

# 101 Exploring the association of trip characteristics and motivations with pro-environmental outcomes of Antarctic tourists: An analysis based on PRE and POST surveys.

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Tourism in Antarctica has significantly increased and diversified over the last decades (Carey, 2020). In the 2019-2020 season, the International Association of Antarctica Tour Operators (IAATO) reported 74 401 tourists visiting the continent, representing a 134% increase from the 2010-2011 season (IAATO, 2021). While Antarctic tourists are purported to have meaningful interactions with the Antarctic environment, little empirical research exists to understand how motivations and trip characteristics of the Antarctic journey shape tourists' experiential outputs, which may in turn influence their pro-environmental outcomes, both core elements of Nature Based Tourism (NBT) experiences.

Powell et al. (2009, 2012) adapted the interactional model to NBT experiences as a lens to explore the effects of the Antarctic experience. The authors suggested that the interactive exchange between tourists' characteristics and their physical and social environment could influence their experiential outcomes. Based on this, we proposed a new model (Fig. 1) in which we conceptualized perceived importance of trip characteristics (PITC) and tourist motivations as key inputs. Different from the literature, we differentiated experiential outputs and pro-environmental outcomes. Specifically, satisfaction, perceived learning (PL) and measured learning (ML) were considered experiential outputs with potential influences on pro-environmental outcomes, which constituted environmental concerns (EC), management preferences (MP), and behavior intentions (BI).

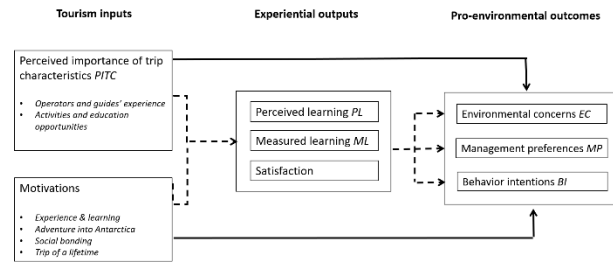


Figure 1: A conceptual model showing the potential relationship between tourism inputs, experiential outputs, and their influence on pro-environmental outcomes.

This presentation reports results from a larger ongoing study in which we are examining different parts of the conceptual model. Here we focus on one research question: How are the differences in trip characteristics and motivations associated with experiential outputs and pro-environmental outcomes of Antarctic tourists? To examine these relationships, we conducted exploratory analyses using 242 pre-and post-trip surveys collected during the 2019- 2020 Antarctic season. First, we applied

Spearman correlations to determine the association among PITC variables, experiential outputs (ML, PL, satisfaction), and pro-environmental outcomes (EC, MP, BI). We applied a two-step clustering procedure to identify a typology of tourists reflecting their travel motivations. We also applied Kruskal-Wallis tests to compare Antarctic motivation groups on their respective associations with experiential outputs and pro-environmental outcomes.

Our Spearman correlations showed highly significant associations of PITC variable activities and education opportunities with both PL ( $p(240) = .38, p < .0001$ ) and satisfaction variables ( $p(240) = .26, p < .0001$ ). PITC variable operator and guides' experience was also significantly correlated with

PL ( $\rho(240) = .12, p < .043$ ) and satisfaction ( $\rho(240) = .19, p < .002$ ). Regarding the pro-environmental outcomes, the PITS variable activities and education opportunities was significantly correlated with the BI dimensions of policy support ( $\rho(240) = .15, p < .015$ ), financial support ( $\rho(240) = .17, p < .005$ ), and the variable MP ( $\rho(240) = .12, p < .048$ ). While the variable operator and guides' experience was significantly correlated with the same BI dimensions policy support ( $\rho(240) = .13, p < .053$ ) and financial support ( $\rho(240) = .12, p < .044$ ) and the variable sharing information ( $\rho(240) = .13, p < .037$ )

Results of our cluster analysis revealed a four-group typology of Antarctic tourists: 1. Experiencing & learning, 2. Social bonding, 3. Adventure into Antarctica, 4. Trip of a lifetime. Only two significant correlations were identified between these motivation groups with the output or outcome variables. Kruskal-Wallis tests revealed significant differences in means for PL ( $H(3) = 7.53, p = .056$ ), with the trip of a lifetime group reporting the highest levels of PL ( $M = 8.66$ ), significantly higher than the social bonding group ( $p = .053$ ). ML outcomes were also different ( $H(3) = 6.67, p = .082$ ), with the experience & learning group ( $M = 0.13$ ) reporting the highest overall mean, significantly higher than the

adventure group ( $p = .082$ ). None of the pro-environmental outcomes showed a significant direct association with any motivation groups.

Our results exhibit similarities with past studies on NBT experiences (Beh & Bruyere, 2007, Miller et al., 2020 Ardoin et al., 2015, Ballantyne et al., 2012), which demonstrate the importance of satisfaction and learning in facilitating pro-environmental outcomes. We confirmed that specific inputs of motivations and PITS influenced experiential outputs differently, especially PL and satisfaction, which were in turn strongly associated with pro-environmental outcomes. Our findings reinforce the importance of creating meaningful and transformative Antarctic experiences for tourists who are traveling with a diversity of motivations and expectations if pro-environmental outcomes are to be achieved. We also emphasize the essential role of Antarctic tour operators in creating and tailoring communication and educational strategies for their diverse guests—two essential components of NBT experiences and critical elements for the evolving Antarctic tourism.

## References

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