

## Session F2

### **Stated and Revealed Preferences for Travel Carbon Offset - Hongrun Wu, Hanyuan Zhang and Haiyan Song**

One potential solution for decarbonizing tourism involves facilitating tourists to contribute to climate mitigation by purchasing voluntary carbon offset (products). To support the development of travel carbon offset (TCO), it's essential to comprehend tourists' choices and preferences towards TCO.

The stated preference (SP) and revealed preference (RP) data are two primary sources of responses used to analyze choice behavior. The RP data involves real-market choices, while the SP data involves situations where consumers choose in hypothetical scenarios.

The SP data offers valuable insights into consumers' attribute trade-offs and can provide information about preferences for new attributes or products. Therefore, the SP methods are dominantly employed in studies related to carbon offset choices. However, a common criticism of the SP results is that stated preferences may not always predict actual behavior. In consumer choice behavior, a typical approach to assess the validity of the SP results involves using the RP data, which includes real-market transactions for related goods. However, the voluntary offset market is still in its early stage, which is still evolving with supply chaos and a lack of standardization. This has hindered the availability of the transactional RP data. Additionally, the RP data may lack the necessary variability to identify the attributes effectively. To address these challenges, the data enrichment approach, which combines both the SP and RP data, could be used to leverage the strengths of both data types while compensating for their respective limitations.

To better reflect tourists' real preferences and choices of TCO, this study, following the data enrichment paradigm, aims to identify the heterogeneity (or/and consistency) between and within the SP and RP data by developing and comparing the results of the combined models. The study will involve a joint SP and RP survey, with the RP section gathering data on tourists' recent actual offset behavior while the SP part collects responses regarding travel offset choices in a discrete choice experiment. This study will adopt a nested logit model to combine two datasets and measure the scale effects to identify the scale differences between RP and SP. This study will also develop joint random parameter/effect models to identify the sources of heterogeneity within a dataset (individual/alternative-specific heterogeneities) and between RP and SP (state dependence).

The results of the combination and comparison of the SP and RP data will offer valuable insights to researchers and practitioners, helping them better understand tourists' real preferences for carbon offset and come closer to its actual valuation. The results can also encourage the development of TCO products/services based on both the SP and RP data. Furthermore, the anticipated improved performance of the combined SP/RP model may guide future research on carbon offset choices.

## **Investigating the non-linear impacts of seven types of natural disasters on inbound tourism: insights from the EM-DAT database - Léopold Biardeau and Mondher Sahli**

The growing frequency and intensity of disasters due to climate change present considerable risks for tourist destinations, necessitating comprehensive research on their economic impacts. This study investigates the contemporaneous dose-response relationship between natural disasters and inbound tourism by estimating a flexible binned regression model. The analysis is conducted in a panel data setting from 1995-2019, spanning over 150 countries and accounting for the impact of more than 8,300 individual disasters from seven distinct categories. Examining seven natural disaster types (earthquakes, epidemics, extreme temperature events, floods, landslides, storms, and wildfires) and five disaster impact metrics reflecting their human and economic impacts, the analysis reveals that increased disaster impact, except for earthquakes, correlates with reduced levels of tourist arrivals and travel expenditure. The paper provides valuable insights into the relationship between disasters, climate change, and tourism economics, informing disaster mitigation strategies and broader climate change assessments for tourism sector policy and decision-makers.

## **Failure of carbon offsetting in tourism: evidence from the Canary Islands, Spain - Eugenio Diaz-Farina, Aythami Santana-Padrón, Jaime Blazquez Valeron and Carmelo León González**

Reducing environmental impact, in addition to the negative social and economic impacts, of tourism activities is a necessary condition for achieving sustainable tourism. There are different economic instruments to encourage more environmentally responsible behavior in the tourism sector. Carbon tax paid by tourists is a good example of this type of economic incentive, but they are unpopular. As a more attractive alternative for tourists, carbon emission offsetting is offered. In this study, we analyzed the willingness of almost 40,000 tourists to voluntarily offset CO<sub>2</sub> emissions after their vacations in the Canary Islands, the most touristic (NUTS2) region in the whole EU. A database is available with multiple variables on the socioeconomic and demographic characteristics of tourists, their environmental awareness, the activities carried out at the destination, the characteristics of the accommodation, and the expenditure made. The methodology used is Bayesian Model Averaging (BMA) for ordered logit models to identify the determinants of tourists' willingness to pay voluntarily to offset their CO<sub>2</sub> emissions. The results show that tourists who consume services with the greatest environmental impact associated, such as all-inclusive services, are the least willing to voluntarily compensate. Additionally, tourists practicing nature-based tourism, with higher education and higher income levels are more willing to compensate for the emissions associated with their vacations. Under this scenario, we point to the failure of voluntarism among tourists and the need to adopt taxes to internalize the environmental impact of tourism.

## **Exploring Us Tourists' Willingness to Pay for Travel to A Volcanic Island with Low Air Travel Connectivity - Sergio Alvarez, Karen C. N. Tavares, Robertico Croes, Manuel Rivera and Kelly Semrad**

Modern realities such as the pandemic and worldwide financial changes have generated a shift of tourists' travel preferences from urban and coastal destinations towards rural, culture, and nature-based mountain places (Osti and Nava, 2020; Huang et al., 2021; Li et al., 2021; Ongsakul et al., 2022). Destinations that match such preferences are faced with opportunities, which can be proxied by understanding tourists' willingness to pay (WTP) for such destination products. This study examines U.S. Tourists' WTP for a vacation in the Caribbean Island of Saba, a volcanic or mountain island that is economically isolated due to a small airfield, requiring international tourists to take a connecting flight from a nearby large airport.

Relying on contingent valuation (CV), respondents were presented with hypothetical scenarios and asked their WTP for a visit to Saba. CV is proposed as a better approach than inference of WTP from observed behaviors (Alvarez et al., 2022), and has been applied in the context of tourism in many coastal destination studies including conservation funds and improvements (Birdir et al., 2013; Piriyaapada and Wang, 2015; Schuhmann et al., 2016, 2019). Not many studies consider the total WTP for a visit to a specific destination or for the specific characteristics of destinations (Boto-Garcia et al., 2020). This study contributes to the literature by applying CV to estimate tourists' WTP for visits to an isolated volcanic island.

A sample of U.S. residents over 18 years old with previous trips to Caribbean destinations within the past five years was selected. A total of 448 usable responses to the Qualtrics survey were obtained in September 2022. Besides screening questions, the survey included 5 sections: a) travel habits, b) evaluation of island attributes, c) choice experiment, d) willingness to pay for a trip to Saba, and e) demographics. Preliminary results indicate large variability in the distribution of annual vacation spending among U.S. travelers and previous visitation to Caribbean destinations among the sample. Further, preference for low-lying coral islands with high transportation connectivity is also observed. A preference for family tourism is prevalent, followed by a desire for relaxation and wellness tourism when considering Caribbean destinations. The WTP analysis indicated a high variability among respondents, ranging from \$0 to \$10,000 USD for a 4 days 5 nights trip to Saba presented in the question scenario. Further demographic characteristics are considered in alignment with WTP.

Given U.S. tourists' preference for high air connectivity and low-lying coral islands, Saba's isolated volcanic characteristics pose a market challenge. However, a careful WTP analysis considering demographic factors allow for understanding and segmentation of potential tourists. Such knowledge advances theoretical understanding of WTP for volcanic islands with low air travel connectivity and expands on CV research in destination specific contexts. Managerially, results assist in tourism planning and development, as well as market segmentation and marketing efforts.