Tourism-related Climate Change Perspectives: Social Media Conversations about Canada's Rocky Mountain National Parks

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Introduction - While perceptions of tourism-related climate change causes and impacts in traditional media, such as newspapers, have been relatively well-studied (Capstick et al., 2015), there are only a few studies that focus on how climate change is perceived in social media (SM). SM provides significant insights into informal conversations in society, it is an exceptional source for studying everyday discourses outside the scope of mass media. One of the main objectives of this study is to investigate the public understanding and discursive construction of climate change in SM. Employing linguistic analysis and discursive analysis of laypeople's conversations about climate change in online reviews, this study seeks to extend knowledge about how climate change is perceived in the sense-making practices of visitors to Jasper National Park (JNP). It is argued that discursive explorations can provide important insights into the public debate on climate change, which can potentially help tourism providers improve their communications and management practices to address the needs and interests of the public. This paper explores the discourse produced on TripAdvisor regarding climate change and how opinions are expressed, discussed, and created through online reviews of JNP. Tourists' reactions to climate change and their interests in engaging in pro-environmental behaviors that will mitigate and minimize tourism activity related impacts are also reported.

Literature review - Long-term analyses of the effects of climate change on tourism systems have been a popular area of research in the past two decades (Scott et al., 2016; Steiger et al., 2019). However, the ability to understand tourists' behaviors and responses toward this environmental issue is vital as well. This understanding will require the development of new approaches to not only illustrate a clearer picture of tourists' thoughts and beliefs, but to improve their understanding and ability to address climate change. National parks and protected areas throughout the world already demonstrate impacts of climate change such as glacial retreat (Hall & Fagre, 2003). Tourist activity has introduced new pressures on both human and biological communities in mountain destinations, including fragile alpine and riparian environments, and accelerates climate change through the act of travel (Beniston, 2003). It is important for visitors to acknowledge that climate change causes problems for ecological wellbeing as well as to accept their central role in this problem. Tourism scholars have explored the degree of public understanding of climate change in relation to tourism (Becken, 2007; Gössling et al., 2007). In the last two decades, efforts to research climate change communication and its comprehension by and impact on the general public have grown considerably. In one of the first attempts to study climate change communication on SM by applying linguistic analysis, Koteyko (2010) argues that blog discussions are rich sources of data for scholars studying the conceptualizations of climate change conversations. Visitors to nature-based tourism destinations are exposed to climate change-related messages on SM and contribute to these conversations through their postings on various SM platforms. Documenting visitors' perceptions of climate change impacts related to JNP visitor experiences will be the first objective of this paper. Studying public perceptions of climate change on SM can provide evidence of what tourists know and believe about climate-related concerns, and how they communicate about such issues, with the ultimate goal of enhanced communication between tourism providers and tourists regarding the potential risks and benefits of climate change. An analysis of tourist perceptions of climate change should also consider the tourists' understanding of their own role in this process. Hence, a second objective of this paper is to evaluate what tourists know about their own contribution to tourism-related environmental problems, particularly climate change.

Data and procedure - This study combines a corpus-linguistic approach with thematic analysis to investigate online lay discourse of climatic change issues in nature-based tourism destinations. A qualitative corpus linguistic tool in the form of concordances was applied, which allows examination of the lexical environment of a search term (e.g., climate). When it comes to qualitative analysis, thematic discourse analysis was applied and followed Braun and Clarke's (2006) suggested steps for thematic analysis. All English travelers' reviews about top natural attractions and park areas in JNP were extracted from the third-

party review website TripAdvisor, ranging from December 2002 to October 2019 (a total of 17224 English reviews). After a detailed review of the tourism climate change literature, a vocabulary of climate change keywords was developed (e.g., climate change, global warming, and glacier retreat). This keyword vocabulary was subsequently used to identify and separate climate change-expressed reviews from the rest of the corpus. After a close reading check to ensure the relatedness of the extracted reviews to climate change conversations, a total of 982 reviews remained for further thematic analysis (Braun & Clark, 2006). To sum up, the methods involved deductive extraction of relevant TripAdvisor postings and inductive analysis of each posting's content.

Findings and discussion - Findings from the discourse thematic analysis offer an intriguing picture of the representations of climate change in the social medium TripAdvisor. The two major thematic clusters that emerged from the corpus are related to glaciers and wildfires. Of particular interest is the cluster about glacier tourism and visitors' different viewpoints about the effects of climate change on the Athabasca Glaciers. The glacier thematic cluster contained several sub-clusters: climate grief, the role of interpretation and education, destination competitiveness, pro-environmental behavior, corporate environmental responsibility, and disappearing attraction. Running's (2007) stages of climate grief were observed in the online reviews, namely denial (containing climate change uncertainty and glacier retreat as natural phenomenon), climate depression (including solastalgia and climate change hopelessness; read Albrecht et al. (2007) for more on this), climate acceptance (including climate change and glacier retreat acknowledgments), and anger and shame (containing eco-guilt). The role of education and interpretation is another extensive sub-theme under the glacier super-theme, which included conversations around informative tour, signage, and visitor center (Discovery Centre) in one end of the spectrum, and reporting on the lack of delivery of appropriate information by the aforementioned entities on the other end. Pro-environmental attitudes and behaviors made up another significant proportion with the most commonly identified sub-themes as Environmentally Responsible Behavior (ERB), environmental concern, collective action, environmental generativity (concerns for future generations; read Urien and Kilbourne (2011) for more on this), and environmental solution (tourists' climate mitigation recommendations). The destination environmental competitiveness thematic category comprises sub-themes relating to perceived trip value, destination loyalty, and the Athabasca glaciers' comparative advantages (comparisons with other glaciers). Disappearing attraction was another theme with discourse about the Athabasca Glaciers as a last chance tourism destination as well as showing a feeling of awe upon visiting the glaciers. The sixth and last category under the glacier super-theme focuses on corporate environmental responsibility, with majority of discourse about expectations and critiques for CER in one end of the spectrum and acknowledgment of tour operators' (in this case Banff Jasper Collection by Pursuit) environmentally-friendly practices in the other end. Finally, the last super-theme relates to wildfire and includes online reviews reporting on eco-anxiety as well as negative impacts of wildfires on both nature and visitor experience. However, SM texts failed to reveal clear links between visitors' experiences of wildfire events and their perceptions of climate change, or if they thought climate change was associated with wildfires.

Conclusion - This study unearthed divergent themes regarding tourists' perceptions of climate change upon visiting JNP, with the most significant discourses on climate grief, education and interpretation, pro-environmental behaviors, and last-chance tourism. It was also observed that despite scientific links between increasingly intense and extended wildfire seasons and climate change, visitors failed to connect wildfire's negative impacts on visitors' experiences in Canada's Rocky Mountain national parks with climate change. Some practical implications and suggestions for DMOs and tourism providers in JNP include: encouraging visitors to engage in small changes with an emphasis on incremental pro-environmental accomplishments; place-based interpretation programs that take advantage of the climate change impacts that are readily observable at JNP while supplementing educational programs with some degrees of direct control practices (e.g., rewards, punishment, incentives, and disincentives) for both operators and tourists; emphasizing comparative advantages and core competencies of JNP in their destination branding (e.g., accessibility, cost/value, roadway viewing; read Mirzaalian (2021) for more on this); and expansion of crisis management

planning and programs to support tourists and operators to prepare, respond and recover from wildfires (e.g., infrastructure and training investment, recovery marketing campaigns).

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