Research in Hospitality Management

ISSN: 2224-3534 (Print) 2415-5152 (Online) Journal homepage: www.tandfonline.com/journals/rrhm20

Measuring South Africa destination loyalty levels through recommending and complaining framings

Concepción Román, Juan Carlos Martín & Engelina du Plessis

To cite this article: Concepción Román, Juan Carlos Martín & Engelina du Plessis (2025) Measuring South Africa destination loyalty levels through recommending and complaining framings, Research in Hospitality Management, 15:1, 84-94, DOI: 10.1080/22243534.2025.2459080

To link to this article: https://doi.org/10.1080/22243534.2025.2459080

Research in Hospitality Management 2025, 15(1): 84–94
https://doi.org/10.1080/22243534.2025.2459080

RHM 2025 Research in Hospitality Management

RESEARCH ARTICLE

Measuring South Africa destination loyalty levels through recommending and complaining framings

Concepción Román[1], Juan Carlos Martín[1] & Engelina du Plessis[2]*

[1]*Institute of Tourism and Sustainable Economic Development, Universidad de Las Palmas de Gran Canaria*
[2]*TREES, School of Tourism Management, North-West University, Potchefstroom, South Africa*
**Correspondence: Lindie.DuPlessis@nwu.ac.za*

ABSTRACT: The study aims to analyse how framing (recommending versus complaining) affects the measurement of destination loyalty. It focuses on international tourists who visited South Africa, and evaluated loyalty through the two framings. The study tests whether loyalty can be measured by reversing the scale based on complaining, assuming that a lack of complaints is positively related to the recommending framing. The study employs a hybrid fuzzy TOPSIS method and fuzzy clustering to analyse tourist responses. The dataset includes eight items related to key service sectors: accommodation, attractions, food and beverages, and immigration services. A three type fuzzy clustering solution is obtained to classify the respondents based on their likelihood to recommend or complain. The study identifies drivers and barriers influencing loyalty behaviour in two controversial quadrants: those who neither recommend nor complain, and those who recommend while complaining. Key barriers include shopping motivations and travelling with extended family, while drivers include being a postgraduate and travelling with children. The results indicate that framing significantly affects how tourists express their loyalty, finding that different wording leads to varied responses. Framing of loyalty constructs has a crucial impact on results, thereby offering new insights for scholars and practitioners in tourism loyalty measurement.

KEYWORDS: destination image, eco-extended apostle model, fuzzy cluster segmentation, fuzzy logic, TOPSIS, triangular fuzzy numbers

SUPPLEMENTARY INFORMATION available online at https://doi.org/10.1080/22243534.2025.2459080

Introduction

The idea of a tourist destination's image has been subject to various conceptual approximations based on diverse social theories. However, distilling some of the main ideas and concepts raised by Crompton (1979) and Kotler et al. (1993), it can be said that destination image is the set of beliefs, ideas, impressions and perceptions that tourists have mentally constructed of a destination. Galí Espelt and Donaire Benito (2005) define "destination image" as the mental structures (visual or not) that integrate the elements, impressions and values that tourists project onto a determined destination; and are based on a series of more or less material knowledge that tourists can have about potential destinations, and on a series of perceptions that can be more or less affective or emotional. Wasaya et al. (2024) analyse the relationship between norms, personal traits and destination fondness with loyalty.

In the marketing literature, but also the tourism literature, loyalty is usually associated with repeat purchases and/or visitations and/or lack of complaining (Oppermann, 2000; Mingfang, 2011). Obviously, for a tourist operator or a destination, loyalty has been intuitively associated as a consequence of positive satisfaction that irremediably affects the positive effects of word of mouth. Oppermann (2000) contended that the positive effects should not be underestimated because friends' and relatives' decisions are strongly based on these opinions as they are one of the most reliable sources used by all tourists worldwide. Meanwhile, Mingfang (2011) summarised the various attempts that analysed antecedents and consequents of tourist satisfaction according to the main theories as the following sequence: destination image (motivations) > tourist satisfaction > destination loyalty.

Martin, Saayman & Du Plessis (2019) contended that satisfaction and loyalty studies are strongly determined by the scales used in the past by other scholars, taking into account: (1) destination being the subject of both measurements (e.g. country, region, particular micro-destination areas; ski-resort, sun-and-beach, cultural); (2) the nature of the measurement scale (e.g. single item, multi-item; direct, indirect); (3) the population investigated (e.g. students, couples, seniors, special groups); (4) theoretical approach (e.g. expectations performance, disconfirmation theory, importance-performance analysis, only performance, and benchmarking with competitors); and (5) empirical models and research design (e.g. analysis of variance, factor analysis, structural equation models, regression analysis, and fuzzy hybrid models; surveys, laboratory experiment, repeated measures in longitudinal design).

In this respect, the focus of the current study is to provide insights into loyalty measurement regarding the framing issue. It is widely recognised in the literature that dissatisfied tourists do not have an easy option of switching a particular destination for some holidays, but they can easily voice their complaints. At the same time, it is also true that satisfied tourists have a higher probability of becoming repeat visitors, but satisfying experiences at a particular destination are not completely related to the repeat-visit phenomenon. Similarly, tourist satisfaction should decrease the incidence of complaints, but positive and negative associations do not have a deterministic nature.

It is known from the prospect theory proposed by Kahneman and Tversky (1979) that framing is an important concept that affects not only choice behaviour, but also the responses given to a survey. Differences in presentation and wording can affect the conclusions extracted from a study. To our knowledge, there still needs to be empirical evidence studying this critical issue. The current study aims to analyse framing in the context of the recommendation (loyalty) construct using eight items related to four dimensions: accommodation, attractions, food and beverages, and the immigration office for international tourists who visited South Africa.

Two different framings are used, namely recommending and complaining. The prior assumption is that the lack of complaining should be positively related to the recommendation framing, but the study will analyse to what extent this assertion is true. There is a need to empirically check to what extent the loyalty construct analysed by recommending variables is unambiguously related to the construct studied with complaining items. In other words, it is necessary to determine whether the loyalty construct can be studied by the specific recommending and complaining items, and this is the major aim of this article.

The article addresses the abovementioned research gap based on five different objectives: (1) a fuzzy hybrid TOPSIS (the technique for order performance by similarity to ideal solution) method is proposed to analyse the loyalty latent variable using both wording systems, namely recommending and complaining; (2) a fuzzy clustering method is proposed to find the membership function of each of the survey respondents; (3) the classic apostle model is compared with the eco-extended fuzzy apostle model; (4) four categories are renamed from the classic apostle model (defectors, mercenaries, hostages, apostles) to "do not recommend-do not complain", "recommend and do not complain", "do not recommend and complain", and "recommend and complain"; and (5) some socio-economic variables are studied to analyse the main drivers in one of the four categories mentioned above.

Literature review

Loyalty is an essential construct studied in different industrial and service domains as a rational marketing approach that guarantees the firms' market survival (Palmer, 1994; Oliver, 1999). Oliver (1999) contended that satisfaction is always an important antecedent of loyalty, but on some occasions, it is not a sufficient condition. Although loyal consumers are mostly typically satisfied, satisfaction does not universally translate into loyalty. Deming (1986) was one of the first authors who realised that for firms, it would not be sufficient to have satisfied customers. According to Reichheld (1996), many customers who claim to be satisfied or very satisfied end up defecting. This empirical observation is known as "the satisfaction trap".

Donicar (2015) analysed 78 published tourism survey studies, finding that loyalty was one of the six more studied constructs, among attitude, behavioural intention, satisfaction, behaviour and image. She found four different loyalty definitions in the literature: (1) the intention to re-patronise or repurchase (Horng et al., 2012); (2) the attachment that a customer has to a brand (Aaker, 1991); (3) the intention to visit or the willingness to recommend the hotel or restaurant brand (Nam et al., 2011); and (4) a deeply held commitment to re-buy or re-patronise a preferred product/service consistently in the future (Oliver, 1999). Moreover, Campón et al. (2013), after reviewing 74 tourism studies dealing with loyalty, found that most of the studies used more than two items to measure the loyalty construct and that the construct has evolved from being unidimensional to multi-dimensional, containing mainly the cognitive, affective and conative dimensions.

Various definitions and theoretical perspectives are typically based on the diverse range of contexts present in the real world. Saren and Tzokas (1998) delve into loyalty programmes and brand personification campaigns to create affective and emotional bonds between firms and customers. They also discussed how some basic encounters facilitated by vending machines or ATMs could not be preconceived as personal interactions. In certain situations, the authors found that re-patronising, repurchasing, or revisiting may not be very common. Bigné et al. (2005) agree with this perspective for the tourism industry, as visitors often seek new destinations. Therefore, the evaluation of businesses should focus on factors that encourage positive recommendations and word-of-mouth promotion. According to Campón et al. (2013), measuring customer loyalty in the tourism industry is a complicated task. After examining existing literature on the subject, the authors discovered that the loyalty construct presents a conceptualisation challenge that has yet to be effectively addressed in empirical studies. Thus, they concluded that tourism researchers should use appropriate variables to evaluate tourists' loyalty to a specific tourism product.

The section ends by observing that dissatisfaction and complaints have been less studied in general. Richins (1983) was one of the first scholars to claim that few studies have examined consumers' responses to dissatisfaction in detail. She categorised the possible reactions to dissatisfaction into three groups: (1) switching brands; (2) making a complaint to the seller or to others; and (3) telling others about their unsatisfactory experience (negative word-of-mouth). In certain industries, particularly financial services, the frequency of complaints can be a significant concern. Salim et al. (2017) created a model specific to this sector that aims to enhance customer loyalty through better complaint management, improved banking service quality and increased customer satisfaction. In tourism, Mingfang (2011), studying destination tourist satisfaction, and proposed a conceptual model to study loyalty using complaining as a latent variable that interacted with tourist satisfaction and loyalty. The complaining construct was operationalised with only two items, the intention to complain to employees and to others.

Positive vs negative emotions and wording

Haase et al. (2022) recognised it as extremely important for business managers to understand consumers' negative emotions, and it is not a surprise that the topic is getting more attention in marketing (Fetscherin, 2019; Hashim & Kasana, 2019; Islam et al., 2019; Kumar et al., 2023). Negative consumer emotions can negatively influence the loyalty of affected consumers as well as new consumers. This tendency is booming in today's digital era, where negative experiences are widely spread via online digital platforms (Kucuk, 2019; Mushtaq et al., 2024). Furthermore, studies have revealed that negative emotions tend to have a greater impact on our memories when compared to positive emotions, and consumers are more likely to share and comment on a negative experience than a positive one (Hegner et al., 2017; Rahimah et al., 2023; Taqi et al., 2024).

The relative power of negative emotions in comparison with positive ones is congruent with the results obtained from the prospect theory proposed by Kahneman and Tversky (1979). The same theory has been applied to quantify the discrepancies between the willingness to accept the figures for service quality losses and the willingness to pay for service quality improvements in the hotel industry (Masiero et al., 2016; Román & Martín, 2016; Bi et al., 2020). According to the prospect theory, tourists perceive gains such as room upgrades and improved service quality differently than losses such as room downgrades and worsened service quality compared to their reference level. This theory suggests that the weight given to losses is higher than the weight given to gains.

The controversy surrounding the use of negatively worded questions to control acquiescence bias (Van Sonderen et al., 2013; Kuru & Pasek, 2016; Chyung et al., 2018) could potentially stem from the prospect theory, but this hypothesis has not been studied in the literature. Acquiescent bias is a significant concern in the creation of questionnaires, as it can influence attitudes towards the topic being studied due to the common human inclination to agree. There is also a debate about how to code negative wording items when measuring a specific latent variable. The common method of reverse coding may not accurately capture the same latent construct as the positive wording concept. Negative concepts or the inclusion of the word "not" in questions may cause confusion among respondents (Colosi, 2000).

Chyung et al. (2018) argued that the reverse coding of the negative wording questions makes a very strong assumption that being in accordance with a positive statement has the same value as disagreeing with its negatively worded counterpart. This assumption needs to be supported by more empirical evidence, as prospect theory points in the opposite direction. When it comes to loyalty, researchers have typically defined it in terms of recommending products or services. Through their studies, they have discovered a correlation between loyalty and a tendency to not complain (Salim et al., 2017; Saayman et al., 2018; Bezerra & Gomes, 2019). In this study, the idea is to provide empirical evidence that loyalty cannot be studied in isolation through recommending or non-complaining items.

Data

For this study, we used a structured questionnaire that consisted of three sections. The questionnaire was designed to measure six latent variables, including loyalty (measured through recommending behaviour) and complaining behaviour (measured through intention to complain). The first section (section A) contained questions about the sociodemographic details of respondents. Section B included questions measuring six different latent variables, namely expectations, perceived performance, assessed value, satisfaction, intention to complain, and loyalty using recommending items. All the latent variables were studied according to each of the four key service sectors that all tourists experience at their destination, such as accommodation, food and beverages, visitor attractions and immigration services. These four key services can be seen as short version of Buhalis' (2000) six As framework: (1) attractions; (2) accessibility; (3) amenities; (4) available packages; (5) activities; and (6) ancillary services.

Research on destination loyalty has traditionally viewed a destination as a collection of local products and services in a specific geographic area. However, in today's global market, destinations must compete on a worldwide scale. In order to foster loyalty among tourists, it is crucial for destination managers and promoters to have a thorough understanding of their preferences. This was emphasised by the findings of Campón et al. (2013). They concluded that it is relevant to investigate what the main factors are behind their loyalty, and, if possible, what other relationships with other latent variables exist? Such information is crucial for implementing long-term destination strategies that can promote the destination to a consolidated base of loyal tourists.

The scales included in the questionnaire to measure all the latent variables were adopted from Song et al. (2012). Section C included questions that measured the basic characteristics of the respondent's trip, as well as information on the impact of the trip on the respondent's subjective well-being. The items included in sections B and C were measured on an anchored 5-point Likert scale: 1 = completely disagree (or extremely poor) and 5 = strongly agree (or extremely good).

The survey was conducted at the main airport in Johannesburg (OR Tambo International), the main gateway for the South Africa tourism market,[1] from 22 to 28 March 2015. The survey was administered to foreign tourists who had completed their trip to South Africa and were returning to their country of residence. Thus, the respondents could respond to all the questions included in the questionnaire. Trained students helped in the distribution and administration of the survey through various airport waiting areas for both long-haul and short-haul flights with the idea of having a wide representation of the source markets of South African tourism. The total sample obtained was 504 valid responses that made up the dataset of the current study. The study aimed to demonstrate the application of the proposed methodology by analysing tourist loyalty from two contrasting perspectives – recommending and complaining behaviour. As such, we believe that limitations such as sample representativeness or slightly outdated data are not significant factors to consider if the focus is directed to the framing issue. More details of the questionnaire, sample and dataset can be found in Saayman et al. (2018) and Martin, Saayman & Du Plessis (2019).

Methodology

The loyalty latent variable will be analysed through two scales (recommendation and complaining) that use eight indicators with different framing. Recommendation (RECOM) and complaining (COMPL) scales are based on Saayman et al. (2016). The RECOM latent variable is based on the following eight indicators: (1) I intend to use the same accommodation if I visit South Africa again; (2) I intend to visit the same attraction/entertainment venue if I visit South Africa again; (3) I intend to use the same food and beverage services that I experienced most recently if I visit South Africa again; (4) I intend to use the immigration services even if I could use a private supplier of similar services; (5) I intend to recommend the accommodation to other people (e.g. friends, relatives and colleagues); (6) I intend to recommend the attraction/entertainment venue to other people (e.g. friends, relatives and colleagues); (7) I intend to recommend the food and beverage services that I experienced most recently to other people (e.g. friends, relatives and colleagues); (8) I intend to say positive things about the immigration services to other people (e.g. friends, relatives and colleagues).

Meanwhile, the COMPL latent variable is based on the same eight indicators with a different wording that determines a new framing: (1) I intend to complain about the accommodation services to the employees or manager of the accommodation establishment; (2) I intend to complain about the attraction/entertainment service to the employees or manager of the attractions; (3) I intend to complain about the food and beverage service I experienced most recently to the employees or manager of the establishment; (4) I intend to complain about the immigration services to the employees or manager of the immigration service; (5) I intend to complain about the accommodation service to other people (e.g., friends, relatives and colleagues); (6) I intend to complain about the attraction/entertainment service to other people (e.g. friends, relatives and colleagues); (7) I intend to complain about the food and beverage service I experienced most recently to other people (e.g. friends, relatives and colleagues); (8) I intend to complain about the immigration services to other people (e.g. friends, relatives and colleagues).

In our study, the Likert scale was converted to triangular fuzzy numbers that are capable of grasping the essence of vague information. Then, individual aggregated synthetic indicators were obtained using a multi-criteria decision-making model based on the concept of optimal solutions through the use of TOPSIS (the technique for order performance by similarity to ideal solution) (Zadeh, 1965; Kahraman et al., 2004).

The method has been extensively used by scholars in different tourist contexts, such as transport mode access in world heritage cities (Martín et al., 2021), airlines (Leon & Martín, 2020), hotels (Benítez et al., 2007), destinations (Martín et al., 2019), gastronomy (Martín et al., 2020), food and beverages at airports (Del Chiappa et al., 2016), second home tourists in Ecuador (Martín et al., 2022) and duty-free shopping at airports (Martín, Martín-Domingo et al., 2019). According to Leon and Martín (2020), the method is gaining popularity as a useful tool in multi-criteria decision-making (MCDM) studies for three key reasons. Firstly, it is flexible and user-friendly when it comes to handling imprecise information. Secondly, it offers a more intuitive understanding compared to other MCDM methods. Lastly, it can be adjusted to various objective functions without making any strong assumptions about the problem's dimensionality.

Two synthetic loyalty indicators (RECOM and COMPL indices) for each respondent can be calculated following the technique for order preference by similarity to ideal solution (TOPSIS). TOPSIS is one of the most used multi-criteria decision-making techniques (Hwang & Yoon, 1981; Zeleny, 1982).

The comparison and analysis of loyalty using the negative wording of complaining and the positive wording of recommending at the individual level will be based on fuzzy clustering (Leon & Martín, 2020). The method provides the membership function for each tourist of the sample that determines their degree of similarity with respect to the tourist profile representing a particular group (Martín & Indelicato, 2023). As suggested in D'Urso et al. (2016), the current study will be based on a three-cluster solution rather than an optimal solution that could be obtained under a theoretical loss function that has more than three clusters.

For this reason, three representative tourists' profiles are obtained according to the maximum, minimum and median observation found by the RECOM and COMPL indices. The fuzzy segmentation analysis extends the bagged cluster algorithm introduced by Leisch (1999). Readers can consult D'Urso et al. (2013; 2015; 2016) for more information on cluster validation and cluster profiles.

The eco-extended apostle and ordinal probit models

Schaefer (2013) broadened the "apostle model" to aid in the comprehension of invasive species, species at risk, and keystone species from an ecological perspective. This resulted in the adaptation of the classic model quadrants into ecological terminology. This was initially introduced by the Harvard Business School in the mid-1990s (Jones & Sasser, 1995), and examined the connection between loyalty and satisfaction in order to enhance the survival rate of organisations.

Thus, the four quadrants and their respective classic categories, originally denominated as deserters (defectors), mercenaries, hostages and apostles, were translated into ecological terms where products were seen as habitats, and clients as species. A study conducted by Indelicato and Martín (2022) utilised the eco-apostle approach to examine four categories of citizens based on their civic and ethnic identities. This approach was used to categorise citizens transferring the pair of analysis loyalty–satisfaction by civic-ethnic national identity dimensions. The researchers employed a fuzzy clustering technique to further divide the four categories into 16 distinct categories.

Following Schaefer (2013) and Indelicato and Martín (2022), the current study will transform the four classic categories into 16 new categories. These categories will help analyse how tourists are distributed in a bi-dimensional space based on loyalty. In this framework, recommending behaviour will be used as a proxy for satisfaction, while complaining behaviour will serve as an indicator of loyalty. This approach will allow a more nuanced examination of tourist behavior under the perspectives proposed in the two studies. Thus, the model will distinguish between those tourists who responded consistently to the loyalty construct independently of using positive or negative wording in the questionnaires, from those who were not consistently classified as loyal tourists because they did not recommend South Africa or they complained about their recent visit to the country.

Figure 1 shows the four quadrants explained above through the Loyalty-TOPSIS indicator at an individual level using the two different wordings. Thus, the south-west quadrant (deserters) can be seen as the tourists who will be classified as unloyal under the positive wording (RECOM) and loyal under the negative wording (COMPL). Similarly, the north-east quadrant (apostles) is characterised by those tourists who would be classified as loyal under the recommending vision, and unloyal under the complaining counterpart. Meanwhile, the south-east and north-west quadrants are the least controversial from the point of view of survey design as they contain tourists who would be consistently classified as loyal (south-east quadrant) or unloyal (north-west quadrant)

As Indelicato and Martín (2022) contended, a limitation of this method is that there are some observations which are very close to the average latent variable TOPSIS values, and the separation of the quadrants for these observations is sometimes unclear or inappropriate. Identifying tourists' quadrant based on their behaviour can prove challenging when their actions fall within the realm of average values. For this reason, the new proposal based on the ternary graphs obtained after the fuzzy clustering analysis seems to be more appropriate. The extended eco-apostle model refines the blurred observations obtained with the classic model.

The new model extends the four classic categories into 16 different classes that are determined by the membership functions of the fuzzy clustering method. Among these, the four corner categories were determined by whether the tourists are more similar to those who recommend and complain, and those who neither recommend nor complain. Special emphasis was put on these controversial quadrants because they contained tourists who provided the most inconsistent answers regarding the loyalty latent construct. The extended method is based on the membership functions obtained for the analysis of the loyalty construct under the recommending and complaining perspectives.

The method splits the ternary graph distribution into four equilateral triangles in which the upper triangle – those who are more similar to the tourists who experienced the least likelihood of recommending or complaining – takes the value of one. Similarly, the left-lower triangle – which is for those who are more similar to the tourist who has the highest likelihood of recommending or complaining – gets the value of four. Finally, the right lower triangle and the middle triangle get the values of three and two, respectively (Figure 2). The lower triangle shows the intermediate position regarding the recommending and complaining behaviour. Thus, the classic apostle model is extended to a model with 16 different categories in which the pure categories located in the corner quadrants are characterised by the following pairs ((1,1), (4,1), (1,4) and (4,4)). As previously said, the analysis of the pure controversial quadrants characterised by (1,1) and (4,4) will be of special relevance to this study.

FIGURE 1: Apostle model applied to the loyalty latent variable

An ordinal probit model will be estimated to analyse whether a respondent belongs to any of the four quadrants according to the eco-extended apostle model, using the following 15 explanatory variables: gender, age, language, trip purpose, educational level, number of visits, travelling alone, travelling with my couple, travelling with my family, travelling with my extended family, travelling with my friends, travelling with my colleagues, hotel accommodation, a one-word description, intention to revisit SA again.

After the estimation of the ordinal probit model, the marginal effects were calculated to analyse how differences in the explanatory variables affected the probability of being tourists who perceive loyalty under the two studied perspectives according to the four categories, namely no recommending–no complaining, recommending–no complaining, no recommending–complaining, and recommending–complaining. The most commonly used method for normalising categorical variables is dummy coding. However, for the sake of interpretability, this study employs effects coding as proposed by Daly et al. (2016). With this coding, it becomes easier to interpret marginal effects in relation to the sample average. This makes it more straightforward to compare explanatory variables.

The dependent variable for the econometric model is based on the results obtained by the eco-extended apostle model according to the following criteria: (1) for the south-west quadrant (no recommending–no complaining); (2) for the south-east quadrant (recommending–no complaining); (3) for the north-west quadrant (no recommending–complaining); and (4) for the north-east quadrant (recommending–complaining). As the independent variable ranges in an ordinal scale of four points, a heteroscedastic ordered probit model is estimated as the best approach to analyse the main determinants to explain the tourists' loyalty behaviour. It is well known in the literature that homoscedastic ordered probit models could lead to biased parameter estimates in addition to unspecified standard errors, so the analysis of heteroscedastic ordered probit models is highly recommended (Reardon et al., 2017). However, in the current study, we could not find a heteroscedastic model with a better fit than the homoscedastic model.

The ordered probit formulation is as follows: Let y denote the independent variable whose value ranges from 1 to 4, and the order of the values means that tourists are more inclined to recommend and complain. Thus, the nature of the latent variable y^* is determined by:

$$y^* = x\,\beta + \varepsilon$$

where x is a vector formed by the dummy variables included in the model as the determinant factors, beta is the vector of parameters to be estimated by the model, ε is the error term that distributes as a standard normal distribution. The model now determines three threshold parameters $\mu_1 < \mu_2 < \mu_3$ that permit the observed dependent variable to link with the unobserved latent variable as follows:

$$y = 1 \text{ if } y^* \leq \eta_1$$
$$y = 2 \text{ if } \eta_1 < y^* \leq \eta_2$$
$$y = 3 \text{ if } \eta_2 < y^* \leq \eta_3$$
$$y = 4 \text{ if } \eta_3 < y^*$$

The parameters are estimated by maximising as usual the log-likelihood functions which are consistent and asymptotically normal. The probability of observing a particular outcome, for $(1 \leq i \leq 4$ is given by

$$\begin{aligned} P(y_i = j \mid x_i) &= P(\eta_{j-1} \leq y_i^* \leq \eta_j) \\ &= P(\ \eta_{j-1} - x_i\beta \leq \varepsilon_i \ \leq \eta_j - x_i\beta) \\ &= F(\ \eta_j - x_i\beta) - F(\eta_{j-1} - x_i\beta) \end{aligned}$$

Where F is the cumulative normal distribution function assumed for the error term, $\eta_0 = -\infty$, and $\eta_4 = \infty$. Then we can write the log-likelihood function as follows:

$$\log L = \sum_{i=1}^{N} \sum_{j=1}^{4} y_{ij} \log\left[F(\ \eta_j - x_i\beta) - F(\eta_{j-1} - x_i\beta)\right]$$

The log likelihood is maximised with respect to the parameters of the distribution function and the cut thresholds. Normalisation of categorical variables in choice or ordinal models has garnered considerable attention due to the prevalent issue of linear dependency (Greene & Hensher, 2010; Hensher et al., 2015; Daly et al., 2016). Many papers estimating ordered probit models tend to utilise dummy coding as their primary normalisation method. However, due to issues of interpretability and potential confounding effects with constant or threshold cut points, Hensher et al. (2015) argue that effects coding normalisation is a superior alternative. To enhance the accuracy of comparisons, Daly et al. (2016) introduced a more reliable reference point for normalising the effects code. They suggested using the population-weighted average as a permanent zero definition instead of the category-weighted averages. We have decided to adopt this method for normalising all the variables in our study, as it improves the value of our comparisons.

Results

We found that the profiles for the most recommending and complaining tourists were characterised by being very extreme with 5s in all the items included in the scales. Interestingly, the profiles for the intermediate recommending and complaining tourists are closer to the recommending and non-complaining tourist profile with 4s and 2s answered in all the items. On the other hand, the profiles for the non-recommending and non-complaining tourists are characterised as not being as extreme only in the first case of recommending behaviour, with 1s in only four indicators. Meanwhile, in the case of non-complaining, we find an equally extreme behaviour with 1s in the total set of indicators. On initial examination, it appears that tourists' behavior differs when they provide responses of complete disagreement.

Figure 2 shows the two ternary graphs that represent the distribution of the tourists according to the membership function obtained with the method. Our results using RECOM show that 21.8 per cent of the tourists have recommending behaviour, 4.7 per cent have an non-recommending behaviour, and 73.5 per cent have a moderate recommending behaviour. In the case of using COMPL, the empirical evidence shows that 21.3 per cent of the tourists have complaining behaviour, 33.1 per cent have an non-complaining behaviour, and 45.6 per cent have a more moderate complaining behaviour. At first sight, it seems evident that framing plays a determinant role when researchers are analysing loyalty latent variables using recommending or complaining indicators, and this issue should be contemplated in future studies.

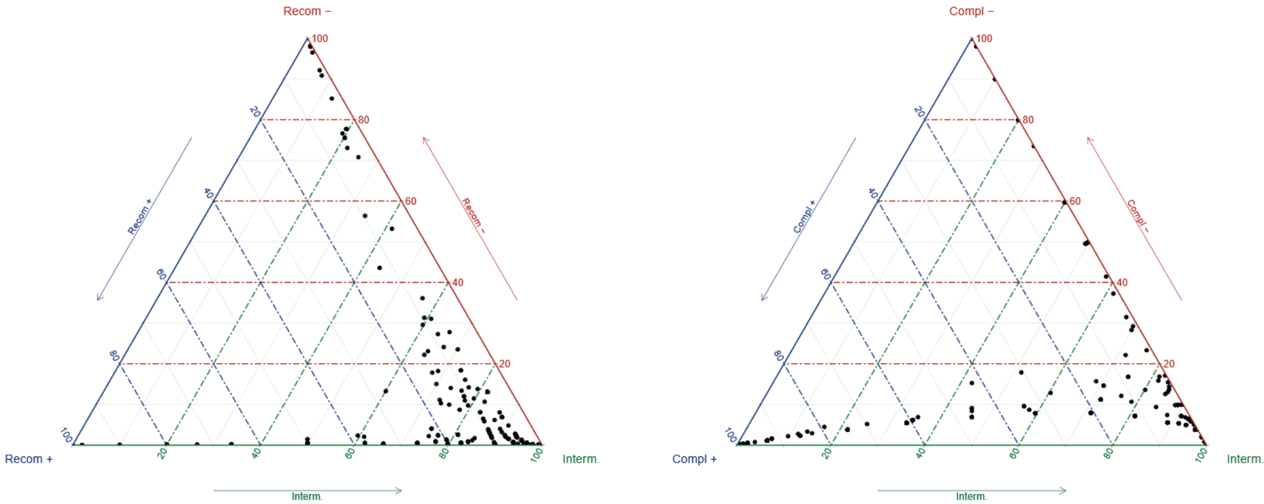
The classic apostle model shows that the most representative group is characterised by those tourists who recommend and do not complain (42.5%), which is a nice result from an empirical point of view for South Africa and for researchers. As for this tourist sub-sample, it seems that loyalty can be studied indistinctly by recommending and/or complaining. Nevertheless, for 20.4 (recommending and complaining) and 15.1 (neither recommending nor complaining) per cent of the sample, the loyalty latent variable cannot be studied by recommending and complaining, and the results can be biased.

Figure 3 shows the classic apostle model where it seems evident that there is a negative relationship between recommending and complaining. However, there are some tourists in the far north-east quadrant which means tourists who recommend and complain at the same time. In addition, there are also some observations characterised by neither recommending nor complaining.

These results are very different from those obtained by the eco-extended apostle model using the fuzzy clustering method to categorise the tourists into 16 different categories. In this last case, it can be seen that the most represented group is the tourists who recommend and complain (35.9%). In comparison, the other three groups are less represented, e.g. they neither recommend nor complain (19.8 %), 30.8% represented the no recommending and complaining, and the least represented group is that of those who recommend and do not complain (13.5%). It can be concluded that framing influences the loyalty variable. It is not immediately clear whether loyalty should be studied by focusing solely on recommending behaviour, non-complaining behaviour, or a combination of both, as the wording of the questionnaire appears to impact how tourists respond.

The study also analyses if each of the categories can be explained by some covariates, and fifteen variables were used in an ordinal probit model to see if there were some key performance indicators that can be used to determine the framing effect, that is, whether loyalty will be higher, lower or equal when the latent variable is studied with recommending or complaining frames. The results of the model show that there are significant effects that also need to be considered when researchers analyse loyalty in tourist destinations.[2]

Interestingly, it was observed that the covariates of gender, language, travelling alone, travelling as a couple, travelling with



(a) Recommending (b) Complaining

FIGURE 2: **Ternary graphs representing the loyalty latent variable**

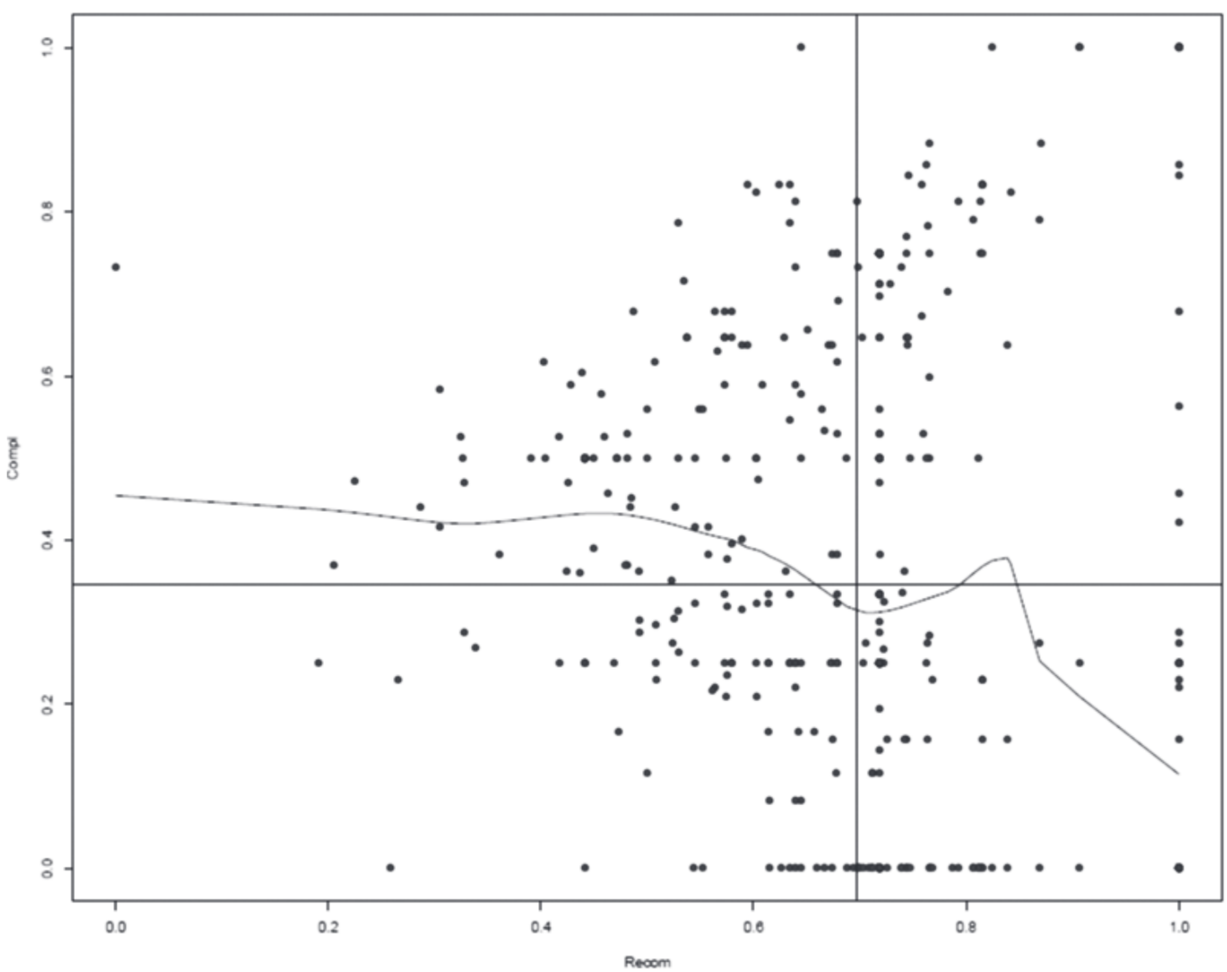


FIGURE 3: **Classic apostle graph**

friends, travelling with colleagues, hotel accommodation and a one-word description for the visit to South Africa do not have any significant effect on the study of the loyalty latent construct from the perspectives of recommending or complaining. Nevertheless, age, trip purpose, educational level, number of visits, travelling with family, travelling with extended family and intention to revisit South Africa again have some effect on it.

To keep things simple and concise, we will only comment on significant results in the controversial quadrants (neither recommend nor complain, and recommend and complain). The analysis will be based on the study of the main drivers and barriers to be in these two quadrants. In the south-west quadrant, it can be seen that with a confidence level of 90 per cent, the main barriers are to be a postgraduate and to travel with a family with children. The marginal effects range between −8.2% and −11.9%, respectively, i.e. with respect to the average sample tourist, the probability of being in this quadrant decreases when the tourist belongs to the stated category by that marginal effect. Analysing the main drivers, we find that the top two factors influencing loyalty behaviour are the absence of children during travel (+1.6%) and shopping motivations (+14.6%).

In the north-east quadrant (recommend and complaining). Results show that there are a more significant number of drivers and barriers located here, and the significance levels are also better than for the quadrant commented on above, as the confidence level ranges now from 91 to 99 per cent. Regarding the main barriers, the results show that these are: shopping motivations (−21.5%), travelling with the extended family, including grandparents (−18.9%), being older than 65 years old (−14.8%), being between 56 and 65 years old (−13.9%), visiting South Africa for the first time (−6.7%), travelling with the family, but without children (−2.2%) and declaring the intention to visit South Africa again in the future (−1.6%). On the other hand, being a post-graduate (+12.1%) and travelling with the family, including the children (+15.4%) are the main drivers. Readers are reminded that the figures between parenthesis show the marginal effects with respect to the average tourist in the sample.

Discussion and conclusion

The loyalty of tourists who visit South Africa differs a lot if the analysis is made using recommending or complaining latent variables. The results show that loyalty is also affected by whether the classic or eco-extended apostle model is used. The majority of the tourists are located in the south-east quadrant of those tourists who recommended a visit to South Africa and did not complain. The eco-extended apostle model changes the conclusions obtained by the classic apostle model, so a word of caution is given here in case researchers prefer to use the classic apostle model which, in our view, provides a further refinement of results. In any case, the study shows that framing plays a determinant role that cannot be neglected when destination loyalty is under analysis.

The extended model shows that many of the tourists who were previously classified as recommending and not complaining with RECOM and COMPL scores close to the mean are now included in the group of non-recommending and non-complaining (18.8 per cent of the sample), and in the group of non-recommending and complaining (13.5 per cent of the sample). It is interesting to note that the transition matrix from the classic model to the extended model shows that the three highest probabilities are obtained for the two previous commented pairs and the additional pair that corresponds to the north-west classical quadrant (non-recommending-complaining) into the 11th hybrid quadrant (recommending and complaining) with 12.9 per cent of the sample. It was shown that both models provide different results in all the cases. The different results are unsurprising as the extended model refines the categories obtained by the classic apostle model. Nevertheless, it can be deduced that, independently of the model, the loyalty analysis is not neutral in using positive or negative framings based on the recommendation or complaining tourists' behaviour.

The ordinal probit model shows that some covariates do not have any effect on explaining the different loyalty categories, such as gender, language, travelling alone, travelling as a couple, travelling with friends, travelling with colleagues, hotel accommodation and a one-word description. This result provides an interesting insight as the loyalty typology is not affected by the main image of South Africa. It is interesting to highlight here that the main images described by one word are the following: people, animals, diversity, scenery and crime.

Dolnicar et al. (2015) expressed three main concerns when analysing the association between satisfaction and behavioural intentions. First, latent variables are complex and challenging to analyse. Second, the measurement of the latent variables is sometimes inconsistent and depends mainly on the scale selection. Finally, the response heterogeneity impedes to some extent that the explained variance of the models is insignificant.

Our findings underscore Dolnicar's concerns regarding the unambiguous measurement of tourist loyalty. Using scales based solely on positive (recommending) or negative (complaining) wordings could lead to conflicting results. We have demonstrated that even mixing these item types within a scale can be detrimental, as our results reveal a significant portion of tourists (35.9%) who both recommend and complain and another 19.8% who neither recommend nor complain. Thus, tourist practitioners and researchers should exercise caution when analysing loyalty, recognising the importance of framing and the potential limitations of traditional scale designs.

Despite the extensive literature on loyalty, we have yet to develop a comprehensive scale capable of accurately measuring this complex latent construct. We believe such a scale may be unattainable. Nevertheless, the pursuit of a precise conceptual definition of loyalty is likely to remain a formidable challenge for future tourism researchers, akin to the elusive Holy Grail.

Regarding the covariates that have the role of being barriers, drivers or insignificant factors, it is not easy to compare our results with the previous literature. To our knowledge, the study is one of the first attempts to analyse the effects of positive and negative wording in the construction of the loyalty scale. In fact, the controversial quadrants can be justified for the existence of important nuances regarding recommending and complaining behaviour. Unfortunately, our study presents empirical evidence that the travel market loyalty in South Africa cannot be studied without considering the framing effects in the construction of the loyalty latent variable scales. Tourist marketers are warned of the risks that exist if such an approach is taken.

The risks are even more accentuated when the tourists allege that: their main motivation is shopping; they travel with the extended family including grandparents; they are in the older group segments (56–65 years old and older than 65); they are first visitors; they are postgraduates; and they travel with the family but without children. It is out of the scope of the current study to make a conjecture of the possible reasons for such results.

It was not surprising that declaring the intention to visit South Africa again in the future, which has been used as a loyalty measurement by some studies (Assaker et al., 2011; Rasoolimanesh et al., 2022), was the main barrier in the controversial quadrant of those who recommend and complain at the same time. However, the sufficient condition of declaring their intention to revisit South Africa in the future to be a driver for being in the south-east quadrant (recommending and no complaining) was not found. The results once raise suspicion about the subtle complexities involved in conceptualising loyalty.

Research implications and limitations

The research suggests that tourism professionals and researchers must carefully consider how to measure loyalty when examining it, considering how it is presented and the possible constraints of conventional measurement methods. Our findings indicate that using positive, negative, or a combination of both wordings may result in conflicting loyalty measurements.

This study is subject to some limitations that could serve as fruitful lines for future research. First, the loyalty scales employed in the study are mainly limited to revisiting or recommending issues in the case of the positive wording, and to complaining or delivering bad judgments to others in the case of the negative wording. It would be interesting to analyse other types of wording, such as visiting South Africa was finally a good choice, for the positive wording; or it was a bad choice or I should have visited another destination instead of South Africa for the negative wording. Second, the analysis could be extended to other destinations in order to analyse whether the results can be generalised.

Notes

1. The authors acknowledge that the dataset is outdated as many things have changed in the South African tourist industry since 2015. For this reason, the results and insights provided by the article might be mainly interpreted regarding the analysis of the survey framings on tourists' recommending or complaining behaviour, as well as the proposed method that analyses tourist loyalty using these two latent variables at the same time. In this respect, the results should be taken mainly as prescriptions for future work when researchers analyse loyalty constructs. A word of caution is given regarding the drivers and barriers as these could have changed.
2. The tables with the estimated coefficients and the marginal effects for each of the categories can be obtained from the authors.

Acknowledgements

The researchers acknowledge Rod Taylor for assisting in the language and proof reading of the article. In addition, thank you to TREES (Tourism Research in Economics, Environs and Society) and the NWU (North-West University) for their funding support

ORCiDs

Concepción Román – 0000-0002-0591-1298
Juan Carlos Martín – 0000-0002-7867-1926
Engelina du Plessis – 0000-0001-9314-9127

References

Aaker, D. A. (1991). *Managing Brand Equity: Capitalizing on the Value of the Brand Name*. Free Press.

Assaker, G., Vinzi, V. E., & O'Connor, P. (2011). Examining the effect of novelty seeking, satisfaction, and destination image on tourists' return pattern: A two factor, non-linear latent growth model. *Tourism Management*, *32*(4), 890–901. https://doi.org/10.1016/j.tourman.2010.08.004

Benítez, J. M., Martín, J. C., & Román, C. (2007). Using fuzzy number for measuring quality of service in the hotel industry. *Tourism Management*, *28*(2), 544–555. https://doi.org/10.1016/j.tourman.2006.04.018

Bezerra, G. C. L., & Gomes, C. F. (2019). Determinants of passenger loyalty in multi-airport regions: Implications for tourism destination. *Tourism Management Perspectives*, *31*, 145–158. https://doi.org/10.1016/j.tmp.2019.04.003

Bi, J.-W., Liu, Y., Fan, Z.-P., & Zhang, J. (2020). Exploring asymmetric effects of attribute performance on customer satisfaction in the hotel industry. *Tourism Management*, *77*, 104006. https://doi.org/10.1016/j.tourman.2019.104006

Bigné, E., García, I. S., & Blas, S. S. (2005). Relationships among residents' image, evaluation of the stay and post-purchase behaviour. *Journal of Vacation Marketing*, *11*(4), 291–302. https://doi.org/10.1177/1356766705056626

Buhalis, D. (2000). Marketing the competitive destination of the future. *Tourism Management*, *21*(1), 97–116. https://doi.org/10.1016/S0261-5177(99)00095-3

Campón, A. M., Alves, H., & Hernández, J. M. (2013). Loyalty measurement in tourism: a theoretical reflection. In Á. Matias, P. Nijkamp, & M. Sarmento (eds), Quantitative *Methods in Tourism Economics* (pp. 13–40). Physica-Verlag HD. https://doi.org/10.1007/978-3-7908-2879-5_2

Chyung, S. Y. Y., Barkin, J. R., & Shamsy, J. A. (2018). Evidence-based survey design: the use of negatively worded items in surveys. *Performance Improvement*, *57*(3), 16–25. https://doi.org/10.1002/pfi.21749

Colosi, R. (2000). Negatively worded questions cause respondent confusion. *Survey Research Methods*, 20746, 2896–2903.

Crompton, J. L. (1979). An assessment of the image of Mexico as a vacation destination and the influence of geographical location upon that image. *Journal of Travel Research*, *17*(4), 18–23. https://doi.org/10.1177/004728757901700404

D'Urso, P., De Giovanni, L., Disegna, M., & Massari, R. (2013). Bagged clustering and its application to tourism market segmentation. *Expert Systems with Applications*, *40*(12), 4944–4956. https://doi.org/10.1016/j.eswa.2013.03.005

D'Urso, P., Disegna, M., Massari, R., & Osti, L. (2016). Fuzzy segmentation of postmodern tourists. *Tourism Management*, *55*, 297–308. https://doi.org/10.1016/j.tourman.2016.03.018

D'Urso, P., Disegna, M., Massari, R., & Prayag, G. (2015). Bagged fuzzy clustering for fuzzy data: An application to a tourism market. *Knowledge-Based Systems*, *73*(1), 335–346. https://doi.org/10.1016/j.knosys.2014.10.015

Daly, A., Dekker, T., & Hess, S. (2016). Dummy coding vs effects coding for categorical variables: Clarifications and extensions. *Journal of Choice Modelling*, *21*, 36–41. https://doi.org/10.1016/j.jocm.2016.09.005

Del Chiappa, G., Martin, J. C., & Roman, C. (2016). Service quality of airports' food and beverage retailers. A fuzzy approach. *Journal of Air Transport Management*, *53*, 105–113. https://doi.org/10.1016/j.jairtraman.2016.02.002

Deming, W. E. (1986). *Out of the Crisis*. Massachusetts Institute of Technology, Center for Advanced Engineering Study.

Dolnicar, S., Coltman, T., & Sharma, R. (2015). Do satisfied tourists really intend to come back? Three concerns with empirical studies of the link between satisfaction and behavioral intention. *Journal of Travel Research*, *54*(2), 152–178. https://doi.org/10.1177/0047287513513167

Fetscherin, M. (2019). The five types of brand hate: How they affect consumer behavior. *Journal of Business Research*, *101*, 116–127. https://doi.org/10.1016/j.jbusres.2019.04.017

Galí Espelt, N., & Donaire Benito, J. A. (2005). The social construction of the image of Girona: a methodological approach. *Tourism Management*, *26*(5), 777–785. https://doi.org/10.1016/J.TOURMAN.2004.04.004

Greene, W. H., & Hensher, D. A. (2010). *Modelling Ordered Choices: A Primer.* Cambridge University Press. https://doi.org/10.1017/CBO9780511845062

Haase, J., Wiedmann, K. P., & Labenz, F. (2022). Brand hate, rage, anger & co.: Exploring the relevance and characteristics of negative consumer emotions toward brands. *Journal of Business Research*, *152*, 1–16. https://doi.org/10.1016/j.jbusres.2022.07.036

Hashim, S., & Kasana, S. (2019). Antecedents of brand hate in the fast food industry. *Spanish Journal of Marketing*, *23*(2), 227–248. https://doi.org/10.1108/SJME-10-2018-0047/FULL/PDF

Hegner, S. M., Fetscherin, M., & van Delzen, M. (2017). Determinants and outcomes of brand hate. *Journal of Product and Brand Management*, *26*(1), 13–25. https://doi.org/10.1108/JPBM-01-2016-1070/FULL/HTML

Hensher, D. A., Rose, J. M., & Greene, W. H. (2015). *Applied Choice Analysis.* Cambridge University Press. https://doi.org/10.1017/CBO9781316136232

Horng, J.-S., Liu, C.-H., Chou, H.-Y., & Tsai, C.-Y. (2012). Understanding the impact of culinary brand equity and destination familiarity on travel intentions. *Tourism Management*, *33*(4), 815–824. https://doi.org/10.1016/j.tourman.2011.09.004

Hwang, C., & Yoon, K. (1981). *Multiple Attribute Decision Making: Methods and application*. Springer.

Indelicato, A., & Martín, J. C. (2022). Two approaches to analyze whether citizens' national identity is affected by country, age, and political orientation – a fuzzy eco-apostle model. *Applied Sciences*, *12*(8), 3946. https://doi.org/10.3390/app12083946

Islam, T., Attiq, S., Hameed, Z., Khokhar, M. N., & Sheikh, Z. (2019). The impact of self-congruity (symbolic and functional) on the brand hate: A study based on self-congruity theory. *British Food Journal*, *121*(1), 71–88. https://doi.org/10.1108/BFJ-03-2018-0206

Jones, T. O., & Sasser, W. E. (1995). Why satisfied customers defect. *Harvard Business Review*, *73*(6), 88–99.

Kahraman, C., Cebeci, U., & Ruan, D. (2004). Multi-attribute comparison of catering service companies using fuzzy AHP: The case of Turkey. *International Journal of Production Economics*, *87*(2), 171–184. https://doi.org/10.1016/S0925-5273(03)00099-9

Kahneman, D. & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*(2), 263–291. https://doi.org/10.2307/1914185

Kotler, P., Haider, D., & Rein, I. (1993). There's no place like our place! The marketing of cities, regions, and nations. *The Futurist*, *27*(6), 14.

Kucuk, S. U. (2019). Consumer brand hate: Steam rolling whatever I see. *Psychology & Marketing*, *36*(5), 431–443. https://doi.org/10.1002/MAR.21175

Kumar, R., Jebarajakirthy, C., Maseeh, H. I., Dhanda, K., Saha, R., & Dahiya, R. (2023). Two decades of brand hate research: a review and research agenda. *Marketing Intelligence & Planning*, *41*(6), 763–789.

Kuru, O., & Pasek, J. (2016). Improving social media measurement in surveys: Avoiding acquiescence bias in Facebook research. *Computers in Human Behavior*, *57*, 82–92. https://doi.org/10.1016/j.chb.2015.12.008

Leisch, F. (1999). Bagged Clustering. *Proceedings of the 2nd International Workshop on Multiple Classifier Systems (*pp. 75–84).

Leon, S., & Martín, J. C. (2020). A fuzzy segmentation analysis of airline passengers in the U.S. based on service satisfaction. *Research in Transportation Business & Management*, *37*, 100550. https://doi.org/10.1016/j.rtbm.2020.100550

Martín, J. C., & Indelicato, A. (2023). A fuzzy-hybrid analysis of citizens' perception toward immigrants in Europe. *Quality & Quantity*, *57*(2), 1101–1124. https://doi.org/10.1007/s11135-022-01401-0

Martín, J. C., Bustamante-Sánchez, N. S., & Indelicato, A. (2022). Analyzing the main determinants for being an immigrant in Cuenca (Ecuador) based on a fuzzy clustering approach. *Axioms*, *11*(2), 74. https://doi.org/10.3390/AXIOMS11020074

Martín, J. C., Martín-Domingo, L., Lohmann, G., & Spasojevic, B. (2019). The role of travel patterns in airport duty-free shopping satisfaction: A case study from an Australian regional airport. *Journal of Air Transport Management*, *80*, 101691. https://doi.org/10.1016/j.jairtraman.2019.101691

Martín, J. C., Román, C., López-Guzmán Guzmán, T., & Moral-Cuadra, S. (2020). A fuzzy segmentation study of gastronomical experience. *International Journal of Gastronomy and Food Science*, *22*(July), 100248. https://doi.org/10.1016/j.ijgfs.2020.100248

Martín, J. C., Román, C., Moreira, P., Moreno, R., & Oyarce, F. (2021). Does the access transport mode affect visitors' satisfaction in a World Heritage City? The case of Valparaiso, Chile. *Journal of Transport Geography*, *91*, 102969. https://doi.org/10.1016/j.jtrangeo.2021.102969

Martín, J. C., Saayman, M., & du Plessis, E. (2019). Determining satisfaction of international tourist: A different approach. *Journal of Hospitality and Tourism Management*, *40*, 1–10. https://doi.org/10.1016/j.jhtm.2019.04.005

Masiero, L., Pan, B., & Heo, C. Y. (2016). Asymmetric preference in hotel room choice and implications on revenue management. *International Journal of Hospitality Management*, *56*, 18–27. https://doi.org/10.1016/j.ijhm.2016.03.009

Mingfang, Z. (2011). Examining the structural relationships of tourist characteristics and destination satisfaction. *International Conference on E-Business, Management and Economics IPEDR*, *3*, 187–191.

Mushtaq, F. M., Ghazali, E. M., & Hamzah, Z. L. (2024). Brand hate: a systematic literature review and future perspectives. *Management Review Quarterly*, 1–34.

Nam, J., Ekinci, Y., & Whyatt, G. (2011). Brand equity, brand loyalty and consumer satisfaction. *Annals of Tourism Research*, *38*(3), 1009–1030. https://doi.org/10.1016/j.annals.2011.01.015

Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing*, *63*(4 suppl1), 33–44. https://doi.org/10.1177/00222429990634s105

Oppermann, M. (2000). Tourism destination loyalty. *Journal of Travel Research*, *39*(1), 78–84. https://doi.org/10.1177/004728750003900110

Palmer, A. (1994). Relationship marketing: Back to basics? *Journal of Marketing Management*, *10*(7), 571–579. https://doi.org/10.1080/0267257X.1994.9964305

Rahimah, A., Dang, H. P., Nguyen, T. T., Cheng, J. M. S., & Kusumawati, A. (2023). The subsequent effects of negative emotions: From brand hate to anti-brand consumption behavior under moderating mechanisms. *Journal of Product & Brand Management*, *32*(4), 618–631.

Rasoolimanesh, S. M., Seyfi, S., Rather, R. A., & Hall, C. M. (2022). Investigating the mediating role of visitor satisfaction in the relationship between memorable tourism experiences and behavioral intentions in heritage tourism context. *Tourism Review*, *77*(2), 687–709. https://doi.org/10.1108/TR-02-2021-0086

Reardon, S. F., Shear, B. R., Castellano, K. E., & Ho, A. D. (2017). Using heteroskedastic ordered probit models to recover moments of continuous test score distributions from coarsened data. *Journal of Educational and Behavioral Statistics*, *42*(1), 3–45. https://doi.org/10.3102/1076998616666279

Reichheld, F. F. (1996). *The Loyalty Effect*. Harvard Business School Press.

Richins, M. L. (1983). Negative word-of-mouth by dissatisfied consumers: a pilot study. *Journal of Marketing*, *47*(1), 68–78. https://doi.org/10.1177/002224298304700107

Román, C., & Martín, J. C. (2016). Hotel attributes: Asymmetries in guest payments and gains – A stated preference approach. *Tourism Management*, *52*, 488–497. https://doi.org/10.1016/j.tourman.2015.08.001

Saayman, M., Li, G., Uysal, M., & Song, H. (2018). Tourist satisfaction and subjective well-being: An index approach. *International Journal of Tourism Research*, *20*(3), 388–399. https://doi.org/10.1002/jtr.2190

Saayman, M., Martin, J. C., & du Plessis, E. (2016). Measuring tourist satisfaction: Do scales matter? *Tourism Management, 54*, 113–123. https://doi.org/10.1016/j.tourman.2016.11.003.
Salim, A., Setiawan, M., Rofiaty, R., & Rohman, F. (2017). How to build satisfaction and customer loyalty with a focus on complaints handling (Review of the scientific literature). *Journal of Finance and Banking Review*, *2*(2), 28–33. https://doi.org/10.35609/jfbr.2017.2.2(5)
Saren, M. J., & Tzokas, N. X. (1998). Some dangerous axioms of relationship marketing. *Journal of Strategic Marketing*, *6*(3), 187–196. https://doi.org/10.1080/096525498346612
Schaefer, V. (2013). Nature's apostles: A model for using ecological restoration to teach ecology. *American Biology Teacher*, *75*(6), 417–419. https://doi.org/10.1525/abt.2013.75.6.11
Song, H., van der Veen, R., Li, G., & Chen, J. L. (2012). The Hong Kong tourist satisfaction index. *Annals of Tourism Research*, *39*(1), 459–479. https://doi.org/10.1016/J.ANNALS.2011.06.001
Taqi, M., Bagozzi, R. P., Tuğrul, T., & Yaprak, A. (2024). The phenomenon of brand hate: A systematic literature review. *Journal of Marketing Theory and Practice*, 1–28. https://doi.org/10.1080/10696679.2024.2376021
Van Sonderen, E., Sanderman, R., & Coyne, J. C. (2013). Ineffectiveness of reverse wording of questionnaire items: let's learn from cows in the rain. *PLoS ONE*, *8*(7), e68967. https://doi.org/10.1371/journal.pone.0068967
Wasaya, A., Prentice, C., & Hsiao, A. (2024). Shaping destination marketing with norms and personality. *Journal of Retailing and Consumer Services*, *77*, 103643. https://doi.org/10.1016/j.jretconser.2023.103643
Zadeh, L. A. (1965). Fuzzy sets. *Information and Control*, *8*, 338–353. https://doi.org/10.1016/S0019-9958(65)90241-X
Zeleny, M. (1982). *Multiple Criteria Decision Making*. McGraw-Hill.