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Tourism Climate Insurance: Implications and Prospects

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Abstract

This paper investigates the intentions of tourists to purchase climate insurance as part of their holiday packages. A research model, based on Bagozzi's reformulation of attitude theory (BRAT) designed to examine the relationships between climate expectation-disconfirmation and the behavioral intentions of tourists in purchasing tourism climate insurance, with destination loyalty as an outcome. The model hypothesizes and tests whether expectation-disconfirmation can be resolved by insuring the product- climate. A structural equation modeling (SEM) is utilized. The results reveal that the expectation-disconfirmation of tourists in relation to climate is positively associated with their intentions to purchase insurance and negatively affects loyalty.

Keywords: Tourism Climate Insurance, Expectation-disconfirmation, Climate change, Loyalty, Seasonality, North Cyprus.

1. Introduction

Tourism plays key role within the global economic system. It has become a significant global phenomenon socially, culturally, economically, and environmentally. Environmental concerns and climate change are becoming elements of uncertainty in terms of the sustainabiltiy of tourism as a socio-economic force. Climatic change is highlighted in a report by the Intergovernmental Panel on Climate Change (IPCC), which states the following:

> In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans. Impacts are due to observed climate change, irrespective of its cause, indicating the sensitivity of natural and human systems to changing climate. Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen (IPCC, 2014).

Clearly, uncertainty and randomness are two characteristics of climate change that can affect the well-being of tourists while they are at their destinations, especially if they are there for the purpose of 3S (sun, sea, and sand) tourism. Since tourists expect a favorable climate, occurrences such as high winds, heavy precipitation, and inordinately high temperatures will negatively impact their satisfaction (Hall et al., 2015; De Freitas, 2003; De Freitas, Scott, & McBoyle, 2008; Jeuring & Becken, 2013; Silver & Conrad, 2010). Climate is one of the key attractions, especially in 3S tourism, and an important factor in determining length of stay, satisfaction, and loyalty, as well as in affecting the feasibility of locations as tourist destinations (De Freitas, 2014; Denstadli et al.,

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2011; Romão et al., 2014; Gössling et al., 2006). Climate, as one of the destination image attributes, is also highly influential in tourists' destination choices, as well as in their behavior during and after visiting their destinations (Kajan & Saarinen, 2013; Botzen et al., 2009; Tasci & Gartner, 2007). According to Martin and Belén (2005), there is a consensus among geographers and planners that climate is a major determinant of tourist site selection, decisions on infrastructural development, encouragement of investors, temporal tourism activities, and tourists' intentions to return.

To address the destructive effects of climate on tourism, several authors have emphasized the following requirements: obtaining useful information (Scott & Lemieux, 2010), being adequately prepared (De Freitas, 2003), and making tourists' aware about how to behave in inclement climatic conditions (Jeuring & Becken, 2013). Climate insurance as a risk management strategy is another approach that many scholars suggest to reduce the vulnerability of tourists during unfavorable climatic events (Becken & Hay, 2007; Day, Chin, Sydnor, & Cherkauer, 2013; Heltberg, Siegel, & Jorgensen, 2009; Martin & Belén, 2005; Oliver-Smith, 2014; Scott, Gössling, & De Freitas, 2009). In other words, climate insurance is not only a protection against unfavorable weather, providing an inexpensive and viable resource for tourism activities; it also provides tourists with peace of mind during extremely destructive climatic occurrences, such as rainfall (Mills, 2005; UNEP, 2008). Eventually, this will redefine the consequences of disconfirmation that results from a discrepancy between the expectations tourists have of a favorable climate and the experiences they encounter, not to mention the implications this has for destination marketing (De Freitas, 2014; Martin & Belén, 2005).

Against this backdrop, tourism climate insurance, like several other complex ideas regarding tourism and climate, is still an under-researched topic (De Freitas et al., 2007; Denstadli et al., 2011; Scott & Lemieux, 2010). However, the implications of climate insurance have been investigated in other sectors such as agriculture (Lou & Sun, 2013) and environment (Lo, 2013). The fact that little attention has been paid to tourism climate insurance is exacerbated by the lack of a specific framework through which to provide a link to tourism and hospitality firms, such as travel agencies, insurance firms, and hoteliers (Becken & Hay, 2007; Rutty, et al., 2014). Becken and Hay (2007, p. 46) have emphasized the key role that tourism climate insurance can play as an effective mechanism for and an adaptive approach against climatic uncertainty, in addition to being a cushioning mechanism for the destinations in order to attract tourists.

As highlighted by Rosselló-Nadal (2014), optimal tourism conditions can be established by assuming that some tourism activities require an appropriate level of favorable climatic conditions. Therefore, an assessment of the perception of tourists' optimal weather conditions is possible, and anything other than optimal conditions will have negative effects on leisure activities in the destination. With this in mind, it is important to assess the connection between climate expectation-disconfirmation in these destinations, especially in Mediterranean regions where tourism is highly dependent on climate, which is predominantly the most attractive factor. This empirical study attempts to address the research question on how cognitive-affective appraisal of

tourists regarding the climate contributes in IPTCI and loyalty? From a perspective of the authors' knowledge, this is among the few empirical studies that used Bagozzi's reformulation of attitude theory (BRAT) to propose a structural model for predicting tourist intention to purchase climate insurance and loyalty; therefore, this study investigates antecedents and consequences of tourism climate insurance by focusing on the actual perceptions of tourists. This research is complementing the works by Yu and Chen (2018) that predicts that the intention of travelers to purchase online travel insurance; they have found that customers with greater online experience are more willing to purchase travel insurance.

This study aims to develop and test a research model by using a structural modeling approach to investigate the willingness of tourists to purchase climate insurance. An expectation-disconfirmation model is applied to determine indicators of the behavioral intentions of tourists in terms of both the purchase of climate insurance and of loyalty. Behavioral loyalty is examined as an outcome of the intention to purchase tourism climate insurance (IPTCI). The conceptual model that conforms to BRAT (1992), has been assessed using empirical data obtained from tourists who traveled to the Mediterranean island of North Cyprus. The next section of the paper explains BRAT as a reference point that will be followed by the research hypotheses, research design, and results. The paper concludes with implications for practitioners and researchers for further studies.

2. Theory, hypotheses, and conceptual model

2.1. Bagozzi's reformulation of attitude theory (BRAT)

There are several theories, namely the theory of reasoned action (Fishbein & Ajzen, 1975), the theory of planned behavior (Ajzen, 1985), and social cognitive theory (Bandura, 1986), that predict and explain motivational influences on behavior. The variables adopted in our study and their directional relations are highly congruent with BRAT. Therefore, BRAT is considered to be the theoretical framework for the study. The essence of this theory came to light when Bagozzi (1992) applied Lazarus's (1991) theory of emotion and adaptation in an attitude-intention link to justify the role of a cognitive and emotional self-regulatory mechanism. Bagozzi's (1992, 2000) theory is as follows:

> … Self-regulation is accomplished through conative processes and emotional responses stemming from outcome-desire interactions (i.e., outcome-desire conflict, fulfillment, avoidance, or pursuit). Appraisals of outcome-desire units lead to specific emotions and in turn stimulate coping responses of intentions directed toward specific actions.

In a study by Chen and Phou (2012), linkages of destination image/personality, destination relationship, and loyalty supported by a self-regulatory mechanism (cognitive knowledge → affective outcomes → behavioral outcomes) are framed upon BRAT. Pujiastuti et al. (2017) applied BRAT to explain the following sequence consisting of the tourist's experience→ trust→ behavioral intention. They discussed the results based on BRAT, that the experience of tourists who visited a destination in a rural area. BRAT described how tourists derived their trust that eventually lead to a desired behavioral intention in terms of revisiting and recommending the

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destination. BRAT also was used to support the effects of student perception about a university brand and its influence regarding their trust and loyalty to the university (Nevzat et al., 2016). Kumar (2016) applied BRAT as theoretical underpinning of a structural model that was designed upon cognitive-affective appraisal to predict tourist loyalty. He found that the sequence of destination personality (cognitive), satisfaction (affective), and loyalty (behavioral response) is supported by BRAT. This study developed a research model—which is structured according to the aforementioned sequences (expectation: cognitive→ disconfirmation: affective→ IPTCI and loyalty: behavioral response)—was accommodated based on BRAT (1992).

2.2.Expectation and disconfirmation

In general, discomfort can ensue when there is a discrepancy between the consumer/tourist's expectations and the actual quality of the received product/experience. According to cognitive dissonance theory, this will be psychologically discomforting (Festinger, 1957). Disconfirmation is a gap between expectations and experience that can be either negative (with experience worse than expectations) or positive (with experience better than expectations) (Oliver, 1980; Van Ryzin, 2013). The same argument is valid for tourists' expectations of the climate of the destination. If the weather is not up to expectations while at the destination, negative disconfirmation will emerge. Since tourists' expectations of a pleasant climate have already been shaped in their minds through various sources of advertising before they arrive at the destination, when the cognitive knowledge does not match a tourist's experience of favorable weather, this will lead to a negative affective outcome (disconfirmation). Negative linkage between expectation and disconfirmation has also been reported in previous research (Denstadli et al., 2011; Oliver, 1980; Spreng & Page, 2003; Siu, Zhang & Kwan, 2014). This means that tourists with a high level of expectation regarding the destination's climate would report a low level of negative disconfirmation. Therefore, based on the BRAT sequence of cognitive knowledge (expectation) → affective outcome (disconfirmation) and the aforementioned information, the following hypothesis is proposed:

H1. Expectation is negatively related to disconfirmation.

2.3. Disconfirmation and behavioral outcomes

Loyalty and the intention to purchase tourism climate insurance are the two behavioral outcomes of disconfirmation that are examined in this study. Tourists demonstrate positive behavioral responses, such as behavioral loyalty, when they perceive a destination favorably (Zhang et al., 2014). A study by Yoon and Kim (2000) reports that negative disconfirmation has a negative impact on the behavioral outcomes, such as repeat purchase and loyalty, of car customers in Korea. Such statements are in line with BRAT, which states that affective outcomes (disconfirmation) lead to behavioral outcomes (IPTCI and loyalty).

Tourists who experience negative disconfirmation with respect to climate (i.e., experiencing climates that are worse than their expectations) are likely to purchase climate insurance to have peace of mind as well as to provide them with greater inclination to visit the destination again, as

they are insured. Empirically, it has been reported that intentions to purchase climate insurance increased as a result of events involving unfavorable climate conditions (Park, Jung, Shin, & Kim, 2013). Disconfirmation, then, increases tourists' intentions to obtain climate insurance before they travel. Therefore, the following hypothesis is proposed:

H2. Disconfirmation is positively related to IPTCI.

Negative disconfirmation may lead to the selection of an alternative destination with a more favorable climate, which means that tourists' loyalty is adversely influenced by negative climate disconfirmation. As climate is one indicator of the cognitive image of a destination, it plays a significant role in inspiring tourists to return as well as to recommend the destination to others (Oppermann, 2000). The intentions to return among tourists who experienced summer weather in Scandinavia are significantly associated with climate disconfirmation (Denstadli et al., 2011). Accordingly, the following hypothesis is proposed:

H3. Disconfirmation is negatively related to loyalty.

2.4. IPTCI and loyalty

Insurance of climate during a visit enhances the intentions of tourists to revisit or recommend the destination. It is important to understand whether climate insurance is associated with positive outcomes, including loyalty, because these have useful implications for addressing climate change and seasonality issues. In accordance with the precepts of equity theory, Yoon and Uysal (2005, p. 47) have stated that "if tourists receive benefits or value based on their time, effort, and money for travel, the destination is worthwhile." In other words, if tourists are assured that an unfavorable climate will not disturb their plans while on holiday, they are more likely to revisit the destination and to recommend it to others. Therefore, IPTCI has a significant impact on tourist loyalty and the following hypothesis is proposed:

H4. IPTCI is positively related to loyalty.

2.5. Research model

The research model that includes the hypothesized relationships and the BRAT sequence is presented in Figure 1. As illustrated in the model, expectation is negatively related to disconfirmation. The model suggests that disconfirmation is positively related to IPTCI and negatively related to loyalty. The model also proposes that IPTCI can function as an indicator of destination loyalty.

Place Figure 1 here

3. Research Method

3.1. Sample and procedure

Tourists who traveled to the Mediterranean island of North Cyprus were selected as a target population for conducting this empirical research. Climate is one of the key resources of the North Cyprus tourism industry. The typical Mediterranean climate is highly conducive to attracting

tourists from European countries for the purpose of 3S tourism. Data was obtained from tourists who were approached directly at the places where they were staying and at times that were convenient for them, by the researcher, who had received prior permission from the hotel management. To reduce the possibility of common method bias, the study considered the procedural remedies suggested by Podsakoff et al. (2003). In accordance with these, the objectives of the study and the information about assurances of the confidentiality and anonymity of the data are explained on the first page of the questionnaire. The questionnaire consists of expectation, disconfirmation, IPTCI, and loyalty measures, as well as items about the demographic information of the respondents.

The survey was conducted over a period of three weeks, 300 tourists were asked to participate in the survey, and 227 people agreed to respond to the questionnaires. However, 15 questionnaires were disregarded due to incomplete data. The remaining sample size was 212, which yielded a response rate of 70%. The demographic information of the respondents is shown in Table 1.

Place Table 1 here

About 29% of the respondents ranged in age from 18 to 27 years, 37% were between 28-37 years, and 17% were between 38-47 years. Approximately 8% of the respondents ranged in age from 48-57 years and 9% were older than 57. The sample consisted of 97 (46%) females and 115 (54%) males. In terms of education, 33% of the respondents had completed high school, 42% had bachelor's degrees, about 20% had master's degrees, and the rest had doctoral degrees. The annual income of the majority of the respondents, 59% of them, was less than $30,000, and 18% had between $30,000 and $59,999; 10% of the respondents earned between $60,000 and $89,999 per year. The annual income of the rest of the respondents was over $90,000. A full 75% of the respondents reported that this was the first time they had visited the island, with 25% being repeat visitors.

3.2. Measures

Expectation, disconfirmation, IPTCI, and loyalty were operationalized using the scale items derived from past studies of the relevant literature (Ajzen & Fishbein; 1980; Oliver & Burke, 1999; Spreng & Page, 2003; Taylor & Baker, 1994; Yoon & Uysal, 2005). Expectation was measured using two items adapted from the study by Oliver and Burke (1999). A sample item is "I knew I would like this weather." Three items were developed to measure disconfirmation. These were taken from the works of Oliver and Burke (1999) and Spreng and Page (2003). A sample item is "The weather is much worse than I had imagined." IPTCI was operationalized using four items from Ajzen and Fishbein (1980) and Taylor and Baker (1994). A sample item is "I intend to purchase tourism climate insurance on my next trip."

Three items were taken from Yoon and Uysal (2005) to measure loyalty in terms of revisiting the destination and recommending it to others. A sample item is "I will probably revisit North Cyprus in the next few years." Responses to the items were rated on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Before administering the questionnaire in the field, a pilot

study with ten tourists was conducted to check the ease with which the questionnaire items could be understood (Table I in Appendix A). The results revealed that there was no need to change the wording of any questions and the questions were devoid of ambiguity.

3.3. Data analysis

Exploratory factor analysis (EFA), descriptive and inferential analyses of the collected data, was performed using Statistical Package for Social Sciences (SPSS 20.0). To evaluate for the measurement model through confirmatory factor analysis (CFA) and the structural model, Analysis of Moments Structure (AMOS 20.0) software with maximum likelihood estimation was used. Since expectation, disconfirmation, and IPTCI constructs have not been measured in tourism climate literature, it was necessary to perform EFA to check the composition of each scale (Denstadli et al., 2011; Hurley et al., 1997). Therefore, all items were subjected to a series of EFA and CFA to assess dimensionality, convergent, and divergent validity (Anderson & Gerbing, 1988; Fornell & Larcker, 1981; Hurley et al., 1997). Composite reliability (CR) was used to test internal consistency reliability (Bagozzi & Yi, 1988). Hypothesized relationships were assessed through structural equation modeling (SEM). The x^2/df, goodness of fit index (GFI), normed fit index (NFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA) were used as model fit indices (Bentler, 1990; Bentler & Bonett, 1980; Browne & Cudeck, 1993; Joreskog & Sorbom, 1984).

4. Results

4.1. Preliminary test results

The results of EFA with a varimax rotation (principle component method) revealed that each item emerged under the desired factor. All loadings were higher than 0.4, without any cross-loading issues. The eigenvalue for each component was more than .1 (Table I in Appendix A). To confirm the scale composition explored by EFA, a rigorous psychometric approach (CFA) was applied for testing the measurement model (Olya & Altinay, 2016). According to the CFA results, none of the items was discarded due to loading with a low level (<.50), non-significant loading (p>.05), and correlation measurement error. As indicated in Table 2, the standardized factor loading for each item was found to be greater than .5 (ranged from .77 to .97) and significant (p<.001).

In terms of fit validity, ration of x2/df between 2-5, GFI >.90, CFI > .95, NFI >.90 and RMSEA <.08 indicate that the proposed conceptual model fits with the empirical data (Meyers, Gamst & Guarino, 2016). The results of fitness statistics for the research model are depicted in Figure 2. Based on the Meyerset al.'s (2016) guideline, fit statistics for proposed measurement model (x^2=91.47, df=48, x^2/df=1.90, GFI=.93, CFI=.98, NFI=.95, and RMSEA=.06), fitted quite well with empirical data.

In terms of construct validity, the average variance extracted by expectation, disconfirmation, IPTCI, and loyalty was calculated and in all cases was larger than .50. The estimated maximum shared squared variance and average shared square variance for each construct was less than the respective average variance extracted. The magnitude of composite reliability for each latent

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variable was found to be more than the common accepted cut-off (>.7) that provides evidence of measures of internal consistency reliability. To sum up, there was evidence of convergent and discriminant validity (Anderson & Gerbing, 1988; Fornell & Larcker, 1981). Means, standard deviations, and correlations of study variables are depicted in Table II in Appendix A.

Place Table2 here

4.2.Structural model test results

Figure 2 illustrates the results of SEM for hypotheses testing. There is a negative linkage between expectation and disconfirmation (β=- .49, p<.001). This means that tourists with high degrees of expectation expressed a high level of negative disconfirmation. In other words, to influence tourists towards a positive disconfirmation, marketers should keep expectation about the favorability of the destination weather low. Hypothesis 1, then, has been supported. According to the SEM results, disconfirmation is positively related to IPTCI (β=.14, p<.05). Therefore, Hypothesis 2 is supported. This means that tourists intend to purchase tourism climate insurance to have peace of mind regarding negative disconfirmation. Tourists who believe they would experience worse weather than expected at the destination will most likely intend to purchase insurance.

The results also reveal that disconfirmation is negatively related to loyalty (β=-.18, p<.05). Tourist loyalty for the destination is adversely influenced by disconfirmation. It means that those who perceived negative disconfirmation are less likely to revisit and recommend the destination. Hence, Hypothesis 3 has been supported. As demonstrated in Figure 2, IPTCI has a significant effect on loyalty (β=.16, p<.05). This means that the probability of revisiting and recommending the destination has been increased by tourism climate insurance. Therefore, Hypothesis 4 is supported. This provides a practical approach for the destination managers, policy makers, travel agencies and insurance firms to be aware of the loyalty of the tourists towards a destination which is increased by offering insurance on the favorability of the destination weather. According to model fit statistics (x^2=95.95, df=50, x^2/df=1.91, GFI=.93, CFI=.97, NFI=.96, and RMSEA=.06), the proposed model fits the empirical data adequately (Meyerset al., 2016).

Place Figure 2 here

5. Discussion and conclusion

The issue of climate change and its impact on the tourism industry as well as tourists and destinations have been discussed and elaborated in the literature. By far, the scientific community is largely convinced that climate change and its consequences is a fact rather than fiction, notwithstanding the uncertainties (Hallett, 2002; Romm, 2004; Lynch, 2018). Pertinent to climate change and tourism, discussions and warnings also abound (Craig and Feng, 2018; Weir, 2017; Wijaya and Furqan, 2018, just to name a few). Some authors have focused on specific destinations in terms of climate change and its impact on tourism (Wijaya & Furqan, 2018; Chin et al., 2018; Liu et al., 2019; Hewer & Gough, 2018). Nevertheless, ‘as a Chicago Tribune article concluded: There are, then, legitimate experts on all sides of the greenhouse theory. And all the rest of us can do is wait for more facts to clear matters up so we can decide whether—and how much—to change

our lives' (as cited in Romm, 2004. p. 91). On this ground, climatic change and its volatility, with obvious implications, as they effect tourism and stakeholders is a forgone conclusion. In this context tourists as stakeholders gradually will develop a concern about their expectation for pleasant weather while on holiday. Therefore, insuring their holiday package against possible weather uncertainty is not a farfetched scenario. For instance, Florida as one of the most popular destinations, 'holds one of the most vulnerable positions as a result of climate change (Atzori et al., 2018, p. 12). Our findings are testimony to tourists' concern regarding weather insurance even though there might be climate change skeptics among tourists. We can also make an analogy between tourists who purchase comprehensive coverage insurance for some of the products they buy, (e.g., a car), and those who might think third party insurance is sufficient. In the case of volatile climatic uncertainty, weather insurance can give tourists peace of mind. Weather insurance as a new business concept deserves attention as its logic is rooted in the effects climate change upon tourism. Furthermore, if we consider climate change as a 'crisis' (Li, 2011); tourists will react to such crisis by either insuring their purchased package (i.e., experience), or ignore the crisis with a risk of encountering an unpleasant weather experience at its core. This is because 'tourism is a climate-dependent industry, and many destinations owe their popularity to their pleasant climates during traditional holiday seasons' (Amelung et al., 2007, p. 285).

5.1.Assessment of findings

This empirical investigation contributes to current knowledge by providing useful insight to the relevant literature on destination management. First, the study reports the results concerning tourists' intentions to purchase climate insurance for the destinations where they intend to spend their holidays. IPTCI has been measured in the context of a research model in which expectation and disconfirmation function as predictors, and loyalty as a criterion variable. In agreement with precepts derived from Bagozzi's (1992) BRAT studies, the expectations that tourists have about the destination's climate (cognitive knowledge) has a significant effect on disconfirmation (affective outcome). Therefore, it is likely that disconfirmation will lead to behavioral outcomes such as IPTCI and loyalty.

The results reported in the present study provide empirical support for all four hypotheses, which are consistent with the works of Bagozzi (1992), Chen and Phou (2012), Denstadli et al. (2011), Oliver and Burke (1999), and Park, Jung, Shin, & Kim (2013). In addition, as Denstadli, et al. (2011) have recommended, further research direction with expectation and disconfirmation measured as constructs (not a single item), is important for checking the reliability and validity of the measurement. The result concerning the negative linkage between expectation and disconfirmation is in agreement with past empirical research (e.g., Denstadli et al., 2011; Oliver, 1980; Spreng & Page, 2003; Siu, Zhang, & Kwan, 2014). Essentially, negative disconfirmation is demonstrated by tourists who have high levels of expectation about the attractiveness of the climate at the destination.

In accordance with BRAT (1992), this study reveals that IPTCI and loyalty are two outcomes of disconfirmation. Climate disconfirmation causes tourists to demonstrate different behavioral

feedback. The result that disconfirmation enhances IPTCI suggests that tourists who experience unfavorable climates during their travels are more likely to seek destination climate insurance.

Climate insurance during their leisure activities gives tourists peace of mind that adverse weather will not affect their plans for recreation and other activities and that their time and money will not be wasted or lost, because they will at least be compensated. Such results agree with findings of other scholars (e.g., Day, Chin, Sydnor, & Cherkauer, 2013; Heltberg, Siegel, & Jorgensen, 2009; Martin & Belén, 2005; Mills, 2005; Oliver-Smith, 2014; Scott, Gössling, & De Freitas, 2009) that emphasize the key role that climate insurance in the tourism industry plays as a practical strategy for addressing uncertain temporal and spatial climatic conditions. According to the results of the current study, disconfirmation has a negative impact on loyalty. This means that if tourists do not encounter the climate conditions they expected during their visits, they are unlikely to return to these destinations or to recommend them to others. This result is similar to the findings of Denstadli et al. (2011) and Yoon and Uysal (2005) that have reported the significant effect that disconfirmation has on destination loyalty.

Finally, the empirical results of this study suggest that IPTCI can function as an adaptive strategy against climate change and seasonality issues. According to the results, IPTCI has a significant and positive effect on loyalty. In other words, if the favorability of the climate is assured, intentions to revisit and to recommend the destination increase. The practicality of this type of insurance has also been investigated as a useful adaptive strategy under uncertain conditions in other sectors (Lo, 2013; Lou and Sun, 2013). IPTCI helps to mitigate the negative consequences of adverse climate disconfirmation in destination marketing (De Freitas, 2014; Martin and Belén, 2005). In addition, advertising IPTCI services in the context of tour packages reminds tourists about the effects of climate change, even on their personal lives. This can lead to raising the knowledge and awareness among tourists about climate change and positively influence their attitudes and behaviors (Bandura, 1986; Jeuring & Becken, 2013; Line, Chatterjee, & Lyons, 2012).

5.2. Implications

The current study provides empirical evidence indicating that on the demand side, it is likely that tourists will purchase tourism climate insurance. If we assume there is a degree of uncertainty about weather conditions in the destination; therefore, the tourists' choice of destination and their perception of a suitable comfort zone will be affected. This will also affect the stakeholders in the industry. Mather et al asserted that 'the comfort experienced by tourists is also influenced by other elements such as disease risk, prolonged rainfall and changes in extremes. All these factors affect a leisure travelers' destination choice' (as cited in Atzori et al, 2018, p. 12). Many scholars have stressed that tourists tend to evaluate the climate attractiveness of a destination based on real situations at low levels of uncertainty. Consequently, creative and adaptive strategies must be applied to mitigate the undesirable consequences of bad weather (Chew & Jahari, 2014; Becken & Hay, 2007).

Tourism climate insurance can be a win-win strategy for both tourists and businesses and service providers. As highlighted by many researchers, insurance can serve as an adaptive strategy to

mitigate the tourist's risk perception about unpredictable events and offers entrepreneurial opportunities for business and service providers (e.g., Olya & Altinay, 2016; Olya & Alipour, 2015a;b).

This is important for commercial sectors, such as travel agencies, tour operators, and insurance firms, to consider tourism climate insurance as a new business opportunity in the current turbulent and unpredictable business environment. Since climate plays a key role in destination marketing, it can also be instrumental as well as logical in a competitive environment (De Freitas, 2014; Denstadli et al., 2011; Romão et al., 2014). Furthermore, the implications of tourism climate insurance will have legitimacy in destinations that are very vulnerable to climate change (Scott, McBoyle, & Schwartzentruber, 2004) and this is by no means an expert/index-based approach.

5.3. Limitations

There are several limitations to this empirical research that can also be used as pathways for further studies. First, this study focuses primarily on tourists' intentions to purchase tourism climate insurance; however, it would be very useful to evaluate this willingness from the perspectives of other stakeholders, namely the supply side. Also, this research is a cross-sectional study that has investigated the intention to purchase tourism climate insurance for a trip to a Mediterranean island. It is recommended that the complete expectation-disconfirmation model of Oliver (1980) be applied in other regions that have different climatic characteristics. Finally, Becken and Hay (2007) propose developing a general insight into the application of tourism climate insurance within the tourism industry; however, a detailed and practical framework is needed to contextualize the benefits of tourism climate insurance and the sustainability principals for all stakeholders, simultaneously. Nevertheless, the small sample size is also considered a limitation. The future studies should consider a larger sample size.

Place Appendix A here

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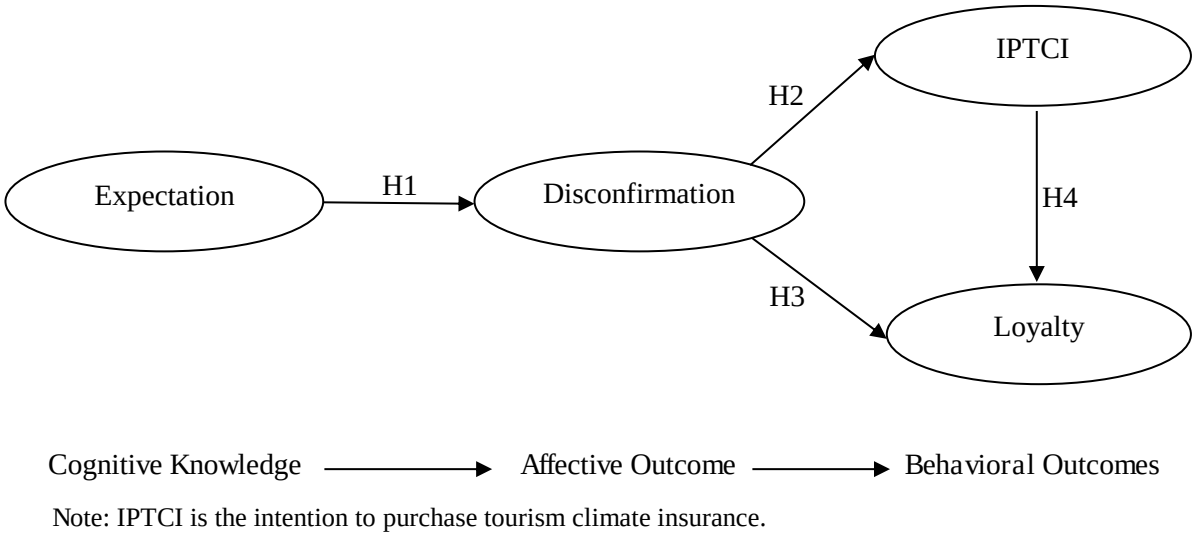

Figure1. Research Model

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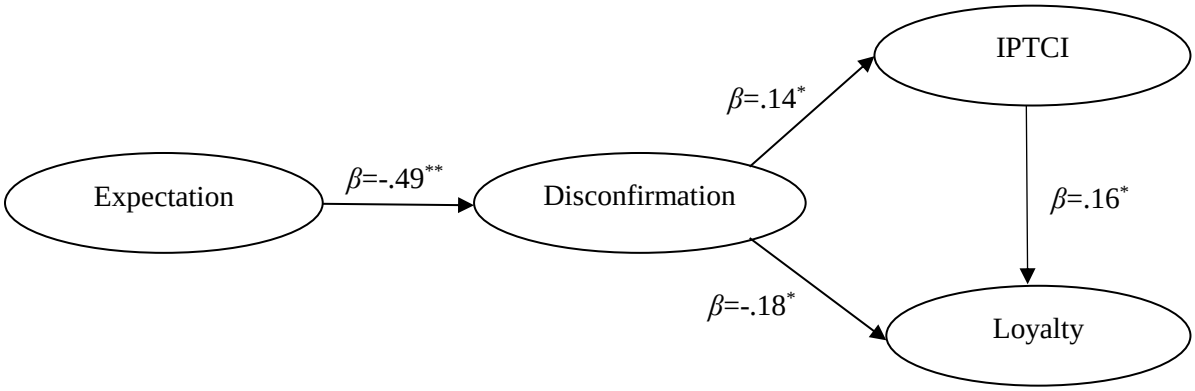

Note: Model fit indices: x^2=95.95, df=50, x^2/df=1.91, GFI=.93, CFI=.97, NFI=.96, RMSEA=.06
**: p<.001, *: p<.05

Figure 2. Structural model test results

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Table1. Respondents' profiles (N=212)

Item	N	%	Item	N	%
Age			Educational level		
18-27 years old	61	28.8	High school or less	71	33.5
28-37 years old	80	37.7	Bachelor degree	89	42.0
38-47 years old	36	17.0	Master degree	42	19.8
48-57 years old	16	7.5	PhD degree	10	4.7
>57 years old	19	9.0	Total	212	100.0
Total	212	100.0	Gender		
Annual income			Male	97	45.8
Less than $30,000	125	59.0	Female	115	54.2
$30,000-$59,999	39	18.4	Total	212	100.0
$60,000-$89,999	22	10.4	Visit time		
$90,000-$119,999	15	7.0	First time visit to the island	159	75.0
$120,000 or more	11	5.2	Repeat visitation to the island	53	25.0
Total	212	100.0	Total	212	100.0

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Table 2. Results of measurement model using confirmatory factor analysis

Latent Variable	Items	SFL	EV	AVE	MSV	ASV	CR
Expectation	E1	0.85*	.73	.75	.24	.09	.86
	E2	0.88*	.77				
Disconfirmation	D1	0.85*	.73	.85	.24	.10	.94
	D2	0.93*	.89				
	D3	0.97*	.94				
IPTCI	I1	0.88*	.78	.79	.02	.02	.94
	I2	0.95*	.90				
	I3	0.95*	.91				
	I4	0.77*	.63				
Loyalty	L1	0.94*	.59	.78	.02	.02	.91
	L2	0.90*	.81				
	L3	0.79*	.89				

Model fit indices: x =91.47, df=48, x^2/df=1.90, GFI=.93, CFI=.98, NFI=.95, and RMSEA=.06

Note: SFL: standardized factor loading, EV (δ): error variance, AVE: average variance extracted, MSV: maximum shared squared variance, ASV: average shared square variance, CR: composite reliability, GFI: goodness of fit index, CFI: comparative fit index, NFI: normed fit index, and RMSEA: root mean square error of approximation. **: SFL is significant at the .001 level. Reliability: CR>.7, convergent validity: CR>AVE, AVE>.5, and discriminant validity: MSV<AVE, ASV<AVE.

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Appendix A

Table I. Results of exploratory factor analysis

Scale Item	Items	λ	Eigenvalue	% of variance
Expectation (Oliver & Burke, 1999).			1.10	14.51
I knew I would like this weather.	E1	.90		
The information/advertisement was accurate; the weather on the island is great.	E2	.89		
Disconfirmation (Oliver & Burke, 1999; and Spreng & Page, 2003).			3.45	22.59
I just couldn't believe how bad the weather turned out to be.	D1	.88		
The weather is much worse than I had imagined.	D2	.93		
There is a big difference between the weather that I expected and what I experienced.	D3	.93		
IPTCI (Ajzen & Fishbein, 1980; Taylor & Baker, 1994).			3.70	28.45
I intend to purchase tourism climate insurance on my next trip.	I1	.91		
I plan to include tourism climate insurance in my future holiday package.	I2	.93		
If tourism climate insurance had been offered during the past trips, I would have purchased it.	I3	.94		
I need to purchase tourism climate insurance when I travel to a destination.	I4	.86		
Loyalty (Yoon & Uysal, 2005).			2.13	21.01
I will probably revisit North Cyprus in the next few years.	L1	.87		
This visit was so highly satisfying that I will repeat it.	L2	.91		
I will recommend North Cyprus to other people (e.g., friends and relatives)	L3	.93		

Note: λ is the factor loading coefficient. IPTCI stands for intention to purchase tourism climate insurance. The Kaiser-Meyer-Olkin (KMO) measure with .76 and Bartlett's test of Sphericity of 2154.43 was significant ($p<.001$). Sources of items are provided in the parenthesis.

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Table II. Means, standard deviations, and correlation matrix of the study variables

Variable	Mean	SD	I.	II.	III.	IV.
I. Expectation	5.78	1.28	1.00			
II. Disconfirmation	2.24	1.57	-.44**	1.00		
III. IPTCI	4.29	1.68	.06	.15*	1.00	
IV. Loyalty	5.84	1.23	.13*	-.14*	.12*	1.00

Note: ** Correlation is significant at the 0.01 level, * Correlation is significant at the 0.05 level. Composite scores for each variable were computed by averaging corresponding item scores. The variables rated from 1 ‘strongly disagree’ to 7 ‘strongly agree.’