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Decoding travellers' willingness to pay more for green travel products: closing the intention–behaviour gap

Abstract

In the complex context of green consumption, researchers have examined the impact of many variables on pro-environmental behaviours, but have paid little attention to the effects of specific combinations of factors. This study fills this gap, using innovative methods to show how a combination of demographic variables, values, normative influence, personality traits and beliefs can stimulate travellers' willingness to pay more (WLP), using one qualitative and two quantitative studies. In a strong methodological contribution, we develop a model based on complexity theory, which was validated using fuzzy-set qualitative comparative analysis (fsQCA) of 642 travellers. The results indicate that our integrated model has a favourable level of predictive power for travellers' behaviour. Our findings suggest that no single factor is sufficient to drive travellers' willingness to pay more, but the results of the fsQCA in four configurations propose eight causal recipes for achieving high WLP. Alongside its significant methodological contribution, our study makes strong theoretical and practical contributions, including how managers can target their green travel products more effectively.

Keywords: Willingness to pay more, theory of planned behaviour, configurational modelling, personality traits, complexity theory, fsQCA.

Introduction

The phenomenon of green consumption has emerged as a significant new frontier for researchers and marketers in the field of customer behaviour studies (Lai & Cheng, 2016; Brach, Walsh, & Shaw, 2018; Rahman, Chen, & Reynolds, 2020). Early research has paid considerable attention to the term "green" in the context of hospitality and tourism, where it has great significance (e.g. Han, Meng & Kim, 2017; Kim & Han, 2010; Morren & Grinstein, 2016; Lee & Cheng, 2018; Gupta, Dash, & Mishra, 2019). The rapid development of eco-friendly travel products has led to major developments in the hospitality and tourism industry (eMarketer, 2017; Gao & Mattila, 2016; Yadav, Balaji, & Jebarajakirthy, 2019), making it one of the top concerns for practitioners and researchers in the field (Wang, Wang, Wang, Li, & Zhao, 2018). Today's managers are paying closer attention to the hospitality industry's impact on the environment (Kang, Stein, Heo, & Lee, 2012; Line & Hanks, 2016; Akhtar, Khan, Frynas, Tse, & Rao-Nicholson, 2018; Peng & Chen, 2019). As a result, tourism and hospitality firms have introduced programmes to reduce the negative environmental impacts of their products (Martínez García de Leaniz et al., 2018; Gil-Soto, Armas-Cruz, Morini-Marrero, & Ramos-Henríquez, 2019). Since a major goal of any tourism and hospitality firm is to improve consumers' behaviour vis-à-vis their business (Buhalis & Leung, 2018), some companies have developed sustainability programmes, guidelines and plans aimed at improving their consumers' positive behaviour or intentions (Han, 2015; Moscardo & Hughes, 2018). Previous studies have confirmed there are organisational benefits of investing in green initiatives such as environment-friendly travel products (Testa & Iraldo, 2010; Hsiao, Chuang, & Huang, 2018; Piriyapada & Wang, 2015; Seetaram, Song, Ye, & Page, 2018).

The growing popularity of green travel products has resulted in an emerging body of literature investigating the variables that affect travellers' intention to buy and willingness to pay more for these products(e.g. Gao & Mattila, 2016; Wang et al., 2018; Zhao, Geng, Liu, Tao, & Xue,

2018; Line & Hanks, 2016). In one study, Wang and Jia (2012) found that 73.6% of respondents were willing to pay $10.72 to visit an eco-friendly park where current entry costs were $3.02. Han, Hsu, & Sheu (2010) advised hospitality and tourism scholars to expand their study of consumers' decision-making processes relating to paying more for eco-friendly products.

The pricing of green products (non-market goods), has been investigated in a number of different fields (Piriyapada & Wang, 2015; Herrero, Sanz, Bedate, & Barrio, 2012; Seetaram et al., 2018). Willingness to pay more (WTP) has been investigated in contexts including natural parks (Goh, Ritchie, & Wang, 2017), the conservation of natural resources (e.g. Schuhmann et al., 2019; Piriyapada & Wang, 2015) and eco-friendly tourism products (Eustice, McCole, & Rutty, 2019). A few studies have also considered how personality traits and the values that influence customers' behaviour are implicit criteria for buying decisions (Gonçalves, Lourenço, & Silva, 2016). Previous studies on pro-environmental intentions have applied different theories such as value-belief-norm (VBN) theory (Stern, Dietz, Abel, Guagnano, & Kalof, 1999), the theory of consumption values (TCV) (Sheth, Newman, & Gross, 1991) and the theory of planned behaviour (TPB) (Ajzen, 1985) to predict consumers' behavioural intentions toward eco-friendly products, which is a complex phenomenon (Olya & Akhshik, 2019). Several studies have also extended, integrated or modified the relevant theories in line with their suggested conceptual frameworks predicting eco-friendly behaviour (e.g. Han, 2015; Kiatkawsin & Han, 2017; Do Paço, Shiel, & Alves, 2019).

Despite these various models, Olya and Akhshik (2019) described eco-friendly behaviour in hospitality and tourism as a "black-box", and as an understudied area that required more research using innovative theoretical and methodological techniques to validate and conceptualise eco-friendly behaviour conceptual frameworks (Olya & Akhshik, 2019; Kiatkawsin & Han, 2017).

Most prior research on this issue has investigated the "net effect" of indicators on eco-friendly behaviour without explaining the complexity of consumers' behaviours. However, focusing on net effects and symmetric may be misleading, as such effects do not apply to all cases in the dataset, meaning the association between two factors is rather unlikely to be of symmetrical form (Woodside, 2014); neither does investigating the net effect provide accurate results on the complex process of buying behaviour (Olya & Akhshik, 2019). Previous studies have neglected the fact that customer behaviour does not shift until the complex antecedents of the behaviour reach a specific "tipping point" (Olya & Akhshik, 2019). A direct guideline that overlooks the complex associations between indicators can lead to unexpected outcomes, which may cost more than the issue itself.

The main aim of the present research is therefore to fill this gap by conceptualising and testing a configurational framework utilising fuzzy-set qualitative comparative analysis (fsQCA) and complexity theory, which is a state-of-the-art method of investigating the stimulation of willingness to pay more for green/eco-friendly travel products (WLP). A distinctive approach is adopted to provide a complete model for investigating the drivers of WLP. The study makes three major contributions to the travel and tourism literature: (1) by providing a robust framework that can deliver a comprehensive understanding of travellers' behaviour and willingness to pay more by combining demographic variables and personality traits and by using the three theories outlined above (VBN, TCV and TPB); (2) by examining the role of study variables in predicting travellers' willingness to pay more for green travel products and introducing a new approach (i.e. fsQCA) to investigate such products; and (3) by accounting for the complexity of the associations between eco-friendly travel product indicators, and empirically explaining how these indicators contribute to the development of such products, offering a list of managerially actionable steps for their creation and management. As a result, the findings have significant implications for travel and tourism firms seeking practical ways

to identify demand for eco-friendly products, and promote the idea that travel and tourism firms should invest in green activities.

Literature review

Overarching theories

The number of studies exploring green products has increased significantly over the past few years. Researchers have adopted a number of overarching theories such as VBN theory (e.g. Fornara, Pattitoni, Mura, & Strazzera, 2016; Kiatkawsin & Han, 2017; Landon, Woosnam, & Boley, 2018), TPB (e.g. Lee, Hsu, Han, & Kim, 2010; Morren & Grinstein, 2016; Yadav & Pathak, 2017; Wang et al., 2018), TCV (e.g. Lin & Huang, 2012; Gonçalves et al., 2016), the norm activation model (e.g., Kiatkawsin & Han, 2017; Esfandiar, et al., 2020) and complexity theory (e.g. Olya & Akhshik, 2019; Olya et al., 2019).

Scholars have argued that no single theory, such as the TPB or VBN model, is sufficient to develop a conceptual pro-environmental behaviour model. This is mainly because of the complexity of pro-environmental behaviours and the complex combination of multiple contextual factors. Some studies have used TPB to explain the antecedents of the pro-environmental behaviours of visitors and travellers (Nguyen, Lobo, & Greenland, 2016; Dolnicar, Knezevic Cvelbar, & Grünet, 2017; Goh et al., 2017), while others have expanded the theory to predict the behavioural intentions of internet game users (Zach & Lissitsa, 2016), or the pro-environmental behaviours of cruise customers (Han et al., 2017). Other researachers have drawn on multiple theories like TPB and VBN to examine whether visitors are willing to pay for conservation (Roberts, Hanley, & Cresswell, 2017), and to determine the pro-environmental behaviours of green hotel customers. VBN theory and the antecedents of expectancy theory have also been merged to determine the pro-environmental behaviours of travellers (Kiatkawsin & Han, 2017).

These studies have shown that modifying, expanding and merging current theories is necessary, but do not sufficiently model the complexity of green behaviours. The heterogeneity of the methods necessary to determine these behaviours reveals both the complexity of the behaviours themselves (Steg, Bolderdijk, Keizer, & Perlaviciute, 2014) and the need to employ a theory that can sufficiently model their complexity (de Leeuw, Valois, Ajzen, & Schmidt, 2015). Only a few studies have included demographic variables to determine a predictive model for these eco-friendly behaviours (de Leeuw et al., 2015;), even though they are key determinants. One study found that demographic variables contributed to the complexity of the eco-friendly behaviours model (Olya & Gavilyan, 2017). Prior research has also shown that personality traits play a vital role in influencing customers' decision-making processes (Tang & Lam, 2017). Moghavvemi, Woosnam, Paramanathan, Musa, & Hamzah (2017) recommended that hospitality and tourism scholars should pay attention to personality, as different traits may result in consumers feeling different levels of responsibility for pro-environmental behaviours. To sufficiently examine the heterogeneity in predicting WLP in the travel industry, and to develop a conceptual WLP model, this study employs complexity theory, which is recommended for modelling complex social phenomena (Olya & Akhshik, 2019; Woodside, 2016; Olya et al., 2019). The results of the model testing are supported by the tenets of this theory.

Willingness to pay more for green travel products

Green travel products are often priced more highly than others, owing to customers' general willingness to pay more for eco-friendly products (e.g. Tang & Lam, 2017; Rahman & Reynolds, 2016). Lee, Bhatt, & Suri (2018) found that 78% of the participants in their study were willing to pay a premium price for green products. For the present paper, we conducted a pilot study on this question. A sample of consumers (n = 60), when asked if they were prepared

to pay more for green travel products, replied that they were. Specifically, the pilot study indicated that the consumers were willing to pay an additional 25-35% for these products.

Prior research has pointed out that the factors affecting customers' willingness to pay more for green products are still unknown (Tully & Winer, 2014). Some managers believe consumers are unwilling to pay extra for inconvenient green initiatives and practices, while some consumers think green products are expensive and of low quality (Tang & Lam, 2017). Consumer demand for green products is low (Lin & Huang, 2012). While some consumers are unwilling to pay a premium price (Manaktola & Jauhari, 2007), others tend to pay more, regardless of the obvious inconvenience (Tang & Lam, 2017). Bohdanowicz (2006) argued that environmental concerns were not the main issue for UK hotel managers. A number of hospitality and tourism researchers have explored the issue (Han et al., 2010; Radwan, Jones, & Minoli, 2012). Some (e.g. Tang and Lam, 2017) have called for more research on guests' decision-making in choosing to pay more for a green hotel. Therefore, the present study investigates the factors affecting travellers' willingness to pay more for green travel products.

Research model

Complexity theory is employed in the present research to aid the development of the proposed framework, which is conceptualised by integrating the predictors of TPB and TCV with VBN theory in order to describe travellers' willingness to pay more for eco-friendly travel products. Several authors have used this approach to assess pro-environmental behaviours (Goh et al., 2017; Han, 2015; Han et al., 2017). TPB is based on the tenet that behaviour is mainly predicted by intentions, which is also predicted by attitudes, subjective norms and perceived behavioural control (PBC) (Ajzen, 1991). On the other hand, TCV – a multidimensional approach developed by Sheth et al. (1991) – asserts that customer behaviour is influenced by five consumption values: social, epistemic, functional, conditional and emotional. Gonçalves et al.

(2016) found that consumption values were significant in explaining green buying behaviour. Finally, VBN theory has been conceptualised from the value theory, norm activation model and the new environmental paradigm (Stern et al., 1999). It posits that the sequential determinants of pro-environmental behaviours are a result of the influence of the values of the new environmental paradigm, which in turn affects one's personal norms (Han et al., 2017).

Determining the interacting factors of WLP indicators and behavioural outcomes is a complex challenge, but complexity theory is well placed to explain the heterogeneity and asymmetric relationships between predictors and any related outcome(s) (Baggio, 2008). Although there is no clear definition of this theory (Johnson, 2007), it is based on systems theory, which uses a blend of conceptual frameworks to develop models and analyse complex systems. The system is said to be complex because it allows outcomes from several parts that are interrelated and interconnected. Each part of this complex system can be considered as a system on its own, and every single system has the tendency to be a larger complex system (Ackoff & Emery, 2005). Several disciplines such as socioeconomics, health and politics have used this theory to shed light on dynamic processes. This is mainly because concepts like simple linear equilibrium do not fully explain the associations of "black-box" configurations, a situation which is compounded by the multiple interactions of the components (Antimova, Nawijn, & Peeters, 2012; Olya et al., 2019).

With regard to the complexity of pro-environmental behaviours and willingness to pay more, the key tenets of complexity theory were used to construct and evaluate the suggested configurational model (Olya et al., 2019; Krajhanzl, 2010). Predictive configurations were labelled and classified as beliefs, values, attitudes and norms (Olya et al., 2019). As demonstrated in Figure 1, demographic variables, personality traits, VBN theory, TCV and TPB were combined and demonstrated as configurations for stimulating WLP.

Arrow A in Figure 1 indicates a combination of demographic factors (gender, age, marital status, ethnicity, education level and income) that represent causal models for predicting high and low WLP. Seven value variables were combined to describe an algorithm for stimulating WLP, represented by Arrow B1 [WLP = f (alt, ego, bio, sov, emv, cov, epv)]. The demographic and value variables were combined and indicated by Arrow B2, and explore causal recipes to predict WLP scores. As represented by Arrow C1, three drivers (dsn, mrn, ijn) of normative influence were configured as antecedents of the causal models for predicting WLP. The combination of demographic and value variables and normative influence is indicated by Arrow C2 and suggests causal models for predicting high and low WLP scores. Arrow D1 in Figure 1 represents causal recipes for stimulating WLP. Personality traits and beliefs suggest causal models to predict WLP. Demographic and value variables, normative influence, personality traits and beliefs were integrated to examine causal recipes for stimulating high WLP levels, represented by Arrow D2. The fsQCA findings are shown in Table A2.

Methodology

This study used a mixed-method approach in which the qualitative research phase was extended by two quantitative techniques of data gathering and analysis (Tashakkori & Teddlie, 2003; So, Oh, & Min, 2018). Mixed-method research helps to corroborate the findings of both qualitative and quantitative analyses (Pham, Tučková, & Jabbour, 2019; So et al., 2018), providing better findings (Tashakkori & Teddlie, 2003; Tashakkori & Creswell, 2007) with enhanced reliability and validity (Bryman & Bell, 2011). The present study therefore used a mixed-method approach, firstly because of the contradictory and inconclusive findings of previous research on the factors affecting consumers' willingness to pay more for green products, and secondly because of the need to contextualise this analysis in the travel context. The qualitative technique was used first, to complement the incomplete and inconsistent findings of prior studies, followed by the quantitative approach to test the study hypotheses.

The qualitative phase and its results

Eight semi-structured focus groups, held in February 2018, were used to gather qualitative information, with the aim of better understanding the factors affecting customers' willingness to pay more for green travel products, the paucity of qualitative enquiries on the subject, and the incomplete or contradictory results of prior studies. Six of the groups comprised members who had bought green travel products in the past, while the members of the other two had no history of such purchases. All the participants were asked to read carefully the description of a green travel product before attending to ensure they all had an equal awareness of the details. In addition, in-depth interviews in London (each lasting 30-45 minutes) were held over a five-day period in February 2018. All the interviews were recorded with consent, and the researcher took notes while conducting them.

The participants were asked to talk about their experiences and knowledge of green travel products, the key factors affecting their attitudes to them, and their willingness to pay for them. The researcher also asked general questions about their experiences (e.g. their impressions, likes, dislikes and fulfilment of their expectations), and specific questions about issues such as their values, attitudes, moral norms, personality traits and subjective norms. The participants were asked to circle any words in the questions they found ambiguous and/or confusing, and to provide any general comments on the statements.

The data was analysed and themes were derived according to the researcher's understanding of the subject matter and the meaning captured in the content (So et al., 2018; Ryan & Bernard, 2003). Two of the researcher's colleagues independently verified the accuracy of the list of factors that had been identified. The results of the analysis demonstrated that the variables identified in prior studies – such as moral norms, egoistic, biospheric, altruistic, conditional

and social values, PBC, awareness of consequences and attitude – appeared to drive travellers' willingness to pay for green travel products; while injunctive norms, agreeableness, extraversion and environmental beliefs, which had not been examined in previous studies, were found to be essential to the willingness to pay. The qualitative results and the findings of the prior studies were incorporated into an integrated model of the factors affecting travellers' willingness to pay more for green travel products, as shown in Figure. 1.

Insert Figure 1 about here

Quantitative method

Study 1

The data was collected from 20 February 2018 to 5 March 2018 using a questionnaire, and was used to validate the model. The study population was every tourist who had bought a green travel product in the last six months.

Following clearance by the human ethics review committee of the researcher's university, the e-mail addresses of 2,000 prospective respondents were bought from a reputable UK marketing list company with access to a representative panel of more than 3.5 million registered travellers. A hyperlink was sent to a random sample of 2,000 of them. A filtering question at the beginning of the questionnaire, asking respondents if they had bought green travel products in the past six months, determined the constituents of the study sample. The e-mail invitation also set out the purpose of the study, the time it would probably take to complete the survey, and a hyperlink to the URL of the questionnaire. The data collection lasted for approximately two weeks. In total, 683 participants were approached. Forty-one responses with missing values were excluded; 642 replies were therefore considered valid for further analysis. Of the remaining group of respondents, 58% were male, 41% were aged between 36 and 54, and 46% had bought green travel products between one and three times in the last six months. The stated income of

the largest group of participants (39%) was between £25,001 and 50,000, and 46% of the total had a university degree. The respondents gave their ethnicity as white (46.2%), hispanic (19.8%), Asian (15.5%), African/black (11.5%) or other (7.0%).

Measurement instruments

Scales which had been validated in the literature were used to ensure the validity and reliability of the study measurements. Measures of willingness to pay more were borrowed from prior studies (e.g., Wei, Ang, & Jancenelle, 2018; Han et al., 2010). The scales in four of the items, as suggested by previous studies (e.g. Dunlap, Van Liere, Mertig, & Jones, 2000; Kazeminia, Hultman, & Mostaghel, 2016), were adapted to measure the variable of environmental beliefs. Attitude was measured using five items from Han et al. (2017) and Line and Hanks (2016). Perceived behavioural control was operationalised with three items, as proposed by Ajzen (1991; 2011) and Han and Kim (2010). Awareness of consequences was adopted from Han et al. (2016). Established and validated measures for injunctive norm, descriptive norm and personal moral norm were adopted from previous studies (e.g. Chen & Peng, 2012; Arvola et al., 2008; Steg & De Groot, 2010; Han et al., 2010; Fornara et al., 2016). The value variables (i.e. egoistic, biospheric, altruistic, social, emotional, conditional and epistemic) were borrowed from prior studies (e.g. Lin & Huang, 2012; Gonçalves et al., 2016). Finally, personality traits (e.g. extraversion and agreeableness) were drawn from Judge, Heller, and Mount (2002).

All the items were measured on a five-point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree). Ten academic experts in tourism and hospitality confirmed the content validity of the measures. The variables were then further tested through personal interviews with 50 customers in London who had already bought green travel products, to ensure that the

wording of the questionnaire was clear, and to evaluate the quality of the content and the reliability of the measures.

Common method bias was recognised as a potential issue in this study, so this was assessed in three different ways (Podsakoff & Organ, 1986). Harman's single-factor test indicated that the largest factor accounted for 22.46% (the variances explained ranged from 17.28% to 22.46%) and no general factor accounted for more than 50% of the variance (Teo et al., 2015). The general factor covariate method was then used to assess potential method effects. The findings showed that the re-estimated framework with the common method variance factor demonstrated insignificant framework enhancement compared with the original. Finallly, Lindell and Whitney's (2001) marker variable method was used: all the coefficients remained significant after the marker variable was controlled for. The results of these three methods therefore confirmed that common method bias was not a serious concern.

Close attention was also paid to the design and administration of the questionnaire: the questions were mixed and different types of scale used to ensure the participants could not combine related items. An evaluation using an approach from Malhotra, Kim, and Patil (2006) revealed negligible common method variance and no common method bias.

Analysis and results

The data was analysed using SPSS, AMOS and fsQCA software (Ragin, Drass, & Davey, 2006; Olya et al., 2019). After the assessment of the measurement model, cross-tabulation analyses were conducted to indicate any occurrence of contrarian cases. Previous studies on green products have demonstrated a high cause-effect interdependence between factors. The use of fsQCA avoids issues that arise from the use of regression analysis (Woodside, 2013). Previous research has also paid considerable attention to fsQCA in various fields, because when it is applied together with SEM, the combination provides a deeper and richer perspective on the

data (Wu et al., 2014; Woodside, 2014; Leischnig & Kasper-Brauer, 2015; Pappas, Kourouthanassis, Giannakos, & Chrissikopoulos, 2016). Considerable attention has been paid to the application of fsQCA in the travel and tourism context (e.g. Pappas & Papatheodorou, 2017; Olya & Gavilyan, 2017; Olya, Khaksar, & Alipour 2017; Olya et al., 2019; Olya & Al-Ansi 2018; Pappas & Papatheodorou, 2017). The key tenets of complexity theory were used to assess the fsQCA results (Olya et al., 2019; Woodside, 2014). Lastly, we assessed the predictive validity of the study mode (Olya, Altinay, & De Vita, 2018; Olya et al., 2019). Skewness and kurtosis tests indicated no departure from normality in the measurement items (George & Mallery, 2010). A Bartlett test of sphericity (4146.441) and KMO measure (0.889) of sampling adequacy indicated a significant association between the factors to guarantee the factor analysis application (Hair, Hult, Ringle, & Sarstedt, 2015).

Measurement model

Both the reliability and validity of the measurement model were evaluated (Hair et al., 2015). The confirmatory factor analysis results showed that all the items had significant influence on their specified variables ($p < 0.001$), and loaded above 0.70 on their constructs (Hair et al., 2015). Convergent validity was evaluated using composite reliability, average variance extracted (AVE) and Cronbach's alpha. All the results (set out in Table 1) indicated satisfactory convergent validity. The loadings of all the variables were above the recommended threshold of 0.7 proposed by Hair et al. (2015) and Bagozzi and Yi (1988). The AVE value for each construct ranged from 0.5014 to 0.720, exceeding the recommended value of 0.50 suggested by Fornell and Larcker (1981) and Hair et al. (2015). The Bentler-Bonnet coefficient was 0.941, which is also indicative of adequate convergent validity. Moreover, the AVE square root for all factors was always higher than its correlation with any other factor, supporting the discriminant validity of the research variables (Klarner, Sarstedt, Hoeck, & Ringle, 2013) (Table 2). The Cronbach's alpha values seem to have ranged from 0.872 to 0.931. In addition,

building on Bagozzi et al. (1991) to address the multi-collinearity issue, all the variance inflation factors were below 3, suggesting that collinearity issues were absent.

Insert Tables 1 and 2 about here

Cross-tabulation analysis

The results of the cross-tabulation analysis indicated asymmetric links between WLP and its drivers. Table 3 shows two examples of heterogeneity in specifying WLP. For example, 170 travellers (26%) who were only minimally concerned with egoistic values, and 120 (19 %) who were neutral on these values, had a high level of WLP (as shown in Table 3A). These findings are consistent with the results of Olya et al. (2019) and Steg et al. (2014), who found that egoistic values had either no significant influence, or a negative influence, on pro-environmental behaviours.

The relationship between PBC and WLP represents another example of the occurrence of contrarian cases. Table 3B shows the findings of Cramér's V and cross-tabulation analyses. A total of 118 travellers (19%) who indicated low PBC, and 128 (20%) who were undecided regarding PBC, were willing to pay more for green travel products. These results are consistent with prior research findings (e.g. Olya et al., 2019; Goh et al., 2017), which found that PBC had no significant influence on pro-environmental behaviours. The Cramér's V test results indicated a significant medium effect size for egoistic values and PBC (Cohen, 1977). Regarding the heterogeneity problems in predicting WLP, Olya et al. (2019) found that attitude had no significant effect on pro-environmental behaviours. These results confirm that conceptual frameworks for stimulating pro-environmental behaviours should be conducted using asymmetric rather than symmetric methods. The occurrence of heterogeneity is explained by the fsQCA results in the next section.

Insert Table 3 about here

FsQCA results

Tables 4 and 5 present the fsQCA results, demonstrated by Arrows A-D2. The function of fsQCA, according to the Quine-McCluskey method, is to calculate causal recipes that enable the prediction of conditions that result in high and low WLP. Regarding Arrow A, Table 4 shows that using demographics as indicators [A: wlp = *f* (ag, eth, inc, edu, gen, mrs)], produces two causal recipes, M1 and M2, that result in high WLP scores (coverage = 0.793, consistency = 0.971). M1 indicates that high WLP is attained when travellers are female, older, highly educated and married, and have a low income; while M2 (~gen*edu*inc*mrs), shows high WLP among male, highly educated, married educators with a high income level. Unlike traditional approaches that offer a single causal recipe for predicting WLP, this innovative method provides one or more casual recipes for predicting it. Traditional approaches also show low WLP scores in cases that represent the mirror opposite of the causal recipes for high WLP. However, the findings shown in Table 4 indicate that the conditions for WLP negation (~A: M1. gen*~ed*~inc*mrs) is not a mirror opposite of the algorithms resulting in high WLP scores (Table 4, A: M1 and M2).

Insert Tables 4 and 5 about here

Regarding the configuration of values, the fsQCA results indicate that travellers with high biospheric, altruistic, social, emotional, conditional and epistemic values have a high degree of WLP (Table 4, B1: M1. ~ego*bio*alt*sov*emv*cov*epv). Based on (M2. bio*sov*cov), travellers with high levels of biospheric, social and conditional values show a high level of WLP. These results are consistent with Gonçalves et al. (2016), and indicate that biospheric, altruistic, social, emotional, conditional and epistemic values have significant effects on WLP

(Table 4, B1: M1. ~ego*bio*alt*sov*emv*cov*epv). For the normative influence configuration (C1), the results indicate that two models lead to high WLP (coverage = 0.963, consistency = 0.978). M1 shows that a combination of personal moral norms, injunctive norms and descriptive norms leads to high WLP; while in M2, travellers with higher personal moral and descriptive norms had high WLP. In contrast, a model with a low level of descriptive norms (Table 4, ~C1: M1. ~dsn) leads to WLP negation.

Arrow B2 indicates a combination of demographics and values configurations, and offers four causal recipes for achieving high WLP. For instance, M1 indicates high WLP attained when travellers are older, female, white, highly educated, married, and have a high income, low egoistic values, and high degrees of biospheric, social, altruistic, emotional, conditional and epistemic values (Table 5, M1. ag*eth*~inc*edu*gen*mrs* ego~*bio~alt*sov*emv*cov*epv). The three other causal recipes for attaining high WLP and two causal algorithms predicting WLP negation are demonstrated by B2 and ~B2 respectively (as shown in Table 5).

A combination of demographic factors, values and normative influence are demonstrated by C2. The fsQCA results show five causal recipes leading to high WLP (coverage = 0.583, consistency = 0.998). For example, M1 reveals that older, white, low income, educated, married females with a high level of low egoistic values, and high degrees of biospheric, social, altruistic, emotional, conditional and epistemic values, and of moral, descriptive and injunctive norms, reported high WLP (Table 5, C2: M1. ag*eth~inc*edu*gen*mrs*~ego*bio~alt*sov*emv*cov*epv*mrn*inj*dsn). Using a combination of demographic factors, values and normative influence, two causal configurations were examined for WLP negation (coverage = 0.402, consistency = 0.563).

The results of the fsQCA also indicate that a combination of demographics, values, normative influence, beliefs and personality traits (Arrow D2) reported eight causal recipes lead to high WLP. for instance, M1 indicates older educators who are white, low income, married, female, low egoistic values, high degree of biospheric, social, altruistic, emotional, conditional, epistemic value, moral norm, descriptive, injunctive norm, positive attitude, high level of awareness of consequences, environmental beliefs, agreeableness and extraversion lead to higher WLP (Table 5, D2: M1. ag*eth~inc*edu*gen*mrs*~ego*bio~alt*sov*emv*cov*epv*mrn*inj*dsn*agr*att*ext*awr* pbc*enb). These factors also reveal three causal algorithms for WLP negation (coverage = 0.527, consistency = 0.743). The findings indicate that the complexity and heterogeneity of the associations of INT drivers can be examined by complexity theory. Based on complexity theory, a combination of the drivers indicates the causal recipes leading to outcomes (e.g. WLP), and the role of each driver relies on the attributes of other the indicators in a causal model.

Predictive validity

Table 6 presents evidence of the predictive validity. The research sample was divided into two subsamples and testing models that emerged from subsample 1 using subsample 2 (Olya et al., 2019; Wu et al. 2014). The fuzzy XY plots for two models are described, indicating the asymmetric between WLP and its causal recipes. Subsample 2 was used to test these two causal models (M1 and M2), and the results showed that both had high levels of consistency and coverage that confirmed their predictive validity (e.g. Woodside, 2016).

Insert Figure 2 about here

Figure 2 shows that the consistency of the model 1 test in subsample 2 was 0.863. Thus, the models have high predictive capacity (Alonso-Dos-Santos & Llanos-Contreras, 2018). As

suggested by several prior studies (e.g. Hsiao et al., 2018; Olya et al., 2019; Wu et al., 2014), the predictive validity of the suggested model's use of another sample is significant.

Insert Table 6 about here

Complexity theory evaluation

Key tenets of complexity theory were used to evaluate the fsQCA results shown in Table 6. The findings supported Tenet 1, i.e. that it is rare for a single driver to stimulate high/low WLP. Instead, a combination of drivers creates the conditions resulting in high/low WLP (Tenet 2). Based on the fsQCA results, descriptive norms, as a single predictor, are insufficient to lead to high WLP, but combining them with personal moral norms and injunctive norms can do so (Table 4, C1: M1. mrn *inj*dsn). While the symmetric approach provides one model, complexity theory with fsQCA demonstrates that one or more causal models (Tenet 3) can attain high/low WLP. Table 4 (D2) indicates that there are eight alternative models for achieving high WLP.

As noted above, in traditional approaches, causal recipes for the negation of WLP are mirror inversions of models resulting in high WLP. Complexity theory supposes that causal models for WLP negation are unique, and are not simply inversions of the models for high WLP (Tenet 4). For instance, eight causal recipes lead to high WLP (Table 4, B2), while the three causal models resulting in low WLP are not a mirror inversion of any of them (Table 4, ~B2). The fsQCA findings therefore support Tenet 5. Table 7 demonstrates that the coverage value for the cases with high WLP is lower than 1.00. Thus, these results support Tenet 6 (Woodside, 2014; Olya et al., 2019).

Overall, the findings reveal that WLP should be modelled using complexity theory and fsQCA due to the ingrained complexity of WLP and the associations of a large number of drivers.

Insert Table 7 about here

Study 2

The second phase of the data collection was implemented six months after the first study. The authors used a telephone survey to assess travellers' behaviour. The main aim of Study 2 was to examine the link between travellers' willingness to pay for green travel products and their actual behaviour. The participants were reminded of their preferred green travel products as mentioned in the first stage of the survey, and were asked how many times in the past six months they had purchased them. Their actual behaviour was inferred from the number of items they had bought in the six months between the initial web-based survey of Study 1 and the follow-up telephone survey of Study 2.

All 642 travellers who had taken part in the first study were approached again. A total of 438 replies were considered valid for further analysis. Of these participants, 53% were male, 37% were aged between 36 and 54, and 32% stated that they had bought green travel products between one and three times in the past six months. The stated income of the largest group of participants (37%) was from £25,001 to 50,000, and 41% of the total had a university degree. The respondents indicated their ethnic groups as follows: white (41.2%), hispanic (21.8%), Asian (17.5%), African/black (14.5%) and other (5.0%).

Correlation analysis was used to assess the proposed relationship between the travellers' willingness to pay and their actual behaviour, because the actual behaviour was captured using single-item metric scales. The link was found to be positive and significant ($p < 0.01$), a result that further augments the evidence of a strong relationship between travellers' willingness to pay more for green travel products and their actual behaviour.

Robustness checks

The robustness of our findings was checked using two additional analyses. The findings were validated by investigating the link between travellers' willingness to pay and actual behaviour using three-month (n = 472) and six-month (n = 519) time lags between the second study survey and the current one.

Correlation analysis was performed to assess the proposed relationship between willingness to pay and actual behaviour. Specifically, the positive and significant main effect of travellers' willingness to pay more on actual behaviour ($p < 0.01$) was replicated. Additionally, an analysis of variance (ANOVA) was run to validate the findings regarding the link between willingness to pay and actual behaviour for the different time frames. The outcomes of these additional tests mimicked the findings of the main model, indicating the robustness of the findings.

Conclusion and implications

Overall, our study makes significant contributions to the travel and tourism literature both methodologically and theoretically, in particular through the innovative application of a new statistical technique (fsQCA) and complexity theory. As a result, we have shown how a complex combination of demographic factors, values, normative influence, personality traits and beliefs function as a causally sufficient configuration of travellers' willingness to pay more for green travel products. Eight causal recipes emerged from our research, with the results suggesting that predictors like egoistic values can serve as positive and negative indicators of WLP, and that causal conditions for WLP exist when travellers have low PBC and egoistic values. Our findings can inform policies and decisions in numerous ways, including by helping to provide restrictive conditions in line with the WLP negation models.

Methodological contributions

By using fsQCA as a theoretical approach to modelling WLP, our study contributes strongly to methodological advancement. This approach allows asymmetric modelling by exploring the causal conditions for high and low WLP. The complex interplay between different factors, which we have demonstrated using this distinctive approach, highlights that a simple tactical plan is not appropriate, and a truly actionable environmental plan will need to recognise the sophistication of an individual's behavioural intentions. Most prior studies using TPB have focused only on the net effect of TPB indicators in predicting these behaviours.

For the first time we have shown the importance of combined factors such as personality traits like extraversion and agreeableness and of subjective and personal moral norms, as well as demonstrating that behaviour is influenced by the ability to act confidently. In the eight causal recipes for high WLP identified in our findings, a simple driver (i.e. values) was important in all, but only a combination of multiple factors was sufficient to achieve high WLP. We have therefore shown the advantages of fsQCA over the regression-based approach, demonstrating the suitability of survey data for use in a large N QCA, showing more recent robustness tests, and demonstrating the use of customers' socio-demographic variables as a pathway to WLP for a closer "case orientation". The fsQCA results also support the tenets of complexity theory.

Theoretical contributions

Among a number of theoretical contributions, the study has used TCV to understand willingness to pay for green travel products. The findings not only help to identify the consumer role in consumption values, but also the interrelationship with willingness to pay more, providing different justifications for WLP according to the existence of alternative paths to the outcome, and demonstrating that the consumption values or their combinations that explain WLP are not necessarily the same for ~WLP.

The ability to explore more than one causal condition as a consequence of variations in the interactions of several configurations, has enabled WLP to be addressed despite its sophistication. The findings suggest a need to alter present conditions to realise high behavioural outcomes. The use of fsQCA enabled the identification of eight causal models leading to high WLP (as shown in Table 5), providing practitioners with guidance on how to attain this outcome. In particular, the combined use of fsQCA and complexity theory – an approach about which little was previously known – allowed for the inclusion of demographic indicators for predicting WLP. The results from the models with demographic indicators can be used to target specific markets based on travellers' education and income level, age, ethnicity, marital status and gender (see Table 4, A).

Our study therefore builds on existing research which has relied on TPB, TCV and VBN to model WLP, despite their insufficiency to effectively predict it. This study combines and expanding these theories to support the proposed conceptual model. The use of complexity theory allows adequate explanation of the complex combinations of the predictors of TPB, TCV and VBN, which may have non-linear relationships; and also allows for the evaluation of contradictions in the causal configurations. Furthermore, the study has assimilated intentional and behavioural data in a context of repeated interactions between travellers and travel companies, enabling greater confidence in the results since behavioural disposition is predicted by an aggregation of behaviours rather than by a single behaviour (Ajzen, 1991).

The findings of the cross-tabulations test also demonstrated that the heterogeneity issues encountered in modelling WLP can be explained by complexity theory.

Managerial contributions

Our results provide managers with many practical ways to target their green tourism products more effectively. For example, our findings reveal that personality traits play a key role in

willingness to pay more for green travel products, with agreeableness and extraversion indicated as the most influential determinants. Agreeable consumers are more likely than others to show a caring attitude, to be socially concerned or engaged in green issues, and to hold positive attitudes to green products, and are therefore more likely to choose green travel products. These findings are consistent with prior studies (e.g. Milfont & Sibley, 2012; Brick & Lewis, 2016; Tang & Lam, 2017). Our results also show that extraversion has a positive and significant effect on WLP, which is consistent with the results of previous research on green consumption (e.g. Brick & Lewis, 2016; Tang & Lam, 2017). Marketing campaigns could therefore stress the characteristics of extraversion (e.g. sociability, outgoingness, expressiveness, novelty-seeking and positive energy towards others), and/or of agreeableness (i.e. compassion, sympathy, generosity, cooperation and altruism).

Since the results also indicate the key role of personal moral norms, managers could use advertising campaigns to imprint on customers' minds that it is morally wrong to buy travel products that damage the environment. Other useful strategies could include cards placed in guest rooms with a message about a moral norm (e.g. saving energy and reusing towels is the right thing to do). As subjective norms also emerged as important determinants of willingness to pay more, managers could use word-of-mouth marketing strategies as an effective response.

Given another significant finding, that behaviour is influenced by the ability to act confidently, travellers' perceptions and normative beliefs could be influenced by programmes designed to develop their confidence and engage them in sustainability events. Managerial responses could include training programmes on developing pro-environmental behaviours, social media posts on environmental impacts, or campaigns encouraging young people to conserve endangered species. To maximise travellers' pro-environmental behaviours and WLP, communities could develop normative messages that promote conservation of the environment by travellers.

Marketing managers can also enhance consumer acquisition strategies such as segmenting customers according to combinations of their values, and develop appropriate product offerings, such as material printed on recycled material that provides carbon footprint information.

Limitations and future research avenues

Our study is not without caveats. We tested only one outcome (WLP). However, our theoretical and analytical techniques have the potential to measure other conditions and outcomes. Further research should therefore investigate outcomes separately from intentions, for example the long-term effects of pro-environmental behaviours and the intention–behaviour gap. Future research could examine green products beyond the travel industry, while a larger sample size would ensure generalisability. More configurations could be added to the model we employed, and further research on WLP could evaluate the tipping point concept. Comparative analysis should be undertaken to tests pro-environmental behaviours and willingness to pay spillover effects against the complexity of other behaviours. Such studies, using different conditions and settings, could expand our understanding of pro-environmental behaviours. Finally, while our study has focused on the demand perspective, future supply-orientated studies could assess how policymakers and travel firms could influence ethical views of green products, including eco-friendly travel.

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Table 1. Measurement statistics of construct scales.

Construct/Indicators	Indicator loadings	CR	Mean	Standard deviation	VIF	Cronbach's α	AVE	MSV	ASV
Willingness to pay more		**0.96**			**2.079**	**0.93**	**0.52**	**0.205**	**0.185**
WLP1	**0.96**		**3.128**	**0.62**					
WLP2	**0.94**		**2.920**	**0.51**					
WLP3	**0.89**		**4.283**	**0.76**					
WLP4	**0.97**		**3.210**	**0.68**					
WLP5	**0.92**		**3.115**	**0.59**					
Attitude		**0.95**			**1.812**	**0.93**	**0.62**	**0.231**	**0.158**
ATT1	**0.94**		**2.951**	**0.64**					
ATT2	**0.97**		**4.170**	**0.86**					
ATT3	**0.94**		**3.610**	**0.62**					
ATT4	**0.95**		**4.130**	**0.71**					
ATT5	**0.89**		**2.94**	**0.69**					
Environmental beliefs		**0.96**			**2.045**	**0.93**	**0.65**	**0.242**	**0.175**
ENB1	**0.96**		**2.840**	**0.59**					
ENB2	**0.92**		**2.917**	**0.68**					
ENB3	**0.90**		**3.690**	**0.57**					
ENB4	**0.97**		**3.167**	**0.71**					
Awareness of consequences		**0.97**			**2.056**	**0.94**	**0.67**	**0.241**	**0.262**
AWR1	**0.98**		**3.761**	**0.62**					
AWR2	**0.96**		**3.095**	**0.74**					

AWR3	**0.94**		**3.168**	**0.58**					
Agreeableness		**0.98**			**2.740**	**0.96**	**0.62**	**0.315**	**0.275**
AGR1	**0.98**		**4.087**	**0.87**					
AGR2	**0.94**		**4.137**	**0.89**					
AGR3	**0.96**		**3.761**	**0.64**					
Extraversion		**0.97**			**2.039**	**0.94**	**0.58**	**0.219**	**0.180**
EXT1	**0.96**		**3.095**	**0.62**					
EXT2	**0.93**		**3.157**	**0.70**					
EXT3	**0.97**		**3.219**	**0.59**					
Perceived behavioural control		**0.95**			**2.139**	**0.92**	**0.57**	**0.243**	**0.078**
PBC1	**0.98**		**2.740**	**0.81**					
PBC2	**0.94**		**3.126**	**0.67**					
PBC3	**0.95**		**3.095**	**0.69**					
Personal moral norm		**0.97**			**1.849**	**0.95**	**0.59**	**0.320**	**0.067**
MRN1	**0.96**		**2.874**	**0.58**					
MRN2	**0.94**		**2.905**	**0.77**					
MRN3	**0.98**		**3.158**	**0.70**					
MRN4	**0.93**		**3.075**	**0.57**					
MRN5	**0.90**		**3.714**	**0.82**					
Injunctive norm		**0.96**			**1.043**	**0.93**	**0.66**	**0.257**	**0.243**
INJ1	**0.96**		**3.781**	**0.67**					
INJ2	**0.94**		**3.257**	**0.59**					
INJ3	**0.91**		**3.091**	**0.81**					

Descriptive norm		**0.96**			**1.267**	**0.93**	**0.59**	**0.240**	**0.219**
DSN1	**0.96**		**2.840**	**0.61**					
DSN2	**0.95**		**3.126**	**0.59**					
DSN3	**0.97**		**3.170**	**0.73**					
Egoistic value		**0.95**			**1.290**	**0.91**	**0.69**	**0.302**	**0.128**
EGO1	**0.94**		**2.761**	**0.57**					
EGO2	**0.97**		**3.813**	**0.80**					
EGO3	**0.92**		**4.094**	**0.79**					
Altruistic value		**0.92**			**1.437**	**0.89**	**0.54**	**0.201**	**0.175**
ALT1	**0.94**		**3.098**	**0.62**					
ALT2	**0.96**		**3.126**	**0.70**					
ALT3	**0.91**		**3.671**	**0.84**					
Biospheric value		**0.96**			**1.023**	**0.93**	**0.65**	**0.304**	**0.240**
BIO1	**0.96**		**3.174**	**0.62**					
BIO2	**0.94**		**3.258**	**0.79**					
BIO3	**0.97**		**3.01**	**0.65**					
Social value		**0.96**			**1.827**	**0.92**	**0.51**	**0.283**	**0.183**
SOV1	**0.93**		**4.085**	**0.69**					
SOV2	**0.97**		**3.617**	**0.60**					
SOV3	**0.96**		**4.091**	**0.72**					
SOV4	**0.95**		**3.570**	**0.64**					

Emotional value		**0.97**			**1.242**	**0.94**	**0.65**	**0.342**	**0.254**
EMV1	**0.94**		**3.704**	**0.67**					
EMV2	**0.97**		**3.681**	**0.71**					
EMV3	**0.95**		**4.705**	**0.86**					
Conditional value		**0.96**			**1.293**	**0.90**	**0.68**	**0.210**	**0.123**
COV1	**0.92**		**3.795**	**0.59**					
COV2	**0.96**		**4.267**	**0.82**					
COV3	**0.94**		**4.098**	**0.79**					
COV4	**0.96**		**3.510**	**0.76**					
Epistemic value		**0.94**			**1.025**	**0.89**	**0.59**	**0.206**	**0.172**
EPV1	**0.94**		**3.096**	**0.61**					
EPV2	**0.97**		**2.581**	**0.54**					
EPV3	**0.91**		**3.157**	**0.70**					
EPV4	**0.90**		**3.629**	**0.73**					

Notes:

WLP= Willingness to pay more for green travel products; **EGO=**Egoistic value; **BIO=**Biospheric value; **ALT=**Altruistic value; **SOV=** Social value; **EMV=** Emotional value**;** **COV=**Conditional value; **EPV=**Epistemic value; **MRN=**Moral norm; **INJ=**Injunctive norm; **DSN=** Descriptive norm; **AGR=**Agreeableness; **EXT=** Extraversion; **ATT=**Attitude; **AWR=** Awareness of consequences; **PBC=**Perceived behavioural control; **ENB=** Environmental beliefs.

Table 2. Discriminant Validity of the Correlations between Constructs

Construct	Correlations and square roots of AVE																
	WLP	**ATT**	**ENB**	**PBC**	**AWR**	**EXT**	**AGR**	**MRN**	**INJ**	**DSN**	**BIO**	**EGO**	**ALT**	**SOV**	**EMV**	**COV**	**EPV**
WLP	**0.721a**																
ATT	0.640**b**	**0.787**															
ENB	0.513	0.494	**0.806**														
PBC	0.628	0.640	0.621	**0.755**													
AWR	0.325	0.419	0.429	0.432	**0.818**												
EXT	0.237	0.526	0.246	0.359	0.428	**0.762**											
AGR	0.604	0.643	0.343	0.537	0.631	0.530	**0.787**										
MRN	0.573	0.336	0.612	0.414	0.454	0.543	0.434	**0.768**									
INJ	0.319	0.402	0.403	0.349	0.421	0.493	0.412	0.521	**0.813**								
DSN	0.373	0.453	0.484	0.452	0.338	0.419	0.485	0.573	0.429	**0.768**							

BIO	0.390	0.543	0.408	0.472	0.472	0.445	0.389	0.389	0.493	0.403	**0.806**						
EGO	0.504	0.443	0.377	0.329	0.529	0.378	0.476	0.430	0.230	0.392	0.449	**0.831**					
ALT	0.518	0.503	0.540	0.602	0.348	0.520	0.603	0.483	0.403	0.203	0.490	0.434	**0.735**				
SOV	0.432	0.279	0.389	0.289	0.573	0.339	0.483	0.390	0.440	0.608	0.375	0.448	0.340	**0.714**			
EMV	0.539	0.503	0.328	0.402	0.430	0.612	0.495	0.473	0.430	0.374	0.423	0.270	0.530	0.609	**0.806**		
COV	0.390	0.305	0.239	0.502	0.129	0.430	0.387	0.490	0.293	0.448	0.541	0.594	0.403	0.228	0.212	**0.825**	
EPV	0.503	0.238	0.421	0.384	0.318	0.318	0.336	0.182	0.502	0.345	0.601	0.438	0.174	0.503	0.492	0.447	**0.768**

Note:

a Composite reliabilities are along the diagonal, **b** Correlations,

WLP= Willingness to pay more for green travel products; **EGO=**Egoistic value; **BIO=**Biospheric value; **ALT=**Altruistic value; **SOV=** Social value; **EMV=** Emotional value**; COV=**Conditional value; **EPV=**Epistemic value; **MRN=**Moral norm; **INJ=**Injunctive norm; **DSN=** Descriptive norm; **AGR=**Agreeableness; **EXT=** Extraversion; **ATT=**Attitude; **AWR=** Awareness of consequences; **PBC=**Perceived behavioural control; **ENB=** Environmental beliefs.

Table 3. Results of Cross-Tabulation Analyses of Willingness to pay for green travel products (WLP) with egoistic value (A) and perceived behavioral control (B).

Negative contrarian cases (329 cases =26%) indicating ~ A → O

(A) Egoistic value	Willingness to pay for green travel products (WLP)					
(Cramer's V = 0.284, P < .05	Slightly Disagree	Undecided	Slightly Agree	Agree	Strongly Agree	Total
Extremely unimportant						
Count	6	11	23	63	23	126
% within WLP	13.6	21.5	13.7	9.4	7.3	10.1
% of total	0.48	0.9	1.8	5.1	1.9	10.1
Not very important						
Count	4	8	27	59	36	134
% within WLP	9.1	15.7	16.1	8.8	11.5	10.7
% of total	0.32	0.64	2.2	4.7	2.9	10.7
Somewhat unimportant						
Count	5	7	22	46	30	110
% within WLP	11.4	13.7	13.1	6.8	9.6	8.8
% of total	0.4	0.56	1.7	3.7	2.4	8.8
Neutral						
Count	6	9	39	146	62	262
% within WLP	13.6	17.7	23.2	21.7	19.9	20.1
% of total	0.48	0.72	3.2	11.7	4.9	20.1
Somewhat important						
Count	10	6	17	129	59	221
% within WLP	22.7	11.8	10.1	19.2	18.9	17.7

% of total	**0.81**	**0.48**	**1.4**	**10.4**	**4.7**	**17.7**
Important						
Count	**7**	**7**	**19**	**126**	**64**	**223**
% within WLPW	**15.9**	**13.7**	**11.3**	**18.7**	**20.5**	**17.8**
% of total	**0.56**	**0.56**	**1.5**	**10.1**	**5.2**	**17.8**
Extremely important						
Count	**6**	**3**	**21**	**104**	**38**	**172**
% within WLP	**13.7**	**5.9**	**12.5**	**15.5**	**12.2**	**13.7**
% of total	**0.48**	**0.24**	**1.7**	**8.3**	**3.1**	**13.7**
Total						
Count	**44**	**51**	**168**	**673**	**312**	**1248**
% within WLP	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
% of total	**0.040**	**0.060**	**0.14**	**0.54**	**0.25**	**100.0**

Negative contrarian cases 118 cases =19%) indicating ~ A → 0

(B) Perceived behavioral control	Willingness to pay for green travel products (WLP)					
(Cramer's V = 0.367, P < .01	Slightly Disagree	Undecided	Slightly Agree	Agree	Strongly Agree	Total
Extremely unimportant						
Count	2	3	6	11	19	41
% within WLP	12.1	4.5	4.6	4.6	11.6	6.4
% of total	0.40	0.46	0.93	1.8	2.9	6.4
Not very important						
Count	2	5	9	33	10	59
% within WLP	9.6	7.5	13.1	13.5	6.1	9.19
% of total	0.31	0.78	2.5	5.1	1.5	9.19
Somewhat unimportant						
Count	1	5	5	19	6	36
% within WLP	7.3	11.4	6.8	7.9	3.6	5.6
% of total	0.24	0.81	0.86	2.9	0.93	5.6
Neutral						
Count	8	20	31	51	46	156
% within WLP	12.1	13.6	23.5	21.7	28.1	24.3
% of total	0.40	0.96	4.8	7.9	7.2	24.3
Somewhat important						
Count	10	10	31	28	23	102
% within WLP	17.1	14.9	23.5	11.5	14.2	15.9
% of total	0.56	0.96	4.8	4.5	5.2	15.9
Important						

Count	**4**	**7**	**21**	**48**	**29**	**109**
% within WLP	**22.7**	**21.5**	**15.9**	**19.7**	**17.6**	**16.9**
% of total	**0.81**	**1.6**	**3.3**	**7.4**	**4.5**	**16.9**
Extremely important						
Count	**8**	**17**	**29**	**54**	**31**	**139**
% within WLP	**17.1**	**22.7**	**21.9**	**22.1**	**18.9**	**21.6**
% of total	**0.56**	**1.6**	**4.5**	**8.1**	**4.8**	**21.6**
Total						
Count	**35**	**67**	**132**	**244**	**164**	**642**
% within WLP	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
% of total	**0.03**	**0.13**	**0.20**	**0.38**	**0.26**	**100.0**

Table 4. Configural Model WLP and Their Negation (Models A, B1, B2, C1, D1, and Their Negations).

Models for Predicting High Score of Outcome (wlp)	RC	UC	C	Models for Predicting the Negation of Outcome (~wlp)	RC	UC	C
A: wlp = *f* (ag, eth, inc, edu, gen, mrs)				~A: ~wlp= *f* (ag, eth, inc, edu, gen, mrs)			
M1. ag*gen*~inc*edu*mrs	0.563	0.341	0.986	M1. gen*~ed*~inc*mrs	0.536	0.291	0.642
M2. ~gen*edu*inc*mrs	0.459	0.287	0.959	Solution coverage: 0.718			
Solution coverage: 0.793				Solution consistency: 0.460			
Solution consistency: 0.971							
B1: wlp = *f* (ego, bio, alt, sov, emv, cov, epv)				~ *B1:* ~ wlp = *f* (ego, bio, alt, sov, emv, cov, epv)			
M1. ~ego*bio*alt*sov*emv*cov*epv)	0.519	0.237	0.959	M1. ~ego*sov	0.646	0.691	0.458
M2. bio*sov*cov	0.683	0.395	0.976	Solution coverage: 0.662			
Solution coverage: 0.913				Solution consistency: 0.346			
Solution consistency: 0.980							
B2: wlp = *f* (ag, eth, inc, edu, gen, mrs, ego, bio, alt, sov, emv, cov, epv)				~ B2: ~wlp = *f* (ag, eth, inc, edu, gen, mrs, ego, bio, alt, sov, emv, cov, epv)			
M1. ag*eth*~ inc*edu*gen* mrs* ego~*bio~alt*sov*emv*cov*epv	0.495	0.305	0.951	M1. ag*~ inc*mrs* ego~*bio			
M2. ag*eth*~ inc*edu*gen* mrs* ego~*bio~alt*~ sov*emv*cov*~ epv	0.385	0.293	0.962	M1. ag*~ inc* ego~*bio			
M3. ag*eth*~ inc*edu*gen* mrs* ego~*bio~alt*sov*emv*cov	0.405	0.371	0.961	Solution coverage: 0.571			
M4. . ag*eth*~ inc*gen* mrs* ego~*bio~alt*emv*cov*epv	0.375	0.214	0.961	Solution consistency: 0.378			
Solution coverage: 0.946							
Solution consistency: 0.989							
C1: wlp = *f* (mrn, inj, dsn)				~ C1: ~ wlp = *f* (mrn, inj, dsn)			
M1. mrn *inj*dsn	0.537	0.293	0.9798	M1. ~dsn	0.429	0.469	0.9840
M2. mrn*dsn	0.470	0.415	0.976	Solution coverage: 0.615			
Solution coverage: 0.963				Solution consistency: 0.978			
Solution consistency: 0.978							

D1: wlp = *f* (agr, att, ext, awr, pbc, enb)				*~D1:* ~ wlp = *f* (agr, att, ext, awr, pbc, enb)			
M1. agr*att*ext*awr*pbc*enb	0.538	0.305	0.974	M1. ~att*pbc	0.496	0.236	0.964
M2. agr*att*ext*awr	0.452	0.291	0.968	Solution coverage:	0.572		
Solution coverage:	0.936			Solution consistency:	0.938		
Solution consistency:	0.974						

Note: M = model; RC = raw coverage; UC = unique coverage; and C = consistency.

Table 5. Casual Recipes for Predicting WLP with All Antecedents.

Models for Predicting High Score of Outcome (wlp) (C2 & D2) and Its Negation of (~C2 & ~D2)	RC	UC	C
C2*:* wlp = *f* (ag, eth, inc, edu, gen, mrs, ego, bio, alt, sov, emv, cov, epv, mrn, inj, dsn)			
M1. ag*eth~inc*edu*gen*mrs*~ego*bio~alt*sov*emv*cov*epv*mrn*inj*dsn	**0.224**	**0.047**	**0.998**
M2. ag*eth~inc*edu*gen*mrs*~ego*bio*sov*emv*cov* mrn*inj*dsn	**0.167**	**0.024**	**0.985**
M3. ag*eth~inc*edu*gen*mrs*~ego*bio*sov*emv*cov*epv*mrn*inj*dsn	**0.213**	**0.016**	**0.997**
M4. ag*eth~inc*edu*gen~ego*bio~alt*sov*emv*cov*epv*mrn*inj*dsn	**0.319**	**0.040**	**0.961**
M5. ag*eth~inc*gen*mrs*~ego*bio*sov*emv*cov*epv*mrn*inj*dsn	**0.182**	**0.028**	**0.998**
Solution coverage: 0.583			
Solution consistency: 0.998			
~C2*:* ~ wlp = *f* ag, eth, inc, edu, gen, mrs, ego, bio, alt, sov, emv, cov, epv, mrn, inj, dsn)			
M1. ag*eth~inc*edu*gen*mrs*~ego*bio~alt*~sov*emv*~cov*epv*mrn*~inj*dsn	**0.417**	**0.045**	**0.657**
M2. ag*eth~inc*gen*mrs*~ego*bio~alt*~sov*~cov*epv*mrn*~inj*dsn	**0.373**	**0.018**	**0.714**
Solution coverage: 0.402			
Solution consistency: 0.563			
D2*:* wlp = *f* (ag, eth, inc, edu, gen, mrs, ego, bio, alt, sov, emv, cov, epv, mrn, inj, dsn, agr, att, ext, awr, pbc, enb)			
M1. ag*eth~inc*edu*gen*mrs*~ego*bio~alt*sov*emv*cov*epv*mrn*inj*dsn*agr*att*ext*awr*pbc*enb	**0.262**	**0.028**	**0.994**
M2. ag*eth~inc*edu*gen*mrs*~ego*bio~alt*sov*cov*epv*mrn*inj*dsn*agr*att*ext*awr*pbc*enb	**0.318**	**0.018**	**0.983**
M3. ag*eth~inc*gen*mrs*~ego*bio~alt*sov*cov*epv*mrn*inj*dsn*agr*att*ext*awr*pbc*enb	**0.369**	**0.064**	**0.998**
M4. ag*eth~inc*edu*gen*mrs*~ego*bio~alt*sov*emv*cov*epv*mrn*inj*dsn*agr*~att*ext*awr*pbc*enb	**0.517**	**0.006**	**0.996**
M5. ag*eth~inc*edu*gen*mrs*~ego*bio~alt*sov*cov*epv*mrn*inj*dsn*agr*att*ext*awr*pbc*enb	**0.206**	**0.021**	**0.987**
M6. ag*eth~inc*mrs*~ego*bio~alt*sov*emv*cov*epv*mrn*dsn*agr*att*ext*awr*pbc*enb	**0.327**	**0.054**	**0.990**
M7. ag*eth~inc*edu*gen*mrs*bio~alt*sov*emv*cov*epv*inj*dsn*agr*att*ext*awr*pbc*enb	**0.261**	**0.025**	**0.998**
M8. ag*eth~inc*edu*gen*mrs*~ego*bio~alt*sov*cov*epv*mrn*inj*dsn*agr*att*ext*awr*pbc*enb	**0.305**	**0.021**	**0.996**
Solution coverage: 0.653			
Solution consistency: 0.998			

~D2*: ~ wlp= f* (ag, eth, inc, edu, gen, mrs, ego, bio, alt, sov, emv, cov, epv, mrn, inj, dsn, agr, att, ext, awr, pbc, enb)			
M1. ag*eth~inc*edu*gen*mrs*~ego*bio~alt*cov*epv*mrn*~inj*agr*att*ext*awr*pbc*enb	**0.562**	**0.028**	**0.693**
M2. ~ ag*eth~inc*~edu*gen*~mrs*~ego*bio~alt*~cov*epv*~inj*agr*att*ext*~awr*pbc*enb	**0.485**	**0.043**	**0.594**
M3. ag*eth~inc*edu*~gen*~mrs*~ego*bio~alt*sov*~emv*cov*~epv*mrn*inj*~att*ext*awr*pbc*enb	**0.478**	**0.023**	**0.593**
Solution coverage: 0.527			
Solution consistency: 0.743			

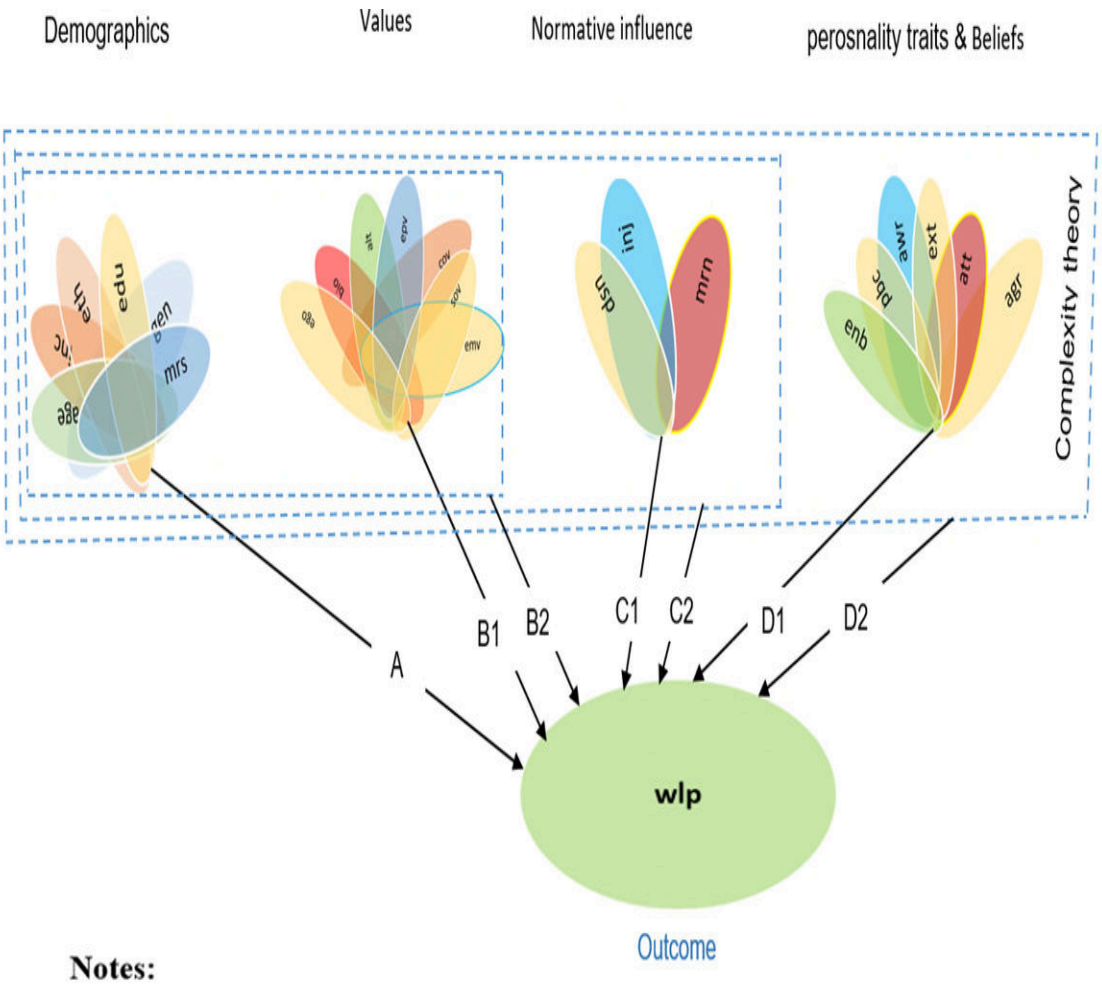
Table 6. Results of Predictive Validity.

Models from Subsample 1	Raw Coverage	Unique Coverage	Consistency
Subsample 1: **wlp = *f* (ag, eth, inc, edu, gen, mrs, ego, bio, alt, sov, emv, cov, epv, mrn, inj, dsn, agr, att, ext, awr, pbc, enb)**			
M1. ag*eth~inc*edu*gen*~ego*bio~alt*sov*cov*epv*mrn*dsn*agr*att*awr*pbc*enb	**0.283**	**0.0284**	**0.996**
M2. ag*eth~inc*edu~ego*bio~alt*sov*cov*mrn*inj*dsn*agr*att*ext*awr*pbc*enb	**0.308**	**0.0187**	**0.988**
Solution coverage: 0. 874			
Solution consistency: 0.968			

Table 7. Evaluation of fsQCA Results with Key Tenets of Complexity Theory.

No	Tenet	Supporting Evidence
1	Tenet 1: A simple antecedent condition may be necessary, but a simple antecedent condition is rarely sufficient for predicting high or low scores in an outcome condition.	In belief configuration (C1), attribute to the behavior acts as a simple antecedent for predicting PEBIs, which is rare. For other causal models (A, B, D), a simple indicator is not sufficient for simulating high/low INT scores (see Tables 4 and 5).
2	Tenet 2: The recipe principle: A complex antecedent condition of two or more in simple conditions is sufficient for a consistently high score in an outcome condition.	As shown in Table 4 (B1: personality configuration), three antecedents M1 (agr* opn*ext) offer a sufficient and consistent condition for simulating high outcome scores. While to achieve a same outcome (i.e., high INT), a combination of 18 antecedents used to formulate a casual recipe that appeared in M4 (Table 5; D2).
3	Tenet 3: The equifinality principle: A model that is sufficient is not necessary for an outcome having a high score to occur.	Regarding demographic configuration (Table 4; A), M1 is a sufficient model for predicting high INT, but it is not necessary. Because there is other alternative model (M2) that sufficiently explains conditions leading to a high INT. As shown in Table 5 (D2), there are 4 alternative models for simulating high INT conditions.
4	Tenet 4: The causal asymmetry: Recipes indicating a second outcome (e.g., rejection) are unique and not the mirror opposites of recipes of a different outcome (e.g., acceptance) principle.	As shown in Tables 4 and 5, the causal recipes for high INT scores (A, B, C, and D) are not the mirror opposites of the causal models for INT negations (~A, ~B, ~C, and ~D).

5	Tenet 5: An individual feature (attribute or action) in a recipe can contribute positively or negatively to a specific outcome depending on the presence or absence of the other ingredients in the recipes.	Neuroticism and conscientiousness are two examples of heterogeneity, the roles of which in the causal recipes are defined by features of other indicators in the given recipe. A comparison of M3 and M4 in Table 5 (D2) shows that neuroticism and conscientiousness act as both positive and negative antecedents in the models, respectively, the action of which depends on the attributes of other antecedents.
6	Tenet 6: For high Y scores, a given recipe is relevant for some but not all cases; coverage is less than 1.00 for any one recipe.	As clearly illustrated in Table 5, coverage for the causal models is less than 1.00.



Notes:

ag=Age; eth= Ethnicity; inc=Income; edu=Education; gen=Gender; mrs= Marital status; ego=Egoistic value; bio=Biospheric value; alt=Altruistic value; sov= Social value; emv= Emotional value; cov=Conditional value; epv=Epistemic value; mrn=Moral norm; inj=Injunctive norm; dsn= Descriptive norm; agr=Agreeableness; ext= Extraversion; att=Attitude; awr= Awareness of consequences; pbc=Perceived behavioural control; enb= Environmental beliefs.

Models indicating by arrows

A: wlp = f(ag, eth, inc, edu, gen, mrs); B1: wlp = f(eo, bio, alt, sov, emv, cov, epv); B2: wlp = f(ag, eth, inc, edu, gen, mrs, eo, bio, alt, sov, emv, cov, epv); C1: wlp = f(mrn, inj, dsn); C2: wlp = f(ag, eth, inc, edu, gen, mrs, eo, bio, alt, sov, emv, cov, epv, mrn, inj, dsn); D1: wlp = f(agr, ext, att, awr, pbc, enb); D2: wlp = f(ag, eth, inc, edu, gen, mrs, eo, bio, alt, sov, emv, cov, epv, mrn, inj, dsn, agr, ext, att, awr, pbc, enb).

Fig. 1. Proposed configurational model

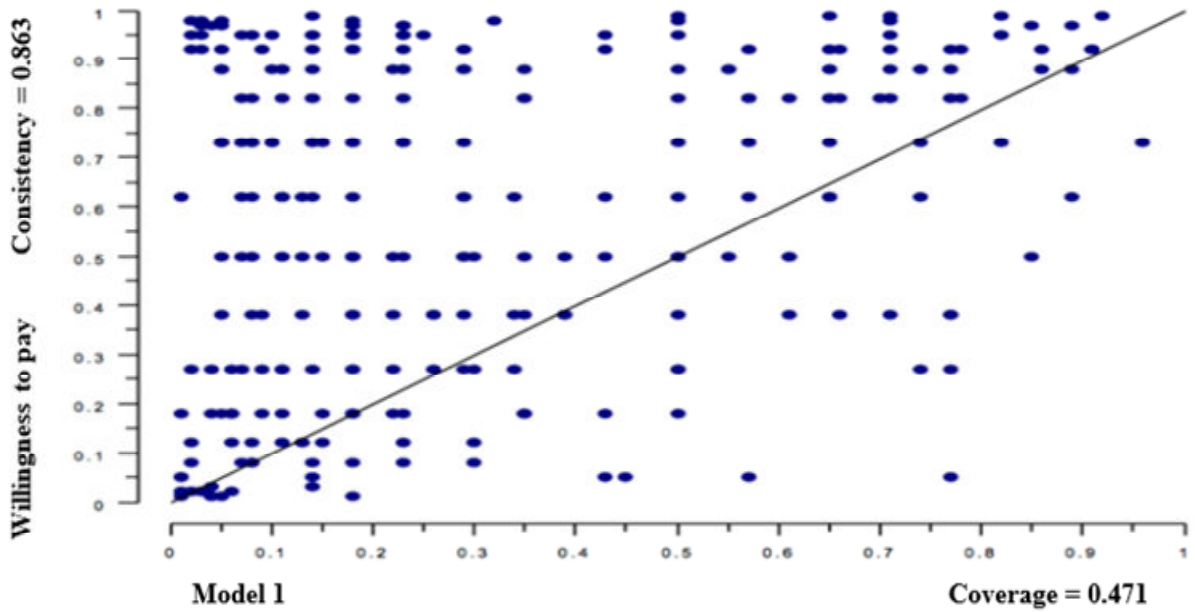


Fig. 2. Test of Model 1 in sub-sample 1 using data from sub-sample 2.