



Green transformational leadership and employee pro-environmental behavior: The role of green thinking and green psychological climate

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ABSTRACT

Article History

Received: 18 July 2022
Revised: 22 December 2022
Accepted: 4 January 2023
Published: 20 January 2023

Keywords

Green psychological climate
Green thinking
Green transformational leadership
Hotels
Pro-environmental behavior
South Africa.

Climate change is one of the biggest challenges that the world currently faces. The generation of waste, carbon dioxide and large-scale consumption of natural resources by hotels, among others, are some of the significant contributors to climate change. Leaders and employees have a major role to play in the effectiveness of the sustainability initiatives of hotels. Therefore, it is important to understand the mechanism through which leadership can affect the green behavior of hotel employees. The purpose of this study is to examine the mediating role of green thinking (GTH) and green psychological climate (GPC) in the relationship between green transformational leadership (GTL) and employees' pro-environmental behavior (PEB). To achieve this, the study first investigates the effect of GTL on hotel employees' PEB. Second, it examines the mediating effects of GTH and GPC in the relationship between GTL and PEB. The study adopts a quantitative research approach, and a structured questionnaire is used to collect data from hotel employees in South African cities, who were selected via the convenience sampling method. The partial least squares structural equation modelling is used to test the hypotheses of the study. The findings reveal that GTL and PEB are significantly positively related. The mediating effects of GTH and GPC are significant. It is recommended that both management and employees should keep up to date with environmental information and implement policies and procedures to continually improve PEB.

Contribution/Originality: Research on how GTL affects employee PEB in South Africa is sparse. This study provides a theoretical model depicting GTH and GPC as mechanisms through which GTL can influence PEB. The findings provide a valuable insight into understanding how leadership, employees' green thinking and organizational climate perception can improve PEB.

1. INTRODUCTION

Climate change is one of the biggest challenges that the world currently faces (Farrukh, Ansari, Raza, Wu, & Wang, 2022). Human behavior and activities, such as the burning of coal, oil and natural gas by industry, the generation of electricity, and the heating of households, have increased the emission of greenhouse gases, leading to global warming and climate change (Hanaki & Portugal-Pereira, 2018; Munawar, 2018). Climate change is likely to promote extreme weather occurrences, such as heatwaves, droughts, colder than normal winters, extreme summers, and poses a severe risk to human health (Marcantonio, Javeline, Field, & Fuentes, 2021; Redlin & Gries, 2021). Climate change is expected to lead to approximately 250,000 deaths per year between 2030 and 2050 (World

Health Organisation, 2021). In order to prevent the disastrous effects of climate change and the associated health-related impact, temperature rise must be limited to 1.5% globally (Intergovernmental Panel on Climate Change, 2021).

Tourism significantly contributes to sustainable development worldwide as it helps to create employment and reduce poverty (Toubes & Araújo-Vila, 2022). In 2019, tourism was directly and indirectly responsible for one in four of all new jobs created globally. Tourism accounted for 10.3% of all jobs and 10.3% of global GDP in 2019 (World Travel and Tourism Council, 2020). One of the challenges facing the tourism sector is the negative environmental impacts of hotels. Hotels account for approximately 21% of all of tourism's ecological footprint (Melissen, Koens, Brinkman, & Smit, 2016). The generation of waste and carbon dioxide and the large consumption of natural resources by hotels are some of the major contributors to climate change (Leyva & Parra, 2021). A growing number of hotels have joined the commitment to environmental protection and sustainable development in order to attract and retain customers, build their brand and gain competitive advantage (Pereira, Silva, & Dias, 2021; Walsh & Dodds, 2017). Many hotels have developed strategies on environmental management, such as reducing and recycling waste and reusing resources to reduce their environmental impact (Salama & Abdelsalam, 2021).

Employees are important stakeholders in organizations and their active engagement, participation and behavior are vital to the success of corporate environmental strategy (Kitsios, Kamariotou, & Talias, 2020; Zientara & Zamojska, 2018). Individual behavior is one of the most important factors in environmental protection (Li, Zhao, Ma, Shao, & Zhang, 2019). Steg and Vlek (2009) defined pro-environmental behavior (PEB) as actions that are aimed at reducing or avoiding causing harm to, and safeguarding, the environment. PEB in the workplace is often at the discretion of the employee and is categorized as extra-role, voluntary, and spontaneous behavior that is not included in an employee's job responsibilities (Li, Xue, Li, Chen, & Wang, 2020; Roberson & Barling, 2013).

Organizational leaders can influence many traditional organizational-related outcomes, such as financial and environmental performance (Roberson & Barling, 2013). Leaders can improve organizations' environmental performance and show their commitment to PEB by communicating green policies and showing environment leadership (Afsar, Cheema, & Javed, 2018; Wesselink, Blok, & Ringersma, 2017).

Transformational leadership can be described as a leadership style that allows leaders and followers to help one another to achieve a higher level of motivation and morale (Burns, 1978). Previously, researchers have focused on how transformational leadership can affect employee and organizational outcomes. However, because of the growing importance of environmental sustainability, recent studies have moved to how transformational leadership can improve organizational sustainability initiatives. This has led to green transformational leadership (GTL), which focuses on how transformational leadership can be used to improve the natural environment (Roberson & Barling, 2013). GTL can be defined as leadership behaviors that lead to the motivation of subordinates to achieve their organizations' environmental objectives (Chen & Chang, 2013). Studies, such as Li et al. (2020) and Farrukh et al. (2022), have found the relationship between GTL and PEB to be positive. In addition, the mediating variables in the relationship between GTL and PEB focused on by previous research include environmental passion, autonomous and external motivation, and the perceived pro-environmental climate of co-workers (Graves & Sarkis, 2018; Roberson & Barling, 2013; Robertson & Carleton, 2018). However, further research is needed to understand the mechanism that links GTL to employee PEB (Li et al., 2020).

The PEB of an individual can be influenced by social, cultural, individual and organizational factors (Li et al., 2019). This study uses green thinking (GTH) and green psychological climate (GPC) as the mechanisms through which GTL can affect employees' PEB in the workplace. GTH is a cognitive process that engages an individual in pro-environmental activities and behavior (Ali, Ashfaq, Begum, & Ali, 2020). An individual with a green mindset shows love and passion for the environment and takes part in activities that protect the environment (Begum, Ashfaq, Xia, & Awan, 2022). GPC describes the perception and interpretation of employees regarding an

organization's procedures, practices and policies in the context of environmental sustainability (Norton, Zacher, Parker, & Ashkanasy, 2017). Based on this background, the objectives of the study are to examine if green transformational leadership can positively influence hotel employees' pro-environmental behavior and investigate if green thinking and green psychological climate will mediate the effect of green transformational leadership on employees' pro-environmental behavior. Research on how GTL affects the PEB of employees in hospitality firms in South Africa is sparse. Also, studies on the indirect effects of GTH and GPC in the relationship between GTL and employee PEB are scarce. To fill this gap, this study tests a theoretical model that includes GTH and GPC as mediating variables in the relationship between GTL and employee PEB. The findings of the study will be of importance in understanding the mechanism through which GTL can motivate hotel employees' PEB in order to lessen the negative ecological effects of the hospitality sector and promote the sustainability of the tourism industry.

2. LITERATURE REVIEW

2.1. Green Transformational Leadership (GTL)

Transformational leadership (TL) can be described as a leadership style in which a leader guides and motivates subordinates to achieve desired change and vision (Avolio, Bass, & Jung, 1999). According to Bass (1998) and Bass and Riggio (2006), TL includes four leadership behaviors, namely idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Idealized influence describes a leader as a role model that displays high ethical standards (Bass, 1998). Inspirational motivation is about the vision of the leader and how he/she makes subordinates feel like they are a part of something worthwhile (Bass, 1998). Intellectual stimulation is about the leader emphasizing constructive challenges, imagination, and strategic thinking. Individualized attention refers to the building of relationships with followers (Bass, 1998). GTL describes leadership behaviors that motivate subordinates to attain organizational environmental goals. A green transformational leader inspires subordinates to perform in a manner that exceeds what is expected with respect to environmental performance (Chen & Chang, 2013). Each of the four behaviors highlighted by Bass (1998) can influence environmental sustainability within organizations (Roberson & Barling, 2013). Green transformational leaders have a green idealized influence by being guided by their moral commitment to an environmentally sustainable planet. In addition, green transformational leaders act as role models to subordinates through their pro-environmental behavior (Roberson & Barling, 2013). Green transformational leaders show green inspirational motivation through their optimism and passion for encouraging subordinates to engage in behaviors that protect the environment (Roberson & Barling, 2013). Green transformational leaders show green intellectual stimulation by encouraging followers to think about environmental issues, and they address environmental challenges in an innovative manner (Roberson & Barling, 2013). Green transformational leaders show green individualized consideration by establishing close relationships with subordinates in order to transmit their environmental values and encourage PEB in the workplace (Roberson & Barling, 2013).

2.2. Green Thinking (GTH)

Green thinking (GTH) is based on the understanding that nature is limited, and it focuses on individual thoughts that are intended to protect the environment (Lozano, 2008; Moreira, Alves, & Sousa, 2010). GTH is a cognitive process that engages an individual in pro-environmental activities and behavior.

2.3. Green Psychological Climate (GPC)

Zhou, Zhang, Lyu, and Zhang (2018) pointed out that, in the context of management psychology, organizational climate is an essential contextual factor that describes the attitudes and behavior of employees. An employee will work toward the vision of a firm if he/she shares similar perceptions of the firm's targets, formal policies and work environment. Based on the definition of organizational climate, Norton et al. (2017) defined GPC

as the interpretation and perception of an employee of a firm's practices, policies and procedures in the context of environmental sustainability.

2.4. Pro-Environmental Behavior (PEB)

Kullmuss and Agyeman (2002) defined PEB as behavior that deliberately seeks to minimize the negative impact of actions of an individual on the natural environment. Employees' PEB in the workplace can be described as discretionary behaviors by employees to protect the natural environment (Ones & Dilchert, 2012). PEB is also known as green behavior, sustainable behavior or environmentally friendly behavior (Sabri, Razak, Xi, & Wijekoon, 2022). PEB at work includes energy and resource conservation, waste reduction, increased recycling and encouraging environmentally friendly behavior of co-workers (Canova & Manganelli, 2020).

2.5. Green Transformational Leadership (GTL) and Pro-environmental Behavior (PEB)

Li et al. (2020) investigated the impact of GTL on the PEB of employees in China. The study argues that the focus of GTL is the long-term sustainable development of organizations through the integration of individual environmental values with organizational values. Therefore, GTL is likely to encourage and motivate voluntary PEB among employees. Empirical findings by Li et al. (2020) show that GTL and employee PEB are significantly positively related. Saleem, Mahmood, and Ahmed (2019) examined the effect of GTL on PEB in Pakistan. The findings of the study indicate a significantly positive relationship between GTL and PEB. Farrukh et al. (2022) remarked that green transformational leaders are role models that can influence the environmental behavior of subordinates. GTL stimulates subordinates' thinking capacity regarding environmental issues and motivates subordinates to develop environmental skills. This results in the exhibition of green behavior by employees. The study by Farrukh et al. (2022) found that GTL positively influences employee PEB. Consequently, it is hypothesized that:

H1: GTL and employee PEB are significantly positively related.

2.6. Green Transformational Leadership (GTL) and Green Thinking (GTH)

Xu, Gao, Cai, and Jiang (2022) pointed out that leaders' green supervisory behaviors positively impact followers' environmental outputs. Caldera, Desha, and Dawes (2019) stated that the objectives of lean and green thinking (GTH) for firms include waste and pollution reduction through strategies that focus on resource optimization. GTL offers a clear environmental vision and inspires subordinates to manifest PEB in order to achieve an organization's environmental goals (Mukonza & Swarts, 2019). GTH is linked to human cognitive abilities and actions, and it leads individuals to show concern for the environment (Ali et al., 2020). Employees under a green transformational leader have a tendency to engage in GTH and this can lead to the development of new green processes and products. The study by Begum et al. (2022) found a significant positive relationship between GTL and GTH. Therefore, it is hypothesized that:

H2: GTL and employee GTH are significantly positively related.

2.7. Green Thinking (GTH) and Pro-environmental Behavior (PEB)

The primary objective of GTH is minimum environmental damage and maximum ecological protection (Moreira et al., 2010). GTH is about the awareness of the unintended damage that humans can cause nature in our daily lives and our interconnectedness with the world (Begum et al., 2022). Empirical findings by Ali et al. (2020) show that GTH positively influences consumer intention to buy green electronic products. Rademaker and Royne (2018) pointed out that the effects of communication are more negative when consumers perceive an advertising medium to be more environmentally harmful than the alternatives. Therefore, GTH is important when making media decisions on the advertisement of green products. Akehurst, Afonso, and Gonçalves (2012) remarked that

green thinkers are individuals and consumers that understand the effects of their actions on the environment and manage their behavior accordingly. With the growing awareness of environmental challenges faced by the world, individuals and consumers tend to increase their interest in environmental protection through their choices. This may affect the way that an individual displays green behavior and their purchase of green products (Fu et al., 2020). This suggests that people who exhibit green thinking are more likely to be aware of environmental problems and are more likely to engage in environmental protection through their behavior. Based on this suggestion, it is hypothesized that:

H3: GTH and employee PEB are significantly positively related.

2.8. Mediating Effect of Green Thinking

Employees under a green transformational leader are inclined toward green thinking and this can aid the introduction of new green processes and products (Begum et al., 2022). Farrukh et al. (2022) stated that green transformational leaders are role models that can influence the environmental behavior of subordinates. These leaders stimulate subordinates' thinking capacity regarding environmental issues, and motivate and assist subordinates to develop environmental skills through green intellectual stimulation. This results in employees exhibiting green behavior. Begum et al. (2022) showed that the effect of GTL on green innovation is positively mediated by GTH. GTH enables employees to come up with sustainable solutions in terms of green products or green behavior (Ali et al., 2020). This suggests that employee GTH can be a mechanism through which GTL can affect PEB. This study hypothesizes that:

H4: The relationship between GTL and PEB is mediated by GTH.

2.9. GTL and GPC

Zhou et al. (2018) pointed out that a transformational leader can shape the organizational climate of a firm by developing policies, procedures and a reward system that positively affect employee behavior. As the originator of a firm's environmental strategy, a green transformational leader can influence GPC by developing mission and vision statements that support environmental protection. The social influence theory (Kelman, 1958) proposes that the attitude, beliefs and behaviors of an individual can be influenced by others through compliance, identification, and internalization. Therefore, a green transformational leader can influence subordinates by creating policies and procedures that support environmental sustainability. Zhou et al. (2018) found that GTL positively affects GPC. It is therefore hypothesized that:

H5: GTL and GPC are significantly positively related.

2.10. GPC and PEB

Naz, Jamshed, Nisar, and Nasir (2021) examined the effect of GPC on employee PEB based on a dataset of employees of manufacturing firms in China. GPC describes an employee's perception of a firm's potential to enhance green standards through strategy, policies and procedures that support the environment. This enables employees to become aware of their roles and responsibilities with respect to green activities. The study found a significant positive relationship between GPC and employee PEB. Pozveh and Karimi (2017) and Mouro and Duarte (2021) found that a positive organizational climate is related to employees' extra-role behavior. It is hypothesized that:

H6: GPC and employee PEB are significantly positively related.

2.11. Mediating Role of GPC

Dumont, Shen, and Deng (2017) remarked that employee behavior is largely influenced by their perception of their firm. The study found that GPC mediates the relationship between a firm's green human resource management and employees' extra-role green behavior. Naz et al. (2021) also found that GPC indirectly affects the

relationship between green human resource management and employee PEB. Zhou et al. (2018) indicated that GPC mediates the relationship between GTL and green product development. Norton et al. (2017) showed that the green climate indirectly affects the relationship between perceived organizational green policies and employees' green behavior. The social and work interactions with peers and leaders help employees to understand the perceptions, rules and policies of a firm regarding environmental sustainability. This can positively influence employees' discretionary environmental behaviors (Sawitri, Hadiyanto, & Hadi, 2015). It is thus hypothesized that:

H7: The effect of GTL on employee PEB is mediated by GPC.

Figure 1 depicts the conceptual model of the study.

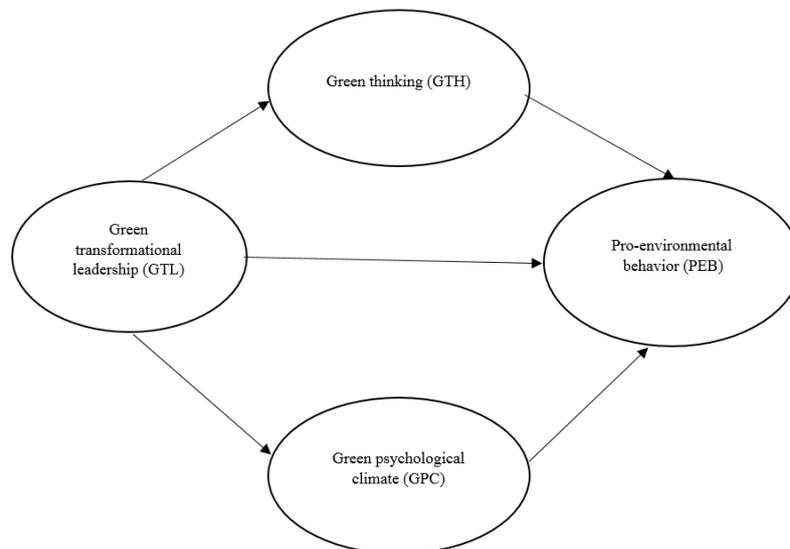


Figure 1. Conceptual model.

3. RESEARCH METHODOLOGY

The quantitative cross-sectional survey focuses on the supervisors/mid-level managers of work units or functional departments of three, four- and five-star hotels in Johannesburg and Pretoria that are graded by the Tourism Grading Council of South Africa. The two cities are located in the Gauteng Province of South Africa and contain many upscale hotels as they are South Africa's commercial and administrative capitals, respectively. Mid-level managers are more likely to have close working relationship with top managers and are also more likely to have informed information about the green transformational leadership style of top managers. Compared to small hotels, large hotels tend to have an environmental strategy in place (Afsar, Badir, & Kiani, 2016). Because the population of mid-level managers of the hotels is unknown, the study adopted the convenience sampling method. Data was collected between September 2021 and March 2022. Before the actual survey, ten hotels and thirty employees participated in a pilot study. The results of the pilot study and the evaluation by two experts on leadership led to slight changes to the questionnaire. To carry out the study, first, the General or Human Resources Manager of each hotel was contacted through email and telephone calls to explain the aim of the study and to request the participation of their hotels and employees. The number of mid-level employees that are managers of different departments in each hotel was identified at this stage. Second, employees were contacted for their permission to participate in the survey and questionnaires were distributed to them. A permission letter was also given to each participant, and the email addresses and/or cell phone numbers of employees were obtained at this stage. Participating employees were given two weeks to complete the questionnaire and were reminded through emails or telephone calls. An additional two weeks were given to employees that did not complete the questionnaire within the first two weeks. Questionnaires not completed after four weeks were treated as non-responses. Three

trained assistants working for a data collection agency were brought in to help with the data collection. Forty-two out of the sixty hotels contacted agreed to participate in the survey.

PEB was measured on a six-item scale adapted from the study by Roberson and Barling (2013). A scale consisting of five items adapted from Li et al. (2020) was used to measure employees' perception of the green transformational leadership of their manager. A scale consisting of three items adapted from Ali et al. (2020) was used to measure green thinking. A scale consisting of five items adapted from Norton et al. (2017) was used to measure green psychological climate. The five-point Likert scale (1 = strongly disagree to 5 = strongly agree) was used for all the measures of the study. All the scales adopted from previous studies achieved adequate internal consistencies, measured by their Cronbach's alpha coefficients. Appendix 1 depicts the measures of the constructs of the study. To analyze the data collected from the respondents, the partial least squares structural equation modeling (PLS-SEM) was used.

4. RESULTS

4.1. Response Rate and Demographic Details

A total of 840 questionnaires were distributed to the survey respondents. Out of these, 440 usable questionnaires were returned within the data collection timeframe. The demographic details of the respondents are as follows: gender (204 male and 236 female); age (152 respondents were aged 21–30 years, 188 respondents were aged 31–40 years, 82 respondents were aged 41–50 years, and 18 respondents were aged 51–60 years); level of education (matric 106 respondents, post-matric 334 respondents).

4.2. PLS-SEM Evaluation

4.2.1. Measurement Model

The requirements for the PLS-SEM analysis, such as factor loading, average variance extracted, Cronbach's alpha and composite reliability, were met by the study (Hair, Risher, Sarstedt, & Ringle, 2019). Table 1 contains the measurement model results. Tables 2 and 3 show the discriminant validity.

Table 1. Measurement model.

Construct	Measurement items of the constructs	Loading	Cronbach's alpha	Composite reliability	AVE
Green transformational leadership (GTL)	1	0.752	0.808	0.891	0.621
	2	0.783			
	3	0.801			
	4	0.788			
	5	0.799			
Green thinking (GTH)	1	0.802	0.784	0.825	0.612
	2	0.779			
	3	0.765			
Green psychological climate (GPC)	1	0.802	0.816	0.804	0.625
	2	0.794			
	3	0.770			
	4	0.809			
	5	0.783			
Pro-environmental behavior (PEB)	1	0.816	0.804	0.895	0.587
	2	0.769			
	3	0.781			
	4	0.746			
	5	0.752			
	6	0.731			

Table 2. Fornell–Larcker criterion.

Construct	GTL	GTH	GPC	PEB
GTL	0.788			
GTH	0.604	0.782		
GPC	0.594	0.601	0.791	
PEB	0.619	0.538	0.766	0.766

Note: Figures in bold are the square roots of the AVE. Other figures represent the correlations.

Table 3. Heterotrait-monotrait (HTMT) ratio of correlations.

Construct	GTL	GTH	GPC	PEB
GTL				
GTH	0.618			
GPC	0.542	0.604		
PEB	0.516	0.616	0.658	

4.2.2. Structural Model

The requirements for the structural model with respect to the common method bias (CMB), effect size, the standardized root mean square residual SRMR, the R^2 , the Q^2 , and the evaluation of the path coefficients, as depicted by Hair et al. (2019), were followed and achieved by the study. The SRMR indicates the model's goodness of fit. The figure of 0.03 indicates a good fit. The goodness of fit value and the Q^2 of this model suggest a significant predictive power of the model. The effect sizes suggest an acceptable effect of each exogenous latent construct on the endogenous latent constructs.

Table 4. Hypothesis testing for direct paths.

Path	Coefficient	T-statistic	Decision
H1 GTL → PEB	0.179	5.082*	Supported
H2 GTL → GTH	0.162	4.117**	Supported
H3 GTH → PEB	0.169	2.969*	Supported
H5 GTL → GPC	0.201	4.448**	Supported
H6 GPC → PEB	0.199	6.309 *	Supported

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

Table 5. Mediation effects.

Path	Indirect effect	Total effect and t-statistic	Confidence interval	Decision	VAF
			Lower limit Upper limit		
H4 GTL→GTH→PEB	0.159**	0.248** -2.601	0.073 0.262	Accepted (Partial mediation)	64.11%
H7 GTL→GPC→PEB	0.172*	0.212* -2.476	0.061 0.238	Accepted (Full mediation)	81.13%

Note: * $p < 0.01$; ** $p < 0.05$. VAF = Variance accounted for.

The results of the hypothesis testing for the direct relationships are detailed in Table 4. The T-statistics and Beta coefficients show that GTL and PEB are significantly positively related. In addition, GTL and GTH, GTH and PEB, GTL and GPC, and GPC and PEB are significantly positively rated. Hypotheses one, two, three, five and six are supported.

Table 5 contains the mediation results. The indirect paths between GTL→GTH→PEB and GTL→GPC→PEB are positive and significant. The results show that the direct and indirect effects are significant; therefore, hypotheses four and seven are also supported.

5. DISCUSSION

The results indicate a significant positive relationship between GTL and PEB among employees. The findings suggest that GTL can help an organization to integrate individual environmental values with organizational values, leading to individual self-directed ecological behavior. The findings are supported by previous research. Li et al. (2020) found that that GTL and employee PEB are significantly positively related. Saleem et al. (2019) found that the relationship between GTL and PEB is significantly positive. Farrukh et al. (2022) indicated that GTL positively influences PEB among employees. The findings indicate that GTL is positively associated with employee GTH. Ali et al. (2020) suggested that a green transformational leader can stimulate green thinking among employees. Begum et al. (2022) found that GTL and GTH are positively correlated. The findings revealed that green thinking is positively related to employee PEB. The primary objective of green thinking is maximum ecological protection (Moreira et al., 2010). Green thinking can help to protect the natural environment through individual decisions and behavior. Ali et al. (2020) found that consumers' GTH is positively related to the intention to purchase green electronic products. The findings indicated that the relationship between GTL and employee PEB is mediated by GTH. According to Farrukh et al. (2022), GTL create leaders that are environmental role models that can influence the environmental behavior of subordinates. GTL stimulates the thinking capacity of employees about environmental concern and motivates them to develop environmental skills through green intellectual stimulation. Begum et al. (2022) find that the impact GTL on green innovation is indirectly affected by GTH. The findings indicated that the relationship between GTL and GPC are significantly positively related. The findings suggest that a green transformational leader can shape the organizational climate of a firm by developing green policies and procedures that protect the environment. The results are supported by prior research. Zhou et al. (2018) find that a transformational leader can shape the organizational climate of a firm. The findings indicated that GPC and employee PEB are positively related. The findings suggest that an employee's perception of a firm's potential to enhance green standards through strategy, policies and procedures that support the environment. Naz et al. (2021) found that GPC and employee PEB are positively related. The findings indicated that GPC mediates the effect of GTL on employee PEB. This suggests that through work interactions, leaders can help employees to understand the perception, rules and policies of a firm regarding environmental sustainability. Thus GPC can mediate the relationship between GTL and employee PEB (Sawitri et al., 2015).

6. CONCLUSION

Theoretically, the study confirms that GTH and GPC are mechanisms through which GTL can affect the PEB of employees in the workplace. The study contributes to the research on how green leadership can affect PEB in the context of firms in the hospitality industry. The findings of the study have practical implications for leaders, employees and hotels. Leaders should attend training on GTL, show their commitment to PEB, and communicate green policies to employees. Hotels should continue to create awareness through internal communications about the negative effects of the industry, especially in the area of resource overuse in order to develop green thinking among employees. Greening should be included in the culture of hospitality firms. Hotels should develop policies, procedures, and reward systems that support environmental sustainability and communicate these to employees.

The study has the following limitations: The generalizability of the findings is limited because data was collected from hotel employees in only two South African cities. Including hotel employees in other cities in South Africa will help to generalize the empirical findings. In addition, the effects of the demographic variables, such as gender, age and level of education, were not examined. A multi-group analysis that takes demographic factors, social class and income into consideration will add to the knowledge on employees' pro-environmental behavior. Also, the study utilized a cross-sectional research design, which limits the cause and effect relationship, so future studies could adopt a longitudinal research design.

Funding: This research is supported by Department of Business Management, University of Limpopo (Grant number: BMAN 3/2021).

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: All authors contributed equally to the conception and design of the study.

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Appendix 1. Measures of the study constructs.

Construct	Item	Adapted from
Green transformational leadership	<ol style="list-style-type: none"> 1. My supervisor (Manager) shows confidence regarding issues related to the environment 2. My supervisor (Manager) talks about the significance of protecting the natural environment 3. My supervisor (Manager) talks with enthusiasm about the need to protect the natural environment 4. My supervisor (Manager) makes me look at environmental challenges in a new way 5. My supervisor (Manager) provides explanations to me about environmental challenges 	Li et al. (2020)
Green thinking	<ol style="list-style-type: none"> 1. I think about the environment 2. I am willing to ensure that I protect the natural environment 3. The current situation of the environment makes me think about how I am living my life 	Ali et al. (2020)
Green psychological climate	<ol style="list-style-type: none"> 1. My hotel worries about the impact of its activities and operations on the environment 2. My hotel likes to support environmental causes 3. Protecting the environment is of the utmost importance to my hotel 4. Being environmentally friendly is of concern to my hotel 5. My hotel intends to be perceived as being environmentally friendly 	Norton et al. (2017)
Pro-environmental behavior	<ol style="list-style-type: none"> 1. I recycle waste at work 2. At work, I make an effort to conserve the use of materials 3. At work, I encourage colleagues to turn off equipment when not in use 4. At work, I encourage colleagues to be environmentally friendly 5. I conserve energy at work 6. At work, I discuss with my manager on how to be environmentally friendly 	Roberson and Barling (2013)

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