employees to engage in organizational citizenship behavior for the environment: A double-mediation model. *Sustainability*, 11(3), 605. <https://doi.org/10.3390/su11030605>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43, 115-135.
- Holden, A., Jamal, T., & Burini, F. (2022). The future of tourism in the anthropocene. *Annual Review of Environment and Resources*, 47(1), 423-447.
- Iftikhar, U., Zaman, K., Rehmani, M., Ghias, W., & Islam, T. (2021). Impact of green human resource management on service recovery: Mediating role of environmental commitment and moderation of transformational leadership. *Frontiers in Psychology*, 12, 710050. <https://doi.org/10.3389/fpsyg.2021.710050>
- Iqbal, R., Shahzad, K., & Donia, M. B. (2023). Environmentally specific transformational leadership and employee green attitude and behavior: An affective events theory perspective. *Journal of Environmental Psychology*, 92, 102181. <https://doi.org/10.1016/j.jenvp.2023.102181>
- Jing, K., Qi, M., Mei, Y., & Chen, L. (2022). The impact of empathy with nature on green purchase behavior: An ERP study. *Neuroscience Letters*, 784, 136745. <https://doi.org/10.1016/j.neulet.2022.136745>
- Karassin, O., & Bar-Haim, A. (2016). Multilevel corporate environmental responsibility. *Journal of Environmental Management*, 183, 110-120.
- Karatepe, O. M., Hsieh, H., & Aboramadan, M. (2022). The effects of green human resource management and perceived organizational support for the environment on green and non-green hotel employee outcomes. *International Journal of Hospitality Management*, 103, 103202. <https://doi.org/10.1016/j.ijhm.2022.103202>
- Khan, A. N., & Khan, N. A. (2022). The nexuses between transformational leadership and employee green organisational citizenship behaviour: Role of environmental attitude and green dedication. *Business Strategy and the Environment*, 31(3), 921-933.
- Khatte, A. (2023). Challenges and solutions for environmental sustainability in the hospitality sector. *Sustainability*, 15(15), 11491. <https://doi.org/10.3390/su151511491>
- Kim, S. C., & Cooke, S. L. (2021). Using the health belief model to explore the impact of environmental empathy on behavioral intentions to protect ocean health. *Environment and Behavior*, 53(8), 811-836. <https://doi.org/10.1177/0013916520932637>
- Kock, N., & Lynn, G. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for Information Systems*, 13, 546-580.
- Lathabhavan, R., & Kaur, S. (2023). Promoting green employee behaviour from the lens of green transformational leadership. *Leadership & Organization Development Journal*, 44(8), 994-1015.

- Lavy, S. (2019). Daily dynamics of teachers' organizational citizenship behavior: Social and emotional antecedents and outcomes. *Frontiers in Psychology*, 10, 2863. <https://doi.org/10.3389/fpsyg.2019.02863>
- Lee, S.-C., Huang, S. Y., Hu, L., & Chang, T.-W. (2023). Why do employees show pro-environmental behaviors? A perspective of environment social responsibility. *Behavioral Sciences*, 13(6), 463-470.
- Li, Z., Xue, J., Li, R., Chen, H., & Wang, T. (2020). Environmentally specific transformational leadership and employee's pro-environmental behavior: The mediating roles of environmental passion and autonomous motivation. *Frontiers in Psychology*, 11, 1408. <https://doi.org/10.3389/fpsyg.2020.01408>
- Liu, X., & Yu, X. (2023). Green transformational leadership and employee organizational citizenship behavior for the environment in the manufacturing industry: A social information processing perspective. *Frontiers in Psychology*, 13, 1097655. <https://doi.org/10.3389/fpsyg.2022.1097655>
- Malik, S. Y., Hayat Mughal, Y., Azam, T., Cao, Y., Wan, Z., Zhu, H., & Thurasamy, R. (2021). Corporate social responsibility, green human resources management, and sustainable performance: Is organizational citizenship behavior towards environment the missing link? *Sustainability*, 13(3), 1-21.
- Mathew, T., & Parameswari, J. (2023). Exploring the relationship between spirituality, environmental attitude, and positive youth development: The mediating role of environmental commitment and psychological well-being. *Trends in Psychology*, 1-20. <https://doi.org/10.1007/s43076-023-00350-3>
- Moisescu, O.-I., & Gică, O.-A. (2020). The impact of environmental and social responsibility on customer loyalty: A multigroup analysis among generations x and y. *International Journal of Environmental Research and Public Health*, 17(18), 6466. <https://doi.org/10.3390/ijerph17186466>
- Musitu-Ferrer, D., Esteban-Ibañez, M., León-Moreno, C., & García, O. F. (2019). Is school adjustment related to environmental empathy and connectedness to nature? *Psychosocial Intervention*, 28(2), 101-110.
- Nurul Alam, M., Mashi, M. S., Azizan, N. A., Alotaibi, M., & Hashim, F. (2023). When and how green human resource management practices turn to employees' pro-environmental behavior of hotel employees in Nigeria: The role of employee green commitment and green self-efficacy. *Journal of Quality Assurance in Hospitality & Tourism*, 1-28.
- Paillé, P., & Valéau, P. (2021). "I don't owe you, but I am committed": Does felt obligation matter on the effect of green training on employee environmental commitment? *Organization & Environment*, 34(1), 123-144. <https://doi.org/10.1177/1086026620921453>
- Panwar, R., Ober, H., & Pinkse, J. (2023). The uncomfortable relationship between business and biodiversity: Advancing research on business strategies for biodiversity protection. *Business Strategy and the Environment*, 32(5), 2554-2566. <https://doi.org/10.1002/bse.3139>
- Peng, J., Yin, K., Hou, N., Zou, Y., & Nie, Q. (2020). How to facilitate employee green behavior: The joint role of green transformational leadership and green human resource management practice. *Acta Psychologica Sinica*, 52(9), 1105.
- Pham, N. T., Vo-Thanh, T., Shahbaz, M., Huynh, T. L. D., & Usman, M. (2020). Managing environmental challenges: Training as a solution to improve employee green performance. *Journal of Environmental Management*, 269, 110781. <https://doi.org/10.1016/j.jenvman.2020.110781>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Priyadarshini, C., Chatterjee, N., Srivastava, N. K., & Dubey, R. K. (2023). Achieving organizational environmental citizenship behavior through green transformational leadership: A moderated mediation study. *Journal of Asia Business Studies*, 17(6), 1088-1109.
- Raineri, N., & Paillé, P. (2016). Linking corporate policy and supervisory support with environmental citizenship behaviors: The role of employee environmental beliefs and commitment. *Journal of Business Ethics*, 137(1), 129-148.
- Robertson, J. L., & Barling, J. (2017). Contrasting the nature and effects of environmentally specific and general transformational leadership. *Leadership & Organization Development Journal*, 38(1), 22-41. <https://doi.org/10.1108/loj-05-2015-0100>

- Ruan, R., Chen, W., & Zhu, Z. (2022). Linking environmental corporate social responsibility with green innovation performance: The mediating role of shared vision capability and the moderating role of resource slack. *Sustainability*, 14(24), 16943. <https://doi.org/10.3390/su142416943>
- Ruepert, A. M., Keizer, K., & Steg, L. (2017). The relationship between corporate environmental responsibility, employees' biospheric values and pro-environmental behaviour at work. *Journal of Environmental Psychology*, 54, 65-78. <https://doi.org/10.1016/j.jenvp.2017.10.006>
- Sahabuddin, M., Tan, Q., Hossain, I., Alam, M. S., & Nekmahmud, M. (2021). Tourist environmentally responsible behavior and satisfaction; Study on the world's longest natural sea beach, Cox's Bazar, Bangladesh. *Sustainability*, 13(16), 9383. <https://doi.org/10.3390/su13169383>
- Sahar, N. e., Zawawi, D., Jaharuddin, N. S., & Abbasi, M. A. (2023). Responsible leadership and organisational citizenship behaviour for the environment: Mediated by environmental corporate social responsibility. *International Journal of Ethics and Systems*, 39(3), 419-437.
- Santhakumari, M., & Sagar, N. (2020). *The environmental threats our world is facing today. In Handbook of environmental materials management*. Cham: Springer.
- Santos, F. D., Ferreira, P. L., & Pedersen, J. S. T. (2022). The climate change challenge: A review of the barriers and solutions to deliver a Paris solution. *Climate*, 10(5), 1-15.
- Sharpe, E., Ruepert, A., van der Werff, E., & Steg, L. (2022). Corporate environmental responsibility leads to more pro-environmental behavior at work by strengthening intrinsic pro-environmental motivation. *One Earth*, 5(7), 825-835. <https://doi.org/10.1016/j.oneear.2022.06.006>
- Sobaih, A. E. E., Hasanein, A., & Elshaer, I. (2020). Influences of green human resources management on environmental performance in small lodging enterprises: The role of green innovation. *Sustainability*, 12(24), 10371. <https://doi.org/10.3390/su122410371>
- Sugiarto, A., & Huruta, A. D. (2023). Antecedents of green creativity: The mediating role of employee green commitment and employee job satisfaction. *Cogent Business & Management*, 10(2), 2222491. <https://doi.org/10.1080/23311975.2023.2222491>
- Sun, X., Tian, Z., Wang, J., & Su, W. (2022). The impact of environmental commitment on green purchase behavior in China. *International Journal of Environmental Research and Public Health*, 19(14), 8644. <https://doi.org/10.3390/ijerph19148644>
- Swim, J. K., & Bloodhart, B. (2015). Portraying the perils to polar bears: The role of empathic and objective perspective-taking toward animals in climate change communication. *Environmental Communication*, 9(4), 446-468.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In: Worchel, S. and Austin, W.G., Eds., *Psychology of Intergroup Relation*. In (pp. 7-24). Chicago: Hall Publishers.
- Takshe, A. A., Hennawi, M., Jebri, S. e., Alawi, S., AlZaidan, S., & Okasha, A. (2023). Investigating determinants of pro-environmental behaviors amongst UAE university students through Q-methodology. *Discover Sustainability*, 4(1), 1-10.
- Tam, K.-P. (2013). Dispositional empathy with nature. *Journal of Environmental Psychology*, 35, 92-104. <https://doi.org/10.1016/j.jenvp.2013.05.004>
- Tang, H., Ma, Y., & Ren, J. (2022). Influencing factors and mechanism of tourists' pro-environmental behavior—Empirical analysis of the CAC-MOA integration model. *Frontiers in Psychology*, 13, 1060404. <https://doi.org/10.3389/fpsyg.2022.1060404>
- Tian, H., & Liu, X. (2022). Pro-environmental behavior research: Theoretical progress and future directions. *International Journal of Environmental Research and Public Health*, 19(11), 6721. <https://doi.org/10.3390/ijerph19116721>
- Wang, L., Sheng, G., She, S., & Xu, J. (2023). Impact of empathy with nature on pro-environmental behaviour. *International Journal of Consumer Studies*, 47(2), 652-668.
- Wang, Q., Zhou, X., Bao, J., Zhang, X., & Ju, W. (2020). How is ethical leadership linked to subordinate taking charge? A moderated mediation model of social exchange and power distance. *Frontiers in Psychology*, 11, 315. <https://doi.org/10.3389/fpsyg.2020.00315>



- Wang, X., Zhou, K., & Liu, W. (2018). Value congruence: A study of green transformational leadership and employee green behavior. *Frontiers in Psychology*, 9, 1946. <https://doi.org/10.3389/fpsyg.2018.01946>
- Wang, Y., Shen, T., Chen, Y., & Carmeli, A. (2021). CEO environmentally responsible leadership and firm environmental innovation: A socio-psychological perspective. *Journal of Business Research*, 126, 327-340. <https://doi.org/10.1016/j.jbusres.2021.01.004>
- Wesselink, R., Blok, V., & Ringersma, J. (2017). Pro-environmental behaviour in the workplace and the role of managers and organisation. *Journal of Cleaner Production*, 168, 1679-1687. <https://doi.org/10.1016/j.jclepro.2017.08.214>
- Winston, A., Polman, P., & Seabright, J. (2023). Middle management is the key to sustainability. *Harvard Business Review*, 101(6), 102-111.
- Yin, C., Ma, H., Gong, Y., Chen, Q., & Zhang, Y. (2021). Environmental CSR and environmental citizenship behavior: The role of employees' environmental passion and empathy. *Journal of Cleaner Production*, 320, 128751. <https://doi.org/10.1016/j.jclepro.2021.128751>

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