Climate Change and the Response of Food Truck Industry: A Study on Vancouver Visitors' Destination

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Introduction

Climate and weather are important for tourism, and became one of the "hottest" issues in tourism development discussions, policy, and research (UNWTO, 2003). The relationship between tourism and climate change has been researched for many years ago (e.g., Scott et al., 2013; Fang et al., 2018). There is a wealth of research available in the literature on tourism and climate change that have mainly focused on accommodation sectors, nature based tourism operators, and snow-based winter tourism activities (e.g., Jarvis & Ortega, 2010; Saarinen, Hambira, Atlhopheng, & Manwa, 2012; Mushawemhuka, Rogerson, & Saarinen, 2018; Pandy & Rogerson, 2019). However, existing research highlights the need to understand the level of climate change knowledge and perceptions among small tourism operators (hereby food truck industry) in order to establish suitable adaptation (and mitigation) strategies (Saarinen & Tervo, 2006; Becken, 2013; Hambira et al., 2013; Tervo-Kankare et al., 2018). Studies have noted that there is relative lack of empirical studies on climate change perceptions and adoption in food truck operations across North America especially from Vancouver context. Vancouver is strongly associated with tourism and at the forefront of climate change impact. The tourism and hospitality sector is a major economic importance in British Columbia (B.C) as it is a major source of employment and revenue. According to the Statistic Canada, 6.1 million tourist visited to B.C and B.C. tourism brought $18 billion a year to the provincial economy in 2017 (Carrigg, 2019). Tourism is also important to the city of Vancouver, which is located west coast of Canada and attracted more than 10.3 million visitors and generated $4.8 billion for the local economy in 2017 (Chan, 2018). However, data also shows that tourism industry in Vancouver have major threat of climate change (Denis, 2015). Thus, how the tourism and hospitality sectors (hereby food truck sectors) are responding to the challenges of climate change in Vancouver, gives a sense of urgency for further research.

This research therefore, will explore how food truck operations in Vancouver, Canada are responding to challenges of the impact of climate change. More specifically, it will explore whether these small tourism operators are aware of how important the implications of climate change are for them, how they are strategically responding to climate change, and what challenges they may have to address any changes.

Literature Review

Climate Change and Tourism Industry

> The relationship between climate change and tourism is bidirectional, in that tourism activity is both impacted by, as well as being a major contributor to, this phenomenon (Buhalis & Costa, 2005, p. 45).

The linkage between climate and tourism is very strong. Region's tourism potential, attractiveness and tourism demand and supply depends on climate (Saarinen & Tervo, 2006; Becken & Hay, 2007; Pang et al., 2013). Further, the impact of global climate change on tourism activities differ according to the location of the region, its resources forming the basis for tourism activities and

services and adaptive capacity (Andersson et al., 2006; Biggs et al., 2008; Kaján et al., 2014). Dewar (2005) and Saarinen and Tervo (2006) also noted that the tourism sector's adaptive capacity depends largely on entrepreneurs' and managers' knowledge about and perceptions of climate change, which will affect their views on adaptation and the kind of adaptation strategy they would envisage. Thus, there might be 'winners and losers' in the tourism and climate change nexus.

Climate change has resulted in the alteration of weather phenomena such as increase in drought events, erratic and spasmodic rainfall, and sea level rises (Gössling et al., 2018). This climatic alterations directly and indirectly affect the environment and as a result, the environment is prone to change (Kaján & Saarinen, 2013). These environmental changes local diversity, reduction in landscape aesthetics, decrease wildlife, increase coastal erosion and damage the tourism infrastructure (Mushawemhuka et al., 2018). Furthermore, emissions from tourism are also predicted to grow rapidly, with an increase of 152% between the years 2005 and 2035 without concrete action to reduce it (UNWTO, 2007, p. 4), thus contributing to the climate change. Therefore, adapting to climate change has become vital for survival (Prideaux et al., 2010).

Climate Change Perceptions and Adaptions

Adaptions refers to action aiming to reduce the negative effects of climate change (Smith & Wandel, 2006). In general, the adaption concepts focuses on how a unit or system aims to adapt to change through transforming its operations (Kelly & Edgar, 2000), and usually seen as a local scale response (Nalau et al., 2015). In tourism business studies the need for adaption has been studied extensively (e.g., Scott et al., 2012; Kaján & Saarinen, 2013), with a focus on the adaption perceptions, attitudes and implementations plans by tourism operators (Brouder & Lundmark, 2011; Tervo-Kankare et al., 2018). While, from a destination context, adaption and related actions should contribute to climate resilient development which increases the systems' (climate and weather) stress tolerance and the ability to reorganize or continue operations in changing environments (Lew, 2014). Thus, adaption can plays a critical role in resilience and can enhance sustainable development locally and in the wider tourism system and societies (Espiner, Orchiston, & Higham, 2017).

The tourism industry is increasingly incorporating climate change adaption into its planning. However, the views of tourism stakeholders about climate change often are limited. Kaján and Saarinen (2013) argue that there is an alarming number of tourism businesses that are disregarding climate change as a current threat regardless of the amount of evidence available, including the recent report by the Intergovernmental Panel on Climate Change (IPCC, 2014). Other several studies has also noted that the level of climate change adaption is rather low in many tourism businesses (Matasci, Kruse, Barawid, & Thalmann, 2014; Cheablam & Shrestha, 2015).

The Food Truck Industry

Although food truck fall under the realm of the restaurant industry, but they differ significantly. Food truck industry have become one of the top concept trends in the restaurant industry (National Restaurant Association, 2018). Food trucks offer new opportunities to restaurants, entrepreneurs, and other hospitality and tourism businesses to engage customers (Off the Grid, 2018). Several

reasons have been noted in research for launching a food truck business include new concept testing, keeping up the new trends, reaching out to alternative markets, increasing brand awareness, and higher profitability and lower cost options compared to brick and mortar restaurants (Beato, 2012; Weber, 2012; Klin, Shah, & Rubright, 2014; Off the Grid, 2018). Additionally, food trucks become valuable resources in tourism by providing food and beverage options in locations and local cuisine (Kline et al., 2014).

Food truck business is growing in unprecedented way (McLaughlin, 2009; Brocki, 2012; IBISWorld, 2019). The industry has been expanded significantly at an annual rate of 6.8% from 2014 to 2019 generating $1 billion revenue (IBISWorld, 2019). The growth of this industry continues to be positive due to the increase in household income and changes in customer preferences (IBISWorld, 2019). Responding to this demand, there are 2,416 food trucks serving customers in Canada (Government of Canada, 2019). In 2019, research shown that food truck revenue expected to reach $358.4 million dollars in Canada (IBISWorld, 2019). This is expected to grow 3.8 percent annually until 2020 (IBISWorld, 2019).

Food truck industry has become also popular in Canada's most tourism destination city-Vancouver, BC along with other cities such as Toronto and Montreal. Smith (2015) stated that there are approximately 305 food truck establishments operating in Metro Vancouver and Victoria, generating annual revenue of $50 million. Although food truck industry is constantly growing in Vancouver, there has been lack of research undertaken to understand this industry in the context of climate change perceptions and adoption. As most of the previous research related to the food truck context discussed about psychological, sociological, and cultural factors (Bhimji, 2010; Gazley et al., 2014; Shin, Kim, & Severt, 2018, 2019), food safety issues (Okumus, Sönmez, Moore, Auvil, & Parks, 2019), and decision making process of consumption of street foods (Shin, Im, & Severt, 2019). Thus, it is this need to the development of this study.

Methodology

This study will be exploratory in nature that will shed light on the food truck industry and its impact on climate change. The city of Vancouver is selected as the study location because it is the third largest city in Canada and it has been described as one of the top travel destination in the world (Tourism Vancouver, n.d.). Beyond being the top travel destination, Vancouver's food trucks ranked third-best food truck city in North America for foodies worldwide (Heatherington, 2013) and nominated for the "Foodiest City on Earth" award by British culinary website Chowzter (Birkett, 2014).

This study will be based on individual semi-structured interviews in Vancouver with operators/managers of food truck operations. All food truck operators in the Vancouver will be approached and ask to participate in the study. The sample of food truck operations will be acquired from telephone directories and websites that maintain extensive food truck establishment addresses. Due to convenience, speed, and low cost (Patton, 2001), purposive sampling and non-probability method will be applied to gather information from food truck operations (Patton, 2001; Neuman & Robson, 2009). The initial request for an interview will be addressed to all the food truck operators through email and/or telephone. Further, to improve the validity and reliability,

data will be triangulated with literature review, document analysis, and semi-structured interviews (Molina-Azorín & Font, 2016).

The approximately hour-long individual semi-structured interviews will cover the following key areas: background information about the food truck operators and their businesses; the impact that climate change has on food truck operators in Vancouver; the awareness of food truck operators about the issues and challenges related to climate change; the strategies that food truck operators are taking regarding the issues and challenges of climate change; and possible barriers to an environmental response and implementation of change.

Conclusions

Overall, outcomes of this study will provide valuable knowledge and directions to develop clear and informed strategies to respond to climate change on tourism subsectors (hereby food truck industry) in Vancouver and in Canada as a whole in the context of sustainable tourism in future.

References

Andersson, L., Wilk, J., Todd, M. C., Hughes, D. A., Earle, A., Kniveton, D., ... & Savenije, H. H. (2006). Impact of climate change and development scenarios on flow patterns in the Okavango River. *Journal of Hydrology*, *331*(1-2), 43-57.

Beato, G. (2012). *Sizzler has a food truck. Sorry, Hipsters*. Retrieved from http://www.adweek.com/brand-marketing/sizzler-has-food-truck-sorry-hipsters-142481/

Becken, S. & Hay, J.E. (2007). *Tourism and Climate Change: Risks and Opportunities*, Clevedon: Channel View.

Bhimji, F. (2010). Struggles, urban citizenship, and belonging: The experience of undocumented street vendors and food truck owners in Los Angeles. *Urban Anthropology and Studies of Cultural Systems and World Economic Development*, *39*(4), 455–492.

Biggs, R., Simons, H., Bakkenes, M., Scholes, R. J., Eickhout, B., van Vuuren, D., & Alkemade, R. (2008). Scenarios of biodiversity loss in southern Africa in the 21st century. *Global Environmental Change*, *18*(2), 296-309.

Brocki, L. (2012, July 3). Inside Vancouver's food truck business. *Business*, Retrieved from https://www.bcbusiness.ca/inside-vancouvers-food-truck-business

Brouder, P., & Lundmark, L. (2011). Climate change in Northern Sweden: Intra-regional perceptions of vulnerability among winter-oriented tourism businesses. *Journal of Sustainable Tourism*, *19*(8), 919-933.

Buhalis, D. & Costa, C. (2005). *Tourism Management Dynamics*. Oxford: Butterworth-Heinemann.

Carrig, D. (2019, Feb 25). Record number of international tourists flock to B.C. *Vancouver Sun*. Retrieved from https://vancouversun.com/news/local-news/record-numbers-of-international-tourists-flock-to-b-c

Chan, K. (2018, Mar 20). New record for Vancouver tourism with over 10.3 million visitors in 2017. *Venture Vancouver*. Retrieved from https://dailyhive.com/vancouver/record-vancouver-tourism-overnight-visitors-2017

Chang, J., & Hsieh, A. T. (2006). Leisure motives of eating out in night markets. *Journal of Business Research, 59*(12), 1276–1278.

Cheablam, O., & Shrestha, R. P. (2015). Climate change trends and its impact on tourism resources in Mu Ko Surin Marine National Park, Thailand. *Asia Pacific Journal of Tourism Research*, *20*(4), 435-454.

Choi, J., Lee, A., & Ok, C. (2013). The effects of consumers' perceived risk and benefit on attitude and behavioral intention: A study of street food. *Journal of Travel & Tourism Marketing, 30*(3), 222–237.

Denis, Jen. (2015, Feb 16). Climate change looms as major threat to key B.C industries. *Environment*. Retrieved from https://biv.com/article/2015/02/climate-change-looms-major-threat-key-bc-industrie

Dewar, K. (2005). Everyone talks about the weather. In C.M. Hall & J. Higham (Eds.), *Tourism, Recreation and Climate Change* (pp.233-246). Channel View Publications: Clevedon.

Espiner, S., Orchiston, C., & Higham, J. (2017). Resilience and sustainability: A complementary relationship? Towards a practical conceptual model for the sustainability–resilience nexus in tourism. *Journal of Sustainable Tourism*, *25*(10), 1385-1400.

Fang, Y., Yin, J., & Wu, B. (2018). Climate change and tourism: a scientometric analysis using CiteSpace. *Journal of Sustainable Tourism*, *26*(1), 108-126.

Gazley, B., Tschirhart, M., Esparza, N., Walker, E. T., & Rossman, G. (2014). Trade associations and the legitimation of entrepreneurial movements: Collective action in the emerging gourmet food truck industry. *Non-profit and Voluntary Sector Quarterly, 43*(2S), 143S–162S.

Gössling, S., Hall, C. M., & Scott, D. (2018). Coastal and Marine Tourism. In M. Salomon and T. Markus (Eds.), *Handbook on Marine Environment Protection* (pp. 773-790). Cham: Springer International.

Government of Canada. (2019). *Summary-Canadian industry statistics*. Retrieved from https://www.ic.gc.ca/app/scr/app/cis/summary-sommaire/72233

Hambira, W. L., Saarinen, J., Manwa, H., & Atlhopheng, J. R. (2013). Climate change adaptation practices in nature-based tourism in Maun in the Okavango Delta area, Botswana: How prepared are the tourism businesses?. *Tourism Review International*, *17*(1), 19-29.

Heatherington, R. (2013, April 26). *Vancouver named third-best food truck city in North America*. Retrieved from https://bc.ctvnews.ca/vancouver-news-headlines/vancouver-named-third-best-food-truck-city-in-north-america-1.1256364

IBISWorld. (2019). *Street vendors in Canada: Market research report.* Retrieved from https://www.ibisworld.com/canada/market-research-reports/street-vendors-industry/

IPCC (Intergovernmental Panel on Climate Change). (2014). *Organizational History*. Retrieved from http:// www.ipcc.ch/organization/organization_history.shtml.

Jarvis, N., & Ortega, A. P. (2010). The impact of climate change on small hotels in Granada, Spain. *Tourism and Hospitality Planning & Development*, 7(3), 283-299.

Kaján, E., & Saarinen, J. (2013). Tourism, climate change and adaptation: A review. *Current Issues in Tourism*, *16*(2), 167-195.

Kelly, P. M., & Adger, W. N. (2000). Theory and practice in assessing vulnerability to climate change andFacilitating adaptation. *Climatic change*, *47*(4), 325-352.

Kline, C., Shah, N., & Rubright, H. (2014). Applying the positive theory of social entrepreneurship to understand food entrepreneurs and their operations. *Tourism Planning & Development, 11*(3), 330–342.

Lew, A. A. (2014). Scale, change and resilience in community tourism planning. *Tourism Geographies*, *16*(1), 14-22.

Matasci, C., Kruse, S., Barawid, N., & Thalmann, P. (2014). Exploring barriers to climate change adaptation in the Swiss tourism sector. *Mitigation and Adaptation strategies for global change*, *19*(8), 1239-1254.

McLaughlin, K. (2009, June 5). Food truck nation. *The Wall Street Journal.* Retrieved from https://www.wsj.com/articles/SB10001424052970204456604574201934018170554

Molina-Azorín, J. F., & Font, X. (2016). Mixed methods in sustainable tourism research: an analysis of prevalence, designs and application in JOST (2005–2014). *Journal of Sustainable Tourism, 24*(4), 549-573.

Mushawemhuka, W., Rogerson, J. M., & Saarinen, J. (2018). Nature-based tourism operators' perceptions and adaptation to climate change in Hwange National Park, Zimbabwe. *Bulletin of Geography. Socio-economic Series*, *42*(42), 115-127.

National Restaurant Association. (2018). *What's hot: 2018 culinary forecast*. Retrieved from https://restaurant.org/Restaurant/media/Restaurant/SiteImages/News%20and%20Research/Whats%20Hot/Whats_Hot_Culinary_Forecast_2018.pdf

Neuman, W. L., & Robson, K. (2009). *Basics of social research: Qualitative and quantitative approaches*. Toronto: Pearson.

Off the Grid. (2018, December). *Off the grid mobile food trends & insights report.* Retrieved from https://offthegrid.com/mobilefood/

Okumus, B., Sönmez, S., Moore, S., Auvil, D. P., & Parks, G. D. (2019). Exploring safety of food truck products in a developed country. *International Journal of Hospitality Management, 81*, 150–158.

Pandy, W. R., & Rogerson, C. M. (2019). Urban tourism and climate change: Risk perceptions of business tourism stakeholders in Johannesburg, South Africa. Representative, *Director*, 225.

Pang, S. F., McKercher, B., & Prideaux, B. (2013). Climate change and tourism: An overview. *Asia Pacific Journal of Tourism Research*, *18*(1-2), 4-20.

Patton, M.Q. (2001). *Qualitative research & evaluation methods.* London: Sage.

Prideaux, B., Coghlan, A., & Mcnamara, K. (2010). Assessing tourists' perceptions of climate change on mountain landscapes. *Tourism Recreation Research*, *35*(2), 187-200.

Saarinen, J., & Tervo, K. (2006). Perceptions and adaptation strategies of the tourism industry to climate change: the case of Finnish nature-based tourism entrepreneurs. *International Journal of Innovation and Sustainable Development*, *1*(3), 214-228.

Saarinen, J., & Tervo, K. (2006). Perceptions and adaptation strategies of the tourism industry to climate change: the case of Finnish nature-based tourism entrepreneurs. *International Journal of Innovation and Sustainable Development*, *1*(3), 214-228.

Saarinen, J., & Tervo, K. (2006). Perceptions and adaptation strategies of the tourism industry to climate change: the case of Finnish nature-based tourism entrepreneurs. International Journal of Innovation and Sustainable Development, 1(3), 214-228.

Saarinen, J., Hambira, W. L., Atlhopheng, J., & Manwa, H. (2012). Tourism industry reaction to climate change in Kgalagadi South District, Botswana. *Development Southern Africa*, 29(2), 273-285.

Scott A., Higham, J. Gössling, S. and Peeters P. (2013). *Understanding and Governing Sustainable Tourism Mobility: Psychological and Behavioural Approaches.* London: Routledge.

Scott, D., Hall, C.M., & Gössling, S. (2012). *Tourism and Climate Change: Impacts, Adaptation & Mitigation.* London: Routledge.

Shin, Y. H., Im, J., & Severt, K. (2019). Consumers' intention to patronize food trucks: An application of the theory of planned behavior. *Journal of Foodservice Business Research*, *22*(6), 582-599.

Shin, Y. H., Kim, H., & Severt, K. (2018). Antecedents of consumers' intention to visit food trucks. *Journal of Foodservice Business Research, 21*(3), 239–256.

Shin, Y. H., Kim, H., & Severt, K. (2019). Consumer values and service quality perceptions of food truck experiences. *International Journal of Hospitality Management, 79*, 11–20.

Smit, B., & Wandel, J. (2006). Adaptation, adaptive capacity and vulnerability. *Global environmental change*, *16*(3), 282-292.

Smith, C. (2015, July 28). Vancity report reveals high turnover in B.C.'s $50-million food truck industry. *The Georgia Straight.* Retrieved from https://www.straight.com/food/496851/vancity-report-reveals-high-turnover-bcs-50-million-food-truck-industry

Tervo-Kankare, K., Kaján, E., & Saarinen, J. (2018). Costs and benefits of environmental change: tourism industry's responses in Arctic Finland. *Tourism Geographies*, *20*(2), 202-223.

Tervo-Kankare, K., Kaján, E., & Saarinen, J. (2018). Costs and benefits of environmental change: tourism industry's responses in Arctic Finland. *Tourism Geographies*, *20*(2), 202-223.

Tourism Vancouver. (n.d.). *Travel Media Corporate Communication*. Retrieved from https://www.tourismvancouver.com/media/corporate-communications/vancouvers-awards-and-accolades/

UNWTO (United Nation World Tourism Organization). (2007). *Tourism and Climate Change confronting the Common Challenges UNWTO Preliminary. Considerations.* Madrid: World Tourism Organisation.

UNWTO (United Nations World Tourism Organisation). (2003). *Climate change and tourism. Proceedings of the 1st international conference on climate change and tourism, 9–11 April, Djerba, Tunisia.* www.world-tourism.org/sustainable/climate/final-report.pdf

Weber, D. (2012). *The food truck handbook: Start, grow, and succeed in the mobile food business.* Hoboken, NJ: John Wiley & Sons, Inc.