Journal of Humanities and Applied Social Sciences

Towards green hospitality: exploring the consumer perceived value of pro-environmental star-graded accommodation

Tafadzwa Matiza and Elmarie Slabbert
Tourism Research in Economics, Environs and Society (TREES) Research Unit, School of Tourism, North-West University – Potchefstroom Campus, Potchefstroom, South Africa

Received 30 July 2024
Revised 31 August 2024
Accepted 14 September 2024

Abstract

Purpose – This paper explores the effect of pro-environmental measures and green behaviour of star-graded accommodation establishments on the consumer perceived value that domestic tourists associate with them. From our study's perspective, value creation via green hospitality may promote more responsible and environmentally friendly consumptive behaviour amongst domestic tourists.

Design/methodology/approach – Designed as a cross-sectional deductive study, data were generated from an online panel sample of 440 South African domestic tourists. The hypotheses were tested using SmartPLS 4 via partial least squares–structural equation modelling. Further, multi-group analysis assessed and exposed gender-based differences.

Findings – The findings imply that green hospitality positively influences the value perceptions of tourists. More in-depth analyses indicate gender-based heterogeneity in the effect of green hospitality aspects on consumer perceived values. Our findings establish pro-environmentalism within the accommodation sector as an approach to initiating pro-environmental behaviour change through value creation.

Originality/value – Our study extends the theory around pro-environmental behaviour and provides empirical evidence from domestic tourists as an under-researched population within the debate around tourism sustainability and green hospitality. The study sheds new light on the importance of supply-side green interventions in tourist behaviour and highlights the potential influence of gender differences. It explores this in the context of an emerging tourism destination in the Global South.

Keywords Consumer perceived value, Green hospitality, Green behaviour, Pro-environmental measures, Star-graded accommodation

Paper type Research paper

Introduction

Accommodation is a vital element in the tourism value chain and a key component of the overall tourism experience (Filimonau *et al.*, 2022; Nunkoo *et al.*, 2020). Due to a paradigm shift in crucial tourism stakeholder (governments, policymakers, tourism organisations and residents) views towards more sustainable travel and tourism, a significant concern of the ongoing green

This study was funded by the National Department of Tourism: Republic of South Africa 2023/24.

Disclosure statement: Authors have no competing interest to declare. This work is based on research supported by the National Research Foundation (NRF). Any opinion, finding, conclusion or recommendation expressed in this material is that of the authors, and the NRF does not accept any liability in this regard.

Journal of Humanities and Applied Social Sciences
Emerald Publishing Limited
2632-279X
DOI 10.1108/JHASS-07-2024-0123

revolution in the accommodation sector has become the economic viability of going green and, more significantly, the creation of value for green-conscious consumer segments (Dolnicar, 2020; Durán-Román *et al.*, 2021; Robinot and Giannelloni, 2010). However, despite the commitment of the accommodation sector to developing and implementing pro-environmental measures and practising green behaviour, not all tourists appear to reciprocate or assimilate this green behaviour (Kim *et al.*, 2021). An estimated 8% of all global greenhouse emissions are attributed to travel and tourism activity (Dolnicar, 2020), of which at least 20% of these travel and tourism-related emissions can be ascribed to accommodation-based (primarily hotel) activity (Merli *et al.*, 2019). While concerted tourist engagement may reduce their psychological distance from destinations' environmental concerns (Wang and Jiao, 2024), prior studies (Dolnicar, 2020; Han *et al.*, 2011; Hsiao *et al.*, 2014) have associated the hotel sector with a corresponding upsurge in water use (up to 300% more per person than their average use when at home); excessive electricity consumption; and solid waste generation at destinations.

When tourists travel, their sometimes-excessive, consumptive behaviour (Cooper *et al.*, 2024; Dolnicar, 2020) implies that tourism-related accommodation establishments have a dual role as an essential pillar of the tourism value chain. First, they must change how they offer their services to ensure the sustainability of contemporary tourism through their "green" policy measures and practices, and second, they must endeavour to simultaneously enhance guests' pro-environmental behaviour via providing a green hospitality experience (Kim *et al.*, 2021). "Green" or green-conscious accommodation establishments are hospitality service providers committed to establishing and implementing pro-environmental measures to minimise the establishment's environmental effects via resource-saving and solid waste mitigation measures (Berezan *et al.*, 2013; Hsiao *et al.*, 2014). Within the scope of this study, *pro-environmental measures* primarily seek to guide product and service provision and, for the most part, manage and mitigate the potentially negative impact of tourist (guest) consumptive behaviour on the environment (Wu *et al.*, 2021). It follows that in line with established pro-environmental measures, *green behaviour* refers to an accommodation establishment's subsequent resource-saving, recycling and reuse activities (Hsiao *et al.*, 2014).

As the primary consumers of tourism resources, the impact of tourists on the environment is a critical aspect of the ongoing debate around tourism, its contribution to climate change via resource consumption (fossil fuels during travel, water, energy and resource other consumption) and the overall sustainability of destinations (Merli *et al.*, 2019; Verma and Chandra, 2016; Wang and Jiao, 2024). Within the accommodation context, the green product experience emanating from the combination of pro-environmental measures and the green behaviour of accommodation establishments [or *green hospitality* in the context of this study] influences tourists' value perceptions (Sampene *et al.*, 2024). Consumer Perceived Value (CPV) may be characterised as "consumers' overall assessment of product utility based on the perception they are given and received" (Zhang *et al.*, 2021, p. 23). As a multidimensional construct, CPV theory was suitable to explore the value perceptions of guests as it acknowledges the heterogeneity of guest experience and can be adapted to support a composite scale that can adequately measure experience derived value on a broad spectrum; hence, CPV is critical in predicting consumer behaviour, and within green hospitality studies (El-Adly, 2019; Saut and Bie, 2022). CPV has been explored in the biospheric context – green value and green perceived value (Majeed *et al.*, 2023; Sampene *et al.*, 2024). Our study, however, conceptualises CPV from the conventional cognitive (functional and economic) and affect (social and emotional) perspectives of value (Gallarza and Gil Saura, 2020; Koller *et al.*, 2011).

Green hospitality has become a critical aspect of the accommodation servicescape (Nisar *et al.*, 2022; Nurul Alam *et al.*, 2023), yet little is still known about green hospitality as an antecedent of guest participation in pro-environmental behaviour in response to accommodation-based green interventions. While contemporary studies (Bagheri *et al.*, 2020; Hu *et al.*, 2011; Kim *et al.*, 2021; Wang and Jiao, 2024) have established the importance of

accommodation-based green interventions to sustainable tourism, research into the impact of accommodation supplier-initiated pro-environmental interventions on tourist (guest) CPV formation also remains nascent (Cooper *et al.*, 2024; Hu *et al.*, 2011; Worsfold *et al.*, 2016). Further, even when considering the limited extant international studies on green hospitality and CPV, domestic tourists have been the subject of comparatively limited academic research within the context of green accommodation and choice behaviour (Behera *et al.*, 2023; Trinh and Thuy, 2024). This is despite domestic tourism being the global primary tourism typology – implying that domestic tourists may have a more pronounced environmental impact than international tourism activity (Gössling and Peeters, 2015). The role of domestic tourism in the resilience of South African tourism post-pandemic is well-established, and the literature (Matiza and Kruger, 2022; Nyikana and Bama, 2023) illustrates the evolving role and importance of domestic tourism in South Africa given the country's overreliance on international tourism demand pre-the-pandemic – particularly post-crisis demand recovery (Matiza and Kruger, 2022).

Notwithstanding the limited literature on domestic tourism and pro-environmental behaviour in African countries, there are concerns about the prevalence of maladaptive behaviour towards the environment, indicating the generally low adoption of pro-environmental behaviour by Africans (see Ifegbesan *et al.*, 2022) and other emerging markets in general (Filimonau *et al.*, 2022). This discrepancy between consumers having a conscious concern for the environment and not matching this concern with the required pro-environmental consumptive behaviour may be referred to as the "green gap" (Do and Do, 2024; Filimonau *et al.*, 2022). Moreover, researchers (Han *et al.*, 2011; Wu *et al.*, 2021) have intimated the general need for more academic inquiry into the influence of individual characteristics such as experience and the socio-demographic profile on consumers' pro-environmental behaviour. Despite the consensus that demographic characteristics significantly influence attitudes and behaviour towards green products, scant studies (Koller *et al.*, 2011; Vicente-Molina *et al.*, 2018; Wu *et al.*, 2021) have established heterogeneity in the impact of tourists' demographic profiles on pro-environmental behaviour uptake.

This study explores whether the pro-environmental measures and green behaviour of star-graded accommodation establishments influence consumer perceived value for domestic tourists. Our study assumes that enhanced CPV associated with green-oriented star-graded accommodation may subsequently enhance the pro-environmental behaviour of domestic tourists as guests (Hu *et al.*, 2011). This study builds on Filimonau *et al.* (2022) and van Valkengoed *et al.*'s (2022) work, which calls for more academic inquiry into the underlying psychological mechanisms influencing tourists' pro-environmental behaviour. The context of our study is the South African star-graded accommodation sector and the value perceptions of domestic tourists resident in South Africa as potential guests towards green-oriented star-graded accommodations that have established pro-environmental measures and practised green behaviour as part of their product offering. Our study goes on to probe the potential role of gender in the value perceptions of said guests. To the best of the authors' knowledge, the direct and interaction effects of pro-environmental measures and green behaviour of star-graded accommodations on tourists' consumer perceived value towards them have yet to be empirically tested. Further, the two determinants proposed in our model have yet to be explored within the context of domestic tourists' CPV from a Global South perspective, more so while determining the potential significance of gender-based differences.

Literature review

The supporting theory

The present study is guided by Bandura's (1986, 1991) Social Cognitive Theory (SCT), which posits that humans have agency and that the ability of individuals to learn or engage in specific behaviour is susceptible to the individual's interactive experience, external

environmental stimuli and the expected behaviour itself. Sampene *et al.* (2024) identify self-efficacy and the positive desirable results as critical outcomes of SCT-oriented pro-environmental behaviour. Hence, within the context of this study, SCT aids in better understanding the influence of pro-environmental measures on the (service-driven) green behaviour of star-graded accommodation establishments, more so how the interaction of the two variables influences value perceptions. Prior hospitality and tourism studies have drawn on SCT to model the influence of pro-environmental measures on the green behaviour of tourism service providers (Nurul Alam *et al.*, 2023; Sampene *et al.*, 2024) and consumer (tourist) behaviour (Ma *et al.*, 2024; Wu *et al.*, 2021), as well as explain potential gender differences in the uptake and practice of eco-friendly behaviour (Roxas and Marte, 2022; Sawitri *et al.*, 2015), and value perceptions associated with green products and services (Majeed *et al.*, 2023).

Consumer perceived value in green tourism accommodation

Service quality, customer satisfaction and loyalty are critical antecedents to accommodation establishments' competitiveness, customer attraction and retention (Nunkoo *et al.*, 2020). It follows that if value perception in tourism is a precursor of consumer satisfaction and loyalty (Gallarza and Gil Saura, 2020), the determination of CPV would be critical to the overall competitiveness of tourism accommodation. Stemming from the theory of consumer behaviour (Zeithaml, 1988), CPV is a multidimensional construct that acknowledges how consumers perceive value within the hospitality context, which is situational and predicated on their experience (El-Adly, 2019). To this end, within the specific scope of tourism-oriented accommodation, CPV is associated with the experience of the consumer as a guest, where knowledge of the accommodation's pro-environmental policies and subsequent green hospitality experience influence the value perceptions associated with the establishment (Zhang *et al.*, 2021).

Studies have alluded to the importance of green value and green perceived value in influencing consumers' consumptive behaviour (Majeed *et al.*, 2023; Sampene *et al.*, 2024). For instance, based on their data mining study on CPV and purchase behaviour, Zhang *et al.* (2021) established that consumers' perceived value affected their intention to (re)visit luxury or green hotels. Thus indicating the potential significance of the value creation – pro-environmental behaviour adoption nexus. However, notwithstanding the extant literature (Kim *et al.*, 2021; Nisar *et al.*, 2022; Verma and Chandra, 2016, 2018) that attributes pro-environmental behaviour in the hospitality accommodation sector to enhancing environmental sustainability-oriented behaviour, our study considers and measures the "generic" value dimensions in overall value perception formation in both green and non-green-conscious tourists as potential guests (Berezan *et al.*, 2013; El-Adly, 2019). As a multi-dimensional construct, CPV within the star-graded accommodation context may be viewed through the lenses of functional (accommodation quality aspects), emotional (intrinsic affect aspects emanating from the hospitality experience), economic (price-oriented value for money aspects) and social (reference group-oriented norms) value (El-Adly, 2019; Hu *et al.*, 2011; Koller *et al.*, 2011; Prebensen and Rosengren, 2016; Saut and Bie, 2022).

Pro-environmental measures and tourist behaviour towards accommodation facilities

Consumers increasingly expect accommodation facilities such as hotels to implement measures to protect the environment (Berezan *et al.*, 2013; Hsiao *et al.*, 2014; Merli *et al.*, 2019). Deemed as "pro-environmental lodging properties which implement different green practices such as saving water and energy, reducing solid waste, and recycling and reusing durable service items" (Merli *et al.*, 2019:170), green-oriented accommodation establishments are a consequence of increasing green-oriented consumerism (Verma and Chandra, 2018). Prior

studies (Han *et al.*, 2011; Hsiao *et al.*, 2014; Nisar *et al.*, 2022; Wang and Jiao, 2024) have determined that mitigating the negative impact of resource consumption via formal interventions (pro-environmental measures) such as environmental management systems (EMS) is critical to the sustainability of the tourism-oriented accommodation sector. Such EMS systems include developing and adopting policy measures that include waste management, biological diversity management, sustainable tourism policy advocacy and related corporate social responsibility (Cabral and Jabbour, 2020; Kim *et al.*, 2018, 2021).

Studies (Han *et al.*, 2011) have shown that between 16% and up to 90% of surveyed hotel guests prefer to stay in eco-friendly hotels, resulting in accommodation establishments increasingly adapting their product offerings to meet the growing demand for sustainable, eco-friendly tourism products and services. For instance, the symbiotic relationship between going green and the competitiveness of hotels are vital elements in customer retention and gaining significant market share within the fast-emerging "sustainability-sensitive" accommodation guest segments (Han *et al.*, 2011; Verma and Chandra, 2018). Moreover, from a consumer behaviour perspective, green consumption should ideally result in positive, responsive behaviour (evaluation, perceptions and beliefs) towards offerings and organisations that have embedded green psychological benefits (Majeed *et al.*, 2023). Studies have, thus far, established a correlation between the pro-environmental measures of accommodation establishments and guest satisfaction and loyalty (Merli *et al.*, 2019), (re)visit intention (Filimonau *et al.*, 2022; Verma and Chandra, 2018), and more pertinently, consumers' value perceptions (Majeed *et al.*, 2023; Robinot and Giannelloni, 2010) and favourability towards specific accommodation establishments (Verma and Chandra, 2016). The subsequent hypotheses tested are,

H1. Pro-environmental measures influence the consumer perceived [H_{1a}] emotional, [H_{1b}] functional, [H_{1c}] social value, and [H_{1d}] value for money of domestic tourists towards star-graded accommodation establishments.

Antecedents and effects of accommodation "green behaviour"

Within the scope of our study, the green behavioural practices of star-graded accommodation establishments include the application of green principles, waste recycling, energy and water-saving activities (Berezan *et al.*, 2013; Merli *et al.*, 2019; Verma and Chandra, 2016), and food waste limitation as part of the accommodation servicescape (Hsiao *et al.*, 2014). Therefore, green behaviour in the accommodation sector is "behaviour which leads to positive effects on the environment or reduces negative effects" (Dolnicar, 2020). Research has established the positive causal effect of organisation-initiated pro-environmental measures such as corporate environmental responsibility on employee and organisational environmental performance (Sampene *et al.*, 2024). Moreover, the extant literature determined that the development of EMS (Kim *et al.*, 2018, 2021), supported by proactive pro-environmental management policy implementation (Bagheri *et al.*, 2020; Hsiao *et al.*, 2014), has a positive effect on the green "behaviour" or practices of accommodation establishments.

A comparative study between green and non-green-oriented hotels in Pakistan showed that developing and implementing a green-oriented management policy enhanced hotel environmental performance via highly motivated and efficacious employees committed to green behaviour (Nisar *et al.*, 2022). A study by Nurul Alam *et al.* (2023) establishes a positive correlation between the green human resource management practices of selected Nigerian hotels and the green-oriented behaviour of employees in their workplaces, thus enhancing the green performance of their respective hotels. It follows that akin to established individual biospheric value(s) – which include green value and green perceived value (Majeed *et al.*, 2023) – the assessment of value induced by pro-environmental behaviour remains

paramount (Sampene *et al.*, 2024). Studies have extended the positive effects of green behaviour in accommodation establishments to value creation for guests (Robinot and Giannelloni, 2010). To this end, a study in the American hotel sector by Han *et al.* (2011) concluded that pro-environmental practices translate into comparative advantages, including boosts in employee morale and performance, profitability and, more pertinently, enhanced stakeholder appeal. Merli *et al.* (2019) caution that discord between the development of pro-environmental measures and the green behaviour (practice) of accommodation establishments has been found to have a negative effect on the behaviour of consumers. Therefore, the following hypotheses are tested,

H2. Pro-environmental measures influence star-graded accommodation establishments' perceived green behaviour.

H3. The perceived green behaviour of star-graded accommodation establishments influences the consumer's perceived [H_{3a}] emotional, [H_{3b}] functional, [H_{3c}] social value, and [H_{3d}] value for money of domestic tourists.

Mediation hypotheses

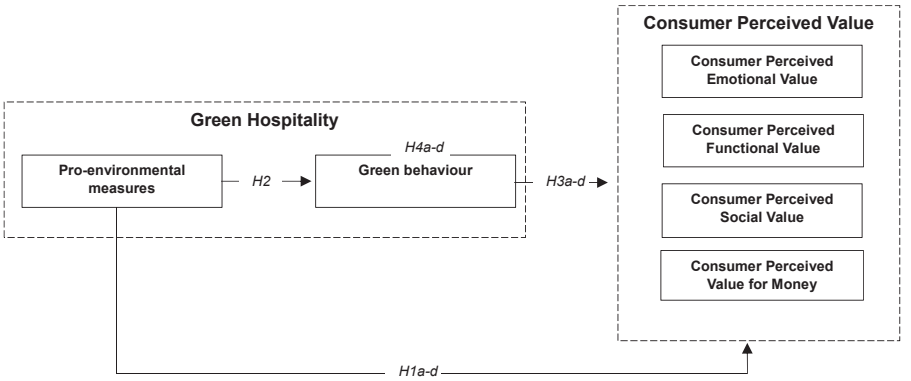
Social Cognitive Theory (Bandura, 1986, 1991) supports direct relationships between the modelled variables. The literature has established that developing and implementing green-oriented EMS is an antecedent of green behaviour in the hospitality sector (Bagheri *et al.*, 2020; Hsiao *et al.*, 2014; Nurul Alam *et al.*, 2023). It has also been determined that consumers' knowledge that an accommodation establishment is pro-environmental in its management practices influences the choice behaviour of guests (Sampene *et al.*, 2024; Wang and Jiao, 2024). Studies have also shown that green hospitality or behaviour offers guests an experience that may influence their pro-environmental behaviour (El-Adly, 2019; Zhang *et al.*, 2021) and value perceptions towards an accommodation establishment (Majeed *et al.*, 2023; Robinot and Giannelloni, 2010; Verma and Chandra, 2016, 2018). Given the literature, it is plausible that a mediation relationship may exist between pro-environmental measures, green behaviour, and the consumer perceived value of domestic tourists towards star-graded accommodation establishments. Hence, the following meditation hypotheses were formulated,

H4. The perceived green behaviour of star-graded accommodation establishments mediated the relationship between pro-environmental measures and consumer perceived [H_{4a}] emotional, [H_{4b}] functional, [H_{4c}] social value, and [H_{4d}] value for money of domestic tourists.

Based on the extant literature, Figure 1 illustrates the study's Conceptual Framework.

The role of gender in pro-environmentalism in tourism

Social Cognitive Theory (SCT) acknowledges the dichotomy in pro-environmental behaviour between individuals with high environmental efficacy versus those with low efficacy perception (Sawitri *et al.*, 2015). According to Sampene *et al.* (2024), this efficacy relates to individuals' social cognition (information processing, analysis and utility) as a predictive psychological mechanism. The role of gender in influencing beliefs, attitudes, behaviour, and opinions points to its potential significance in explaining pro-environmental behaviour (Ifegbesan *et al.*, 2022; Xiao and McCright, 2015). Hence, socio-demographic characteristics, such as gender, thus become critical to explaining and predicting human-responsive behaviour to environmentalism from a social perspective (Vicente-Molina *et al.*, 2018). While there is acknowledged heterogeneity in the effect and impact of gender in how consumers respond to green products and interventions, studies have generally established that gender-



Source(s): Figure by authors

Figure 1.
Conceptual framework

based differences in green behaviour may be attributed to societal gender roles (Koller *et al.*, 2011; Sawitri *et al.*, 2015; Wu *et al.*, 2021; Xiao and McCright, 2015). In their overview of the contemporary literature on gender and pro-environmentalism (Vicente-Molina *et al.*, 2018), they observe that females tend to be more responsive in the private sphere (energy saving, recycling, purchase of organic products) than males who are more responsive in the public sphere (policy formulation, advocacy, implementation).

When exploring the effect of gender on the CPV of vehicle brand consumers, Koller *et al.* (2011) found that ecological aspects, such as environmental friendliness, had different effects on the value perceptions of men compared to women drivers. A six-country African study found that, on aggregate, females were more likely to be positively inclined to pro-environmental behaviour than males (Ifegbesan *et al.*, 2022). More pertinently, within the green accommodation context, findings from a study of American hotel patrons by Han *et al.* (2011) were consistent with prior empirical evidence of the propensity of women to be more environmentally conscious – establishing that when compared to male guests, females were more susceptible to the influence of green hotel practices. In conclusion, women were more likely to visit, pay more for, and be more likely to recommend green accommodation products. In India, Verma and Chandra (2016) found heterogeneity in the effect of hotel green behaviour on guests based on gender. Their study indicated that the influence of green behaviour attributes such as energy efficiency and waste management was more pronounced for males compared to females. Further, the influence of pro-environmental measures such as green certification was also more pronounced amongst male hotel guests than female hotel guests. Based on the preceding discussion, the following hypothesis was formulated,

H5. There are discernable gender-based differences in the value perceptions of domestic tourists as consumers.

Methodology

The grading of accommodation establishments in South Africa is based on the Tourism Grading Council of South Africa's (TGSA) five-star-based accommodation classification system, where 1-star is the lowest rating and 5-star is the highest (Nunkoo *et al.*, 2020). As part of a broader study assessing South Africa's star-graded accommodation, an online study was conducted between the 1st of October and the 1st of November 2024 to survey the perceptions of domestic tourists towards star-graded accommodation establishments in

South Africa. A self-administered survey was administered to a pre-recruited panel of South African consumers via research firm InfoQuest Africa (https://infoquest.africa/). Screening questions ensured that only respondents who used paid accommodation when they engaged in travel and tourism and were aware of the grading system of accommodation establishments participated in the study. Data analysed in this study were generated from $n = 440$ South Africans.

Measuring instrument

A closed-ended online questionnaire was developed and published on the QuestionPro platform, and the survey link was distributed to the panel. Scales in the composite questionnaire were adapted from the literature, with the instrument undergoing an expert review process by a tourism scientific committee and ethics committee, respectively. *Pro-environmental measures* are the independent variable, measured based on the literature (Kim *et al.*, 2018, 2021; Verma and Chandra, 2016). Responses were recorded based on a 5-point Likert scale of the extent of importance for their accommodation choice ranging between (1) "No extent" and (5) "Not applicable". The *Green Behaviour* of the accommodation is measured as the mediation variable based on five items adapted from the literature (Bagheri *et al.*, 2020; Kim *et al.*, 2018). Responses were recorded on a 5-point Likert scale of importance ranging between (1) "Not at all important" and (5) "Extremely important". CPV of star-graded accommodation was measured as the outcome variable based on 12 items adapted from the literature (El-Adly, 2019; Hu *et al.*, 2011; Prebensen and Rosengren, 2016; Saut and Bie, 2022) to measure Consumer Perceived: *Emotional Value*, *Functional Value*, *Social Value*, and *Value for Money* based on three items each. Responses were recorded on a 5-point Likert agreement scale ranging between (1) "Strongly disagree" and (5) "Strongly agree".

Model specification and data analysis

The study adopted the partial least squares-structural equation modelling (PLS-SEM) approach applied by Nunkoo *et al.* (2020) and Nisar *et al.* (2022). SmartPLS 4 software (Ringle *et al.*, 2024) developed, estimated, and assessed the reflective conceptual model (Figure 1). Unlike covariance-based-SEM (CB-SEM), PLS-SEM accommodates the causal-predictive model approach that optimises the theory and predicts the endogenous construct(s) under study. Four key steps were followed. First, Measurement Invariance of Composite Models (MICOM) established the invariance in the data; second, the measurement model determined the reliability and validity of the model; third, PLS-SEM tested the direct and in-direct hypotheses, followed by Multi-Group Analysis (MGA) to compare the gender-based differences in the data (Gao *et al.*, 2024; Nisar *et al.*, 2022; Nunkoo *et al.*, 2020). PLS-SEM, which is Ordinary Least Squares regression-based, was preferred over Covariance Based (CB-SEM) approaches such as LISREL or AMOS. This preference was based on the PLS-SEM approach accommodating (1) the model's focus on explaining and predicting CPV as the primary latent variable, (2) the complexity of the model, which included direct and indirect hypothesised relationships, (3) the intricacy of modelling reflective constructs with better reliability and validity statistics, and (4) PLS-SEM is recommended for testing composite measurement models over CB-SEM (Dash and Paul, 2021; Filimonau *et al.*, 2022).

Results

Respondent socio-demographic profile

There was an almost equal distribution (male = 49.32% and female = 50.00%) in the gender profile of the respondents (Supplementary Data Table A1). Most respondents (46.47%) were aged between 25 and 34 years old and were primarily (69.32%) employed in South Africa's

private sector at the time of the survey. Most respondents (53.41%) resided in the Gauteng Province (the economic hub of South Africa) and indicated that they usually travelled with their partner (28.34%) or family – adults and children (21.53%).

Measurement invariance of composite model (MICOM)

The study adopted the three-step measurement invariance of composite models (MICOM) as part of Multi-Group Analysis in PLS-SEM. Since SmartPLS4 assumes configural invariance (Ringle *et al.*, 2024), the MICOM (Supplementary Data Tables A2–A4) reported statistical differences in the compositional invariance (Step 2), the equality of composite mean values (Step 3b) and variances (Step 3b). The MICOM established partial measurement invariance, confirming that differences across groups were not attributable to differences in the meaning of the same constructs (Henseler *et al.*, 2015); hence, standardised path coefficients could only be compared across the groups via separate group-specific model estimations (Gao *et al.*, 2024; Nisar *et al.*, 2022). Considering the minimum recommended threshold of 100 cases/observations per group for MGA (Leong *et al.*, 2024), two gender-based groups were established and modelled – to complement the Complete sample ($n = 440$): Males ($n = 217$) and Females ($n = 220$).

Reflective measurement model

Common Method Bias (CMB <50%) was not a concern in the data, as Harman's single-factor test reported CMB = 31.77% (Filimonau *et al.*, 2022; Gao *et al.*, 2024). As shown in Table 1, the Kurtosis (between − 10 to + 10) and Skewness (between − 3 and +3) statistics across all sample groups ranged between 0.300 and 7.728 and −1.518 and −1.181, respectively (Griffin and Steinbrecher, 2013). The Outer Loadings (Table 1) across all groups exceeded the 0.700 threshold, indicating sufficient strength between the observed variables and their corresponding latent variables (Saeed *et al.*, 2022). Further, the variance inflation factor (VIF <5) in Table 1 shows that the VIF statistics indicated small to moderate correlation across all groups. Hence, all were below the accepted threshold, and multicollinearity was not a concern with the data (Camisón and Forés, 2015; Dedeoğlu *et al.*, 2023; Latif *et al.*, 2022).

Table 2 summarises the validity and reliability statistics across all sample groups. Construct Reliability ($\alpha > 0.700$), Composite Reliability (CR > 0.700) and Convergent validity (Average Variance Extracted: AVE >0.500) were above the accepted thresholds (Fornell and Larcker, 1981; Hair *et al.*, 2013) and were confirmed across all the sample groups.

The Heterotrait-Monotrait Ratio of Correlations (HTMT) and the Fornell and Larcker criteria were used to assess the discriminate validity of the respective sample group models. The respective Complete, Male and Female models (Supplementary Data Table A5 and Table A6) reported HTMT statistics of <0.90 (Mengzhen *et al.*, 2022). They indicated the square root of AVE > inter-construct correlations (Fornell and Larcker, 1981).

Structural model

The proposed hypotheses were assessed by a PLS-SEM based on Bootstrapping, bias-corrected with 10,000 test samples at a 97.5% confidence level. Table 3 summarises the three sample models' explanatory power (R^2). The R^2 statistics for the Complete (R^2: 0.075–0.266), Male (R^2: 0.032–0.260), and Female (R^2: 0.102–0.254) samples reported coefficients ranging from weak to medium.

The predictive relevance ($Q^2 > 0.000$) of the models was also assessed (Table 3), with all the respective models Complete (Q^2: 0.058–0.260), Male (Q^2: 0.021–0.289), and Female (Q^2: 0.079–0.239) reporting significant predictive power (Hair *et al.*, 2013). Table 4 shows that the f^2 statistics ranged between 0.023 and 0.367 for the Complete sample, 0.005 and 0.413 for the

Table 1. Measurement model – outer loadings summary

Code	Item	Complete sample OL	VIF	Kurtosis	Skewness	Male OL	VIF	Kurtosis	Skewness	Female OL	VIF	Kurtosis	Skewness
Consumer Perceived Emotional Value													
CPE1	It makes me feel safe and relaxed	0.840	2.015	2.745	−0.307	0.848	1.934	2.735	0.129	0.832	2.183	3.217	−0.878
CPE2	Makes me feel happy about my booking	0.891	2.350	6.270	−0.894	0.866	2.031	6.664	−1.518	0.918	2.950	2.487	0.602
CPE3	Give me a feeling of well-being	0.880	1.842	4.621	−0.059	0.872	1.773	5.692	0.366	0.886	1.978	2.522	−0.703
Consumer Perceived Functional Value													
CPF1	Provides an impression of a consistent level of quality	0.876	2.144	4.466	−0.921	0.880	2.173	5.629	−1.595	0.869	2.161	2.310	−0.062
CPF2	Represents an acceptable standard of quality	0.878	2.317	5.281	−0.147	0.884	2.491	3.148	0.453	0.875	2.355	7.343	−0.635
CPF3	Are overall of a high-value	0.901	2.168	2.802	−0.035	0.924	2.749	3.366	−0.051	0.872	1.777	2.346	−0.178
Consumer Perceived Social Value													
CPS1	Give a good impression of me to other people	0.844	2.126	2.130	0.556	0.853	2.220	2.836	1.179	0.846	2.177	0.770	0.159
CPS2	Improves my social status	0.928	3.326	2.116	0.545	0.915	3.147	1.951	0.443	0.943	3.821	2.368	0.667
CPS3	Makes me socially acceptable to others	0.908	2.491	2.823	−0.991	0.899	2.215	2.366	−0.910	0.915	2.897	3.295	−1.181
Consumer Perceived Economic Value													
CPV1	Represents "value" for money	0.809	1.561	3.084	−0.583	0.855	1.870	3.849	−0.892	0.743	1.323	2.530	−0.433
CPV2	Represents accurate pricing based on level of grading	0.809	1.512	2.207	−0.469	0.816	1.660	1.832	−0.432	0.813	1.397	3.132	−0.430
CPV3	When comparing what I pay to what I might get, provides me with good value	0.858	1.637	4.842	−0.227	0.888	1.917	2.444	0.325	0.822	1.433	7.728	−0.775
Green Behaviour													
GRN1	The establishment limits food waste	0.752	1.730	2.156	−0.015	0.758	1.770	2.353	−0.147	0.763	1.731	1.589	0.392
GRN2	The establishment practices recycling	0.877	2.885	2.438	0.118	0.856	2.506	2.686	0.030	0.900	3.604	1.112	0.366
GRN3	The establishment applies green principles	0.888	3.320	1.372	0.352	0.894	3.283	0.300	0.244	0.890	3.678	1.633	0.127
GRN4	The establishment decreases their carbon footprint – no printing	0.866	2.877	1.730	−0.153	0.879	3.364	1.273	−0.304	0.853	2.615	2.268	−0.044
GRN5	The establishment encourages limited water use	0.757	1.822	1.203	−0.513	0.771	2.137	1.160	−0.310	0.749	1.676	1.061	−0.691

(*continued*)

Code	Item	Complete sample OL	VIF	Kurtosis	Skewness	Male OL	VIF	Kurtosis	Skewness	Female OL	VIF	Kurtosis	Skewness
Pro-Environmental Measures													
PEM 2	Water saving measures	0.712	1.481	0.943	−0.446	0.766	1.589	0.766	−0.502	0.650	1.406	0.948	−0.407
PEM 3	Waste management activities	0.786	1.721	1.658	−0.080	0.801	1.914	1.146	0.155	0.767	1.553	1.987	−0.269
PEM 4	Biological diversity management activities	0.776	1.639	1.427	−0.134	0.784	1.727	1.008	−0.328	0.761	1.564	2.045	0.133
PEM 6	Participate in policy discussions related to sustainable tourism	0.766	1.993	1.540	−0.300	0.816	2.396	1.382	0.063	0.700	1.706	1.693	−0.531
PEM 7	Involvement/commitment to CSR and community welfare	0.702	1.740	1.094	−0.029	0.721	1.917	1.509	0.060	0.675	1.576	0.624	−0.100

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; PEM = Pro-Environmental Measures; OL = Outer Loading; VIF = Variance inflation factor
Source(s): Table by authors

Table 1.

Item	Complete			Male			Female		
	Alpha (α)	CR	AVE	Alpha (α)	CR	AVE	Alpha (α)	CR	AVE
CPE	0.842	0.904	0.758	0.829	0.897	0.744	0.856	0.911	0.773
CPF	0.862	0.915	0.783	0.878	0.925	0.803	0.844	0.905	0.760
CPS	0.875	0.922	0.799	0.869	0.919	0.791	0.886	0.929	0.814
CPV	0.767	0.865	0.682	0.814	0.889	0.728	0.706	0.836	0.629
GRN	0.886	0.917	0.689	0.889	0.919	0.694	0.888	0.919	0.694
SUST	0.805	0.865	0.561	0.837	0.885	0.605	0.757	0.837	0.507

Table 2. Measurement model – reliability and validity summary

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; Alpha = Cronbach Alpha; CR=Composite Reliability; AVE = Average Variance Extracted
Source(s): Table by authors

Variable	Complete		Male		Female	
	R^2	Q^2	R^2	Q^2	R^2	Q^2
CPE	0.119	0.095	0.129	0.084	0.102	0.079
CPF	0.075	0.058	0.032	0.021	0.139	0.099
CPS	0.157	0.103	0.145	0.083	0.169	0.119
CPV	0.123	0.081	0.106	0.067	0.140	0.079
GRN	0.266	0.260	0.289	0.281	0.254	0.239

Table 3. Structural model explanatory power

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; R^2 – Coefficient of 0.19 = Weak; 0.23 = Medium; 0.67 = Substantial; Q^2 – Predictive power of > 0.000
Source(s): Table by authors

Male sample, and 0.012 and 0.348 for the Female sample, indicating a small to large effect (Cohen, 1988).

Direct hypotheses

As shown in Table 4 (see Supplementary Data Table A7, for supporting Total effects), all the direct relationships were statistically significant in the Complete sample case. Therefore, hypotheses H1a-d, H2 and H3a-d were accepted. In the case of the Male sample, all the direct relationships were statistically significant except the direct effect of *GRN* on *CPF* (H3b: $\beta = 0.079$, $t = 0.727$, $p = 0.467$). Hence, hypotheses H1a-d, H2 and H3a, H3c and H3d were accepted, whereas hypothesis H3b was rejected. In the context of the Female sample, all the direct relationships were statistically significant except the direct effect of *GRN* on *CPE* (H3a: $\beta = 0.118$, $t = 1.398$, $p = 0.162$). Hence, hypotheses H1a-d, H2 and H3b, H3c and H3d were accepted, whereas hypothesis H3a was rejected.

The mediating effect of green behaviour was tested; the p-value indicated statistical significance, and the confidence index (lower limit – upper limit) did not include zero (Hair *et al.*, 2013). Green behaviour had a mediating effect in all the hypothesised relationships (Table 5); hence, in the Complete sample, hypotheses H4a-d were accepted.

Within the gender-based groups (Table 5), green behaviour mediated all the hypothesised relationships in the Male sample except for the hypothesised mediation effect of green behaviour in the relationship between pro-environmental measures and consumer perceived functional value (H4b: $\beta = 0.043$, $t = 0.699$, $p = 0.485$). Hence, hypotheses H4a, H4c and H4d

Table 4. Direct relationships

	Hypotheses	Complete					Male					Female				
		f^2	β	t	*p-value*	Outcome	f^2	β	t	*p-value*	Outcome	f^2	β	t	*p-value*	Outcome
H1a	PEM → CPE	0.047	0.238	4.036	0.000***	Accept	0.033	0.199	2.332	0.020**	Accept	0.056	0.258	3.065	0.002**	Accept
H1b	PEM → CPF	0.029	0.192	3.227	0.001**	Accept	0.017	0.151	1.746	0.081*	Accept	0.051	0.243	2.820	0.005**	Accept
H1c	PEM → CPS	0.036	0.202	3.183	0.001**	Accept	0.029	0.185	1.923	0.055*	Accept	0.051	0.239	3.229	0.001**	Accept
H1d	PEM → CPV	0.030	0.189	2.701	0.007**	Accept	0.027	0.182	1.751	0.080*	Accept	0.031	0.188	1.952	0.051*	Accept
H2	PEM → GRN	0.367	0.518	11.159	0.000***	Accept	0.413	0.541	8.996	0.000***	Accept	0.348	0.508	7.081	0.000***	Accept
H3a	GRN → CPE	0.023	0.164	2.575	0.010**	Accept	0.041	0.224	2.275	0.023**	Accept	0.012	0.118	1.398	0.162	Reject
H3b	GRN → CPF	0.014	0.131	2.036	0.042**	Accept	0.005	0.079	0.727	0.467	Reject	0.035	0.199	2.474	0.013**	Accept
H3c	GRN → CPS	0.058	0.258	4.406	0.000***	Accept	0.057	0.260	2.946	0.003**	Accept	0.055	0.248	3.119	0.002**	Accept
H3d	GRN → CPV	0.041	0.220	3.477	0.001**	Accept	0.034	0.205	2.053	0.040**	Accept	0.057	0.256	3.149	0.002**	Accept

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; PEM = Pro-Environmental Measures

Relationships are significant at: *$p < 0.100$; **$p < 0.05$; ***$p < 0.001$, β = Beta Coefficient; t-value = t – Statistics; p-value = Probability (p) value

Source(s): Table by authors

Table 5.
Indirect relationships

	Hypotheses	Complete						Male						Female					
		β	*t*	*p-value*	2.5% CI lower limit	97.5% CI upper limit	Out	*β*	*t*	*p-value*	2.5% CI lower limit	97.5% CI upper limit	Out	*β*	*t*	*p-value*	2.5% CI lower limit	97.5% CI upper limit	Out
H4a	PEM → GRN → CPE	0.085	2.460	0.014**	0.021	0.156	Accept	0.121	2.149	0.032**	0.015	0.235	Accept	0.060	1.320	0.187	−0.023	0.153	Reject
H4b	PEM → GRN → CPF	0.068	1.945	0.052*	0.001	0.140	Accept	0.043	0.699	0.485	−0.078	0.161	Reject	0.101	2.256	0.024**	0.022	0.201	Accept
H4c	PEM → GRN → CPS	0.134	4.111	0.000***	0.073	0.201	Accept	0.141	2.806	0.005**	0.041	0.240	Accept	0.126	2.806	0.005**	0.046	0.223	Accept
H4d	PEM → GRN → CPV	0.114	3.235	0.001**	0.048	0.186	Accept	0.111	1.905	0.057*	−0.001	0.225	Accept	0.130	2.784	0.005**	0.050	0.235	Accept

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; PEM = Pro-Environmental Measures
Relationships are significant at: *$p < 0.100$; **$p < 0.05$; ***$p < 0.001$, β = Beta Coefficient; *t*-value = *t* – Statistics; *p*-value = Probability (*p*) value; CI = Confidence Index
Source(s): Table by authors

were accepted, while hypothesis H_{4b} was rejected. In the context of the Female sample, all the mediation hypotheses were statistically significant except for the hypothesised mediation effect of green behaviour in the relationship between pro-environmental measures and consumer perceived emotional value (H4a: $\beta = 0.060$, $t = 1.320$, $p = 0.187$). Hence, hypotheses H4b, H4c and H4d were accepted, while hypothesis H4a was rejected.

Multi-group analysis (MGA)

Due to the established partial invariance, standardised path coefficients were compared across the Complete Male and Female groups via separate group-specific model estimations as part of Partial Least Squares – Multi-Group Analysis (PLS-MGA) (Gao *et al.*, 2024). As shown in Table 6, the influence of green behaviour on consumer-perceived emotional value is stronger in males ($\beta = 0.224$, $p < 0.05$) than in females ($\beta = 0.118$, $p < 0.05$). In comparison, the influence of green behaviour on consumer-perceived functional value is stronger for females ($\beta = 0.199$, $p < 0.05$) compared to males ($\beta = 0.079$, $p < 0.05$).

Further, the influence of pro-environmental measures on consumer perceived functional value is stronger in females ($\beta = 0.243$, $p < 0.05$) than in males ($\beta = 0.151$, $p < 0.05$). At the same time, the influence of pro-environmental measures on consumer-perceived social value is stronger in females ($\beta = 0.239$, $p < 0.05$) than in males ($\beta = 0.185$, $p < 0.05$). Hence, hypothesis H5 was accepted since there are discernable gender-based differences in the value perceptions of domestic tourists as consumers.

Discussion

The study aimed to explore whether the pro-environmental measures and green behaviour of star-graded accommodation establishments create value for tourists – assuming that enhanced CPV associated with green-oriented star-graded accommodation may subsequently enhance the pro-environmental behaviour of tourists as guests. As it emerged from our findings, in line with the extant literature (El-Adly, 2019; Majeed *et al.*, 2023; Verma and Chandra, 2016, 2018; Zhang *et al.*, 2021); generally, domestic tourist awareness of the pro-environmental measures established by an accommodation establishment positively influenced their consumer perceived [emotional, functional, social, and value for money] value perception. Furthermore, it was determined across all groups that pro-environmental measures influence the green behaviour of star-graded

Relationship	Original (Male)	*p*-value (Male)	Original (female)	*p*-value (female)	Invariant
GRN → CPE	0.224	0.020	0.118	0.166	No
GRN → CPF	0.079	0.467	0.199	0.014	No
GRN → CPS	0.260	0.003	0.248	0.002	Yes
GRN → CPV	0.205	0.037	0.256	0.001	Yes
PEM → CPE	0.199	0.021	0.258	0.002	Yes
PEM → CPF	0.151	0.082	0.243	0.004	No
PEM → CPS	0.185	0.058	0.239	0.001	No
PEM → CPV	0.182	0.081	0.188	0.054	Yes
PEM → GRN	0.541	0.000	0.508	0.000	Yes

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; PEM = Pro-Environmental Measures

*The Differences are significant in the relationships between males and females ($p < 0.05$)

Source(s): Table by authors

Table 6. Summary of multi-group analysis test

accommodation establishments, thus corroborating prior research findings (Kim *et al.*, 2018, 2021; Nisar *et al.*, 2022; Nurul Alam *et al.*, 2023; Sampene *et al.*, 2024), that the development of green-oriented EMS and other related policies influenced the pro-environmental performance, *among other things* the green behaviour of hospitality entities such as hotels and other accommodation services. Generally, the green behaviour of star-graded accommodation establishments (Complete sample) positively influenced the value perceptions of domestic tourists across the consumer-perceived value spectrum. Hence, supporting the extant prior research (Zhang *et al.*, 2021; Majeed *et al.*, 2023; Sampene *et al.*, 2024) that green-oriented hospitality product experiences influence the attitudes of accommodation guests; however, what is significant is that this notion is extended to domestic tourists as guests.

To the author's knowledge, no prior study has examined the mediating effect of green behaviour in the relationship between domestic tourists' awareness of pro-environmental measures at a star-graded accommodation establishment and their value perception towards the establishment. However, anecdotal evidence suggests that our findings corroborate the extant literature that suggests that green consumption translates to psychological benefits, including what is termed the warm glow- (akin to consumer-perceived emotional value), self-expressive- (akin to consumer-perceived social value) and in the accommodation context, experience- (akin to consumer-perceived functional value) benefits (Hu *et al.*, 2011; Majeed *et al.*, 2023). Therefore, without specific previous studies, our findings that the green behaviour of star-graded accommodation establishments positively mediates the relationship between pro-environmental measures and the value perceptions of domestic tourists across the perceived value spectrum explored in this study appear novel from a Global South perspective.

Significant gender-based variances emerged from the study. Regarding the PLS-SEM direct effects (Table 4), the green behaviour of star-graded accommodation establishments did not influence the consumer perceived functional value in male domestic tourists as it did in females. Whereas green behaviour did not influence, female domestic tourists' consumer perceived emotional value associated with star-graded, as it did males. Subsequently, these differences extend to the mediation effect of green behaviour (Table 5). The MGA (Table 6) confirms these gender-based differences in the effect of green behaviour. The literature (Wu *et al.*, 2021; Vicente-Molina *et al.*, 2018; Xiao and McCright, 2015) suggests that these discrepancies may be attributed to males not being mainly oriented towards their sphere in their pro-environmental behaviour. Hence, their potential disassociation of the green experience from the behaviour of establishments from the product quality-oriented value perceptions. While women are more practical and oriented towards their surroundings, and thus, they tend to value green experiences from a more objective than idiosyncratic, emotional perspective (Han *et al.*, 2011; Vicente-Molina *et al.*, 2018).

Intriguingly, in our study, female domestic tourists tended to be more socially and functionally susceptible regarding value perceptions than males when considering the influence of pro-environmental measures. This may be attributed to the pervasive gender roles (Koller *et al.*, 2011; Sawitri *et al.*, 2015) in society and their impact on subsequent responsiveness to pro-environmental behaviour. Contrary to Verma and Chandra's (2016) observations, males were more inclined to the effect of environmental measures such as green-oriented certifications and formal practices of accommodation establishments. In our study, females are more responsive to how pro-environmental measures influence the product and experience quality at star-graded accommodations that have established energy-saving and recycling policies. Some of the literature (Ifegbesan *et al.*, 2022; Vicente-Molina *et al.*, 2018) asserts that females are more likely to be concerned with social status and social acceptability via pro-environmental behaviour than males. In sum, our findings support the notion of heterogeneity in the influence of gender on the subsequent pro-

environmental behaviour of domestic tourists based on their perceived value (Cooper *et al.*, 2024; Ifegbesan *et al.*, 2022).

Theoretical implications

The study extends the emerging extent of literature on resident environmental citizenship as a critical part of the debate around the sustainability of tourism destinations (Cao *et al.*, 2024). Our study acknowledges that while the focus of contemporary empirical academic enquiry has been on the environmental impact of inbound tourists (Cooper *et al.*, 2024) or locals as residents (Cao *et al.*, 2024), the role of domestic tourists in the sustainability of tourism destinations is still relatively unknown compared to international tourist studies. Hence, our findings extend theory and empirical evidence to an under-researched population within the sustainability of tourism. Some literature (Sawitri *et al.*, 2015) bemoans the dearth of studies applying social-cognitive theory (SCT) to explain pro-environmental behaviour. The empirical evidence from our study provides an enhanced understanding of SCT and strengthens its relevance in explaining and predicting pro-environmental behaviour (Sampene *et al.*, 2024). Moreover, SCT delineates the effects of the gender of domestic tourists on the value perceptions induced by green hospitality experiences in star-graded accommodation establishments (Verma and Chandra, 2016; Vicente-Molina *et al.*, 2018). Hence, this contributes to the theory of hospitality. The study also addresses the discernible knowledge gap in the literature (Ifegbesan *et al.*, 2022) by providing empirical evidence that African star-graded accommodation establishments developing pro-environmental measures and employing green behaviour influence the value perceptions of domestic tourists. Beyond the extant literature (Majeed *et al.*, 2023; Sampene *et al.*, 2024; Roxas and Marte, 2022; Sawitri *et al.*, 2015, we advance theory by modelling the influence of gender on CPV within the context of pro-environmental behaviour and provide a nuanced understanding of conventional SCT and CPV theory from a gender-differences perspective.

Practical implications

This study offers hospitality and tourism practitioners and policymakers in South Africa some critical insights into the importance and influence of green hospitality in mitigating the potential adverse effects of resource consumption and promoting pro-environmental behaviour (green tourism) amongst domestic tourists. Considering the lag identified by the literature (Filimonau *et al.*, 2022; Ifegbesan *et al.*, 2022) in adopting pro-environmental behaviour in African countries compared to the West, two critical practical implications emerge. First, our study's perspective is that determining the CPV associated with green hospitality as a hybrid of pro-environmental measures and establishments' green behaviour is an antecedent to subsequent pro-environmental behaviour (see Berezan *et al.*, 2013; El-Adly, 2019; Nunkoo *et al.*, 2020) induced by domestic tourists' experiences at green-oriented accommodation establishments (see Zhang *et al.*, 2021). To address the potential green gap in Africa, star-graded accommodation establishments may engage in more concerted green hospitality as an interventionist social marketing approach to initiate domestic tourist behaviour change via value creation. This approach would entail aligning pricing, product, place and promotional aspects and have implications for hotels and other similar establishments in the accommodation sector. A bespoke green-social marketing mix would be developed and integrated into the accommodation experience.

Our study confirms heterogeneity in the influence of pro-environmental measures and green behaviour in the value perceptions of domestic tourists towards star-graded accommodation (see Vicente-Molina *et al.*, 2018; Xiao and McCright, 2015). Acknowledging gender-based differences in perceived value creation challenges traditional assumptions and illustrates the importance of recognising the value of gender-

based market analysis (see Koller *et al.*, 2011; Sawitri *et al.*, 2015; Wu *et al.*, 2021). Implementing inclusive green hospitality initiatives such as providing tourists/guests with real-time feedback on their consumptive behaviour, such as water use or energy saving based on differentiated (male vs. female) previous guest behaviour; reducing plate sizes at buffets and incorporating signage that encourages multiple visits to the buffet table to mitigate the embarrassment of being perceived to overeat; and offering cost-savings linked to room cleaning frequency and towel usage (see Dolnicar, 2020). Such initiatives will promote green behaviour amongst tourists while ensuring satisfaction with and loyalty to green hospitality establishments.

Limitations and future research

Although the study provides some critical insights, there are some limitations to consider. The study is cross-sectional and deductive, suggesting that the findings are from a particular snapshot with a specific population. Gender is explored within the South African context, and the findings relate to South African social norms. Therefore, the findings are generalisable to the South African context concerning the period under study. Replication of the study across various contexts is recommended to generate more insights into green hospitality and its value as an interventionist approach to influencing tourist behaviour. Validation of the model across different countries would also enhance the contribution of the measuring scale and its contribution to theory and literature.

References

Bagheri, M., Shojaei, P., Jahromi, S.A. and Kiani, M. (2020), "Proposing a model for assessing green hotels based on ecological indicators", *Tourism and Hospitality Research*, Vol. 20 No. 4, pp. 406-422, doi: 10.1177/1467358420904123.

Bandura, A. (1986), *Social Foundations of Thought and Action: A Social Cognitive Theory*, Prentice Hall, Englewood Cliffs, NJ.

Bandura, A. (1991), "Social Cognitive Theory of moral thought and action", in Kurtines, W.M. and Gewirtz, J.L. (Eds), *Handbook of Moral Behavior and Development*, Lawrence Erlbaum, Hillsdale, NJ, pp. 45-103.

Behera, A., Jatav, S.S., Yadav, A.K. and Behera, K.B. (2023), "How do domestic and foreign tourists understand the concept of 'green hotels' and its practices in India?", *Journal of Survey in Fisheries Sciences*, Vol. 10 No. 4S, pp. 2551-2559, doi: 10.17762/sfs.v10i4S.1614.

Berezan, O., Raab, C., Yoo, M. and Love, C. (2013), "Sustainable hotel practices and nationality: the impact on guest satisfaction and guest intention to return", *International Journal of Hospitality Management*, Vol. 34, pp. 227-233, doi: 10.1016/j.ijhm.2013.03.010.

Cabral, C. and Jabbour, C.J.C. (2020), "Understanding the human side of green hospitality management", *International Journal of Hospitality Management*, Vol. 88, 102389, doi: 10.1016/j.ijhm.2019.102389.

Camisón, C. and Forés, B. (2015), "Is tourism firm competitiveness driven by different internal or external specific factors?: new empirical evidence from Spain", *Tourism Management*, Vol. 48, pp. 477-499, doi: 10.1016/j.tourman.2015.01.001.

Cao, J., Qiu, H., Morrison, A.M. and Guo, Y. (2024), "The effect of pro-environmental destination image on resident environmental citizenship behavior: the mediating roles of satisfaction and pride", *Land*, Vol. 13 No. 7, 1075, doi: 10.3390/land13071075.

Cohen, J. (1988), *Statistical Power Analysis for the Behavioural Sciences*, 2nd ed., Routledge, New York.

Cooper, E., Dolnicar, S. and Grün, B. (2024), "Understanding how a commitment-based pledge intervention encourages pro-environmental tourist behaviour", *Tourism Management*, Vol. 104, 104928, doi: 10.1016/j.tourman.2024.104928.

Dash, G. and Paul, J. (2021), "CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting", *Technological Forecasting and Social Change*, Vol. 173, 121092, doi: 10.1016/j.techfore.2021.121092.

Dedeoğlu, B.B., Karakuş, Y., Çalışkan, C. and Aydın, Ş. (2023), "A complexity perspective for antecedents of support for tourism development", *Journal of Hospitality and Tourism Insights*, Vol. 6 No. 1, pp. 191-221, doi: 10.1108/JHTI-02-2021-0048.

Do, V.T.H. and Do, L.T. (2024), "Downward social comparison in explaining pro-environmental attitude-sustainable consumption behavior gap", *Asia Pacific Journal of Marketing and Logistics*, Vol. ahead-of-print No. ahead-of-print, doi: 10.1108/APJML-05-2024-0665.

Dolnicar, S. (2020), "Designing for more environmentally friendly tourism", *Annals of Tourism Research*, Vol. 84, 102933, doi: 10.1016/j.annals.2020.102933.

Durán-Román, J.L., Cárdenas-García, P.J. and Pulido-Fernández, J.I. (2021), "Tourists' willingness to pay to improve sustainability and experience at destination", *Journal of Destination Marketing and Management*, Vol. 19, 100540, doi: 10.1016/j.jdmm.2020.100540.

El-Adly, M.I. (2019), "Modelling the relationship between hotel perceived value, customer satisfaction, and customer loyalty", *Journal of Retailing and Consumer Services*, Vol. 50, pp. 322-332, doi: 10.1016/j.jretconser.2018.07.007.

Filimonau, V., Matute, J., Mika, M., Kubal-Czerwińska, M., Krzesiwo, K. and Pawłowska-Legwand, A. (2022), "Predictors of patronage intentions towards 'green' hotels in an emerging tourism market", *International Journal of Hospitality Management*, Vol. 103, 103221, doi: 10.1016/j.ijhm.2022.103221.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50, doi: 10.2307/3151312.

Gallarza, M.G. and Gil Saura, I. (2020), "Consumer value in tourism: a perspective article", *Tourism Review*, Vol. 75 No. 1, pp. 41-44, doi: 10.1108/TR-06-2019-0227.

Gao, Z., Cheah, J.H., Lim, X.J., Liu, Y. and Morrison, A.M. (2024), "Reinvestigating repurchase intentions for travel apps: a comparison of China's various tiers of cities", *Asia Pacific Journal of Tourism Research*, Vol. 29 No. 9, pp. 1033-1062, doi: 10.1080/10941665.2024.2358340.

Gössling, S. and Peeters, P. (2015), "Assessing tourism's global environmental impact 1900-2050", *Journal of Sustainable Tourism*, Vol. 23 No. 5, pp. 639-659, doi: 10.1080/09669582.2015.1008500.

Griffin, M.M. and Steinbrecher, T.D. (2013), "Large-Scale datasets in special education research", *International Review of Research in Developmental Disabilities*, Vol. 45, pp. 155-183, doi: 10.1016/B978-0-12-407760-7.00004-9.

Hair, J.F., Ringle, C.M. and Sarstedt, M. (2013), "Partial least squares structural equation modeling: rigorous applications, better results and higher acceptance", *Long Range Planning*, Vol. 46 Nos 1-2, pp. 1-12, doi: 10.1016/j.lrp.2013.01.001, available at: https://ssrn.com/abstract=2233795

Han, H., Hsu, L.-T., Lee, J.-S. and Sheu, C. (2011), "Are lodging customers ready to go green? An examination of attitudes, demographics, and eco-friendly intentions", *International Journal of Hospitality Management*, Vol. 30 No. 2, pp. 345-355, doi: 10.1016/j.ijhm.2010.07.008.

Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modelling", *Journal of the Academy of Marketing Science*, Vol. 43 No. 1, pp. 115-135, doi: 10.1007/s11747-014-0403-8.

Hsiao, T.Y., Chuang, C.M., Kuo, N.W. and Yu, S.M.F. (2014), "Establishing attributes of an environmental management system for green hotel evaluation", *International Journal of Hospitality Management*, Vol. 36, pp. 197-208, doi: 10.1016/j.ijhm.2013.09.005.

Hu, B., Fu, Y. and Wang, Y. (2011), "An empirical study on the dimensions of consumer perceived value in green hotels", *International Conference on Management and Service Science*, IEEE, pp. 1-4, doi: 10.1109/ICMSS.2011.5998754.

Ifegbesan, A.P., Rampedi, I.T., Ogunyemi, B. and Modley, L. (2022), "Predicting pro-environmental behaviour amongst citizens in African countries: a cross-national study amongst six African countries", *Sustainability*, Vol. 14 No. 15, 9311, doi: 10.3390/su14159311.

Kim, Y.H., Barber, N. and Kim, D.K. (2018), "Sustainability research in the hotel industry: past, present, and future", *Journal of Hospitality Marketing and Management*, Vol. 28 No. 5, pp. 576-620, doi: 10.1080/19368623.2019.1533907.

Kim, A., Kim, K.P. and Nguyen, T.H.D. (2021), "The green accommodation management practices: the role of environmentally responsible tourist markets in understanding tourists' pro-environmental behaviour", *Sustainability*, Vol. 13 No. 4, 2326, doi: 10.3390/su13042326.

Koller, M., Floh, A. and Zauner, A. (2011), "Further insights into perceived value and consumer loyalty: a "Green" perspective", *Psychology and Marketing*, Vol. 28 No. 12, pp. 1154-1176, doi: 10.1002/mar.20432.

Latif, K.F., Tariq, R., Muneeb, D., Sahibzada, U.F. and Ahmad, S. (2022), "University Social Responsibility and performance: the role of service quality, reputation, student satisfaction and trust", *Journal of Marketing for Higher Education*, Vol. ahead-of-print No. ahead-of-print, pp. 1-25, doi: 10.1080/08841241.2022.2139791.

Leong, A.M.W., Yeh, S.S., Chen, H.B., Lee, C.L. and Huan, T.C. (2024), "Does gender make a difference in heritage tourism experience? Searching for answers through multi-group analysis", *Tourism Management Perspectives*, Vol. 52, 101250, doi: 10.1016/j.tmp.2024.101250.

Ma, Y., Tang, H. and Ren, J. (2024), "Tourists' risk perceptions and pro-environmental behaviour during the pandemic: the roles of environmental concern and environmental ethics reflection", *Current Issues in Tourism*, Vol. ahead-of-print No. ahead-of-print, pp. 1-18, doi: 10.1080/13683500.2024.2351145.

Majeed, S., Kim, W.G. and Kim, T. (2023), "Perceived green psychological benefits and customer pro-environment behaviour in the value-belief-norm theory: the moderating role of perceived green CSR", *International Journal of Hospitality Management*, Vol. 113, 103502, doi: 10.1016/j.ijhm.2023.103502.

Matiza, T. and Kruger, M. (2022), "Profiling the South African recreational domestic tourist in the era of COVID-19", *Leisure Sciences*, Vol. 46 No. 7, pp. 955-976, doi: 10.1080/01490400.2022.2046525.

Mengzhen, L., Sin, Y., Jaafar, W.-M.-W., Khir, A.M., Hamsan, H.H., Yong, M.H., Wu, S.L., Ooi, P.B., Ong, D.L.T. and Ong, S.C. (2022), "Curbing bribe-giving in Malaysia: the role of attitudes and parents", *Public Integrity*, Vol. 26 No. 2, pp. 188-202, doi: 10.1080/10999922.2022.2144017.

Merli, R., Preziosi, M., Acampora, A. and Ali, F. (2019), "Why should hotels go green? Insights from guests experience in green hotels", *International Journal of Hospitality Management*, Vol. 81, pp. 169-179, doi: 10.1016/j.ijhm.2019.04.022.

Nisar, Q.A., Haider, S., Ali, F., Gill, S.S. and Waqas, A. (2022), "The role of green HRM on environmental performance of hotels: mediating effect of green self-efficacy and employee green behaviors", *Journal of Quality Assurance in Hospitality and Tourism*, Vol. 25 No. 1, pp. 85-118, doi: 10.1080/1528008X.2022.2109235.

Nunkoo, R., Teeroovengadum, V., Ringle, C.M. and Sunnassee, V. (2020), "Service quality and customer satisfaction: the moderating effects of hotel star rating", *International Journal of Hospitality Management*, Vol. 91, 102414, doi: 10.1016/j.ijhm.2019.102414.

Nurul Alam, M., Mashi, M.S., Azizan, N.A., Alotaibi, M. and 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 and Tourism*, Vol. ahead-of-print No. ahead-of-print, pp. 1-28, doi: 10.1080/1528008X.2023.2249233.

Nyikana, S. and Bama, H.K. (2023), "Domestic tourism as a recovery strategy in the face of COVID-19: insights from South Africa", *Acta Commercii-Independent Research Journal in the Management Sciences*, Vol. 23 No. 1, 1066, doi: 10.4102/ac.v23i1.1066, available at: https://hdl.handle.net/10520/ejc-acom_v23_n1_a1066

Prebensen, N.K. and Rosengren, S. (2016), "Experience value as a function of hedonic-and utilitarian-dominant services", *International Journal of Contemporary Hospitality Management*, Vol. 28 No. 1, pp. 113-135, doi: 10.1108/IJCHM-02-2014-0073.

Ringle, C.M., Wende, S. and Becker, J.-M. (2024), "SmartPLS 4. Bönningstedt: SmartPLS", available at: https://www.smartpls.com

Robinot, E. and Giannelloni, J.-L. (2010), "Do hotels' 'green' attributes contribute to customer satisfaction?", *Journal of Services Marketing*, Vol. 24 No. 2, pp. 157-169, doi: 10.1108/08876041011031127.

Roxas, H.B. and Marte, R. (2022), "Effects of institutions on the eco-brand orientation of millennial consumers: a social cognitive perspective", *Journal of Consumer Marketing*, Vol. 39 No. 1, pp. 93-105, doi: 10.1108/JCM-11-2020-4262.

Saeed, B., Tasmin, R., Mahmood, A. and Hafeez, A. (2022), "Development of a multi-item Operational Excellence scale: exploratory and confirmatory factor analysis", *The TQM Journal*, Vol. 34 No. 3, pp. 576-602, doi: 10.1108/TQM-10-2020-0227.

Sampene, A.K., Li, C., Wiredu, J., Agyeman, F.O. and Brenya, R. (2024), "Examining the nexus between social cognition, biospheric values, moral norms, corporate environmental responsibility and pro-environmental behaviour. Does environmental knowledge matter?", *Current Psychology*, Vol. 43 No. 7, pp. 6549-6569, doi: 10.1007/s12144-023-04832-6.

Saut, M. and Bie, S. (2022), "Impact of service expectation, experiential quality, and perceived value on hotel customer satisfaction", *Journal of Quality Assurance in Hospitality and Tourism*, Vol. 25 No. 4, pp. 781-809, doi: 10.1080/1528008X.2022.2141414.

Sawitri, D.R., Hadiyanto, H. and Hadi, S.P. (2015), "Pro-environmental behavior from a social cognitive theory perspective", *Procedia Environmental Sciences*, Vol. 23, pp. 27-33, doi: 10.1016/j.proenv.2015.01.005.

Trinh, T.T. and Thuy, H.T.K. (2024), "Policies to practice in greening accommodation at world heritage", *Journal on Tourism and Sustainability*, Vol. 7 Nos 1 and 2, pp. 124-131, doi: 10.5281/zenodo.12599293.

van Valkengoed, A.M., Abrahamse, W. and Steg, L. (2022), "To select effective interventions for pro-environmental behaviour change, we need to consider determinants of behaviour", *Nature Human Behaviour*, Vol. 6 No. 11, pp. 1482-1492, doi: 10.1038/s41562-022-01473-w.

Verma, V.K. and Chandra, B. (2016), "Hotel guest's perception and choice dynamics for green hotel attribute: a mix method approach", *Indian Journal of Science and Technology*, Vol. 9 No. 5, doi: 10.17485/ijst/2016/v9i5/77601.

Verma, V.K. and Chandra, B. (2018), "An application of theory of planned behavior to predict young Indian consumers' green hotel visit intention", *Journal of Cleaner Production*, Vol. 172, pp. 1152-1162, doi: 10.1016/j.jclepro.2017.10.047.

Vicente-Molina, M.A., Fernández-Sainz, A. and Izagirre-Olaizola, J. (2018), "Does gender make a difference in pro-environmental behaviour? The case of the Basque Country University students", *Journal of Cleaner Production*, Vol. 176, pp. 89-98, doi: 10.1016/j.jclepro.2017.12.079.

Wang, Y. and Jiao, Y. (2024), "Can environmental science popularization of tourism live streaming stimulate potential tourists' pro-environmental behavior intentions? A construal level theory analysis", *Journal of Hospitality and Tourism Management*, Vol. 60, pp. 42-50, doi: 10.1016/j.jhtm.2024.06.003.

Worsfold, K., Fisher, R., McPhail, R., Francis, M. and Thomas, A. (2016), "Satisfaction, value and intention to return in hotels", *International Journal of Contemporary Hospitality Management*, Vol. 28 No. 11, pp. 2570-2588, doi: 10.1108/IJCHM-04-2015-0195.

Wu, J., Font, X. and Liu, J. (2021), "Tourists' pro-environmental behaviours: moral obligation or disengagement?", *Journal of Travel Research*, Vol. 60 No. 4, pp. 735-748, doi: 10.1177/0047287520910787.

Xiao, C. and McCright, A.M. (2015), "Gender differences in environmental concern: revisiting the institutional trust hypothesis in the USA", *Environmental Behaviour*, Vol. 47 No. 1, pp. 17-37, doi: 10.1177/0013916513491571.

Zeithaml, V.A. (1988), "Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence", *Journal of Marketing*, Vol. 52 No. 3, pp. 2-22, doi: 10.1177/002224298805200302.

Zhang, N., Liu, R., Zhang, X.Y. and Pang, Z.L. (2021), "The impact of consumer perceived value on repeat purchase intention based on online reviews: by the method of text mining", *Data Science and Management*, Vol. 3, pp. 22-32, doi: 10.1016/j.dsm.2021.09.001.

Corresponding author
Tafadzwa Matiza can be contacted at: tafadzwa.matiza@nwu.ac.za

Supplementary data

Profile		Count (*n*)	Frequency (%)
Gender	Male	217	49.32%
	Female	220	50.00%
	Non-binary	3	0.68%
Age	18–24	58	13.21%
	25–34	204	46.47%
	35–44	110	25.06%
	45–54	45	10.25%
	55–64	18	4.10%
	Above 64	4	0.91%
Economic activity	Employed in the private sector	305	69.32%
	Student	26	5.91%
	Unemployed	28	6.36%
	Employed in the public sector	74	16.82%
	Retired	7	1.59%
Travel companion(s)	Alone	84	10.40%
	With my partner	229	28.34%
	Family (Adults and children)	174	21.53%
	Work colleagues	67	8.29%
	With my children	82	10.15%
	With my friends	80	9.90%
	Friends and family	92	11.39%
Province of origin	North-West	10	2.27%
	Gauteng	235	53.41%
	Limpopo	14	3.18%
	Mpumalanga	28	6.36%
	Eastern Cape	20	4.55%
	Western Cape	62	14.09%
	KwaZulu Natal	56	12.73%
	Free State	12	2.73%
	Northern Cape	3	0.68%

Source(s): Table by authors

Table A1. Socio-demographic profile

Step 2	Original correlation	Correlation permutation mean	5.0%	Permutation *p*-value
CPE	1.000	0.998	0.992	0.793
CPF	1.000	0.997	0.992	0.997
CPS	0.999	0.999	0.995	0.676
CPV	0.998	0.995	0.985	0.679
GRN	1.000	0.999	0.997	0.819
PEM	0.998	0.997	0.991	0.576

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; PEM = Pro-Environmental Measures
Source(s): Table by authors

Table A2. MICOM Summary – Step 2

Step 3a	Original difference	Permutation mean difference	2.5%	97.5%	Permutation *p*-value
CPE	−0.060	0.004	−0.205	0.197	0.557
CPF	−0.035	0.002	−0.183	0.190	0.745
CPS	0.205	0.000	−0.213	0.202	0.050
CPV	−0.020	0.003	−0.208	0.214	0.837
GRN	−0.008	0.000	−0.198	0.195	0.931
PEM	0.007	0.000	−0.198	0.208	0.958

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; PEM = Pro-Environmental Measures
Source(s): Table by authors

Table A3. MICOM Summary – Step 3a (mean)

Step3b	Original difference	Permutation mean difference	2.5%	97.5%	Permutation *p*-value
CPE	0.102	0.001	−0.362	0.396	0.618
CPF	0.236	−0.012	−0.447	0.433	0.306
CPS	0.121	−0.000	−0.246	0.253	0.345
CPV	0.359	0.003	−0.349	0.374	0.054
GRN	0.068	0.004	−0.308	0.297	0.686
PEM	0.371	−0.006	−0.418	0.374	0.067

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; PEM = Pro-Environmental Measures
Source(s): Table by authors

Table A4. MICOM Summary – Step 3b (variance)

	CPE	CPF	CPS	CPV	GRN	PEM
Complete						
CPE						
CPF	0.616					
CPS	0.557	0.556				
CPV	0.843	0.621	0.588			
GRN	0.326	0.257	0.404	0.380		
PEM	0.383	0.308	0.396	0.384	0.606	
Male						
CPE						
CPF	0.646					
CPS	0.640	0.589				
CPV	0.855	0.551	0.629			
GRN	0.379	0.176	0.398	0.346		
PEM	0.375	0.222	0.374	0.351	0.614	
Female						
CPE						
CPF	0.571					
CPS	0.487	0.534				
CPV	0.831	0.716	0.558			
GRN	0.277	0.364	0.407	0.438		
PEM	0.386	0.421	0.438	0.428	0.612	

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; PEM = Pro-Environmental Measures
Source(s): Table by authors

Table A5. Discriminate validity – heterotrait-monotrait ratio of correlations (HTMT)

	CPE	CPF	CPS	CPV	GRN	PEM
Complete						
CPE	0.871					
CPF	0.528	0.885				
CPS	0.475	0.477	0.894			
CPV	0.669	0.509	0.468	0.826		
GRN	0.288	0.231	0.363	0.319	0.830	
PEM	0.323	0.260	0.336	0.304	0.518	0.749
Male						
CPE	0.862					
CPF	0.554	0.896				
CPS	0.532	0.507	0.889			
CPV	0.698	0.473	0.510	0.853		
GRN	0.331	0.161	0.360	0.303	0.833	
PEM	0.320	0.194	0.326	0.293	0.541	0.778
Female						
CPE	0.879					
CPF	0.487	0.872				
CPS	0.429	0.459	0.902			
CPV	0.631	0.555	0.438	0.793		
GRN	0.249	0.323	0.369	0.351	0.833	
PEM	0.318	0.344	0.364	0.318	0.508	0.712

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; PEM = Pro-Environmental Measures
Source(s): Table by authors

Table A6. Discriminate validity – Fornell and Larcker criteria

Table A7.
Total effect

	Complete						Male						Female					
	β	STDEV	t	p- values	2.5%	97.5%	β	STDEV	t	p- values	2.5%	97.5%	β	STDEV	t	p- values	2.5%	97.5%
GRN → CPE	0.164	0.064	2.575	0.010**	0.039	0.290	0.224	0.098	2.275	0.023**	0.023	0.409	0.118	0.084	1.398	0.162	−0.050	0.278
GRN → CPF	0.131	0.064	2.036	0.042**	0.002	0.257	0.079	0.109	0.727	0.467	−0.147	0.280	0.199	0.081	2.474	0.013**	0.034	0.351
GRN → CPS	0.258	0.059	4.406	0.000***	0.140	0.370	0.260	0.088	2.946	0.003**	0.069	0.421	0.248	0.079	3.119	0.002**	0.081	0.396
GRN → CPV	0.220	0.063	3.477	0.001**	0.093	0.341	0.205	0.100	2.053	0.040**	−0.006	0.385	0.256	0.081	3.149	0.002**	0.088	0.409
PEM → CPE	0.323	0.051	6.394	0.000***	0.216	0.416	0.320	0.074	4.345	0.000***	0.161	0.453	0.318	0.069	4.630	0.000***	0.165	0.437
PEM → CPF	0.260	0.053	4.944	0.000***	0.152	0.357	0.194	0.076	2.552	0.011**	0.030	0.328	0.344	0.068	5.070	0.000***	0.190	0.461
PEM → CPS	0.336	0.052	6.478	0.000***	0.227	0.430	0.326	0.077	4.222	0.000***	0.160	0.465	0.364	0.057	6.415	0.000***	0.238	0.464
PEM → CPV	0.304	0.059	5.186	0.000***	0.183	0.414	0.293	0.086	3.414	0.001**	0.106	0.448	0.318	0.073	4.349	0.000***	0.166	0.453
PEM → GRN	0.518	0.046	11.159	0.000***	0.418	0.601	0.541	0.060	8.996	0.000***	0.409	0.645	0.508	0.072	7.081	0.000***	0.346	0.629

Note(s): CPE = Consumer Perceived Emotional Value; CPF = Consumer Perceived Functional Value; CPS = Consumer Perceived Social Value; CPV = Consumer Perceived Value for Money; GRN = Green Behaviour; PEM = Pro-Environmental Measures
Relationships are significant at: *$p < 0.100$; **$p < 0.05$; ***$p < 0.001$, β = Beta Coefficient; t-value = t – Statistics; p-value = Probability (p) value
Source(s): Table by authors