



UNDERSTANDING SUSTAINABLE ACCOMMODATION CHOICES: A SEGMENTATION ANALYSIS USING EXTENDED TPB

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ABSTRACT

The integration of sustainable practices is paramount for fostering responsibility and sustainability in pivotal sectors such as tourism. This study aims to analyse the intention to book into any type of sustainable accommodations by employing the Theory of Planned Behaviour (TPB) extended with price sensitivity. This research applies FIMIX-PLS to segment the sample based on the TPB framework, which involves the analysis of respondents' attitudes, subjective norms, perceived behavioural control, and price sensitivity concerning sustainable accommodation. The results highlight that attitude is the main predictor of booking intention, followed by price sensitivity. The segmentation analysis reveals four distinct groups composed solely of women, which represents an innovation in terms of perspectives on the role of gender in sustainable tourism behaviour. In this sense, understanding gender divergences in sustainable tourism can inform more inclusive and effective sustainability policies that promote wider societal adoption of sustainable practices. Future research could expand the sample size and explore additional variables that may influence sustainable booking intentions. The results offer practical implications for business management, emphasizing the need for targeted marketing strategies that consider gender-based differences in sustainability perceptions.

RESUMEN

La integración de prácticas sostenibles es fundamental para fomentar la responsabilidad y la sostenibilidad en sectores clave como el turismo. Este estudio tiene como objetivo analizar la intención de reservar en cualquier tipo de alojamiento sostenible mediante la aplicación de la Teoría del Comportamiento Planeado (TPB), ampliada con la sensibilidad al precio. La investigación emplea FIMIX-PLS para segmentar la muestra en función del marco de la TPB, analizando las actitudes, las normas subjetivas, el control percibido del comportamiento y la sensibilidad al precio en relación con los alojamientos sostenibles. Los resultados destacan que la actitud es el principal factor predictor de la intención de reserva, seguido por la sensibilidad al precio. El análisis de segmentación revela cuatro grupos distintos compuestos exclusivamente por mujeres, lo que representa una innovación en la comprensión del papel del género en el comportamiento turístico sostenible. En este sentido, comprender las diferencias de género en el turismo sostenible puede contribuir a diseñar políticas de sostenibilidad más inclusivas y efectivas, fomentando una adopción más amplia de prácticas sostenibles en la sociedad. Para futuras investigaciones, se sugiere ampliar el tamaño de la muestra y explorar variables adicionales que puedan influir en la intención de reserva sostenible. Los resultados ofrecen implicaciones prácticas para la gestión empresarial,

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resaltando la necesidad de estrategias de marketing dirigidas que tengan en cuenta las diferencias de género en la percepción de la sostenibilidad.

PALABRAS CLAVE

Segmentación de turistas, Actitud, Alojamientos sostenibles, Sensibilidad al precio, Gestión empresarial, Marketing, Género.

1. INTRODUCTION

The increasing environmental degradation and a growing concern for environmental protection have prompted the need to address the consequences of climate change, including global warming, pollution, and desertification, with significant implications for human health (Dwidienawati et al., 2021). In response, there has been a rising emphasis on sustainability and sustainable development, extending beyond environmental aspects to encompass social, cultural, and economic dimensions (UNWTO, 2019). In this context, the concept of sustainable development, defined as meeting present needs without compromising those of future generations (WCED, 1987), has become central in contemporary tourism discourse (Higgins-Desbiolles, 2010), largely due to the negative impacts associated with this activity (da Silva, Brandão & Sousa, 2019).

In the face of potential industry saturation that may degrade tourism experiences and jeopardize the sector's future (Gössling et al., 2012), the global market sees consumers becoming more environmentally conscious. This shift is driven by a post-pandemic aspiration for more sustainable options (Jones & Comfort, 2020), along with consumer behaviours that promote or discourage tourism products based on environmental, social, and ethical considerations (Calderon-Monge et al., 2020). Numerous studies have examined consumer behaviour toward sustainable hotels — for example,

attitudes and behaviours toward eco-friendly hotels in Yunnan based on the Theory of Planned Behavior (Gui & Abdullah, 2024) or consumer intentions to visit green hotels in Portugal, where contextual and psychological factors are highlighted (Ferreira et al., 2023). However, research remains limited on other types of tourist accommodation that also seek to integrate sustainable practices (Modica et al., 2020; Tölkes, 2020). This gap is particularly relevant considering the growing demand for alternative forms of sustainable accommodation offered through shared economy platforms like Airbnb, which has surged in popularity among environmentally-conscious travellers. Indeed, tourist accommodations are reaching significant figures, according to new data from Eurostat, Spain recorded 132.6 million overnight stays in short-term tourist accommodations last year, booked through platforms like Airbnb, Booking.com, Expedia Group, and Tripadvisor (Eurostat, 2023). Unlike hotels, these establishments often operate outside traditional regulatory frameworks and, in many cases, lack specific sustainability guidelines. Existing research has historically centred on hotel-based initiatives, emphasising environmental and socio-economic management aspects (Fauzi et al., 2025; Mansoor, Jam & Khan, 2025). For example, research by Abdou et al. (2020) and Sun et al. (2023) highlights the importance of adopting sustainable practices within hotel operations, and Calderon-Monge et al. (2020) investigate consumer

behaviours that may support or reject purchases based on ethical, social, and environmental considerations. Nevertheless, the potential of non-hotel accommodations to contribute to sustainable tourism remains underexplored, even as platforms like Airbnb grow in significance.

In addition, while existing studies generally analyse consumer behaviours toward sustainable accommodations as a single group, they overlook key demographic distinctions, such as gender-based differences, that could influence decision-making processes. Segmenting sustainable accommodation preferences by gender provides an opportunity to understand specific motivations, barriers, and price sensitivities for each group, which could lead to more targeted and effective marketing strategies.

The lack of gender-segmented studies in sustainable accommodation therefore represents a further gap. This research addresses both limitations by exploring guests' decision-making processes across different types of sustainable tourist accommodation, adopting a gender-segmented approach within the Theory of Planned Behaviour (Ajzen, 1991). Unlike prior works focused solely on hotels or undifferentiated consumers (e.g., Kang et al., 2012; Ferreira et al., 2023), this study also incorporates price sensitivity as a determinant of booking intention, analysing both its direct and interactive effects (Kumar & Mohan, 2021). By identifying gender-specific preferences and sensitivities, this study aims to provide a nuanced understanding that can inform gender-targeted strategies in sustainable tourism accommodation.

The paper will progress through presenting the theoretical framework, detailing the methodological approach, analysing the results, and finally discussing broader implications, concluding with proposals for future research directions.

2. LITERATURE REVIEW

In the contemporary global marketplace, consumers are increasingly aware of the environmental impact of purchasing decisions, particularly in tourism (Grasso & Schilirò, 2023). Influenced by sustainability-oriented marketing and perceptions of post-pandemic environmental recovery (Ramirez et al., 2024; Sun et al., 2022), they now seek to contribute positively to the planet through their choices, setting new standards for the industry (Maduku, 2024; Vlaskova et al., 2021). However, as suggested by Schaltegger & Burritt (2018), the solution does not lie in reducing activity but in balanced use that contributes to environmental restoration. This approach has stimulated demand for sustainable options, manifested in the proliferation of regenerative tourism that seeks long-term responses to current global challenges (Bellato et al., 2022).

In this sense, sustainable tourist accommodation is defined as "a business that provides overnight facilities to tourists, monitors environmental, social, and economic impacts, and takes responsible measures to minimize negative impacts and maximize positive impacts, engaging customers as partners, to produce a better holiday experience" (Warren, 2012, p. 41). Although this conceptualization involves all types of tourist accommodation integrating economic, cultural, and social dimensions (Gössling, 2017), studies on sustainable accommodations focus predominantly on hotels and operational practices like waste, recycling, and energy management (Delistavrou & Tilikidou, 2022). The growth of tourist apartments (Parralejo & Díaz-Parra, 2021) underscores the need for further research to develop measures that address the entire sector and advance sustainability. In this context, the tourism industry must strengthen awareness of the significance of its actions (Dupa et

al., 2024), demonstrating not only environmental responsibility but also the generation of social and economic value in the medium and long term within host communities (Sierra & Cacciutto, 2022).

The role of digital marketing has become increasingly relevant in this context. Montero, Álvarez, and Rubio (2023) highlight the growing adoption of inbound marketing strategies in hospitality, focusing on attracting potential customers through valuable content rather than intrusive advertising techniques. Inbound tools, such as search engine optimization (SEO), content marketing, and social media, are particularly useful for promoting sustainable accommodations. These strategies allow businesses to effectively communicate their sustainability initiatives, certifications, and corporate practices, aligning with the expectations of environmentally conscious consumers. As digital platforms play a fundamental role in travel decision-making, inbound marketing can enhance the visibility and credibility of sustainable accommodations, ultimately influencing booking intentions (Montero et al., 2023).

While there are studies on purchasing decisions related to green hotels, such as Nimri et al. (2020) and Han et al. (2010), the rapid growth of the sector compels us not only to revise the variables we measure but also to broaden the typology of accommodations studied. While sustainability has gained traction among consumers (Tawde et al., 2023; Han, 2021), price remains a decisive factor influencing purchasing decisions (Kumar et al., 2021). Similarly, Kang et al. (2012) demonstrate that consumers are generally willing to pay more for green initiatives in the hotel industry, highlighting how sustainability-related efforts can influence purchasing intentions, particularly when aligned with perceived value.

In addition to economic factors, sociocultural aspects play a crucial role in sustainable tourism choices. Solano-Sánchez et al. (2024) explore how sociodemographic factors, such as gender, age, education level, and income, influence tourists' motivations and behaviours, particularly in niche tourism like astrotourism. Their findings align with the notion that segmentation strategies based on these factors can enhance the promotion of sustainable accommodations. Understanding the preferences of different traveller groups, including segments with a stronger preference for environmentally responsible tourism, such as women (Soni et al., 2024), enables businesses to tailor marketing strategies that emphasize sustainability, safety, and immersive local experiences, thereby reinforcing the connection between consumer values and sustainable lodging choices. Alongside factors such as price perception, sociodemographic characteristics, and strategic communication, these approaches contribute to a deeper understanding of consumer behaviour.

However, to explain booking intentions more precisely, it is necessary to examine the psychological and behavioural frameworks that guide decision-making. The Theory of Planned Behaviour (TPB) has emerged as a key model in this area, providing valuable insights into how attitudes, subjective norms, and perceived behavioural control shape sustainable accommodation choices (Ajzen, 1991). In the following sections, we explore how this theoretical framework has been extended to incorporate additional variables, such as price sensitivity, to better capture the complexities of consumer decision-making in the sustainable tourism sector. In this sense, sustainable tourist accommodation is defined as "a business that provides overnight facilities to tourists, monitors environmental, social, and economic impacts, and

takes responsible measures to minimize negative impacts and maximize positive impacts, engaging customers as partners, to produce a better holiday experience" (Warren, 2012, p. 41). However, although this conceptualization involves all types of tourist accommodation integrating economic, cultural, and social dimensions (Gössling, 2017), studies on sustainable tourist accommodations focus predominantly on hotels and practices such as include waste management, recycling, and energy efficiency (Kabirifar et al., 2020). However, the growth of tourist apartments (Parralejo & Díaz-Parra, 2021) highlights the need for further research to propose measures that address the entire industry and promote sustainability. In this regard, the tourism sector should continue to raise awareness of the importance of its actions (Dupa et al., 2024), demonstrating efforts that integrate environmental responsibility with the creation of enduring social, economic, and business value within the local communities it serves (Sierra & Cacciutto, 2022).

While there are studies on purchasing decisions related to green hotels, such as those by Nimri et al. (2020), the rapid growth of the sector compels us not only to revise the variables we measure but also to broaden the typology of accommodations studied. Although research suggests that sustainability has gained some traction among consumers (Tawde et al., 2023; Han, 2021), studies also show that variables like price still play a decisive role in shaping this shift in mindset. For instance, Kumar et al. (2021) conclude that price becomes the most significant factor influencing the intention to purchase green products.

The Theory of Planned Behaviour is one of the most widely used theoretical approaches to predict how people behave in society (Liu et al., 2022; Batool et al., 2024). This model developed by Ajzen (1985, 1991), extends the Theory of Reasoned

Action (TRA), which anticipates behaviours through conscious intention and perceived control. Unlike TRA, TPB incorporates the perception of behavioural control, influencing the intention to perform an action (Han et al., 2010). TPB suggests that intention is a function of four independent factors: attitude towards the behaviour, subjective norms, and perceived behavioural control (Ajzen, 1991; Ajzen & Fishbein, 1980). Understanding these determinants can inform strategies for promoting sustainable practices in the tourism industry.

In fact, Nimri et al. (2020) used an extended TPB model to show that perceived behavioural control and knowledge about green hotels significantly influence consumers' intention to choose them. Their findings highlight the importance of education and marketing in promoting sustainable behaviour in the hospitality sector. Similarly, Tavitiyaman et al. (2024) found that environmental knowledge and perceived behavioural control are crucial determinants in consumers' decisions to choose green hotels. Another study by Liu et al (2022) supports these findings, showing that attitudes towards green practices and perceived behavioural control significantly influence consumers' intentions to stay at green hotels. Additionally, a systematic review by Ulker-Demirel and Ciftci (2020) highlighted the importance of normative beliefs and social influence in shaping pro-environmental behaviour in the hospitality sector.

In this model, attitude is conceptualised as the appraisal, either positive or negative, that an individual makes about the performance of a specific behaviour (Ajzen & Fishbein, 1980), i.e., "the degree to which a person has a favourable or unfavourable evaluation of the behaviour in question" (Ajzen, 1991, p.188). A positive attitude towards a particular behaviour reinforces a person's intention to perform that behaviour (Ajzen, 1991). A favourable attitude

towards sustainable accommodation positively influences booking intention (Han et al., 2010).

Positive evaluations lead to a favourable attitude, as studies on ecological behaviour have shown (Sun & Wang, 2020). Therefore, the following hypothesis is proposed:

- **H1:** Attitude positively influences the intention to book a room in a sustainable tourist accommodation.

Subjective norm refers to the influence of social pressure on intention, based on the perceived opinions of significant individuals. This social pressure, related to the likelihood of approval or disapproval of behaviours by influential individuals, has been shown to be a determinant of intention to take an action (Park, 2000). The relationship between subjective norm and intention is supported by research on sustainable product procurement (Han et al., 2020). Thus:

- **H2:** The subjective norm positively influences the intention to book a room in sustainable tourist accommodation.

Perceived behavioural control reflects the perception of ease or difficulty in performing a behaviour. Confidence in one's ability to perform a behaviour positively affects intention (Yadav & Pathak, 2017). Behavioural control, based on the individual's perception of the ease or difficulty of performing a specific behaviour (Ajzen & Fishbein, 1980), plays a crucial role in intention formation. Numerous studies have highlighted the positive influence of individuals' self-confidence on their ability to perform a behaviour (e.g., Yadav & Pathak, 2017). These studies suggest that, when an individual faces limitations in control over the performance of a behaviour due to a lack of necessary resources or external constraints, their behavioural intention may decrease, even if they

maintain positive attitudes or subjective norms regarding the planned behaviour. Hence:

- **H3:** Perceived behavioural control positively influences the intention to book a room in sustainable tourist accommodation.

Price sensitivity has been shown to influence booking intention in sustainable accommodation, although its effects may vary depending on consumer profiles. Some studies suggest that high prices can reduce sustainable purchasing (Sun & Wang, 2020; Yue et al., 2020), while others highlight willingness to pay a premium when aligned with perceived value (Bolton & Shankar, 2018; Kumar & Mohan, 2021). This variability suggests that price sensitivity should not be considered a universal determinant, but rather a factor whose influence is contingent on sociodemographic characteristics. Therefore:

- **H4:** Price sensitivity influences the intention to book a room in sustainable tourist accommodation, with effects that may vary across consumer subgroups.

Figure 1 provides a graphic representation of these hypotheses.

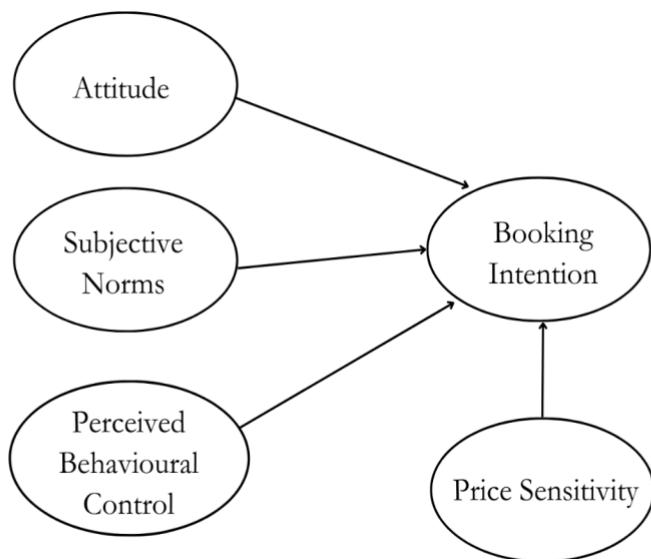


Figure 1. Theoretical Model

Source: Authors..

3. METODOLOGY

The data necessary to evaluate the proposed conceptual model were obtained through a face-to-face survey conducted by professional surveyors and online surveys via social media. A pilot study was conducted to verify the comprehensibility and validity of the questionnaire before data collection. Based on feedback from the pilot survey, refinements were made to some terms in the questionnaire to enhance its understandability from the consumer's perspective. Additionally, all items were professionally translated into Spanish to ensure accuracy and consistency in participant interpretation of the questions.

The target population of this study comprises all Spanish consumers who travel for tourism purposes. Participation was entirely voluntary, and fieldwork was conducted during the months of June, July, and September 2023.

To measure the five constructs of the model, 12 items were used, as shown in Table 1, to which a total of 7 questions were added for socio-demographic characteristics. Following Kline's (2011) criteria for sample size, which advocates 10 samples/item, the final sample of 543 meets the a priori condition. The data presented below highlight the results obtained (see Table 2). The elements of the model were assessed using scales validated in previous studies in the field of environmental pro-behaviour. All participants received a brief explanation of the objectives of the study and the concept of sustainability, based on Warren's (2012) conception.

CONSTRUCT	ITEM	SCALE	REFERENCE
Attitude (ATT)	ATT1	For me, booking a stay at a sustainable accommodation when travelling (tourist purpose) is Extremely bad (1) / Extremely good (5).	Kim & Han (2010)
	ATT2	Extremely undesirable (1) / Extremely desirable (5).	Han et al. (2010)
	ATT3	Extremely unpleasant (1) / Extremely pleasant (5).	Kumar & Mohan (2021)
Subjective norm (SN)	SN1	Strongly disagree (1) / Strongly agree (5) Most people important to me would want me to stay in sustainable accommodation when I travel.	Han et al. (2010); Kumar & Mohan (2021);
	SN2	People whose opinion I value would prefer that I stay in sustainable accommodation when I travel.	Paul et al. (2016); Shukla (2019)
Perceived behavioural control (PBC)	PBC1	Strongly disagree (1) / Strongly agree (5) Whether or not I stay in sustainable accommodation, when I travel is up to me.	Han et al. (2010); Kumar & Mohan (2021);
	PBC2	I am sure I can stay in sustainable accommodation.	Paul et al. (2016); Shukla (2019)
Price Sensitivity (PS)	PS1	Strongly disagree (1) / Strongly agree (5) I pay attention to the price when booking a night in sustainable accommodation.	Kumar & Mohan (2021); Ghali-Zinoubi & Toukabri (2019)
	PS2	I usually collect a lot of information related to price.	
Booking intention (BI)	BI1	Strongly disagree (1) / Strongly agree (5) I am willing to book a stay at a sustainable accommodation when travelling.	Han et al. (2010);
	BI2	I plan to book a stay at a sustainable accommodation when travelling.	Ajzen and Fishbein (1980)
	BI3	I will make an effort to stay at a sustainable accommodation when travelling.	

Table 1. Measurement items, Scales used and their Sources

Source: Authors.

GENRE		
Female	319	58.83%
Male	224	41.17%
AGE		
18 to 25 years old	82	15.10%
26 to 35 years old	188	34.62%
36 to 45 years old	136	25.05%

46 to 60 years old	118	21.73%
Over 60 years old	19	3.50%
LEVEL OF EDUCATION		
Primary Education	24	4.42%
Secondary education	69	12.71%
Bachelor's	350	64.46%
Doctorate	96	17.68%
Without formal schooling	4	0.74%
INCOME LEVEL		
Under €12,000	56	10.31%
€12,001 to €24,000	173	31.86%
€24,001 to € 40,000	206	37.94%
From €40,001	108	19.89%
TYPE OF SUSTAINABLE ACCOMODATION		
Hotel	481	88.58%
Apartment	306	56.35%
Airbnb	268	49.36%
Guest house	112	20.63%
Inns	27	4.97%
Hostel	33	6.08%
Holiday Parks and campground	107	19.71%
Rural accommodation	178	32.78%
Others	5	0.92%
NO. RESERVATIONS		
One per year	55	10.13%
Two per year	2145	39.41%
Three per year	136	25.05%
Four per year	62	11.42%
Five per year	27	4.97%

Table 2. Sample characteristics (N 543)

Source: Authors

3.1 Data analysis

The model was evaluated using the partial least squares structural equation modelling (PLS-SEM) method. According to Hair et al. (2011), this approach is highly beneficial when the purpose is to predict a fundamental construct for exploratory

research or the expansion of an existing theory. This technique is perceived as less restrictive in situations when the sample size is not considerably large and when it is not feasible to assume normality of the data (Hair et al., 2019). In addition, the sample size exceeds the value indicating that it should be (1) ten

times the largest number of formative indicators used to measure a construct or (2) ten times the largest number of structural paths directed towards any latent construct in the structural model. The analysis was conducted in two stages; in the first, an evaluation of the measurement model was carried out with attention to reliability and validity. This was followed by an analysis of explanatory power and hypothesis testing through evaluation of the structural model (Hair et al., 2011). Data analysis was carried out using SmartPLS 4 software (Ringle et al., 2022).

Before evaluation of the model, data were checked to ensure that they were not affected by bias attributable to the measurement instrument used in this study. To this end, Harman's one-factor test for common method bias was applied (CMB). In this sense, according to the work of Podsakoff et al. (2003), if only one factor accounts for more than 50% of the total variance, there is a likelihood that

CMB influences the data and thus the empirical results. In the present study, the highest total variance explained by a single factor is 39.72%, while the full set of factors in the model explains 74.55% of the variance. Therefore, as indicated by Liébana-Cabanillas et al. (2022), it is unlikely that a CMB problem exists.

The normality of the data was assessed by means of the skewness and kurtosis values for each item. The results showed small and moderate values of kurtosis (± 1.96) and skewness (± 1.82) (Curran et al., 1996). Then, multicollinearity was measured through the variance inflation factor (VIF), all of which are detailed in Table 3. Except for the values for SN1 and SN2, all values were below the maximum recommended threshold (5) (Hair et al., 2011), with the mean VIF value being 2.83, indicating no multicollinearity issues in the data.

Constructs/items	Loadings
Attitude (ATT)	
(Mean: 4.18; SD: 0.80; CA: 0.853; CR: 0.911; AVE: 0.772)	
ATT1	0.862
ATT2	0.899
ATT3	0.875
Subjective Norm (SN)	
(Mean: 3; SD: 1.17; CA: 0.952; CR: 0.976; AVE: 0.954)	
SN1	0.977
SN2	0.976
Perceived Behavioural control (PBC)	
(Mean: 4; SD: 0.93; CA: 0.746; CR: 0.849; AVE: 0.743)	
PBC1	0.715
PBC2	0.987
Price Sensitivity (PS)	
(Mean: 5.11; SD: 0.78; CA: 0.662; CR: 0.964; AVE: 0.734)	
PS1	0.937
PS2	0.768

Booking intention (BI)	
(Mean: 5.09; SD: 0.88; CA: 0.915; CR: 0.946; AVE: 0.855)	
BI1	0.933
BI2	0.823
BI3	0.918

Table 3. Descriptive Statistics and Psychometric Properties of the measures

Source: Authors

Table 3 also presents summary statistics on means and standard deviations as well as the psychometric properties of the measures. Individual item reliability was assessed by means of factor loadings. Values above 0.7 indicate that the shared variance between the item and its construct is greater than the error variance (Hair et al., 2014; Henseler et al., 2009). Finally, Table 3 shows that all item loadings exceeded the minimum recommended threshold. The internal consistency of each construct was assessed using Cronbach's alpha (CA) (Cronbach, 1951) and composite factor reliability (CR) (Nunnally and Bernstein, 1994). The constructs presented values above the recommended minimum of 0.7. Convergent validity was also ensured, as all latent variables had an average variance extracted (AVE) above the minimum

recommended value of 0.5 (Fornell and Larcker, 1981) (Table 4).

3.2 Measurement model assessment

To assess discriminant validity, the Fornell-Larcker (1981) criteria and heterotrait-monotrait (HTMT) ratios (Henseler et al., 2015) were used. According to the Fornell-Larcker criteria, the square root of the average variance extracted (AVE) of each construct must be greater than the correlations between that construct and other constructs in the model. Additionally, the HTMT ratio, which measures the correlations between different constructs, should be less than 0.9 to confirm discriminant validity. Upon analysis, both criteria were met, confirming the discriminant validity of the measurement model (see Table 4).

Heterotrait-Monotrait ratio matrix (HTMT)						Fornell- Larcker criterion					
Constructs	ATT	VI	PBC	PS	SN	SN	PS	PBC	BI	ATT	Constructs
ATT	0.772					0.977	0.081	0,013	0.200	0.190	SN
BI	0.634	0.85 5					0.85	0.160	0.069	0.106	PS
PBC	0.202	0.17 0	0.743					0.862	0.187	0.146	PBC
PS	0.146	0.08 2	0.240	0.734					0.924	0.563	BI
SN	0.213	0.21 4	0.044	0.105	0.95 4					0.879	ATT

Table 4. Heterotrait-Monotrait ratio matrix (HTMT) and Fornell- Larcker criteria

Source: Authors

3.3 Structural model assessment

To assess the significance of the path coefficients in the structural model, a bootstrapping procedure was employed with up to 5,000 subsamples (Hair et al., 2011). Table 5 presents the results of the hypothesis tests. H1 ($\beta = 0.611$, $t = 10.103$, $p = 0.000$), therefore, H1 is supported. H3 PBC on VI ($\beta = 0.069$, $t = 2.487$, $p = 0.013$) is therefore H3 is

supported. The H2 SN over VI ($\beta = 0.887$, $t = 10.103$, $p = 0.000$) indicates that H3 is supported. The H4 PS on VI ($\beta = -0.014$, $t = 0.317$, $p = 0.751$) so H4 is not supported. The model contains no indirect effects. The effect size of the relationships in the model was quantified by the values of f^2 .

Note: WT = Intention to book. $n = 5000$

subsamples. * 95% confidence level - two tailed.

Hypothesis	Path coefficient	t-value	p-value*	f^2	Supported
H1. Attitude BI	0.611	2.778	0.000	0.595	Yes
H2. Subjective Norms BI	0.069	4.847	0.013	0.008	Yes
H3. Perceived Behavioural Control BI	-0.014	5.579	0.013	0.000	Yes
H4. Price Sensitivity BI	0.087	0.748	0.751	0.012	NO

Table 5. Results of hypotheses testing

Source: Authors

4. RESULTS

The results show that the effects of attitude on booking intention are large (>0.35), whereas for SN and PBC on booking intention, effect sizes are small in the remaining relationships (< 0.15) (Henseler et al., 2016). The predictive relevance of the model was assessed using Stone's (1974) and Geisser's (1974) Q^2 values. Our results indicate that the predictive relevance of the exogenous constructs for the endogenous constructs is moderate (0.28) for intention to book sustainable accommodation. The

model also presents a standardized mean squared residual (SRMR) ratio value (0.050) within the recommended levels (≤ 0.080) so it can be concluded that it has a good goodness of fit (Henseler et al., 2016). The explanatory power of the model was measured using the R^2 value (Hair et al., 2011). According R^2 values, the model presents a moderate explanatory ability of the endogenous construct variance: 41.4% of intention to book a night's accommodation (Figure 2).

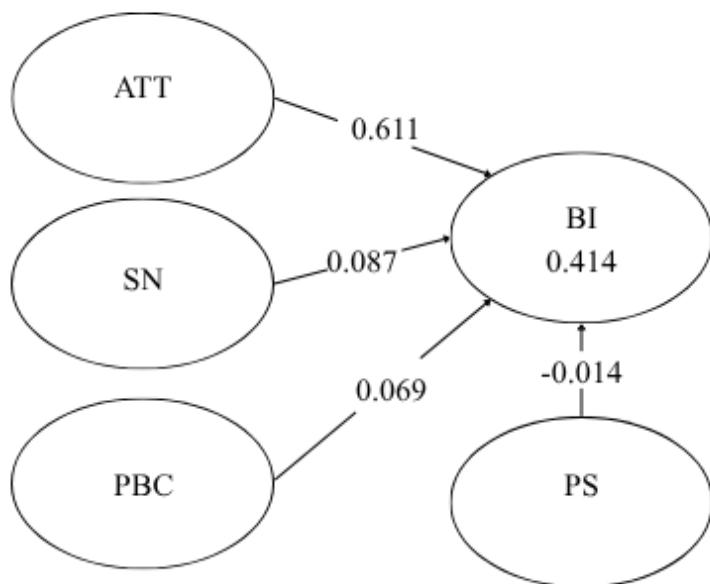


Figure 2. Model Output

Source: Authors

Studies that analyse a dataset that is to represent a population assume that the dataset represents a homogeneous population (Jedidi et al., 1997). However, according to Sarstedt et al. (2009), this assumption of homogeneous characteristics is unrealistic since the behaviour of individuals or actions by firms are usually different. Therefore, observations made in this respect may produce results in which information is lost or which lead to incorrect results. This makes it necessary to consider that heterogeneity may exist (Becker et al., 2013). Identifying heterogeneity, if it exists, can help the researcher to both validate the results and generalize them to the population. To analyse this heterogeneity, we conducted an FIMIX analysis in PLS. Model estimation in FIMIX-PLS follows the likelihood principle, which states that all evidence in a sample that is relevant to the model parameter contained is the likelihood function.

First, we determine the number of segments, i.e., first we attempt to identify how many segments there

are in the population under study, or in the data collected, that reflect the heterogeneity across the model; second, we explain the latent construct structure to finally estimate the specific segments of the model.

Finally, the FIMIX-PLS algorithm must be run for an alternative number of segments, starting with the one-segment solution. As the number of segments is unknown a priori, researchers must compare solutions with different numbers of segments in terms of their statistical adequacy and interpretability (Henseler et al., 2015; Hair et al., 2014). If there is no segment, or only one segment, this means that there is no heterogeneity, but in most cases the researcher is confronted with several segments representing the total population. There are different criteria to determine the number of segments in the population. Among them, Hair et al. (2016) indicate that the theoretical maximum number of segments is given by the largest integer when dividing the sample size (N) by the minimum

sample size (N_{min}). On the other hand, the formula with the most presence is determined by evaluating a number of criteria. These include Akaike's information criterion (AIC), modified Akaike's information criterion with factor 3 (AIC3) or factor

4 (AIC4) or the Bayesian information criterion (BIC), among others. Adapted from Hair et al. (2016), Table 6 presents the characteristics.

AIC	Weak performance. Strong tendency to overestimate the number of segments. Can be used to determine the upper limit of a number of reasonable segmentation solutions.
AIC3	Average to good performance. Tendency to overestimate the number of segments. Works well in combination with Akaike's consistent information criterion and what and Bayesian information criterion.
AIC4	Good performance tends to overestimate the number of segments.
BIC	Good performance as it tends to underestimate the number of segments. Should be considered together with AIC3 in brackets modified Akaike information criterion with factor 3.
CAIC	Good performance as it tends to underestimate the number of segments. Should be considered together with AIC3 in brackets modified Akaike information criterion with factor 3.
HQ	Weak performance. Strong tendency to underestimate the number of segments. Can be used to determine the lower limit of reasonable segmentation solutions.

Table 6. Akaike's Information Criterion (AIC), modified Akaike's Information Criterion with factor 3 (AIC3) or factor 4 (AIC4) or the Bayesian Information Criterion (BIC), among others, adapted from Hair et al. (2016).

Source: Authors

G^* was used to determine the number of segments *power* (Faul et al., 2009), resulting in 4 segments, which means that the researcher can in this case move from 1 to 4 segments. That is, the calculation indicates how many segments are the

maximum but not how many segments there are in the data. This is why it is necessary to make the calculation with all four segments (Table 7).

Segment 1	0.347
Segment 2	0.314
Segment 3	0.224
Segment 4	0.114

Table 7. Segment sizes

Source: Authors

Following Bozdogan (1994), the number of segments is determined based on the AIC3 criterion that should work, i.e., indicate the same segment as the BIC or CAIC criterion. All three criteria indicate

4 segments so there is a problem of unobserved heterogeneity that needs to be explored (Table 8).

Criteria	Segment 1	Segment 2	Segment 3	Segment 4
AIC (Akaike information criterion) max	1.326.890	969.325	932.868	775.412
AIC3 (AIC modified with Factor 3)	1.331.890	980.325	949.868	798.412
AIC4 (AIC modified with Factor 4)	1.336.890	991.325	966.868	821.412
BIC (Bayesian information criterion)	1.348.375	1.016.593	1.005.919	874.245
CAIC (consistent AIC)	1.353.375	1.027.593	1.022.919	897.245
HQ (Hannan Quinn criterion)	1.335.290	987.807	961.431	814.056
CDM5 (minimum description length with factor 5)	1.474.317	1.293.666	1.434.123	1.453.579
LnL (LogLikelihood)	-658.445	-473.662	-449.434	-364.706
EN (normalised entropy statistic) <0.5	0.000	0.593	0.576	0.634
NFI (Non-Fuzzy Index)	0.000	0.660	0.597	0.614
NEC (normalised entropy criterion)	0.000	220745	230262	198590

Table 8. Criteria and segments

Source: Authors

This segmentation reveals four distinct demographic groups, each with specific characteristics that influence their intention to book a night in sustainable accommodation. In this context, it is notable that while the behaviour of men is characterised by homogeneity, particular focus was placed on analysing the heterogeneity observed in women. Segmentation based on socio-demographic variables and responses to the purchase intention model identifies significant patterns in the decision-making of these groups.

Segment 1: Women aged 26-35 with income between €12,001 and €24,000.

Their distinctive trait is their preference for hotels on their trips, followed by apartment hotels and tourist accommodation. The significant relationship between subjective norm and intention ($p=0.289$) and price sensitivity towards intention ($p=0.341$) suggest that these women are highly influenced by the opinion of their close circle. Furthermore, they show positive price sensitivity, indicating that as price increases, so does their

intention to purchase a night in sustainable accommodation. This may be explained by a combination of social and economic factors; the importance of social approval and the willingness to pay more for sustainable accommodation.

Segment 2: Women aged 36 to 45 with income between €24,001 and €40,000.

This group shows a preference for hotels as the type of accommodation. The low influence of attitude ($p=0.057$) contrasts with the positive influence of price ($p=0.391$) and subjective norm ($p=0.289$). This finding can be explained by a greater orientation towards practical and economic aspects when making accommodation decisions. Age and higher purchasing power might lead to a higher prioritisation of tangible factors, such as cost and social recommendations, over more subjective aspects such as attitude towards sustainability.

Segment 3: Women aged 26-35 with income between €24,001 and €40,000.

This group exhibits diversity in accommodation choice, preferring hotels, flats and Airbnb.

Surprisingly, the non-influence of price and subjective norm ($p=0.001$ and $p=0.002$) and the low effect of perceived behavioural control ($p=0.173$) indicate greater independence in their decisions. The high significance of attitude ($p=0.921$) suggests that this group deeply values the subjective and ethical aspects of choosing sustainable accommodation. This finding may be associated with a greater awareness of and commitment to sustainability, which overcomes external and monetary influences.

Segment 4: Women over 60 with income up to €40.001.

Composed of older women, we observe a preference for hotels and flats in this group. The significant relationship of perceived behavioural control ($p=0.523$) together with the negative effect of price ($p=-0.599$) highlights the importance of perceived control and price sensitivity in the intention to book sustainable accommodation. The subjective norm appears negative ($p=-0.092$), suggesting that peer pressure may reduce the intention of this group. This result can be interpreted in the context of a generation that values economic security and resistance to change, influencing resistance to adopting sustainable accommodation options at higher prices.

5. DISCUSSION

This research, based on Ajzen's (1991) Theory of Planned Behaviour (TPB) extended with price sensitivity using segmentation with FIMIX-PLS, explores in depth tourists' decision-making processes when booking sustainable accommodation. This research provides two aspects that may contribute to the existing literature. On the one hand, the study encompasses all types of tourist accommodation, a departure from the reviewed literature in this field, which has historically focused on the analysis of the hotel sector (Fauzi et al., 2025; Grasso & Schilirò,

2023; Mansoor, Jam & Khan, 2025). Furthermore, the segmentation of subjects has enabled the exploration of accommodation choices from a gender perspective. Significant patterns emerge within different demographic groups, highlighting the importance of tailored strategies for effective marketing and management. In accordance with the findings of Solano-Sánchez et al. (2024), sociodemographic factors, including gender, exert a notable influence on tourists' behaviours. The findings of Solano-Sánchez et al. (2024) are consistent with our results, highlighting the proposition that segmentation strategies based on this factor can contribute to the promotion of sustainable accommodations. Besides, the findings found in this research are in line with the evidenced by the results of Soni et al. (2024), who reported the higher inclination towards sustainable tourism among female tourists. The role of digital marketing is particularly relevant in this respect. As indicated by Montero et al. (2023), these strategies allow companies to effectively communicate their initiatives by aligning with consumer expectations.

However, although there is segmentation within the female gender, the male gender is grouped into a single segment, which generates a difference in the strategy of attraction and segmentation of the target audience.

In line with previous studies on sustainable behaviour (Rustum et al., 2020; Wierzbinski et al., 2021), the positive influence of attitude on the intention to book sustainable accommodation is confirmed. However, unexpected dynamics in subjective norms challenge conventional expectations and suggest the need to reassess their impact on sustainable decisions (Wan et al., 2017; Ru et al., 2018; Kumar & Pandey, 2023). Therefore, it seems that a favourable attitude is a determining element when booking a night in a sustainable

accommodation. This result is in line with the data obtained on ecological behaviour from Sun & Wang (2020). Although a positive attitude towards green consumption is an important predictor, such attitudes do not always translate into intentions or behaviours (Wang, Shen & Chu, 2021). This highlights the importance of incorporating additional predictors, such as price, in consumer behaviour studies. Our results show that price can outweigh attitude: even when consumers hold favourable attitudes, high prices may lead them to choose alternative types of accommodation.

The findings confirm that attitude is the strongest predictor of booking intention. Subjective norm, while statistically significant, plays a secondary role with a much smaller effect size. These results highlight the need for nuanced marketing strategies that reinforce positive attitudes towards sustainability while also recognising the influence of social approval. Price sensitivity, although not significant in the overall model, revealed differentiated effects across specific consumer subgroups, which reinforces the relevance of segmentation analysis. As Park (2000) stated, the social pressure individuals experience regarding whether their environment approves or disapproves of a behaviour becomes a key factor in the intention to act. In this sense, it is evident that the opinions of an individual's close circle will have a decisive impact on their intention. This once again highlights the need to consider marketing strategies at all levels, as anyone can constitute social pressure for another person. Moreover, as Han et al. (2020) point out, it is essential to recognize the value of others' opinions in an individual's decision-making process. Therefore, even if external pressure encourages the choice of sustainable accommodation, price may become a secondary factor in the decision-making process. The results of the segmentation analysis confirm that

price sensitivity does not operate uniformly across all segments, but rather varies depending on sociodemographic characteristics. In some female groups, price influence combines with social pressure, reinforcing the willingness to pay more for sustainable accommodation. In others, however, price exerts a negative effect, reducing booking intention. These findings show that price sensitivity should be understood as a contingent factor, conditioned by consumer profile, and not as a universal predictor stronger than attitude.

5.1. Theoretical Implications

This study advances the applicability of TPB in understanding customers' intentions towards selecting sustainable tourism accommodations, integrating price as a crucial predictor. While sustainability is highly valued, the persistent influence of price on booking decisions underscores the necessity to address perceived barriers to sustainable service quality. The findings confirm that attitude is a significant and positive predictor of purchase intention. In contrast, perceived behavioural control did not exhibit a significant influence, indicating the need for modifications in TPB to better fit the specific context of sustainable tourism accommodation. Future research should explore additional constructs that elucidate consumer decisions and consider contextual variables unique to the sustainable tourism industry.

The dynamics of the subjective norm revealed unexpected results, indicating that strong environmental advocacy may actually diminish booking intentions. This suggests a re-evaluation and refinement of the understanding of subjective norm influences on sustainable decisions, particularly in the tourism sector. The inverse relationship between price and purchase intention highlights price sensitivity as a critical mediator. This finding aligns

with prior studies, underscoring the importance of strategies to mitigate price sensitivity by emphasizing the competitive advantages of sustainable products. Moreover, increased awareness and concern for sustainability enhance the willingness to pay, supporting the significance of informing consumers about sustainable practices.

The sustained relevance of attitude in the purchase intention patterns for sustainable tourism accommodation is evident. The complex interplay with other factors necessitates a holistic approach to understanding consumer behaviour in this sector. Variations across demographic segments underline the importance of personalized strategies and messages, considering differences in age, income, and accommodation preferences.

5.2. Practical Implications

Upon analysing the factors influencing the intention to book sustainable tourism accommodation, the central importance of attitude towards sustainable behaviour becomes apparent. This study demonstrates that attitude is a robust predictor of purchase intention, surpassing subjective norm and perceived behavioural control. To promote the choice of sustainable accommodation, managers should focus on fostering positive attitudes and enhancing communication with potential customers. This includes informing about sustainable practices, highlighting health, environmental, social, and long-term economic benefits, while actively cultivating a positive attitude towards sustainability.

To solidify the commitment to sustainability, managers could implement awareness programs. These programs might include advertising campaigns featuring testimonials and recommendations from satisfied customers, emphasizing the positive social acceptance

associated with choosing sustainable accommodation. Additionally, partnerships with environmental organizations could be explored to reinforce their commitment, conveying trust and authenticity to their clientele. Awareness and a positive attitude towards sustainability are crucial for the success of sustainable tourism accommodations.

To translate these insights into action, it is essential to recognize the diversity within the target market. While segmentation focused on female tourists has generated homogeneous male groups, the results reveal variability in age, income, and accommodation preferences, highlighting the need for tailored strategies.

5.3. Segmentation Strategies

Segment 1 (Women aged 26-35 with income between €12,001 and €24,000)

For this segment, the influence of social norms is significant. Marketing strategies should emphasize the positive opinions of this group regarding sustainable accommodation. Collaborations with influencers or customer testimonials can be effective through opinion pages and social media. Given their price sensitivity, attractive pricing strategies or packages that clearly demonstrate value can be appealing. Strategies that focus on social approval, as well as rewards or membership programs that encourage loyalty, are also recommended.

Segment 2 (Women aged 36 to 45 with income between €24,001 and €40,000)

Attracting this group requires a focus on both practical and economic aspects. Since attitude does not have a significant influence, strategies should highlight the tangible and practical benefits of choosing sustainable accommodation, such as long-term savings and additional amenities. Price sensitivity and the influence of the subjective norm

suggest the importance of competitive pricing and recommendation programs that highlight not only the economic advantage but also the social impact and comfort of sustainable choices.

Segment 3 (Women aged 26-35 with income between €24,001 and €40,000)

This segment benefits from awareness campaigns designed to generate impact and emotional connection. These campaigns should emphasize the relevance of sustainability in the context of their preferences and values. Communicating clear and compelling messages about the positive impact their choices can have on the environment and society is crucial. Highlighting their autonomy in decision-making and the significant connection between their choices and sustainability seeks to strengthen their identification with sustainable practices.

Segment 4 (Women over 60 with income up to €40,000)

Given that perceived behavioural control and price sensitivity are key factors for this demographic, strategies should highlight the sense of control they experience when choosing sustainable accommodation by providing affordable pricing options. Addressing resistance to change, evidenced by the negative relationship with subjective norm, is essential. Strategies should go beyond social networks and address concerns related to economic security and stability. Highlighting aspects such as the reliability and familiarity of sustainable accommodations and providing detailed information on how they meet economic expectations, can alleviate concerns. Implementing loyalty and discount programs can be an effective tactic to incentivize the adoption of sustainable options, providing additional benefits that reinforce the perception of control and affordability.

6. CONCLUSIONS

This research delves into the decision-making processes of guests when opting for sustainable tourist accommodation. The results reveal significant patterns across diverse demographic groups, highlighting the need for tailored strategies for effective marketing and management. In this context, gender appears to be a useful segmentation criterion, potentially challenging historical assumptions and indicating possible shifts in consumer purchasing behaviour. The study also confirms the central role of attitude as the strongest predictor of booking intention, while subjective norm exerts a relevant but secondary influence. Price sensitivity does not emerge as a significant predictor in the overall model, but its differentiated effects across consumer segments underline the importance of tailoring strategies rather than applying generalised assumptions.

The limitations of this study must be considered for a proper interpretation of the results. It should be noted that the results are based on a sample of residents in Spain, which means that the findings must be interpreted within a specific national context. Therefore, the scope of this study is exploratory, and its conclusions should not be generalised universally. Future research should validate this model in other cultural and geographical contexts, and assess whether the influence of the key variables (attitude, subjective norm, and price sensitivity) remains constant or differs across countries. However, efforts were made to ensure diversity within the national sample, including the use of both online and face-to-face data collection to reach a wider range of socio-demographic profiles.

Moreover, as the data is self-reported, the potential for response bias cannot be entirely ruled

out. To deepen understanding, the future research agenda could explore comparative analyses across nationalities and incorporate behavioural data to complement the attitudinal insights obtained here. Firstly, a longitudinal study could assess how perceptions of price in selecting sustainable accommodations evolve over time through annual surveys. Continuous data collection on these and other variables will reveal evolving patterns as environmental awareness increases. Secondly, intercultural collaboration can help compare behaviours and attitudes towards sustainable accommodations.

Adapting research approaches to specific cultural nuances will provide a comprehensive understanding of cultural influences on sustainable decision-making. Thirdly, given the persuasive nature of social networks, future research could comprehensively analyse different marketing campaigns for sustainable accommodations. Comparing attitude-focused strategies with those leveraging social pressures will identify key investment areas and develop specific recommendations crucial for accommodation managers to implement actions that promote sustainability while attracting guests.

Fourth, our study proposes an extension of the TPB model by including price as a relevant variable. However, future studies could explore the effect of other variables such as the corporate social responsibility of accommodations (see Kang et al., 2012). In this sense, collaboration among stakeholders and academia could aid in establishing a global certification for sustainable accommodations, defining specific criteria to ensure consistency and international recognition.

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