Key factors influencing the guest loyalty towards green hotels in an island sun and beach destination

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ABSTRACT

Purpose - A study has been conducted in Gran Canaria to analyze the drivers and factors that influence guest loyalty to green hotels, and to identify the hotel guests with circular preferences.

Design/methodology/approach - We propose a conceptual to assess if guest circular preferences and behaviour and hotel environmental policy affect guest loyalty towards green hotels. A survey was conducted with tourists accommodated in hotel establishments in Gran Canaria, and 211 questionnaires were obtained.

Findings - This model identifies main predictors of accomplishment and connects them to different measures that help to achieve better performance in terms of circular hotel practices. This paper identifies those tourist segments with a more pro-circular behaviour and uses a multi-group analysis by partial least squares to assess the moderation of control variables of the theoretical model proposed.

Originality/value - The value added to the research on tourists' circular and eco-friendly behaviour is threefold: First, it analyzes the tourists' intention and behaviour in an island destination, while most empirical research was carried out in continental areas. Second, we assess the moderation effect of several control variables (gender, age or booking system), identifying different tourist segments and finding the ones with a more pro-circular behaviour. Third, results offer insights for destination management organizations and hotel marketers to develop an appropriate strategy to promote circular practices among tourists and to identify those willing to pay more for a green hotel or room.

Keywords: Circular practices; Green hotel; Hotel Environmental Policy; Guest loyalty; PLS-SEM; Multigroup Analysis (MGA).

Article Classification: Research Paper.

1. INTRODUCTION

In recent times, Western industrialized nations have placed growing emphasis on environmental consciousness and the advancement of sustainable development. This has catalyzed a push towards adopting a circular economy (CE) framework aimed at guaranteeing long-term sustainability.

Tourism fast growh has raised the visibility of its environmental effects and increased tourists' concerns about how to deal with them (Hall, 2016). However, the tourism sector is characterized by a linear

consumption-production model based on high consumption of resources, and it is a highly waste-generating industry (Rodríguez et al., 2020). In Europe, tourism activity produces 6.8% of total waste generated (EEA, 2019). Additionally, the tourism industry emits 8% of the global carbon dioxide, and the hotel industry produces 1% of worldwide greenhouse gas emissions (UNWTO, 2018). Tourism also generates other negative externalities like biodiversity loss, road congestion, and noise pollution and has contributed to climate change effects like sea level rise (UNWTO, 2018).

The transition to a CE in a destination, in addition to reducing or eliminating the negative environmental externalities, will contribute to the achievement of the Sustainable Development Goals in the 2030 Agenda (UNWTO, 2018), especially to sustainable use of oceans and marine resources (goal 14), responsible consumption and production (goal 12), sustainable cities and communities (goal 9), and, inclusive and sustained economic growth (goal 8).

The negative environmental externalities of tourism activities have recently led policymakers to stress the need to promote the evolution to a CE in tourism in many countries or regions (e.g. UNWTO, 2021; MITECO, 2020), and it has also become a popular topic in the literature in the past five years. The scarce literature on CE and tourism has mainly focused on the supply side (Rodríguez et al., 2020), especially on the hotel sector, while tourists are a critical factor in the transition to a CE in a destination.

GfK Panel Services Deutschland (2009) considers that hotel customers do not perceive environmental aspects as essential benefits, overlooking the interconnection between the quality of the environment nature and the hotel's sustainability policy. They show that tourists' knowledge of the green hotel practices generates confidence in the hotel quality, which indicates that they are willing to pay more for a green hotel. However, the willingness to pay a premium varies significantly depending on the type of tourist. This study concludes that adopting eco-friendly management strategies enhances customers' perception of quality. Furthermore, environmental awareness also plays a key role in the booking process, leading to a significant opportunity for the hotel to create a competitive advantage through the sustainability strategies outlined in its environmental policy.

In this scenario, examining tourists' attitudes and behaviours regarding circular and sustainable practices while visiting a tourism destination is crucial for implementing a sustainable and circular management approach that prioritizes environmental conservation. However, the recent literature only measures the reaction of tourists visiting ecolabel-certified hotels, not all types of hotels (Merli et al., 2019; Preziosi et al., 2019). Other papers focus on the general environmental behaviour of tourists in a destination, and the literature needs to consider the different demand segments with possible different behaviours. Additionally, the research available needs to go more in-depth into the circular or eco-friendly behaviour of tourists at home, as this might have some influence on the circular behaviour while travelling (Acampora et al., 2022; Patwary et al., 2023).

This paper tries to contribute to the knowledge of the role of tourist loyalty towards green hotels in this transition towards a CE in an island sun and beach destination by analyzing the key drivers that influence their decision-making process, assessing if the attitude of adopting circular practices when travelling and at home and the hotel's circular practices influence their environmental awareness. The paper does not only focus on tourists' behaviour at the destination; we also consider their home circular behaviour and practices, while we implement a multi-group analysis to detect different behaviours across different tourism segments, such as gender, age, booking channel, type of board and type of traveller. It is essential to know how customers behave regarding circular practices, as well as to rank their preferences toward the CE practices in hotels so that we can identify the type of customer that prefers greener practices. This can allow us to focus on demand segments that present higher levels of environmental commitment.

The paper contributes to the research on tourists' circular and eco-friendly behaviour in several ways. First, it focuses on analyzing the intention and behaviour of the tourists in an island mature destination, while most empirical research has been carried out in continental areas. Second, we assess the moderation effect of several control variables such as gender, age or the booking system used. This leads to identifying different tourist segments and finding the ones with more pro-circular behaviour. Third, results will offer insights for destination management organizations and hotel marketers to develop a more appropriate strategy to promote CE practices among tourists and to identify those with pro-circular behaviour who might be willing to pay more for a green or circular hotel or room.

2. THEORETICAL FRAMEWORK

Many studies show that tourists evoke concern for the environment as a critical aspect of their vacation experience quality (e.g. Acampora et al., 2022; Preziosi et al., 2019). The study of how consumers' awareness and attitudes toward environmental issues affect environmental/green consumption and behaviour is a popular topic in the literature. Santos-Corrada et al. (2023) show that in the context of CE, environmental awareness is the most relevant variable influencing sustainable consumption practices, and the level of awareness affects environmental attitude.

Some literature analyses the relationship among tourists' values, attitudes, and environmental behaviours. Results detect a positive relationship between attitudes, values and ecological behavioural intentions or between environmental concern and environmentally related behaviour (e.g. Hedlund, 2011). Patwary et al. (2023) identified a positive relationship between the tourists' attitude towards visiting hotels implementing green practices and their green price sensitivity. However, Preziosi et al. (2019) highlight first that the hotel communication of the hotel's green practices represents a critical issue between the guests' environmental awareness and their perception of the hotel's sustainable practices and second, that there is no direct

relationship between the guest loyalty and the hotel green practices, as they need the mediation of the guest satisfaction with the hotel. Thus, the eco-friendly practices increase guest satisfaction.

One stream of literature analyses how hotel green practices or environmental policy affect guest loyalty and/or intention to revisit (e.g. Acampora et al., 2022; Merli et al., 2019; Lee et al., 2018; Moise et al., 2018). Acampora et al. (2022) demonstrate that hotel environmental policies positively affect customer satisfaction but not guest loyalty; however, customer satisfaction is a mediator between hotel environmental policy and guest loyalty. The results of Merli et al. (2019) demonstrate that hotel green practices or policy positively influence guest loyalty. Moise et al. (2018) show that hotel's environmentally friendly practices positively influence the intention to revisit the hotel and the willingness to spread positive word-of-mouth. Similarly, Lee et al. (2018) show a positive effect of green labels/certificates on guests' perceived value. Labels play a crucial role in guests' eco-friendly intentions, especially in the intention to return to the hotel and pay a premium price.

Other tourism literature stream focuses on analyzing socio-demographic characteristics' effects in shaping tourists' environmentally friendly attitudes and behaviour (e.g. Dolnicar, 2010; Kim, 2012; Leonidou et al., 2015). Women and older tourists have a friendlier attitude towards the environment (Kim, 2012). For Dolnicar (2010) age is a good predictor of tourists' pro-environmental behaviour. Kang et al. (2012) found that men are more willing to pay higher prices for sustainable initiatives. But few studies considered age, gender or income as control variables in the model (Arun et al., 2021).

On the other hand, customers can be grouped according to their preferences, which face similar behaviours to different marketing variables, i.e., what they buy or value. However, just a few studies cover hotel sustainability across different demand segments according to their booking choices or characteristics, such as the type of tourists segment, i.e., families, couples…, or the choice of board or booking channel. Ali et al. (2023) highlight that business and family customers are the most critical segments of Norwegian green hotels. Other papers focus on the different board types to estimate the waste generation of the different food service choices (e.g. Diaz-Farina et al., 2023; Kasavan et al., 2022), while they do not explore the different green hotel preferences of the different customer segments.

Finally, another research stream analyses how the hotel booking system chosen to book an accommodation influences the guests' eco-friendly attitudes and behaviour (e.g. Yildiz et al., 2023). Tourists can book a hotel through traditional intermediaries that sell hotel rooms offline, like travel agencies and tour operators, or online, through the internet, through hotels' websites or platforms, online travel agencies OTAs (e.g. Booking) or metasearch engines such as TripAdvisor or similar. Booking (2019) conducted a study in 12 international markets, revealing that 68% of the platform's user respondents would consider sustainable accommodation if the platform presented the possibility and would even be willing to pay a premium price. Yildiz et al. (2023) studied the effect of a green hotel label on online hotel booking intentions, showing that

an eco-label/certification indicated on the hotel's website positively affects booking behaviour and the intention to book online.

The literature review has identified several gaps. First, few studies considered age, gender or income as control variables in the model, when analyzing tourists' environmentally friendly or circular attitudes and behaviours (Arun et al., 2021). Second, another characteristic that has yet to be considered as a control variable is the type of traveller (single, couple, family, friends and others), even though that information is present in many kinds of research (Acampora et al., 2022). Considering the socio-demographic characteristics of the sample (gender, age, booking channel, type of traveller, etc.) can lead to identifying different segments of tourists with different circular behaviours and investigating how these characteristics impact the various customer segments. Third, most studies used non-probability sampling techniques and used email and internet-based surveys (Arun et al., 2021), while we used face-to-face interviews that allowed the creation of a comfortable and welcoming environment for participants, building a holistic picture and validating and corroborating information. Different studies have demonstrated the invariance of paper and online surveys (Martínez-Gómez et al., 2017). Fourth, most literature focuses on intentions rather than their actual behaviour (Arun et al., 2021), while we collect information on circular practices and behaviour.

3. CONCEPTUAL ANALYSIS

3.1. Conceptual Model

We used a version of the validated theoretical models proposed by Preziosi et al. (2019), Patwary et al. (2023) and Acampora et al. (2022) to identify significant dimensions that significantly impact the Loyalty of Guests towards Green Hotels (LTGH). These dimensions include Guest sustainable consumption and waste management culture (GSCWMC) -which considers the sustainable consumption and waste sorting and recycling habits of tourists-, Guest circular behaviour at home (energy & water) (GCBH_EW) -which considers the measures carried out at home for saving and reusing energy and water-, Guest preferences of hotel circular practices (GPHCP) -which includes the tourist's assessment of the most common hotels' circular measures-, Guest circular behaviour in hotel (GCBH) -which considerss circular practices implemented by tourists in hotels- and Hotel Environmental Policy (HEP) -which includes the hotel' environmental and energy and water policies-.

Figure 1

The description of constructs and indicators used to represent them, supported by the literature review, are found in the Appendix.

3.2. Research Hypotheses

The following hypotheses concerning this research were established based on the previous theoretical foundations.

3.2.1. Guest circular behaviour at home (energy & water)

In recent decades, environmental protection has acquired a universal focus and is a crucial aspect of guests' decision-making process (Huang et al., 2014). Environmental behaviour is the action taken to change the environment positively. Yarimoglu and Gunay (2019) use a construct in an extended model of the TPB that describes the sustainable management and waste sorting and recycling behaviour at the guests' homes in Turkish hotels, which is the best predictor of green hotels' visit intentions and loyalty. We use a similar variable called Guest sustainable consumption and waste management culture GSCWMC). So, proactive GSCWMC customers affect the intention to visit and Loyalty to green hotels.

In the hotel industry guests show their environmental behaviour mostly indirectly by booking their stay in tourist accommodations that implement green measures (Yusof et al., 2015). A literature review on the hotel industry has also demonstrated that guests who are more predisposed to adopt pro-environmental behaviour are more inclined to present a future positive behavioural intention toward eco-friendly hotels (Baker et al., 2014; Millar et al., 2012; Moise et al., 2018). Based on the aforementioned premises, this study postulates:

H1a-1: GCBH_EW influences GCBH.

H1a-2: GCBH_EW influences GSCWMC.

H1a-3: GCBH_EW influences LTGH.

H1a-4: GCBH_EW influences GPHCP.

3.2.2.Hotel Environmental Policy

Positive environmental performance corresponds to a higher inclination to acknowledge and value hotels' practices to reduce their ecological impact (Han et al., 2011). Green practices can be defined as all business activities in the hotel sector that aspire to reduce negative environmental impacts (Kim et al., 2017). This classification includes a wide diversity of measures that the hospitality sector can implement. Some initiatives are directly related to customer behaviour (e.g. switching off air-conditioning and lights when leaving the room). Others are associated with the sustainable management of the hotel's operations (water or energy-saving policy) and can directly impact their experience (Rodriguez et al., 2020). Recent research has noticed that guests' environmental culture has a positive impact on the evaluation of hotels' environmental initiatives (Yusof et al., 2015), which is also affected by the hotel's initiative to communicate its eco-friendly policies and practices, leading to enhanced confidence and increased positive attitude of guest towards green hotels (Preziosi et al., 2019; Han et al., 2011). So this research postulates:

H2a-1 HEP will positively affect GPHCP.

H2a-2 HEP will positively affect Guest LTGH.

3.2.3. Guest circular behavior in hotel (GCBH)

Mohd Suki and Mohd Suki (2015) study the relationship between revisiting consumers' environmental behaviour, the propensity of repetition to stay in an eco-friendly hotel and the moderating effect of green hotel knowledge. Their results confirm that green hotel knowledge can moderate the relationship between revisiting consumers' attitudes and perceived behavioural control with the tendency to revisit an eco-friendly accommodation. Based on this study, the following hypothesis was formulated:

H3a-1 GCBH will influence HEP.

3.2.4.Moderating variables: age, gender, booking system, type of traveller, type of board.

Age, gender and booking system are moderating variables to be considered by researchers in different fields. Tsao et al. (2009) stated that gender apparently has a moderating effect on the impact of expected yield on behavioural intention. Similarly, Venkatesh et al. (2012) indicated that age moderated behavioural intention, and the effect was more substantial in younger men (Chang et al., 2019). However, when analyzing tourists' environmentally friendly or circular attitudes and behaviours, few studies considered age or gender as moderating variables in the model (Arun et al., 2021). Finally, the moderating effect of how tourists travelled and the type of board (only room, room with breakfast, half board or full board) was also analyzed. The type of traveller (single, couple, family, friends and others) is another characteristic that has yet to be considered a control variable when analyzing tourists' eco-friendly or circular attitudes and behaviour (Acampora et al., 2022). Nevertheless, some previous research have used the type of traveller or the type of board to confirm the direct influence of such factors (Moise et al., 2018; White and White, 2008).

Therefore, we propose including a moderating effect of these variables in the previous relationship. Thus, the following hypotheses were created:

H 4: Gender moderated the relationship between GCBH and HEP, GCBH_EW and GPHCP, GCBH_EW and LTGH and tHEP and LTGH

H 5: Age moderated the relationship between GCBH and HEP, GCBH_EW and GPHCP, GCBH_EW and LTGH and HEP and LTGH

H6: The booking system moderated the relationship between GCBH and HEP, GCBH_EW and GPHCP, GCBH_EW and LTGH and tHEP and LTGH

H7: The type of traveller moderated the relationship between GCBH and HEP, GCBH_EW and GPHCP, GCBH_EW and LTGH and tHEP and LTGH

H 8: The type of board moderated the relationship between GCBH and HEP, GCBH_EW and GPHCP, GCBH_EW and LTGH and HEP and LTGH

4. RESEARCH METHOD

4.1. Statistical Analysis

This research performs a two-step analysis. First, we use Partial Least Squares SEM (PLS-SEM) to validate both the measurement and structural model. The first one deals with the relationship between each construct and their indicators, while it is testing the reliability and validity of the measures. To assess the measurement model we use these criteria (Hair et al., 2010):

-Indicator Reliability: Outer Loading for the indicator must be ≥ 0.70

-Internal Consistency Reliability (ICR): Cronbach's alpha (α) and Composite reliability (CR). The threshold value is ≥ 0.70 for both.

- Validity:

- Convergent Validity: Average Variance Extracted (AVE) should be ≥ 0.50 (Fornell and Larcker, 1981; Hensenler. et al., 2015).

- Discriminant Validity (DV): through three tests:

a. Fornell-Larcker criterion (Fornell and Larcker, 1981);

b. Cross-loadings (Urbach and Ahlemann, 2010);

c. The Heterotrait-Monotrait ratio (HTMT) (Henseler et al., 2015).

The structural model assesses the relationship among constructs and is analyzed using the Hair et al. (2010) approach: collinearity (VIF < 5); the structural model relationships significance ($p < 0.05$); the level of R^2 (threshold levels take the following values: 0.190 weak; 0.333 moderate; and 0.670 substantial); the predictive relevance (Q^2) (threshold value >0); the model's fit (SRMR ≤0.08; $RMS_{theta} \leq 0.12$).

A multigroup analysis (MGA) was developed in the second step to explore moderating variables. A moderating variable is a variable that "influences the nature of the effect of an antecedent on an outcome" (Aguinis et al., 2017), as shown in Figure 2.

Figure 2

MGA evaluates differences across groups. If heterogeneity across groups is found; potential moderating variables can be sought to explain this variability.

As all factors are composite models, the three-step MICOM procedure was developed based on a non-parametric test, as shown in Figure 3. Configural invariance is a prerequisite for compositional invariance, and for significantly determining the equality of composite mean values and variance. Once the configural and compositional invariance are established, the partial measurement invariance can be validated and compare the standardized path coefficients of structural relationships between the constructs over the groups.

Figure 3

5. RESULTS

5.1. Aim and participants

A sample of 211 tourists staying in hotels in Gran Canaria was collected using face-to-face surveys, with a structured questionnaire, an appropriate sample size with a power of 0.95 and effect size of 0.15. The fieldwork was carried out during January and February of 2020, before the COVID-19 pandemic. The questionnaire was divided into five sections containing 29 questions. The first section requested information on trip characteristics to Gran Canaria. The second section gathered information on the hotel's environmental policy and guest loyalty to green hotels. The third section collected information on circular practices carried out during their stay in several areas (water, energy, waste, etc) and GPHCP. The fourth section gathers information on circular practices carried out by tourists at home and differences when travelling to obtain a measure for GSCWMC and another one for GCBH_EW. In the final section, basic information was requested on the socio-economic profile of the respondent. Tourists rated their opinion on several items using a 5-point Likert scale ranging from completely disagree to totally agree. GPHCP is measured using 5 items, GCBH_EW is measured using 4 items, GCBH is measured using 4 items, LTGH uses 2 items, HEP uses 4 items, and GSCWMC 4 items. All items are adapted from previous studies after an accurate literature review. The profile respondent is a retired man older than 55 years old, as almost 60% of tourists in Gran Canaria were 45 years old or older in January-February 2020 (ISTAC, 2024), mainly Spanish or from a Nordic country, with upper secondary education or a university degree, and with a monthly net income between 2,000 and 5,000 euros (Table 1).

Table 1

5.2. Measurement Model

5.2.1.Internal consistency reliability tests

All constructs were formulated as composite type A, so outer loadings were analyzed (Hair et el., 2017). All outer loadings were higher than 0.7 in almost all items. Internal consistency and reliability (ICR) were assessed using CR and AVE (Table 2).

Table 2

5.2.2.Discriminant validity

To asses DV, we used the correlation matrix for the Fornell-Lacher criterion, the cross-loadings matrix and the HTMT criterion. Table 3 shows the correlation matrix for the Fornell-Lacher criterion. This method

uses AVE to compare the squared correlation with other constructs in the model. With our data, the diagonal values are higher than those in the same column.

Table 3

We also analyzed the results of the assessment of discriminant validity with the matrix of cross-loadings. Each indicator loads higher on the construct related to it.

Finally, we assessed discriminant validity using the Heterotrait Monotrair (HTMT) matrix. Heterotrait assesses correlations between different constructs, while monotrait correlations measure correlations in the same construct. Threshold values ≤ 0.9 are accepted. Results indicate that values differ significantly from 1.

Table 4

5.2.3 Significance of Outer Loading

The bootstrapping algorithm was used to assess the significance of outer loadings. We used 5000 bootstrap samples to estimate the t and p values, which are used for testing the outer loadings' significance at a 5% level. Results of bootstrapping indicate that outer loadings are significant and p-values lower than 0.05.

5.3. Structural Model

The assessment of structural model includes five steps (Hair et al., 2010). We initially started evaluating collinearity by means of the variance inflation factor (VIF). VIF values ≥ 5 show a possible collinearity problem (Hair et al., 2010). As the obtained VIF values are all less than 5, there are no collinearity problems. Figure 4 exhibits the β values, i.e. the path coefficients of the relationships between constructs.

Figure 4

As shown in Table 5, all hypotheses were accepted at the 5% significance level given the p-value estimated for each relationship.

Table 5

Next, the coefficient of determination (R^2). According to Hair et al. (2010), values of this coeeficient of determinant of 0.75 are substantial, 0.5 moderate and 0.25 weak. Two factors (GCBH_EW and HEP) moderately explained 60.1% of the variance of construct LTGH (Figure 4).

The fourth step is to assess the predictive relevance, i.e. Q^2, using the blindfolding. When Q^2 takes a value of 0.02, it indicates a minor predictive relevance, values of 0.15 show a medium relevance and values of 0.35 present a considerable predictive relevance (Hair et al., 2019). Table 6 shows the Q^2 of the latent variables.

Table 6

Finally, to assess the model fit, we use a set of fit measures proposed by Lohmöller (1989):

1. Standardized Root Mean Square Residual (SRMR). The SRMR for this research is 0.09, lower than the threshold value of 0.10 suggested by Hu and Bentler (1999).

2. The Normed Fit Index (NFI) (Bentler and Bonett, 1980). Values close to 1, better fit. NFI values above 0.9 represent an acceptable fit (Hair et al., 2017). In this paper the value of NFI is 0.719.

3. In the end, we assess the Goodness-of-Fit (GoF) of the model, that is specified as "how well the specified model reproduces the observed covariance matrix among the indicator items" (Hair et al., 2017). The model's Goodness-of-Fit is 0.45 greater than 0.36, the threshold value proposed by Wetzels et al. (2009), so meaning sizeable overall performance, large fit.

5.4. Multigroup Analysis (MGA)

In order to assess the moderating effect of gender, age, booking system, type of traveller and type of board, the sample was partitioned into two groups in each case: female and male, aged 55 years old or younger and older than 55 years old, booking system -traditional offline booking channels vs. online booking channels, couple and family vs alone, with friends and workmates and only room and bed&breakfast vs half and full board. A multigroup analysis is performed to evaluate the hypotheses H4, 5, 6, 7 and 8.

The results of MICOM analysis for gender, age and booking system are shown in Tables 7, 8 and 9. The partial invariance can be established with gender, age and booking system, hence the moderating role is confirmed. Figures 5 and 6 show the results of the path coeficients for gender and age.

Figure 5

Figure 6

The bootstrapping test indicates significant differences between the two age groups, two gender groups, and booking system groups. In particular, the intensity of the relationship between Hotel environmental policy

and Guest preferences of hotel circular practices and Hotel environmental policy and Loyalty towards green hotels is stronger for tourists 55 years old or younger in the case of age and for women in the case of gender.

Tables 7, 8 and 9

Finally, the moderating effect of how tourists travelled, i.e. type of traveller (single, couple, family, friends or work colleagues or others) and type of board was also analyzed. In both variables, a moderating effect was found on the direct effects of GCBH, GCBH_EW, and HEP on LTGH.

6. DISCUSSION

This research contributes significantly to the literature on circular hotel practices and policies and customers' green behaviour and intentions. Practical and theoretical implications might be learned from the paper's findings. The dimension of Loyalty towards green hotels has been assessed, helping to build a new connection between hotel environmental policy and this factor. All the hypotheses about the structural model were accepted. The variable that had the highest impact on loyalty to green hotels is hotel environmental policy, inferring that H2-a2 is persistent based on guest circular behaviour in the hotel and guest circular behaviour at home (energy & water). This result is comparable to previous research (Chen and Peng, 2012; Chen et al., 2011; Choi et al., 2009; Han et al., 2011) according to which hotel guests' environmental attitudes positively influence their intention to stay in an eco-friendly hotel, to share their experience and their willingness to pay more for accommodations that implement circular initiatives and activities..

Few studies investigate the differences in eco-friendly or circular behaviours of tourists at home and in a hotel (Baker et al., 2014; Millar et al., 2012; Moise et al., 2018; Nicolau, 2011). Our study demonstrates that both variables are crucial factors for raising the level of tourist loyalty. Baker et al. (2014) showed that tourists are eco-friendlier at home than when they stay at a hotel. Nicolau (2011) suggests that guests' environmental behaviour on holidays is a function of guest environmental culture. Moise et al. (2018) showed that hotel green practices at home are positively related to guest loyalty and to the intention to revisit the hotel. Similarly, Millar et al. (2012) demonstrated that the more environmentally friendly behaviour they have at home, "the greater importance they place on green attributes", and they will be more committed to having pro-environmental behaviour in a hotel. All this evidence supports our result.

The current study also assessed the moderating effect of age, gender, booking system, type of traveller and type of board. Previous research has established that individual differences influence the relationship between the company and the customer, as not all customers are equally loyal. In our case, partial invariance has been fulfilled with all the variables analyzed in the proposed relationships. The variables gender and age moderate the relationships between several constructs. The intensity of the relationship between Hotel environmental policy and Guest preferences for hotel circular practices and Hotel environmental policy and Loyalty towards green hotels is stronger. Moise et al. (2020) support this result because they found that

Generation X and Baby Boomers present a stronger link between trust and Loyalty and between satisfaction and Loyalty than other generational cohorts, and 35% of our first-age segment (18-55 years old) belong to these cohorts. Similarly, Rodríguez et al. (2020) showed that older tourists present a greater circular attitude and behaviour. In the case of gender, women showed a stronger relationship between those variables than men, a result similar to the one of Leonidou et al. (2015) or Kim (2012). Leonidou et al. (2015) demonstrated that the role of gender in developing positive environmental attitudes is evident; women have a greater attitude.

There is a literature gap on investigating the moderating effect of the booking system, the type of traveller, and the type of board. This study contributes to the body of literature and particularly in the green hotel industry by proving that the three variables present an important moderating role in the relationships between Loyalty towards green hotels and Hotel environmental policy, Guest circular behaviour at home, Guest preferences of hotel circular practices and Guest circular behaviour in the hotel. Tourists travelling with family or as a couple show a higher circular behaviour in the hotel and, therefore, a higher loyalty towards green hotels. In previous research, the role of a fellow traveller has frequently focused on the travel experience (Choo and Petrick, 2014; Tung and Ritchie, 2011) or considering it a descriptive variable influencing behaviour (e.g. Jang et al., 2004; Liang et al., 2017). The findings also show that guests who travel with a partner or with family value Hotel environmental policy and Guest circular behaviour in the hotel more than those who travel with friends or with work colleagues, similar to the results obtained by Su et al. (2020). Furthermore, results show an important influence of the type of board chosen; those tourists who book only a room or a room with breakfast show greater circular behaviour and Loyalty towards green hotels than those who book half-board or full-board. Ramazanova et al. (2021) demonstrate that the board type is one of the main determinants of guest behaviour in terms of water consumption, so full board formulas lead to a less water-efficient behaviour of guests. Addtionally, results indicate a moderating effect of the booking system that influences the relationship between Guest circular behaviour at home, Guest circular behaviour at hotels and customers' Loyalty to green hotels; people who have booked through an agency are the ones who have the stronger relationship. In fact, in Western countries, the users of online booking channels focus on the opinions of their friends who have used online channels before (Li and Zhu, 2023). Assaker and O'Connor (2023) showed that eco-labels/certifications influence consumers' online hotel booking decisions, but they play a minor role compared to cancellation policy, hotel price, hotel rating, and hotel location.

7. CONCLUSIONS

The paper studies the impact of guest circular initiatives and behaviours on guest loyalty in hotels in Gran Canaria by proposing a PLS-SEM model. The research hypotheses were developed based on a literature review and then tested the relationships between Guest circular behaviour at home, Guest circular behaviour in hotel, Hotel environmental policy, Guest preferences of hotel circular practices and Loyalty towards

green hotels. Findings indicate that Guest loyalty towards green hotels is influenced either by Guest circular behaviour at home and by Hotel environmental policy.

The results offer new insights into the findings of previous research that could be interesting for the academia and practitioners for a better comprehension of the factors that influence guests' loyalty to green hotels, especially in an insular context. Furthermore, empirical analysis of MICON and MGA confirm that age, gender, booking system, type of traveler and type of board moderate the relationship between consumers' loyalty with Hotel environmental policy, Guest circular behaviour in hotel and Guest circular behaviour at home.

In fact, the empirical results of this research provide scientific contributions to the existing literature on consumer loyalty towards green hotels, especially in an insular context, by providing supplementary data to reduce the research gap on the existing knowledge about revisting guests' intention to accommodate in green hotels.

In terms of managerial implications, the findings can assist the hotel sector implicated in eco-friendly initiatives and green actions in designing successful marketing plans to attract revisiting guests to stay in eco-friendly hotels and to assess the acceptance level of revisiting consumers towards circular behaviour.

Finally, there are some study limitations. First, a limitation arises from the sample and sample size, as data were collected from tourists of a specific area, and the questionnaire arose from a sample of 211 hotel customers. This limitation can be used for further analysis to include as a control variable in the model the hotel customer's nationality to study how this variable influences guest circular behaviour and hotel circular practices and it can also provide action guidelines to practitioners.

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Appendix

Constructs and items of conceptual model.

Guest sustainable consumption and waste management culture (GSCWMC)	When I buy clothes, I make sure they are environmentally sustainable. I buy local and/or seasonal products. I buy organic products. I buy products with less packaging. I use reusable bags when shopping. I avoid use of aluminum foil.
Guest circular behavior at home (energy & water) (GCBH_EW)	I try to save water and energy. I use renewable energy sources. Thermostat with time scheduling I consider the level of energy efficiency in the house.
Guest preferences of hotel circular practices (GPHCP)	It is important to me that tourist accommodations manage the way water is used in the hotel to reduce consumption and/or maximize water reuse. It is important to me that tourist accommodations make use of renewable energies. It is important to me that tourist accommodations manage the use and Consumption of energy to minimize energy consumption. I am willing for hotels to offer closed menus in restaurants to reduce food waste. It is important to me that tourist accommodations reduce the volume of waste through recycling, reusing waste, or selling waste to a third-party company.
Guest circular behavior in hotel (GCBH)	I turn off air conditioning and lights when I leave the room I do not lower the air conditioning thermostat below 22°C. I recycle if the hotel has recycling containers. I try to reduce food waste in restaurants. I ask for a change of sheets or towels only when necessary.
Hotel environmental policy (HEP)	It is important to me that tourist accommodations have an environmentally responsible policy. It is important to me that a hotel has a water-saving and efficiency policy. It is important to me that a hotel has an energy-saving and efficiency policy. It is important to me that hotel staff are trained in environmental issues (recycling, etc.).
Loyalty towards green hotels (LTGH)	When I choose a tourist accommodation it is important to me that it has an environmental quality certification. I am willing to pay a little more for a hotel with better environmental quality.

Tables

Table 1. Profile of respondent.

		N	Percent (%)
AGE	18-55 years old	80	37.91
	56 or older	131	62.09
GENDER	Male	114	53.80
	Female	97	46.20
	Other	0	0.00
NATIONALITY	Spanish	43	20.38
	German	32	15.17
	British	33	15.64
	Nordic	52	24.64
	Other	51	24.17
EDUCATIONAL BACKGROUND	Early Childhood Education	6	2.84
	Primary Education	27	12.80
	Lower Secondary Education	24	11.37
	Upper Secondary Education	53	25.12
	Bachelor level or higher	91	43.13
	NR	10	4.74
CURRENT OCCUPATION	Self-employed worker	21	9.95
	Upper management employee	15	7.11
	Middle or Junior management employee	50	23.70
	Unskilled employee	7	3.32
	Student	6	2.84
	Retired	106	50.24
	Unemployed	1	0.47
	Other	5	2.37
MONTHLY NET INCOME	Equal or less than 2000€	29	13.74
	2001-5000€	109	51.66
	More than 5000€	36	17.06
	NR/DK	37	17.54
BOOKING SYSTEM	Travel Agency & Tour Operator	69	32.70
	Online channels	142	67.30
TYPE OF BOARD	Only room and Bed&breakfast	163	77.25
	Half and Full board	48	22.75
TYPE OF TRAVELER	Couple	117	55.45
	Family	17	8.06
	Single	35	16.59
	With friends/workmates	42	19.91
TOTAL		211	100.00

NR- No response; DK- Don't know.

Table 2. Measures of internal consistency reliability test

	Cronbach's Alpha	Composite reliability (rho_a)	Average variance extracted (AVE)
GPHCP	0.877	0.879	0.673
GCBH	0.690	0.703	0.520
GSCWMC	0.794	0.802	0.620
HELP	0.926	0.930	0.819
LTGH	0.870	0.872	0.885
GCBH_EW	0.805	0.832	0.561

Table 3. Fornell-Lacker discriminant validity correlation matrix

	GPHCP	GCBH_EW	GCBH	HEP	LTGH	GSCWMC
GPHCP	0.820					
GCBH_EW	0.337	0.721				
GCBH	0.546	0.416	0.787			
HELP	0.489	-0.055	0.262	0.905		
LTGH	0.443	0.142	0.269	0.753	0.941	
GSCWMC	0.387	0.576	0.351	0.052	0.163	0.749

Table 4. Heterotrait-Monotrait ratio (HTMT) correlation matrix

	GPHCP	GCBH	GSCWMC	HEP	LTGH	GCBH_EW
GPHCP						
GCBH	0.650					
GSCWMC	0.469	0.442				
HELP	0.541	0.302	0.159			
LTGH	0.506	0.317	0.212	0.839		
GCBH_EW	0.430	0.559	0.741	0.188	0.230	

Table 5. Results of hypotheses testing and path analysis

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
GCBH -> HEP	0.262	0.254	0.108	2.433	0.015
HEP -> GPHCP	0.509	0.506	0.082	6.232	0.000
HEP -> LTGH	0.763	0.759	0.042	18.291	0.000
GCBH_EW -> GPHCP	0.365	0.371	0.065	5.617	0.000
GCBH_EW -> GCBH	0.416	0.426	0.065	6.370	0.000
GCBH_EW -> GSCWMC	0.576	0.583	0.044	13.206	0.000
GCBH_EW -> LTGH	0.185	0.187	0.048	3.842	0.000

Table 6. Results of Q^2, predictive relevance

	Q^2predict
GPHCP	0.092
GCBH	0.153
GSCWMC	0.315
HELP	-0.026
LTGH	-0.003

Table 7. Results of gender invariance measurement testing using permutation

Constructs	Configural invariance (Same algorithms)	Compositional invariance (Correlation =1) *C=1*	Confidence interval	Partial measurement invariance established	Differences	Equal mean (Confidence Interval)	Equal	Differences	Equal variances (Confidence Interval)	Equal	Full measurement invariance established
GPHCP	Yes	0,.999	[0.993;1]	Yes	-0,027	[-0.275;0.273]	Yes	-0.402	[-0.705;0.718]	Yes	Yes
GCBH	Yes	0.996	[0.987;1]	Yes	-0,382	[-0.273;0.266]	No	-0.151	[-0.609;0.593]	Yes	No
GSCWMC	Yes	0.998	[0.988;1]	Yes	0,386	[-0.269;0.271]	No	-0.192	[-0.344;0.357]	Yes	No
HELP	Yes	1.000	[0.999;1]	Yes	0,013	[-0.270;0.276]	Yes	-0.382	[-0.717;0.761]	Yes	Yes
LTGH	Yes	1.000	[0.999;1]	Yes	0,128	[-0.267;0.272]	Yes	-0.136	[-0.441;0.444]	Yes	Yes
GCBH_EW	Yes	0.993	[0.964;1]	Yes	-0,267	[-0.274;0.275]	Yes	-0.055	[-0.318;0.323]	Yes	Yes

Table 8. Results of age invariance measurement testing using permutation

Constructs	Configural invariance (Same algorithms)	Compositional invariance (Correlation =1) *C=1*	Confidence interval	Partial measurement invariance established	Differences	Equal mean (Confidence Interval)	Equal	Differences	Equal variances (Confidence Interval)	Equal	Full measurement invariance established
GPHCP	Yes	0.999	[0.993;1]	Yes	-0,362	[-0.276;0.273]	No	0,379	[-0.732;0.709]	Yes	No
GCBH	Yes	0.997	[0.985;1]	Yes	-0,183	[-0.283;0.270]	Yes	0,159	[-0.604;0.645]	Yes	Yes
GSCWMC	Yes	0.999	[0.987;1]	Yes	-0,400	[-0.275;0.277]	No	-0,052	[-0.387;0.341]	Yes	No
HELP	Yes	1.000	[0.999;1]	Yes	-0,351	[-0.280;0.273]	No	0,090	[-0.820;0.694]	Yes	No
LTGH	Yes	1.000	[0.999;1]	Yes	-0,461	[-0.279;0.278]	No	-0,077	[-0.482;0.434]	Yes	No
GCBH_EW	Yes	0.986	[0.963;1]	Yes	-0,074	[-0.277;0.274]	Yes	0,111	[-0.344;0.324]	Yes	Yes

Table 9. Results of booking system invariance measurement testing using permutation

Constructs	Configural invariance (Same algorithms)	Compositional invariance (Correlation $C=1$)	Confidence Interval	Partial measurement invariance established	Differences	Equal mean (Confidence Interval)	Equal	Differences	Equal variances (Confidence Interval)	Equal	Full measurement invariance established
GPHCP	Yes	0.993	[0.985;1]	Yes	0.192	[-0.252;0.253]	Yes	-0.217	[-0.524;0.559]	Yes	Yes
GCBH	Yes	0.995	[0.960;1]	Yes	0.178	[-0.257;0.253]	Yes	-0.112	[-0.291;0.281]	Yes	Yes
GSCWMC	Yes	0.999	[0.992;1]	No	0.123	[-0.254;0.249]	Yes	-0.009	[-0.647;0.646]	Yes	Yes
HELP	Yes	0.996	[0.986;1]	Yes	0.256	[-0.254;0.256]	No	-0.093	[-0.354;0.337]	Yes	No
LTGH	Yes	0.999	[0.999;1]	Yes	0.149	[-0.253;0,247]	Yes	-0.418	[-0.707;0.657]	Yes	Yes
GCBH_EW	Yes	1.000	[0.999;1]	Yes	0.306	[-0.251;0.248]	No	-0.183	[-0.409;0,389]	Yes	No

Figures

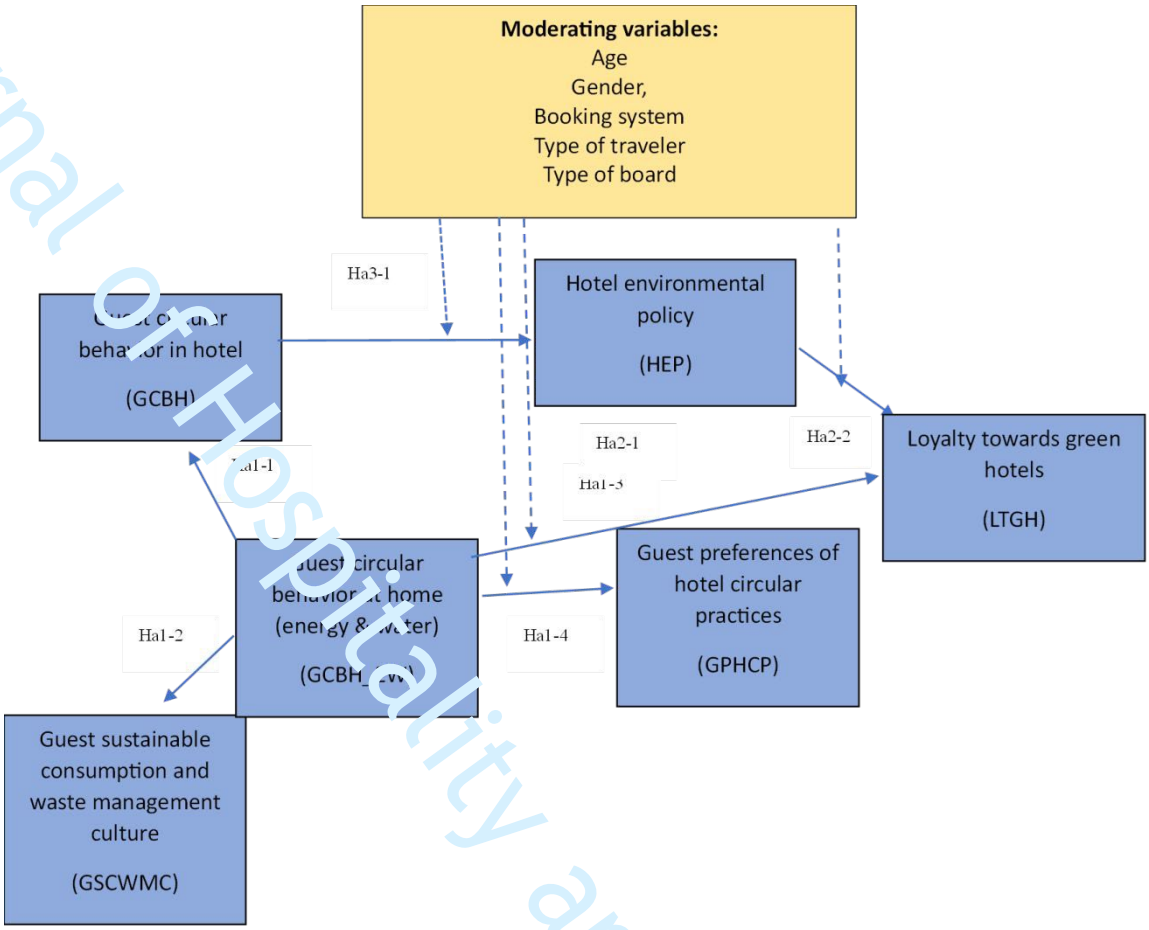

Figure 1. Conceptual model and hypotheses.

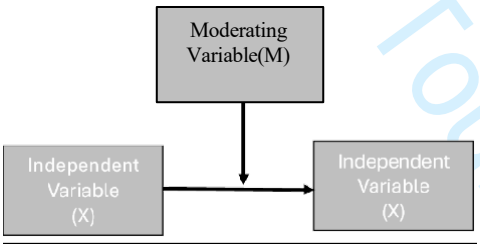

Figure 2. Conceptual Framework of Moderation Analysis

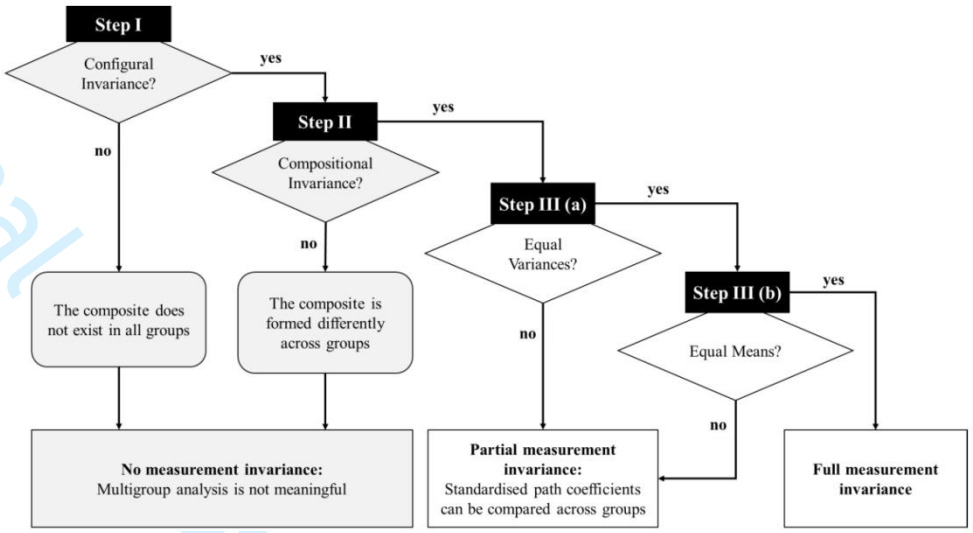

Figure 3: Steps of MICOM Procedure
Source: Cheah et al. (2020).

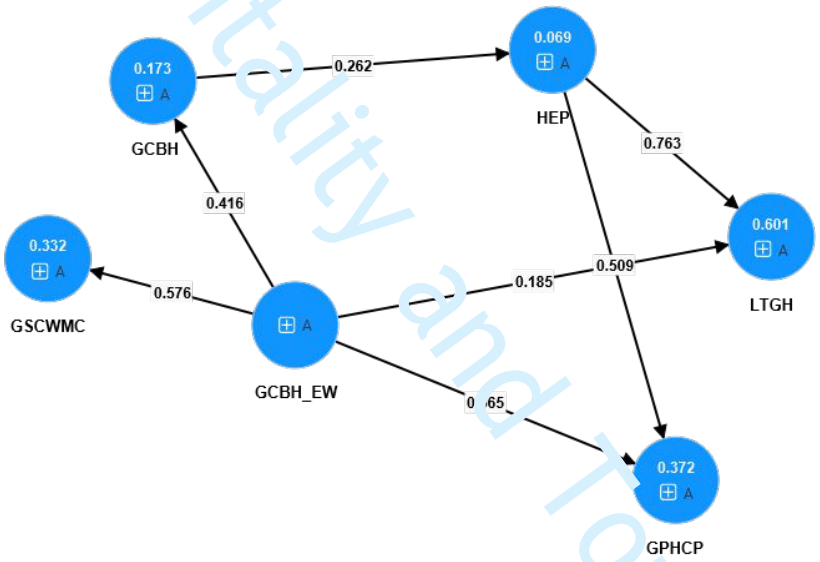

Figure 4. Structural Model Path Coefficients

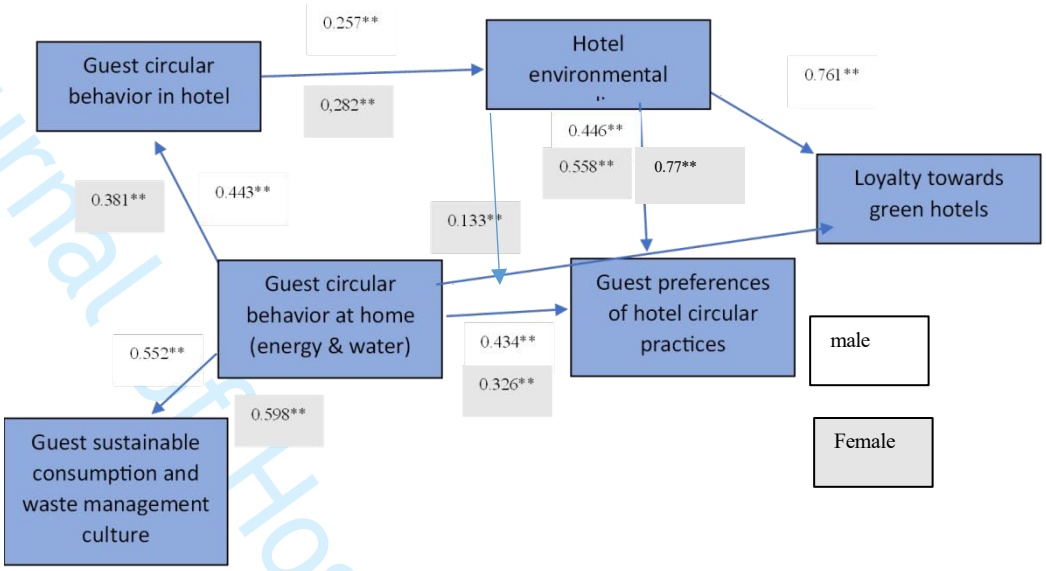

Figure 5. Results of the path coefficients for gender.
Note: ** *Significant at the 0.05 level*

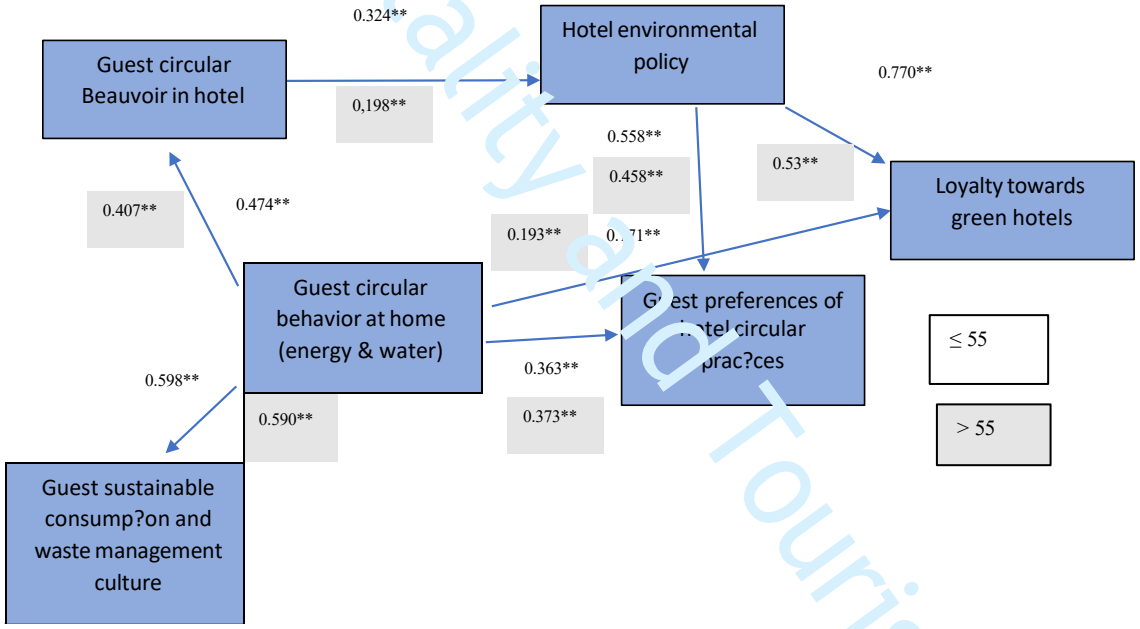

Figure 6. Results of the path coefficients for age
Note: ** *Significant at the 0.05 level*