On linguistic relativity and pro-environmental attitudes in tourism

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HIGHLIGHTS

- Explores if language contributes to pro-environmental attitudes of tourists.
- Compares pro-environmental attitudes of Korean and Mandarin speakers.
- Significant differences in pro-environmental attitudes are recorded.
- Linguistic relativity may shape pro-environmental attitudes of tourists.

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ABSTRACT

Language is a key cultural and cognitive attribute which can shape the way people think and behave. Research in economics has tested the influence of language on human consumption and found that languages that explicitly mark future events, i.e. so-called future-time-reference or strong FTR languages, may engage their speakers in less future-oriented attitudes and actions. This phenomenon is known as linguistic relativity. By applying its principles to tourism, this study investigated the impact of language on pro-environmental attitudes of tourists. Comparative analysis of Korean (strong FTR language) and Mandarin (weak FTR language) speaking tourists revealed substantial differences in attitudes. Although tourists possessed good knowledge on the environmental impacts of tourism, this knowledge did not translate into high pro-environmental attitudes for Korean speakers while it did for Mandarin. This suggests that language can shape the attitudes of tourists towards environmental impacts. Implications for management, policy-making and future research are discussed.

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1. Introduction

Tourism generates a wide array of environmental impacts whose urgent mitigation is necessary (Mowforth & Munt, 2016). A substantial share of these impacts is attributed to irresponsible consumer behaviour which, in turn, is driven by poor public knowledge and negative attitudes (Lee and Moscardo 2005). The issue has been recognised and the topic of environmental perceptions and pro-environmental attitudes among tourists is being increasingly scrutinised (Ballantyne, Packer, & Falk, 2011; Imran, Alam, & Beaumont, 2014; Lee & Jan, 2015). An urgent need to enhance pro-environmental knowledge and attitudes among tourists has been called for as these can translate into more environment-benign travel decisions (Eagles & Cascagnette, 1995) and ultimately determine the success of the sustainable tourism development on a global scale (Chiu, Lee, & Chen, 2014; Jurowski, Uysal, Williams, & Nog, 1995; Laroche, Bergeron, Tomiuk, & Barbaro-Forleo, 2002).

Culture is often viewed as a major driver of human attitudes and behaviour (Craig & Douglas, 2006; Laroche et al. 2002). Although the effect of the cultural background of tourists on their holidaying patterns has been acknowledged (Moscardo, 2004), the issue remains under-studied (Kang & Moscardo, 2006). In particular, Nejati, Mohamed, and Omar (2015) argue that very little work has attempted to explore the overlap between national culture and pro-environmental tourist attitudes while there is evidence to suggest that it can be significant.

Language is a representation of cultural reality (Moutinho, 1987) which reflects common attitudes, beliefs, values and, eventually, behaviour (Kramsch, 1998). Language is not only the main communication medium, but also an influencer of cognitive processes (Harley, 2014). In this regard, the theory of linguistic relativity suggested by Benjamin Lee Whorf proposes that the structure of a language affects the way the speakers think about reality and

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may drive certain behaviours (Lucy, 1997). Proponents of strong linguistic relativity argue that languages form the whole patterns of thoughts and shape behavioural responses (Craig & Douglas, 2006). It has been further emphasised that certain grammatical features of a language, such as tenses that express time reference, can change the individual's perceptions and behaviour (Roberts, Winters, & Chen, 2015).

There have been attempts to study the effect of language on thoughts and behaviour (Boroditsky, Fuhrman, & McCormick, 2011; Chan & Bergen, 2005; Tse and Altarriba 2008). The study by Chen (2013) stands apart in this growing research domain as it has tested the influence of language on consumption. The study found that the languages that grammatically mark future events, i.e. so-called strong future-time-reference or FTR languages, may prompt their speakers to distinguish the present and the future psychologically, thus resulting in less future-oriented behaviours. This is because strong FTR language speakers clearly differentiate between the present and the future which implies that the future is seen as being distant and, therefore, the future rewards are devaluated. When applied to the savings habits, this suggests that speakers of strong FTR languages would save less since they are reluctant to bear current (often substantial) costs for the future (perceived as being remote and abstract) benefits (Chen, 2013).

While the study by Chen (2013) has revealed the important role of language in shaping future consumer behaviour, it has been carried out from an economic, rather than cultural, viewpoint. Furthermore, no in-depth comparative research has been conducted across cultures to validate its findings. This study extends the Chen's theoretical framework (2013) to the tourism context, aiming to critically evaluate whether tourists who speak strong FTR languages have less positive attitudes towards the environment and, subsequently, less inclination to reduce their environmental impacts when travelling, compared to those who speak weak FTR languages. Most environmental impacts from tourism (for instance, climate change) are long-term; they will inflict the largest damage in the future while the immediate effect of tourism impacts is often less visible (Coombes & Jones, 2010). Based on the Chen's (2013) propositions, speakers of strong FTR languages see the future as being remote and abstract; they should therefore have little intention to make their behaviour more environmentally-responsible. This is in contrast to speakers of weak FTR languages who will assign the immediate importance to the environmental impacts from tourism as the future will be associated with the present, thus willing to act urgently towards their mitigation.

Given that the environmental impacts of tourism are rising, it is pivotal to better understand the role of tourists in minimising these impacts. In this sense, it is critical to examine if the language which tourists speak, as a representation of their culture and cognition, may shape public attitudes towards the environmental impacts from tourism and determine the effectiveness of their mitigation. This has important implications for tourism management and policy-making because the results of such analysis can enhance understanding of how to encourage pro-environmental attitudes of tourists by considering their cultural differences instrumentally. This is where this study contributes to knowledge.

2. Literature review

2.1. Tourist attitudes, behaviour and culture

The behavioural model of Fulton, Manfredo, and Lipscomb (1996) pictures that fundamental values are most stable but abstract, which influences behaviour through higher order attitudes and beliefs. Ajzen (1991) explains behaviour in specific contexts; attitudes towards a specific behaviour and perceived control over

the behaviour can allow prediction of more accurate behavioural intentions. Accordingly, these intentions provide information about the key variables of behaviour; and the broad concept of consumer behaviour can be commonly defined as 'select, purchase, use, or dispose of products, services, ideas or experiences to satisfy needs and desires' (Solomon, 2013, p. 31).

This approach can be utilised in identifying patterns of tourist behaviour (Ajzen & Driver, 1991). Tourists display certain behaviours in the whole process of travelling, including before and after a holiday journey, which is described as 'tourist behaviour' or 'travel behaviour' (Van Vuuren & Slabbert, 2011). However, Stern (2000) stresses that tourist behaviour needs to be analysed at multiple or hierarchical levels. This is in line with Bowen and Clarke (2009) who assert that, in tourism, more specialised, tourist-centered models should be considered than the grand models of human behaviour. In response to this critique, Mayo and Jarvis (1981) developed a seminal tourism-specific model which outlines the following factors influencing individual tourist behaviour at the different levels or circles: psychological factors (the inner circle) and external or social factors (the outer circle). Similarly, Mansfeld (1992) pinpoints such key determinants of tourist behaviour as culture, physical/perceived environment and personal characteristics. Yet, Bowen and Clarke (2009) posit that all models that have been developed to understand tourist behaviour to-date lack an empirical base which calls for analysis of their practical applicability.

The study of tourist attitudes is becoming increasingly crucial as attitudes can drive specific behaviour (Leonidou et al. 2015). For example, Cohen, Prayag, and Moital (2014) emphasise how mis-behaviour can be caused by customer dissatisfaction, negative attitudes and perceptions which need to be addressed in the tourist behaviour study. In fact, those negative attitudes and perceptions can bring about not only unexpected changes in travel behaviour, but also behavioural modification in the longer-term (Gössling & Hall, 2006). In this sense, culture represents an influential factor which can facilitate better understanding of tourist behaviour (Woodside, Hsu, & Marshall, 2011).

A number of cultural models (see, for example, Hofstede, 1980; Lewis, 2006; Trompenaars & Hampden-Turner, 1997) have been introduced in an attempt to capture a set of core norms and values shared by the members of specific cultures that are reflected in individual behaviour (Magnusson, Wilson, Zdravkovic, Xin Zhou, & Westjohn, 2008). The feasibility of these cultural models has been scrutinised in various contexts; inter alia, they have been incorporated in the studies on tourist behaviour (see, for instance, Pizam & Sussmann, 1995; Money & Crotts, 2003; Gursoy & Umbreit, 2004; Kang & Moscardo, 2006; Xu, Morgan, & Song, 2009). To better understand tourist behaviour across cultures, some studies have considered particular cultural variables or dimensions (Reisinger, 2009). For example, the time perspective (Hofstede, 1980; House et al. 2002; Trompenaars & Hampden-Turner, 1997) or the environmental perception (Schwartz, 1999; Trompenaars and Hampden-Turner, 1997) dimensions indicate that certain cultures consider and value time or the environment differently, by which a particular attitude can be shaped and specific behaviour of a member of a culture can be influenced (Straub, Loch, Evaristo, Karahanna, & Srite, 2002). An example of such variable-based cross-cultural research is an analysis of international skiers regarding their attitudes towards the environment by Hudson and Ritchie (2001), where significant differences in environmental attitudes have been recorded across cultures. Another example is the study by Lord, Putrevu, and Shi (2008), where the varied perception of time across cultures has been found to affect a holiday type, its duration and means of travel to destination.

Among the different cultural attributes, Craig and Douglas

(2006) see language as a key element of the communication system in a cultural aspect since it enables individuals to more effectively transmit messages to others but also interact more explicitly with members of a common culture. Language has been frequently considered as a significant determinant variable to distinguish behavioural differences across cultures (Pizam & Sussmann, 1995; Turner et al. 2002). This notwithstanding, there is no evidence of research on the role of language in shaping consumer behaviour in tourism.

2.2. The language effect

In addition to its primary function as a key communication tool, language also plays a role in cognitive processes (Harley, 2014). Kramsch (1998) argues that language influences the way people think and behave. In this regard, Whorf and Carroll (1956) claim that the structure of each language determines human cognition and shapes a culture-specific world-view of its speakers; they refer to this phenomenon as the Sapir-Whorf/Whorfian hypothesis or linguistic relativity. The strong Whorfian view suggests that language constrains all human thoughts and behavioural responses; this proposition is often viewed as being overly radical and has been repeatedly criticised (Gumperz & Levinson, 1991; Smith, 1997). In contrast, the weak version of linguistic relativity has been constantly supported empirically (Franklin et al. 2008; Kay & Kempton, 1984; Roberson, Davidoff, Davies, & Shapiro, 2005). In their seminal study, Boroditsky and Gaby (2010) conducted cross-cultural comparisons of linguistic coding, or representations of time, and established associations with cognitive processes.

Perlovsky (2009) argues that the linguistic differences can significantly affect the cognitive differences, but not absolutely. Consistent with the idea, Chen, Benet-Martínez, and Ng (2013) indicate that language may activate the culture-specific representations and thereby result in the corresponding perception and behaviour. Hart and Albarracín (2011) support this statement empirically by showing how the verb aspects that connote either perfective (i.e. 'I was doing') or imperfective (i.e. 'I did') actions were influential in the person's perception of past events in the context of criminal and everyday behaviour. Adding to this evidence, Ribes-Iñesta (2006) notes that language has been significantly involved in understanding human behaviour. Moreover, Legohérel et al. (2009), in their study of consumer behaviour, stress that language plays a pivotal role in influencing individuals' consumption behaviour by allowing them to consider relevant problems and act towards their solution in a specific way.

According to Casasanto (2008), language can form one's temporal representations as well as reflect the structure of those representations. Boroditsky (2001) argues that language plays a particularly important role in shaping one's thoughts for abstract domains, such as time. Boroditsky et al. (2011) demonstrate cross-cultural differences in temporal thinking. For example, while Mandarin speakers tend to talk about time as vertical, the English commonly describe time horizontally, which is reflected in the different way they perceive time (i.e. by using the words 'up' and 'down' when indicating 'earlier' and 'later' events in Mandarin; but using the words 'front/ahead' and 'back/behind' in English).

2.3. Language and time perspective

While the concept of time is a common universal reference in any activity, it has been long questioned whether human perception and understanding of the nature of time remain the same in any language (Pani & Bhattacharjee, 2001). Regarding time perspective in the past, present and future, studies have focused on cross-cultural comparison, particularly in the context of certain

nationalities or regional groups (Gao, 2016; Ji, Guo, Zhang, & Messervey, 2009; Wang, Rieger, & Hens, 2016), but linguistic features, such as tense, have largely been excluded from analysis despite their significance as important variables in the cultural studies. Tense manipulation can influence the process of thinking as shown, for example, by Madden and Therriault (2009) who highlight how the grammatical aspect regarding time in verbs could push its speakers towards particular features of an action.

With respect to this, Chen (2013) proposes that languages that grammatically mark the future, or so-called future-time-reference (FTR) languages, engage in less future-oriented behaviour. To examine the correlation between these linguistic differences and future-oriented behaviour, he divides languages into two major categories: strong (for example, Korean, English, Spanish and Russian) and weak (for instance, Mandarin, German, Dutch and Japanese) FTR languages (Fig. 1). According to Chen (2013), speakers of strong FTR languages feel the future more distant due to the distinguished tenses for the present and the future, and this eventually leads to less future-oriented behaviour (Chen, 2013). As Fig. 1 shows, a Finnish speaker hardly uses obligatory future tense on verbs, while a French speaker grammatically separates the future from the present time of verbs.

The merit of the study by Chen (2013) has been acknowledged but its outcome has been criticised. Dahl (2013 cited by Fabb, 2016) argues that the study is restricted to the use of a single criterion when categorising whether a language is strong or weak FTR, thus criticising such subjective dichotomies. Additionally, Gao (2016) pinpoints substantial cultural differences between Asian Americans and East Asians, using English in the United States as an example. However, Liang, Marquis, Renneboog, and Sun (2014) provide empirical evidence to support the Chen's (2013) concept when studying corporate behaviour. They suggest that companies with strong FTR languages used officially at work appear to be less future-oriented and can thus perform worse in terms of corporate social responsibility and sustainability, compared to those with weak FTR languages. Recently, Chen, Cronqvist, Ni, and Zhang (2015) have extended their linguistic hypothesis to the analysis of corporate cultures. They have found that firms using weak-FTR languages as official languages of in-house communication are more likely to hold cash than strong-FTR speaking firms which is an evidence of a precautionary motive (Chen et al. 2015) and supports the original proposition by Chen (2013). In summary, recent empirical studies have supported the view that strong FTR language speakers engage in less future oriented behaviour; however, these have been conducted primarily from the perspective of corporate business, and not individual customers. No research has attempted to understand the role of language in shaping pro-environmental attitudes of tourists.

2.4. Pro-environmental tourist attitudes and behaviour

Facilitating environment-benign consumer behaviour represents a crucial task in mitigating the environmental significance of tourism operations (Kim, 2012). There is growing evidence of so-called 'tourist pro-environmental behaviour' (Kollmuss & Agyeman, 2002) which occurs when tourists express concerns about the environmental footprint their holidaying patterns impose and make a knowledgeable attempt to minimise it. Such behaviour is also referred to in the literature as environmentally responsible behaviour (Mobley, Vagias, & DeWard, 2010), conservation behaviour (Ballantyne, Packer, & Hughes, 2009), green behaviour (Bergin-Seers & Mair, 2009) and environmentally-friendly behaviour (Dolnicar, Crouch, & Long, 2008). While there have been many directions of the literature on pro-environmental tourist behaviour, a bulk of research has focused on establishing
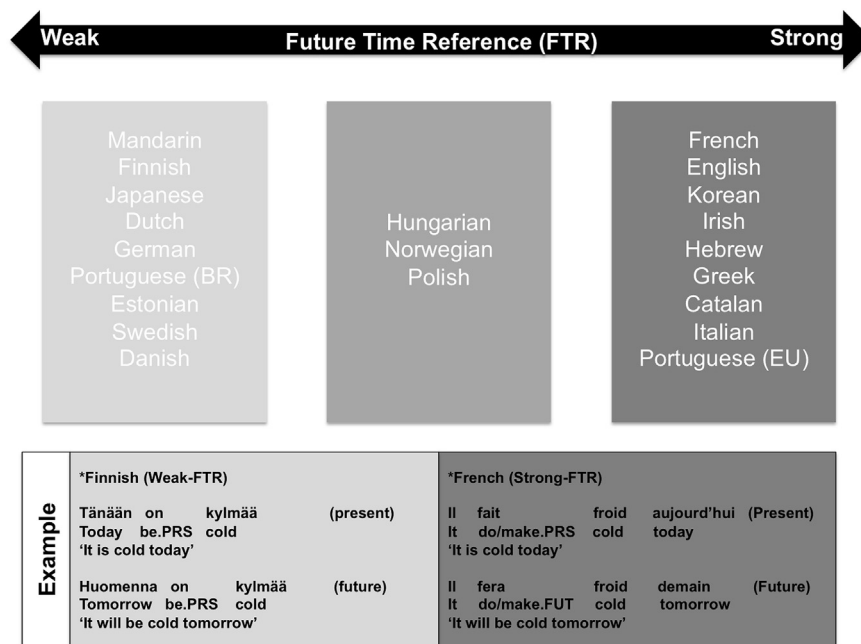
Fig. 1. Languages and FTR values with examples. Source: Authors' own compilation based on the categorisation by Chen (2013).

associations between public environmental attitudes and behaviour of tourists (Leonidou et al. 2015). Some research indicates that positive environmental awareness and attitudes of tourists may result in positive environmental behaviour and drive intentions to engage in more environmentally-friendly travel patterns in the future (Lee and Moscardo 2005; Bergin-Seers & Mair, 2009; Tilikidou, Delistavrou, & Sapountzis, 2014).

Evidence suggests that intentions strongly predicted by certain attitudes are more likely to associate with performance (Sheeran, 2002). In this regard, pro-environmental attitudes have a significant influence on tourist pro-environmental behaviour. For example, strongly environmentally-oriented tourists are willing to pay extra for environmentally-friendly hotel services that obtain eco-label certification (Bastič & Gojčič, 2012) or for eco-labelled products (Shen, 2012). In a similar vein, Kang, Stein, Heo, and Lee (2012) find a positive and significant relationship between the level of public attitudes supporting environmental concerns and the willingness of tourists to pay a premium for environmental initiatives in U.S. hotels. Similarly, Kim (2012) posits that a majority of visitors to a coastal area who had positive attitudes towards the environment would support environmentally-responsible management decisions and would be willing to more actively engage in nature conservation activities. Kim (2012) also reveals that certain types of environmental attitudes could represent strong factors in explaining environmentally-responsible consumer behaviour. Likewise, Wurzinger and Johansson (2006) find that the eco-tourists and nature tourists have more positive beliefs and attitudes towards the environment than the city tourists in Sweden which is well correlated with their pro-environmental behaviour.

Meanwhile, Leonidou et al. (2015) emphasise the importance of tourist satisfaction derived from environmentally-responsible behaviour and the belief that the individual tourist actions can protect and restore the environment. Chiu et al. (2014) assert that it is important to provide a satisfactory tourist experience which does not only enhance tourist knowledge of the environment, but also facilitates positive changes in tourist environmental attitudes and behaviour. Accordingly, personal (or individual) traits including knowledge, values, beliefs, attitudes and intentions are frequently

highlighted to provide a better explanation for pro-environmental behaviour despite the significance of socio-demographic variables (Antimova, Nawijn, & Peeters, 2012). Rodríguez-Oromendía, Reina-Paz, and Sevilla-Sevilla (2013) test the role of personal traits in the context of sustainable tourism and find that these are instrumental in predicting environmental actions of tourists. In this sense, prior research has often considered knowledge as one of the important predictors of environmentally-friendly behaviour of tourists (Cottrell & Graefe, 1997). Bergin-Seers and Mair (2009) highlight the importance of understanding how the generic environmental concerns of tourists translate into behaviour when going on holiday. According to Puhakka (2011), tourists who are highly concerned with the environmental impacts from tourism are willing to reduce the negative impacts of holiday travel and behave in a more environmentally-responsible way.

Among the various individual factors (including psychological variables), time perspective has often been in a focus of analysis as an explanatory variable for pro-environmental tourist behaviour (Arnocky, Milfont, & Nicol, 2014). This is because the long-term benefits of pro-environmental behaviour frequently require immediate costs and, thereby, people tend to 'discount the future', meaning there may occur a tendency to choose a smaller reward today over a larger one in the future (Behavioural Insights Team, 2011; Gadenne, Sharma, Kerr, & Smith, 2011; Stern, 2000). With this regard, studies have attempted to demonstrate 'the extent to which individuals consider the potential distant outcomes of their current behaviours and the extent to which they are influenced by these potential outcomes' (Strathman, Gleicher, Boninger, & Edwards, 1994, p. 743), or consideration of future consequences (CFC), in terms of the degree of engagement in positive attitudes towards nature conservation and intentions to transform into pro-environmental behaviour (Doran, Hanss, & Larsen, 2016). Similarly, Joireman, Lasane, Bennett, Richards, and Solaimani (2001) show how the individuals with high CFC scores display stronger intentions to protect the environment and engage in pro-environmental behaviour.

Individual factors are not the only variable to explain individual pro-environmental behaviour (Doran et al. 2016) and Dickinson

et al. (2013) emphasise that the temporal issues of travel behaviour should not be overlooked. Nevertheless, there is paucity of research on this topic. The only notable example is the study by Dickinson et al. (2013) who find that the temporal rhythms perceived by tourists (i.e. time fluidity; daily and place-related rhythms; and control of time) reinforce individual behavioural patterns, such as the choice of travel modes, also in terms of their environmental sustainability.

2.5. Knowledge gap

Despite the recognised importance of the relationship between culture and pro-environmental tourist attitude/behaviour, there has been no systematic analysis of how specific cultural values could become a determinant of environmentally-responsible tourist behaviour. While language, as one of the key cultural and cognitive elements, has been demonstrated to play a pivotal role in shaping an individual's consumption attitude/behaviour, no research has been undertaken to-date on the effect of language relativity on consumption behaviour in the context of environmentally sustainable tourism. The tourism literature has considered language as a facilitator of or as a barrier to communication when on holiday (see, for instance, Heller, Jaworski, & Thurlow, 2014; Thurlow & Jaworski, 2010), but failed to signify its role in shaping pro-environmental tourist attitudes and driving pro-environmental tourist behaviour. This is a significant omission as it has been suggested that particular aspects of linguistic structures can affect an individual's perceptions and behaviour. With this respect, the effect of future tense in certain languages on socio-economic behaviour at an individual and corporate level has been studied, but the outcome of this research has not yet been scrutinised in the domain of environmentally sustainable tourism.

This study adopts the Chen's (2013) propositions to investigate the correlation between the future marked languages and future oriented behaviour in the context of environmentally sustainable tourism. It hypothesises that tourists speaking strong FTR languages will feel more distant from the future, and this can make them feel remote from the environmental impacts attributed to their holidaying behaviour. Environmental impacts of tourism are largely long-term and future-orientated, such as climate change (Hamilton, Maddison, & Tol, 2005), ozone depletion (Saenz-de-Miera & Rossello, 2013) or biodiversity loss (Holden, 2009). This suggests that tourists who speak future marked languages would display neutral, or even negative, pro-environmental attitudes. In contrast, tourists speaking weak FTR languages might associate the future with the present; they would therefore be more environment-conscious as the environmental impacts from their holidaying behaviour would seem to appear closer to them. This would drive positive pro-environmental attitudes and might result in more responsible behaviour when on holiday.

Considering findings from prior studies and the foregoing discussion, the following research hypotheses have been proposed (Fig. 2). These hypotheses will be tested through an exploratory survey whose design and administration is explained below.

3. Research design

3.1. Choice of languages

Two languages, Korean and Mandarin, were selected for comparison as, according to Chen (2013), they represent strong and weak FTR languages, respectively (Fig. 1). The concept of linguistic relativity was tested in a qualitative pilot study with a small number of willing participants from among the above language speakers. In the case of Korean language, it was found that its

speakers would primarily refer to the future with distinct linguistic constructions, equivalent to 'I will … ' or 'I am going to … ' in English. In contrast, Mandarin speakers would not use any explicit markers of future time while the future and present would often overlap when specific actions were articulated in speaking. This finding confirmed the validity of the Chen's (2013) propositions and supported the choice of these languages for this study.

3.2. Questionnaire design

Based on a research model developed for this study (Fig. 3), the questionnaire was designed to test the hypotheses. The question items were divided into four sections excluding additional questions for personal characteristics. The first section aimed to test the general tourist knowledge about environmental impacts; the second section dealt with tourist knowledge of the environmental impacts specifically caused by tourism; the third section comprised of the attitudinal questions concerning the environmental impacts of tourism; and the last section was made up by the attitudinal questions concerning the *future* implications of the environmental impacts of tourism. The questions in the last section were derived from the study by Chen (2013) but modified according to the scope of this project, i.e. to test the relationship between language and tourist pro-environmental attitudes.

Assistance from a professional linguist, qualified in cultural studies, was sought to develop the survey questions to ensure they captured the effect between the above two variables. To test the hypotheses on the cross-cultural attitudes of tourists as articulated in different languages, back-translation was necessary. As suggested by Brislin (1976), five Korean and three Mandarin bilinguals were employed to translate the source questionnaire (produced in English) to the target languages and to then blindly translate back from the two languages to the source. Clearing up the errors found in the process, some questions were rephrased in order to guarantee the eventual identical versions of the source, target and back-translated languages. The resultant questionnaires underwent careful piloting with a number of native Korean and Mandarin speakers to ensure fluency. The 5-point Likert rating scale was used on the 27 statements in the questionnaire to specify whether respondents agreed or disagreed with each one, ranging from strongly disagree (1) to strongly agree (5). Additional 9 questions sought to collect personal information.

3.3. Sampling and survey administration

The survey was conducted in a mixed-mode to optimise the data collection procedure and reduce survey errors given the project's budget and time (de Leeuw, 2005). An online survey represented the main data collection instrument. It was conducted to collect data from the participants based in South Korea and China for who Korean and Mandarin were the first language, respectively. A number of additional paper questionnaires were collected from Mandarin speakers residing in various locations across the United Kingdom. This is due to the encountered difficulties in online data collection in China which is attributed to the governmental restrictions of public Internet use in this country. When recruiting willing participants, only those were selected who had travelled with holidaying purposes at least once a year within the last two years.

The survey was administered within the three consecutive weeks in December 2016. 309 usable questionnaires were collected in total, consisting of 158 Korean and 151 Mandarin responses. While the sample is on a smaller size, it is deemed appropriate given the exploratory nature of this study. Furthermore, previous comparative cultural research on tourist attitudes towards
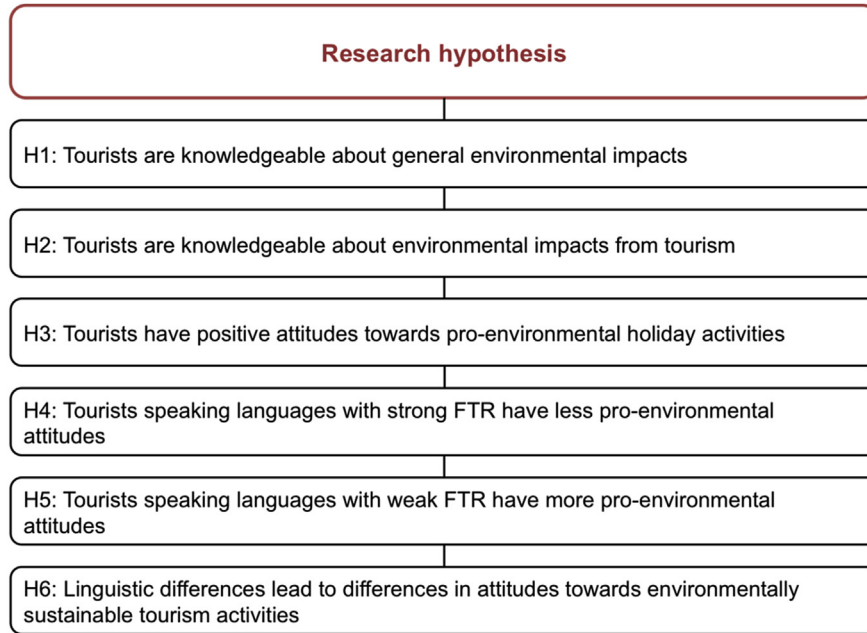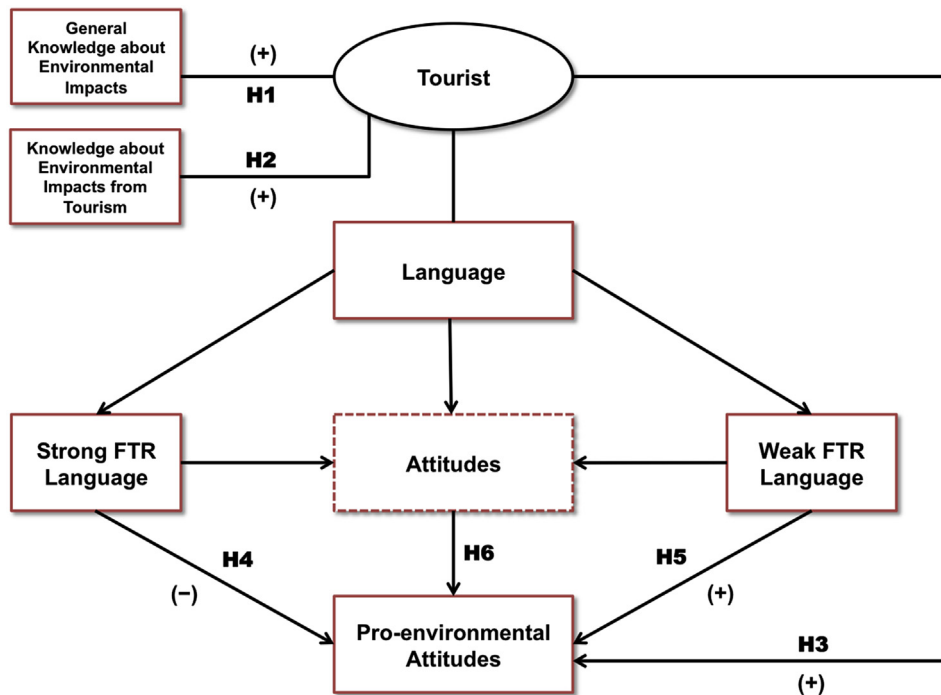
Fig. 2. Research hypotheses.

Fig. 3. Hypothesised research model of environmental knowledge, pro-environmental attitudes and language.

environmental issues was based on similar sample sizes (Kline, 2011; Parker, Ballantyne, & Hughes, 2014); hence the present study is deemed to have reached a meaningful sample size.

3.4. Data processing and analysis

The survey data were processed and analysed using SPSS (Statistical Package for the Social Sciences) Statistics 23.0. To test correlation between tourists' demographic characteristics and attitudinal questions, a Mann-Whitney U test and Kruskal-Wallis test were used. These non-parametric tests were chosen as they have been employed in previous studies on tourist pro-environmental behaviour (see, for example, Ballantyne et al. 2009; Dolnicar & Leisch, 2008; Lee and Moscardo 2005). The one-way ANOVA test was undertaken to explore the differences between the two groups on each item (Kang & Moscardo, 2006).

The Pearson's correlation test was run to check the overall associations between the sets of variables (Kim, 2012).

3.5. Limitations

The study has a number of limitations. Aside from a limited sample size which suggests that the outcome of this study is exploratory, rather than conclusive, this project was based on analysis of two languages only. A larger scale survey based on a few more representative languages from each FTR language group (strong or weak) would contribute to better generalisability of the propositions made in this study. A minor limitation is a disparity in age distribution of the sample population which largely laid in the age group of 18—29. This is attributed to the non-probability sampling technique employed in this project. Future research should aim at recruiting participants based on random selection and utilising purposeful recruitment to reach an evenly distributed sample profile.

4. Results

4.1. Sample profile

Overall, the two samples had a similar profile (Table 1). Both groups had more female respondents (approximately 57%) and were predominantly of young age (72% participants fell between the age of 18 and 29). Notably, 13.9% of respondents who spoke Mandarin as a native language were from countries outside mainland China, such as Taiwan. Whilst approximately 95% of all Korean speaking respondents permanently resided in South Korea, the largest group of Mandarin speakers lived in the UK, France, Taiwan and Unknown countries that represented 56.3% of total responses. The majority in both samples were educated to undergraduate and postgraduate degrees. While the largest group of Korean speaking respondents was employed (59.5%), the majority in the Mandarin speaking sample were students (51%). There were further minor differences in the samples in terms of the annual income distribution (Table 1).

Table 2 presents the correlation coefficients of the four variables, categorised into each testing part from 1 to 4. There was a moderate positive relationship between knowledge about the environmental impacts from tourism and tourist pro-environmental attitudes concerning future consequences which was found statistically significant ($r = 0.435$, $p < 0.001$). Otherwise, only weak relationships were recorded between the variables. Table 2 also shows the mean values and the standard deviations of the dimensions.

4.2. Key findings

Table 3 presents a summary of the main findings and the outcome of a comparative T-test analysis applied to Korean and Mandarin speaking groups. It shows significant differences for each question item and reveals the outcome of testing the research hypotheses. Discussion on the significant differences between the two groups by each dimension is followed. 11 items (Q6, Q12, Q14-16, Q18, Q19, Q23-26) that had no significant differences between the samples were removed to reduce redundancy and move towards an in-depth comparative examination.

Table 3 shows that respondents had high levels of general environmental knowledge; thus, H1 was supported. While both groups were well aware of such global environmental issues as climate change, water scarcity and waste generation, they had limited comprehension of particular underpinned concepts, such as carbon footprint. Overall, the Mandarin respondents had less general environmental knowledge compared to the Korean while the

Korean respondents demonstrated better understanding of the inter-linkages between carbon footprint build-up and climate change. They also exhibited a more comprehensive understanding of the on-going discourse on climate change by agreeing with that people were one of the key drivers of rapid climate changes.

In a series of questions designed to test tourist knowledge of the environmental impacts caused specifically by tourism, respondents mostly agreed that tourism generated impacts on the environment, thus supporting H2. Interestingly, the Mandarin speaking tourists showed higher levels of concern over the environmental significance of tourism and the growing contribution of air travel to climate change, compared to the Korean. Concerning energy consumption, most respondents believed that tourism had a crucial stake in it and hotels were considered as more energy-intense outlets than households. Furthermore, both language groups were concerned about the destruction of natural habitats and wild species extinction caused by the global tourism development. Yet, the level of concern was higher among the Mandarin speaking respondents. Overall, regardless of the language spoken, the findings demonstrated that tourists were knowledgeable about the contribution of tourism to global environmental impacts.

Responses to a set of questions designed to test willingness of tourists to engage with pro-environmental activities when on holiday were slightly negative overall; thus, H3 was not supported. Most respondents were positive about recycling on holiday. However, aside from recycling, the majority of respondents were little concerned about the environmental implications of their holidaying behaviour and saw little control over these. The Koreans assigned the overall responsibility for minimising the environmental impacts from their holidays to tourism providers, while Mandarin speakers shown a slightly better recognition of the potential changes in tourist behaviour as a driver of environmental mitigation in tourism.

As Table 3 demonstrates, both groups had a fairly strong belief that future environmental consequences from tourism would intensify and, thus, would need to be minimised. Nonetheless, there occurred significant differences between the two groups in their attitudes towards environmentally-responsible tourism; thus, H6 was supported. More specifically, the study shown that the Mandarin speaking tourists (weak FTR) had higher pro-environmental attitudes compared to the Korean (strong FTR) which supported H4 and H5. Closer analysis demonstrated that the majority of the Mandarin tourists were significantly worried about the intensification of the future environmental impacts from tourism compared to less than half of the Koreans. The Mandarin speakers indicated more concern about the negative environmental impacts of tourism on next generations compared to the Koreans.

5. Discussion

The findings of this study contribute to the growing empirical evidence that tourists are becoming increasingly aware of the environmental repercussions of their holidaying behaviour (Antimova et al. 2012; Hares, Dickinson, & Wilkes, 2010; McKercher, Prideaux, Cheung, & Law, 2010). In the context of this project, this can be partly explained by the basic values of Confucianism that are shared by both the Chinese and Korean (Kang & Moscardo, 2006). These values emphasise protection of the natural environment and sustainability (Zhu & Yao, 2008) which suggests relatively high levels of pro-environmental awareness among the Chinese and Korean. Meanwhile, knowledge is one of the internal factors that can influence pro-environmental attitudes and behaviour (Anable, Lane, & Kelay, 2006) and Zareie and Navimipour (2016) demonstrate the positive relationship between environmental knowledge and environmentally-responsible behaviour.

Table 1
Respondents' demographic characteristics.

Variable	Category	Korean speakers (Total = 158)		Mandarin speakers (Total = 151)	
		Total number of respondents	Percentage (%)	Total number of respondents	Percentage (%)
Gender	Male	70	44.3	62	41.1
	Female	88	55.7	89	58.9
Age	18–29	116	73.4	106	70.2
	30–49	39	24.7	36	23.8
	50–64	3	1.9	8	5.3
	65 and over	0	–	1	0.7
Nationality (passport holder)	Korean	157	99.4	1	0.7
	Chinese	0	–	129	85.4
	Other*	1	0.6	21	13.9
Current country of residence	Korea	150	94.9	18	11.9
	China	0	–	48	31.8
	Other*	8	5.1	85	56.3
Highest level of education achieved	High school or less	17	10.8	8	5.3
	Diploma/college or prof. degree	18	11.4	18	11.9
	Undergraduate	106	67.1	74	49.0
	Postgraduate or higher degree	17	10.8	51	33.8
Employment	Employed	94	59.5	51	33.8
	Unemployed	20	12.7	17	11.3
	Retired	8	5.1	6	4.0
	Student	36	22.8	77	51.0
Annual income*	Under nation's average	50	31.6	8	5.3
	Over nations' average	52	32.9	46	30.5
	N/A*	56	35.4	97	64.2

Note

* Other language as mother tongue (Total number of respondents)
  - Korean: English (2), French (1)
  - Mandarin: Cantonese (1), French (1), Swedish (2), Taiwanese (8)
* Other nationality (Total number of respondents)
  - Korean: American (1)
  - Mandarin: British (1), Cantonese (1), Swedish (1), Taiwanese (18)
* Other current country of residence (Total number of respondents)
  - Korean: Australia (5), France (1), UK (1), Vietnam (1)
  - Mandarin: France (10), Taiwan (7), UK (66), Unknown (2)
* Annual income: The average annual income of each country was presented in questionnaires.
* N/A: Non-employed, retired, students who are not in the condition of employment.

Table 2
Correlation matrix and descriptive statistics.

Correlations (n = 309)						
Variable	Mean	SD	1	2	3	4
1. Knowledge – General	3.87	0.514	1			
2. Knowledge – Tourism	3.58	0.577	0.182**	1		
3. Attitude – Tourism	3.04	0.607	−0.049	0.079	1	
4. Attitude – Future	3.99	0.516	0.207**	0.435**	0.131*	1

Note: Used a 5-point scale from 1 (strongly disagree) to 5 (strongly agree), negatively worded items were reverse coded, **. Correlation is significant at the 0.01 level, *. Correlation is significant at the 0.05 level.

Therefore, it can be predicted that, when properly marketed and incentivised (Rodríguez-Oromendía et al. 2013), Korean and Mandarin speaking tourists may engage in pro-environmental tourism. In turn, linguistic relativity may affect how people perceive the 'urgency' of environmental protection in tourism, thus leading to certain behavioural patterns that are based on the public cognition of time as infused by the language spoken. This effect should be better understood and capitalised upon by tourism managers and policy-makers.

The study indicates that most Chinese and Korean tourists are unfamiliar with some specific, underpinning concepts signifying the environmental impacts that are not likely to be used in daily life, such as carbon footprint. They also fail to establish links between certain tourism activities (such as air travel) and climate change which is in line with the literature (Gössling & Scott, 2012).

This is partially because the environmental consequences of tourism are complex and not directly recognisable; hence, confusion and uncertainty occur among the public (Becken, 2004). Despite the growing public and political concern about the global environmental issues, tourism consumers remain unclear not only on the specific issues and the cause-effect relationships (for instance, anthropogenic carbon footprint build-up and its correlation with climate change), but also on how these issues are linked to their individual behaviour (Polonsky, Vocino, Grau, Garma, & Ferdous, 2012).

The study shows that Chinese and Korean tourists are unlikely to consider mitigating environmental impacts of their holidaying choices. These patterns of attitudes can be explained by previous research of Bystrzanowski (1989 cited by Carr, 2002) and Ryan, Robertson, and Page (1996), suggesting that tourists tend to adapt themselves to what they call a 'tourist culture' when on holiday, thus becoming a 'new' person (Jafari, 1987). Indeed, when on travel, tourists seek pleasurable activities that often disobey the structured daily life and societal obligations (Preston-Whyte, 2004). Besides, these findings support Hares et al. (2010) who posit that in-depth knowledge does not necessarily translate into environmentally-friendly attitudes when it comes to holidays. Nevertheless, the study suggests that tourists are prepared to recycle when on holiday, just like they do at home, which contradicts previous findings claiming that tourist values and tourist behaviour may significantly change on travel despite commitments to certain behavioural patterns (such as recycling) in households

Table 3
Results of analysis.

Questions	Korean (n = 158)		Mandarin (n = 151)		Sig.	Comparison	Total mean (SD) (n = 309)	Hypothesis
	Mean	SD	Mean	SD				
Test 1: General knowledge of environmental impacts (H1)								**Supported**
1 I am familiar with the notion of carbon footprint.	2.68	1.042	2.99	1.192	0.013	K < M	2.83 (1.127)	✗
2 Carbon footprint is a major contributor to climate change.	3.63	0.961	3.37	0.991	0.022	K > M	3.50 (0.982)	✓
3* Climate change is a natural phenomenon and people play no role in its intensification.	1.76	1.025	2.29	1.147	0.000	K < M	2.02 (1.116)	✓
4 Climate change leads to the rise in temperature and extreme weather events across the globe.	4.20	0.863	3.87	0.989	0.002	K > M	4.04 (0.939)	✓
5 There are regions in the world where water scarcity is a big issue.	4.51	0.780	4.34	0.738	0.044	K > M	4.43 (0.764)	✓
Test 2: Knowledge of environmental impacts from tourism (H2)								**Supported**
7 Tourism imposes a broad range of environmental impacts.	3.58	0.946	3.99	0.707	0.000	K < M	3.78 (0.862)	✓
8 Tourism makes a substantial contribution to climate change.	3.07	0.965	3.50	0.937	0.000	K < M	3.28 (0.975)	✓
9 Tourists travelling by air produce disproportionately high climate impacts.	2.96	0.933	3.40	0.988	0.000	K < M	3.17 (0.985)	✓
10 Energy consumption is a key environmental impact of tourism.	3.13	0.938	3.57	1.030	0.000	K < M	3.35 (1.006)	✓
11 On average, hotels consume more water than households.	3.56	1.181	4.07	0.809	0.000	K < M	3.81 (1.047)	✓
Test 3: Attitudes towards the environmental impacts from tourism on holiday (H3)								**Not Supported**
13 Generally, I am concerned about the environmental footprint of my holiday.	2.49	1.122	2.76	1.182	0.042	K < M	2.62 (1.157)	✗
17* It is a hotel where I stay, and not me, who should minimise environmental impact from my holiday.	3.53	0.988	2.50	1.045	0.000	K > M	3.02 (1.138)	✗
Test 4: Attitudes towards environmental impacts of tourism and language structure (H4, H5, H6)								**Supported**
20 I am worried that environmental impacts from tourism will intensify.	3.35	0.930	3.87	0.885	0.000	K < M	3.60 (0.943)	✓
21 Next generations will be more affected by the negative environmental impacts from tourism than the present generation.	3.81	0.952	4.31	0.723	0.000	K < M	4.06 (0.883)	✓
22 It is important to ensure that we will reduce environmental impacts from tourism.	4.25	0.746	4.02	0.875	0.015	K > M	4.14 (0.818)	✗
27 I am concerned that, if tourism development keeps its pace, we will experience a major ecological catastrophe.	3.82	0.981	4.09	0.743	0.007	K < M	3.95 (0.882)	✓

Note: Significance at the 0.05 level (p < 0.05), Used a 5-point scale from 1 (strongly disagree) to 5 (strongly agree), Q 3 and Q17 are negatively stated.

(Cohen, Higham, & Reis, 2013).

Tourists often believe that the long-term and largely non-personalised benefits attached to being environmentally-friendly when on holiday would incur substantial immediate costs (Gadenne et al. 2011). Therefore, they would rather focus on pleasurable holiday activities that take place at present, rather than think of taking responsibility for any environmental impacts arising from these activities (Kiatkawsin & Han, 2017). Tourists think that the environmental repercussions of their travel choices will only happen in the future (Behavioural Insights Team, 2011) which is seen as distant, thus hindering pro-environmental behaviour. Such dominant perceptions may engage in persistent patterns of ignoring the environmental impacts on holiday which represents a significant barrier towards responsible behavioural change in tourism (Gössling, Scott, Hall, Ceron, & Dubois, 2012). It is therefore paramount to ensure that tourists understand the significance of the environmental implications of their holidaying decisions (Chiu et al. 2014). Previous research suggests that when people understand what is occurring, they will have a feeling of moral obligation that motivates considerable and positive behavioural change (Gadenne et al. 2011). Accordingly, environmental knowledge among tourists can be enhanced and environmentally-responsible attitudes and behaviour can be also strengthened (Chiu et al. 2014). The challenge is therefore not only to raise public awareness of the environmental issues in tourism, but also to encourage tourists to think carefully about the responsibilities their holidays bring forth (Miller, Rathouse, Scarles, Holmes, & Tribe, 2010).

The findings of this study show that Korean- and Mandarin-speakers differ significantly in some attitudinal measurements concerning environmental impacts. Given that language is an integral attribute of culture (Craig & Douglas, 2006; Kramsch, 1998), this underlines the importance of in-depth investigation of the effects made by culture on an individual's attitudes in tourism (Hudson and Ritchie 2001). A comparative analysis of two languages indicates that tourists who grammatically distinguish the

future from the present demonstrate weaker pro-environmental attitudes compared to those who do not. This suggests that language plays an important role in terms of signifying the future-oriented attitudes, or more responsible attitudes, towards the environment. Language can therefore reflect the significant differences in pro-environmental attitudes across cultures. Accordingly, this finding is consistent with Chen (2013)'s hypothesis which was further confirmed by Liang et al. (2014). From a broader perspective, the findings of this study are consistent with previous research denoting that the knowledge of and the attitudes towards environmental impacts vary across cultures (Laroche et al. 2002).

6. Conclusions

Linguistic relativity recognises the important role of language in influencing human attitudes and shaping behaviour. Yet, no empirical research has been undertaken to-date to identify the effect of language on tourist attitudes, especially with regard to the growing environmental significance of the global tourism industry. To fill this knowledge gap, this study sought to investigate whether the linguistic differences would lead to the differences in pro-environmental attitudes among tourists. To this end, a structured survey was conducted to establish the relationship between the FTR languages and tourist future oriented, pro-environmental attitudes. The outcome indicates that tourists who speak a strong FTR language (Korean) have less favourable attitudes towards the urgent mitigation of environmental impacts from tourism than those who speak a weak FTR language (Mandarin). The study contributes to better understanding of the role of culture, and language as its integral element, in shaping pro-environmental attitudes of tourists.

The study outlines a set of managerial and policy-making implications. First, it is critical to enhance public understanding of the specific environmental terms attributed to tourism's impacts, such as carbon footprint. It is further important to ensure the public

comprehends how these are linked to specific holidaying actions, such as air travel. Second, the cultural background of tourists should be taken into consideration when designing public awareness raising campaigns on the environmental repercussions of tourism. For those speaking strong FTR languages, it is paramount to explain that although such environmental impacts of tourism as climate change can appear as being long-term and therefore abstract, they may notwithstanding have substantial short-term and rather tangible individual implications. This holds true, for instance, when climate change brings about local floods and extreme weather events. This may prevent speakers of strong FTR languages from seeing the climate repercussions of tourism as remote and urge them to engage in mitigation. Lastly, the mitigation measures undertaken by the industry and policy-makers with a view to minimise the detrimental environmental impacts of tourism should demonstrate their short-term effectiveness to the speakers of strong FTR languages. In this case, the mitigation measures will be perceived as less abstract and could therefore urge strong FTR speaking tourists to take more active part.

The study revealed a number of avenues for future research. Larger and more diverse in terms of the chosen languages study samples alongside the random sampling techniques should be utilised to draw more generalisable conclusions. Also, a multi-group analysis can be meaningful in the future comparing a few representative languages from the each FTR group (for example, German and Dutch versus Greek and Italian, as per Fig. 1). Comparative analysis of languages that rest within the same FTR category but are located in the different parts of the world and within various political and socio-economic backgrounds (for example, Korean and French) would also be useful to understand the role of external variables (for instance, national education systems and media) in shaping pro-environmental attitudes of tourists. Lastly, it is worth attempting to study tourists who come from the grammatically different language backgrounds (for example, Korean and Mandarin) but who demonstrate positive pro-environmental attitudes, i.e. those who participate in voluntary carbon offsetting schemes or engage in environmentally-responsible types of tourism, to evaluate how the effect of linguistic relatively can be offset by other, internal and external, factors.

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