



**TRAVEL AND TOURISM
RESEARCH ASSOCIATION**

NorthEast Chapter

NorthEast Travel and Tourism Research Association (NETTRA)

Annual Conference Research Colloquium

January 21, 2021 (virtual/online)

Travel Experiences of Adults with Autism Spectrum Disorder

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<https://www.nettra.org/conference-proceedings.html>

Abstract

People with disabilities should be able to participate in and benefit from tourism activities without barriers. Article 30 of the Convention on the Rights of Persons with Disabilities (United Nations, 2006) recognizes the rights of individuals with disabilities to access to cultural life, recreation, leisure, sporting activities, and tourism services. However, people with disabilities are usually underserved due to the lack of accessible tourism products and information available to them (Buhalis et al., 2005). Figueiredo et al. (2012) note that people with disabilities face a greater challenge when traveling, particularly to novel destinations. This challenge is greater for people with autism spectrum disorder (ASD) as they combat changes in established routine, anxiety, and sensory issues while traveling (Hamed, 2013). People with ASD have to face many travel-related barriers that others may not have to worry about (Deka et al., 2016).

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (APA, 2013), ASD is a neurodevelopmental disability that limits or impairs individuals' daily lives. ASD is characterized by "persistent deficits in social communication and social interaction" (APA, 2013, 299.00 [F84.0]) and "restricted, repetitive behaviors, interests, or activities present from early childhood" (APA, 2013, 299.00 [F84.0]). ASD is prevalent among all racial, ethnic, and socioeconomic groups (Maenner et al., 2016). According to the estimates of the Center for Disease Control Prevention (CDC) Autism and Developmental Disabilities Monitoring (ADDM) Network, ASD is identified in one in 54 children in the United States (Maenner et al., 2016), and 5,437,988 (2.21%) adults in the United States are estimated to have ASD (Dietz et al., 2020). These deficiencies may require researchers and practitioners to pay special attention to the travel needs of people with ASD. Depending on the severity levels, people with ASD may be either *requiring support* (level 1), *requiring substantial support* (level 2) or *requiring very substantial*

support (level 3) (APA, 2013, “Autism Spectrum Disorder Severity levels for autism spectrum disorder”). As neurodevelopmental disorders often do, intellectual and language impairments may coexist among people with ASD (APA, 2013), which may make it even more challenging to plan and implement trips.

There is a substantial amount of research conducted at the intersection of tourism and people with disabilities (such as Blichfeldt & Nicolaisen, 2011; Figueiredo et al., 2012; McKercher & Darcy, 2019; Ray & Ryder, 2003), as well as travel and ASD (Davidson, & Henderson, 2010; Deka et al., 2016; Freund et al., 2018; Hamed, 2013; Neo & Flaherty, 2018; Perry & Kozub, 2011). The latter group of studies revealed that people with ASD travel, and when they do, they may be exposed to overwhelming situations. Mobility barriers exist among people with ASD: walking, driving, or using public transportation can be challenging (Deka et al., 2016). Most adults with ASD depend on others for rides and often have to give up traveling when they are not available (Deka et al., 2016). Unfamiliarity with the destination may lead to anxiety, depression, and social isolation (Neo & Flaherty, 2018). Sensory experiences pose a challenge for people with ASD during travel such as exposure to bright lights or strong smells (Hamed, 2013). For those who have difficulties with tolerating motion, certain destinations such as theme parks (Hamed, 2013) and types of transportation such as big buses (Neo & Flaherty, 2018) may be unfavorable, while some individuals with ASD may especially look for such sensory experiences (Hamed, 2013). Noise can be overwhelming for people with ASD, as most of them reported a preference for smaller and quieter accommodation facilities (Hamed, 2013). An auditory overload may likely occur in urban destinations with heavy traffic and a high density of people (Neo & Flaherty, 2018). Airports may be frustrating, especially during long wait times (Neo & Flaherty, 2018; Perry & Kozub, 2011) or manual body searches (Neo &

Flaherty, 2018). In restaurants, long waits at check-in, and noise levels may be challenging (Freund et al., 2018). Changes in routine may cause stress during traveling to new places (Hamed, 2013), especially when traveling internationally (Neo & Flaherty, 2018). Some participants in Hamed's (2013) study stated a preference for travel companies for planning and realizing their vacations, particularly for foreign destinations of which they do not speak the language. Some other challenges can be related to stereotyped or repetitive behavior, communication, social interaction and inclusion, sleeping, and medical difficulties (Hamed, 2013). Overall, the past studies have emphasized all the tourism constraints and barriers to travel for adults with ASD.

However, some adults with ASD do not give up traveling, and they may have a totally unique experience. An anonymous informant has mentioned her travels through a travel company where she did not get off the bus for the entire trip. She stated having her best travel ever, mentioning her enjoyment from listening to music, the comfort of the seats, watching people from the window, and having snacks.

Improving travel experiences of adults with ASD is essential since the special interests of people with ASD may provide them with motivation and pleasure as well as opportunities for education and employment (APA, 2013). However, the studies regarding ASD in the tourism field are mostly limited to families' rather than adults' travel experiences. While parents provide valuable information about the behaviors of their children, they may have difficulties remaining objective, as there is often a mismatch between reports of parents and clinical observations (Lemler, 2012). To enhance our understanding of the travel experiences of people with ASD, this qualitative study seeks to raise the voices of adults with ASD to explore the meanings attached to traveling, as well as motivations, needs for, and barriers to travel. We plan to conduct semi-

structured interviews with adults with ASD who have conversational speaking skills. The respondents will be chosen based on convenience sampling as reaching these individuals may be hard through random sampling. We plan to contact ACRES, a community created by people with ASD for people with ASD, located in State College, Pennsylvania. We will analyze the collected data through inductive thematic analysis via NVivo.

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Reviewer Comments	Author's Response
<p>Reviewer #1:</p> <p>This abstract addresses an interesting subject area. The abstract is well-written and provides a succinct overview of the study's purpose and research design. It was not clear from the abstract whether any data analysis has already taken place – if so, I would recommend including a reference to initial findings (even if they are preliminary). I think this presentation will be of interest to many NETTRA conference attendees and recommend that the abstract is accepted.</p>	<p>Thank you so much for your feedback!</p>
<p>Reviewer #2:</p> <p>This is well-composed and makes a strong case for the proposed future research. This topic could have very meaningful implications for many individuals and families. The background info presented here is strong, but I am left wanting to know more about your research plan. Do you have specific research questions? Why is the sample you have selected appropriate for this research, and what are the associated limitations/delimitations?</p> <p>Since this research has not yet been completed, the conference may be a valuable opportunity to collect feedback that may help guide its progress. I would encourage the authors, given the time limitation of the presentation and Q&A, to perhaps encourage readers/audience members to also reach out to them post-conference</p>	<p>Thank you so much for your feedback! We have changed the title of the paper to “Travel Experiences of Adults with Autism Spectrum Disorder” accordingly.</p> <p>Some research questions we may ask are “why do adults with ASD travel?”, “what are the travel motivations of adults with ASD?”, “what are the travel experiences of adults with ASD?”, “what meanings do adults with ASD ascribe to their trips?”, and “what are the barriers faced by adults with ASD before/during/after travel?”. We included in our paper “...to enhance our understanding of the travel experiences of people with ASD, this qualitative study seeks to raise the voices of adults with ASD to explore the meanings attached to traveling, as well as motivations, needs for, and barriers to travel” to point to these research questions. We plan to choose the respondents based on convenience sampling as it may be challenging to reach these individuals via random sampling, which will create some limitations. Some of the interview questions may include during our interview are:</p> <ul style="list-style-type: none"> • What is your name?

<p>with further advice/ideas and keep the conversation going. I would also suggest changing the title to reflect that this is forthcoming research, not just a literature review.</p>	<ul style="list-style-type: none"> • Do you travel? If so, how often do you travel? • What are some of the most memorable travel experiences of yours (both positive and negative)? • What do these experiences and memories mean to you? • How do you prepare for a trip with respect to your disability? • What challenges have you faced while traveling? • How do you think the tourism industry (such as hotels, airlines, and attractions) can provide better services to you? If you could make any changes to the way the travel industry provides services to you what would they be? • Are there other important issues for individuals with ASD that we have not yet covered? (Perry & Kozub, 2011). <p>Perry, H., & Kozub, M. (2011). Family travel experiences when one member has a developmental disability. Proceedings of the 2011 Northeastern Recreation Research Symposium http://scholarworks.umass.edu/nerr/2011/Papers/17</p>
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Emotional solidarity as a travel motivation:
Tested from emotional solidarity and interaction ritual perspectives

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Abstract

Introduction

A key travel motivation for some is to meet and interact with like-minded individuals (Hsu & Huang, 2008). Much of the enjoyment in religious tourism comes from forming fellowship with others of similar religious beliefs and behaviors (Kaell, 2014). Equally, the experience of heritage tourists often depends on the social bond formed with others who understand the sacredness of the heritage site (Joo, Woosnam et al., 2020). Despite much qualitative evidence underscoring the importance of social emotions to tourists' experience (e.g., Fairley, 2003; Kaell, 2014; Lum et al., 2020), little quantitative research has been undertaken to unveil how affective bonds emerge between tourists and enhance their travel intention.

According to the emotional solidarity theory, individuals are more likely to develop affective bonds toward others when shared beliefs, shared behaviors, and interaction exist between them (Woosnam et al., 2009). Furthermore, the interaction ritual theory posits that positive social emotions (e.g., emotional solidarity) encourage individuals to seek similar social experiences, forming a chain of behaviors propelled by emotional desires (Collins, 1993). Despite their potential relevance in understanding travel motivations, both theories have not been utilized to explicate the emergence and the influence of tourists' social emotions. The emotional solidarity theory has been popular in resident-tourist relationship research (e.g., Woosnam, 2012; Woosnam & Aleshinloye, 2013), but rarely has emotional solidarity among tourists been its concern (Joo & Woosnam, 2020). The interaction ritual theory has been introduced to tourism research only recently and needs further empirical validation (Joo, Cho et al., 2020).

To address the methodological and theoretical gaps, this study tested the following hypotheses in a context involving potential religious tourists.

H₁: Potential tourists' shared beliefs, shared behaviors, and propensity to interact positively influence their emotional solidarity toward other tourists.

H₂: Potential tourists' emotional solidarity toward other tourists positively influences their travel intention.

Methods

The scale for shared beliefs featured 12 items across three dimensions of *devotion*, *concerns*, and *entertainment*. As for shared behaviors, there were 10 items representing *cultural*-, *devotional*-, and *touristic behaviors*. The propensity to interact scale consisted of 12 items across two dimensions (i.e., *touristic*- and *religious occasions*). Emotional solidarity was measured via a 13-item bi-dimensional (i.e., *communality* and *fairness*) scale. All these scales—addressing the constructs within the emotional solidarity theory—were devised by Joo and Woosnam (2020). As for travel intention, three items from Jalilvand et al.'s (2012) study were used. All scale items were asked in a 7-point Likert format where '1' and '7' each indicated strong disagreement or agreement with a positively worded statement.

Data were collected from a survey respondent panel consisted of Christians interested in religious tourism. It was believed that using a panel would help minimize sampling bias by recruiting respondents from various churches and socioeconomic backgrounds. Prior to data analysis, responses containing disengaged answers or multivariate outliers were singled out. Data were then analyzed using 2nd-order structural equation modeling and Anderson and Gerbing's (1988) two-step approach. When testing mediation, Barron and Kenny's (1986) methods was used. All data cleaning and analysis were done in SPSS 25.0 and AMOS 23.0.

Results

Among 980 individuals who accessed the online survey, 439 provided a fully completed response. However, 16 were eliminated for disengaged answers and 64 more were discarded for multivariate outliers. Resultingly, the effective sample size was 359.

A majority of the sample were females (65.5%) and college graduates (51.8%). Many of them were in their 30s (26.0%) or 60s or older (25.1%) and reported an annual earning of under \$75,000 (68.2%). Besides the age, this mostly conformed to known socio-demographic characteristics of Christian religious tourists.

The initial measurement model fit the data poorly, demanding further improvements. In response, decisions were made to discard ten items for poor-factor loading or high-cross loading. The final measurement model produced solid fit indices (CFI = 0.925, TLI = 0.919, RMSEA = 0.051, SRMR = 0.046) and was free of any reliability or validity concerns.

A structural model for hypothesis testing showed a good fit to the data as follows: CFI = 0.910, TLI = 0.906, RMSEA = 0.054, and SRMS = 0.056. Results suggested positive influences of shared beliefs ($\beta = 0.232$, $p = 0.01$), shared behaviors ($\beta = 0.211$, $p = 0.05$), and propensity to interact ($\beta = 0.418$, $p = 0.01$) on emotional solidarity, which then exerted a positive influence on travel intention ($\beta = 0.622$, $p = 0.01$). Finally, emotional solidarity fully mediated the impacts of its antecedents on travel intention. The structural model explained 77.9% and 38.7% of variance in emotional solidarity and travel intention, respectively.

Conclusion

Shared beliefs, shared behaviors, and propensity to interact were all significant predictors of emotional solidarity. This validates the use of the emotional solidarity theory in studying social feelings between members of the same group and not just between residents and tourists.

Potential tourists showed their anticipation for similarity and interaction with other tourists they might meet, and this contributed to developing affective bonds toward them. The positive association between emotional solidarity and travel intention is consistent with the interaction ritual theory. That is, potential tourists gravitate toward engaging in religious tourism, seeing it as an opportunity for emotional rewards. Interestingly, the three predictors would not influence travel intention if emotional solidarity was not present. This full causal relationship attests to the explanatory power of emotional solidarity, both as a theory and as a construct.

Regardless of the theoretical implications of the findings, further research may consider a) surveying actual tourists instead of potential tourists, b) incorporating pre-established religious beliefs and behaviors as additional antecedents, and c) looking at other forms of tourism. Actual tourists are likely to present a more definitive outlook. Also, religious tourists often have double layers of beliefs and behaviors which transcend touristic beliefs and behaviors considered in this study. Finally, religious tourists are relatively niche and homogenous, so the findings need further validation in other more general forms of tourism.

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The Narrative of Holocaust Museums in the United States

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Abstract

Although in the world of tourism museums are often viewed primarily in terms of attracting potential visitors, this is only a fraction of the role these institutions play in society. In the United States alone, there are over twenty-five museums explicitly dedicated to the Holocaust. These museums play an essential role in educating the masses.

The mission statements for each of these institutions imply, if not explicitly state, education as an institutional goal. In American, the education system uses standardized testing as a cornerstone to ensure content proficiency, and often school districts rely on positive results for funding. Although the state might mandate Holocaust education, standardized testing does not cover this topic (Bowen & Kisida, 2020; Pennington, 2018; Starratt et al., 2017). History departments are often passed over for resource allocation in favor of subjects that determine federal funding. To bridge the gap, museums have created resources and professional development opportunities.

It is no wonder that people turn to these institutions for information. Museums are the most trusted source of information in America, ranking more trustworthy than nonprofit research, academic research, and the U.S. government (“Museum Facts & Data,” 2018). Ultimately, holocaust knowledge and education were reported to create better citizens by promoting tolerance for others and helping individuals understand the root of prejudices and stereotypes (Bowen & Kisida, 2020; Donnelly, 2006; Pennington, 2018; Starratt et al., 2017). It is in this capacity that museums start to become contributors to the social consciousness.

But what does the interpretation of the Holocaust look like in a country primarily removed from the persecution in which it exhibits? How do these museums affect social

consciousness? If museums continue being educational leaders, as society has deemed them, a greater understanding is needed of the narrative presented to visitors.

Because museum outreach is the role of museum educators and education was so heavily emphasized throughout the preliminary research, museum educators and educators from Holocaust organizations made up the primary population for sampling. Twenty-six, in-depth interviews were conducted with Holocaust institutions throughout the U.S. The interviews were then cross-referenced with the digital resources available online for each institution to provide a more well-rounded picture.

Findings reiterate the foundational studies' results; school groups were almost always the main focus, followed by professional development for teachers and then community outreach. Contemporary resources provided by museums place the Holocaust in the context of global suffering and other human rights issues. Institutions were often approached about topics such as the Black Lives Matter movement, immigration issues, and other genocides. Successful museums must not only educate but also prompt individuals to become upstanders. As defined by the organization Facing History and Ourselves, an upstander is "a person who speaks or acts in support of an individual or cause, particularly someone who intervenes on behalf of a person being attacked or bullied." They teach critical thinking and highlight that our choices have ramifications. Holocaust institutions do create a narrative about social consciousness in some capacity. However, museums often reported feeling limited by the need to remain apolitical, which is necessary to ensure continued funding. Most importantly, they create better citizens today for a better future tomorrow; they stand as arbitrators of moral dialogue.

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Agritourism Clusters as a Paradigm Shift for Operator and Travelers Benefits

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Abstract

Changes in traditional agriculture combined with evolving tourism demands ('staycations,' creating family memories, culinary and heritage tourism, experiential travel, and the 'good food movement') have led agriculture entrepreneurs to pursue agritourism to help diversify farm income and improve cash flows. Farms have the raw ingredients necessary to create authentic experiences to capitalize on new tourism niches effectively; however, many face challenges to entrepreneurship. The challenges faced are limiting their full agritourism potential - remote locations, small farms/limited offerings, inadequate infrastructure, and fragmented agriculture and tourism sectors.

This presentation will discuss how agritourism cluster development (WV and five other states) benefits the agripreneur and effectively responds to travelers' needs for multi-destination visits that maximize travelers' overall utility and provide heterogeneity of preferences and minimize uncertainty and diversify travel risks.

We highlight the Mountain State Maple Days (MSMD) as an agritourism cluster-networks model - a new agritourism innovation and collaboration model. This model will enhance destination viability both at the 'cluster' or 'community' level and at the individual 'agricultural operation' level. Results show the MSMD as a vehicle for microeconomic competitiveness - improving profitability through strategic partnerships to meet customers' needs. In the same vein, it mitigates agritourism risks through a simultaneous complementarity and competitiveness model.

The presentation concludes by recommending the best practices that simultaneously foster cluster development and mitigate risks in agritourism. Understanding operators' benefits and related motivations; linkages between attractions to determine complementarity in meeting

travelers' needs; '5-star' product/service offerings, and general hospitality and agritourism management standards. We recommend that the innovative and collaborative marketing strategies will help educators, agritourism operators, and state entities generate risk management and market development strategies to reduce agritourism risks, enhance agritourism profitability, and build destination viability.

Purpose and Objectives - Rationale for innovation research. Define the problem to be solved

Changes in traditional agriculture combined with evolving tourism demands ('staycations,' creating family memories, culinary and heritage tourism, experiential travel, and the 'good food movement') have led WV agriculture entrepreneurs to pursue agritourism to help diversify farm-income and improve cash-flows. Farms have the raw ingredients necessary to create authentic experiences to capitalize on new tourism niches effectively. However, many face entrepreneurship challenges, limiting their full agritourism potential, including remote locations, limited farm offerings, inadequate infrastructure, and fragmented agriculture and tourism sectors.

On the demand side, travelers are increasingly engaging in single, multi-destination visits for reasons including the concept of 'cumulative attraction' that maximizes the traveler's overall utility; the need to seek variety - heterogeneity of preferences; or their need to reduce uncertainty and diversify travel risks. The challenge is to help develop a model of 'micro-cluster networks,' a new model of agritourism innovation and collaboration between local stakeholders, to enhance revenue generation, regional viability, and destination marketing.

Program Description /Research Design and Process

Agritourism entrepreneurs' partnership plays a crucial role in the success of agritourism development in the future – the main source of microeconomic competitiveness. Thus, it will be useful to insight into agritourism operators' perception of clusters and preferences for clustering

strategies in WV and five surrounding states. This research will help determine whether such preferences are farmers-specific or whether general relationships exist as it speaks to the relevance to the proposal of improving productivity by creating strategic partnerships that offer a product/service that meets customers' needs.

This presentation will discuss how agritourism cluster development (WV and five surrounding states) benefits the entrepreneur in meeting travelers' needs for multi-destination visits that maximize travelers' overall utility and provide heterogeneity preferences to minimize uncertainty and diversify travel risks. We highlight the Mountain State Maple Days (MSMD) as an agritourism cluster-networks model, which is a new agritourism innovation and collaboration model. This model will enhance destination viability both at the 'cluster' or 'community' level and at the individual 'agricultural operation' level.

Results (Outcomes of the agritourism cluster research)

Results show the MSMDs as a vehicle for microeconomic competitiveness - improving profitability through strategic partnerships to meet customers' needs. In the same vein, mitigating agritourism risks through a simultaneous complementarity and competitiveness model. This presentation focuses on issues that simultaneously foster micro-cluster network development and enhance risk mitigation in tourism. The focus is majorly to understand the spatial travel patterns and motivations behind these choices: the nature of linkages between attractions to determine complementarity in meeting travelers' needs; '5-star' product/service offerings, and general standards in hospitality and agritourism management; and apply travel patterns and destination linkages to recommend innovative and collaborative marketing recommendations to build destination and enterprise viability.

Conclusions, Implications, and Recommendations for Practice

The presentation concludes with the recommendation that innovative and collaborative marketing strategies will help educators, agritourism operators, and state entities generate risk management and market development strategies. It will also help to reduce agritourism risks, enhance agritourism profitability, and build destination viability.



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The campers' conundrum: Examining setting's influence on campsite choice using big data

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Abstract

Introduction

Demand for national park campgrounds has risen at an increasing rate over the last decade (Rice et al., 2019). Additionally, camping is becoming an increasingly sought-after form of tourism accommodation (Craig, 2020). As available campsites become scarcer and booking windows increase, institutional knowledge becomes more important in locating and booking campsites further in advance (Gursoy & Chen, 2012)—thus impacting distributive justice (Shelby et al., 1989). It is thus important to understand how campers reach decisions on the selection of campsites and how attributes of 1) the campsite and 2) the surrounding recreational setting drive this demand. Using campsite reservation data from Zion National Park, we address the following research questions:

R1: What aspects of the setting are most influential on campsite demand?

R2: How can allocation of campsites be improved to support the distributive justice of camping resources?

Methods

Data

In total, 24,683 individual reservations for campsites in Zion National Park's Watchman Campground from fiscal year 2019 were utilized to create our dependent variable—average booking window. For each of the campground's 179 campsites, the average booking window was calculated based on the reservation data provided through Recreation.gov. The full list of independent variables can be found in Table 1, including literature that informed each variable's inclusion in the model and summary statistics for each variable.

Analysis

Analysis followed the four-step approach to spatial regression put forward by Chi and Zhu (2019): 1) establish a spatial weight matrix, 2) test for autocorrelation, 3) determine the nature of spatial dependence, and 4) execute a final spatial regression. An inverse-distance spatial weight matrix of 40 meters was selected to provide the neighborhood structure of the dependent variable, as it yielded the highest Moran's I among the six distance-based matrices trialed with a relatively low number of campsites having no neighbors, and, therefore, no clusters of isolated campsites (Bivand & Portnov, 2013). The established spatial weight matrix yielded a Moran's I of 0.618, and, thus, the data were determined to be clustered, or positively autocorrelated (Chi & Zhu, 2019). Accordingly, an Ordinary Least Squares regression was conducted to determine the nature of spatial dependence present within the dependent variable using Robust Lagrange Multiplier (LM) tests of spatial error and spatial lag at 99.9% confidence intervals (Chi & Zhu, 2019). LM tests presented a significant spatial lag effect. Hence, a spatial lag model was devised.

Results

Results from the final spatial lag model are listed in Table 1. At a 95% confidence interval, the independent variables that have statistically significant impacts on average booking window are 1) the campsite's designation as either standard or walk-in (the latter available only by parking one's car in a lot and walking a short distance to the site), 2) the price of the campsite (which is also indicative of whether or not the campsite has private access to electricity), and 3) whether or not the campsite has direct access to the Virgin River (determined using a pre-established filter on Recreation.gov). These results indicate that, all else remaining equal, 1) the designation of walk-in campsites decreases average booking windows by 11.88 days, 2) for

every \$1 increase in price, average booking windows increase by 1.17 days, and 3) having direct access to the Virgin River decreases average booking windows by 7.96 days.

[INSERT TABLE 1 ABOUT HERE]

Discussion

R1: What aspects of the setting are most influential on campsite demand?

In this case, it appears that the managerial setting provides the greatest influences over demand. Specifically, the nature of the campsite itself (e.g., price, electricity, walk-in designation, etc.), rather than its surroundings (e.g., distance to restroom, number of neighbors, etc.), seems to have greatest influence. Interestingly, the relationship between price and demand is positive. This indicates that, on average, campers are willing to pay more than the \$10 premium for electricity. Therefore, all else being equal, these premium campsites are underpriced, based on their relative demand. Additionally, though two components of the ecological setting—direct access to the Virgin River and views of the canyon walls—were predictive of demand at a minimum of 90% confidence, their impacts appear smaller. River access is somewhat surprisingly negatively correlated with demand—likely the result of historic, toxic cyanobacteria blooms that seasonally make the river unsuitable for recreation (Smith, 2009; Weissinger & Sharrow, 2018). The sole measured component of the social setting, number of campsites within a 40-meter radius, did not yield a statistically significant impact on demand.

R2: How can allocation of campsites be improved to support the distributive justice of camping resources?

Broader implications of this research shed light on a re-emerging issue in national park tourism in the United States: distributive justice. By definition, distributive justice is reached only when the competing concepts of equality, equity, need, and efficiency are balanced to the

satisfaction of all agency mandates and stakeholders in the context of recreation resource allocation (Shelby et al., 1989). Though in this instance, price—being a positively-related predictor of demand—indicates that campsites with private access to electricity are underpriced; raising the price would lead to issues of equity and equality and provide a potential barrier to access (Manning & Lime, 2000; Park et al., 2010). For this reason, as noted by Walls et al. (2018), the National Park Service has been reluctant to raise campsite fees. Yet, the current system of rationing raises its own set of issues relate to equity and equality, where average booking windows range from 51 to 142 days. Specifically, it requires knowledge of campsite demand patterns (Gursoy & Chen, 2012) and, in some cases, it has been compromised by bots programmed to book campsites as soon as they become available (Placzek, 2017). Possible solutions to these issues of distributive justice are 1) a daily lottery, like that currently being trialed at Camp 4 in Yosemite National Park, or 2) a staggered allocation system where, for example, a quarter of all campsites become available 6, 4, 2, and 1 month(s) in advance. Both strategies would improve equality of campsite allocation without compromising efficiency (Shelby et al., 1989).

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Tables

Table 1
Results from SLM regression

Variable	Literature informing inclusion in model	Source	Mean, Min, Max (Yes, No for binary)	Coefficient	Std. Error	p-value
Distance to nearest dump station	Mikulić et al., 2017	Zion NP	229, 62, 471 meters	0.006	0.009	0.49735
Distance to nearest restroom/trash and recycling/water spigot	Mikulić et al., 2017; Oh et al., 2007	Zion NP	63, 7, 144 meters	0.070	0.040	0.08058
Walk-in campsite (binary)	N/A	Recreation.gov	18, 150	-11.880***	3.392	< 0.001
Price/Electricity	Bamford et al., 1988	Recreation.gov	\$25.17, \$20, \$30	1.172***	0.242	< 0.001
Number of neighboring campsites with 40-meter radius	Twight et al., 1981	Zion NP	4.26, 0, 7 neighbors	-0.099	0.616	0.87234
Campsite shading (binary)	James and Cordell, 1970	Recreation.gov	69, 99	0.936	1.660	0.57272
Direct access to Virgin River (binary)	White et al., 2001	Recreation.gov	16, 152	-7.962**	3.088	0.00993
Directly adjacent to canyon wall (binary)	Agimass et al., 2018	Zion NP	16, 152	-2.093	2.953	0.47832
View of canyon walls present in photograph(s) (binary)	Agimass et al., 2018	Recreation.gov	79, 89	2.788	1.691	0.09924
Spatial lag effect				0.315***	0.066	< 0.001
Constant				36.168***	6.207	< 0.001

*p < .05, **p < .01, ***p < .001
 $R^2 = 0.6099$
AIC = 1264.15
BIC = 1298.51

Multicollinearity condition number = 23.850
Breusch-Pagan test: 29.496, p < 0.001
Likelihood Ratio Test: 18.470, p < 0.001



**TRAVEL AND TOURISM
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NorthEast Travel and Tourism Research Association (NETTRA)

Annual Conference Research Colloquium

January 21, 2021 (virtual/online)

Understand customers' trust toward service robots

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Abstract

In recent years, different types of AI technologies have been utilized in the service industry (Chi et al., 2020). Since AI social robots are used to directly interact with consumers in service delivery consumers perceive these robots not only as technology devices but also as social entities (Gursoy et al., 2019; Van Doorn et al., 2017). As a result, how consumers evaluate and trust these social robots is likely to deviate from traditional technology trust theories. Drawing upon the human-computer interaction framework (Zhang & Li, 2005), this study proposes that consumer trust is formed through three dimensions: trustworthy function and design, trustworthy service task and context, and consumer propensity to trust. Accordingly, the scale of Social Service Robot Trust (SSRT) has been newly developed.

To identify the components that may contribute to consumers' trust toward AI social service robots in service transactions, we conducted a systematic literature review. The results were then combined and refined leading to an 11-factor 3-dimensional conceptual model. Afterward, to develop a measurement scale of customers' trust towards AI social service robots, this study followed the scale development procedures recommended by Mackenzie et al. (2011). More specifically, a literature review process, semi-structural interviews, and a focus group study resulted in a pool of 62 items that were subjected to empirical testing. Afterward, three customer panels were hired via Amazon MTurk to purify the initial item pool, validate the measurement scale, and examine external, concurrent, and predictive validities.

This study finds that a person's propensity to trust AI social robots can be measured by five factors. Familiarity with social robots reduces people's uncertainty and increases

the accumulation of trust-related knowledge (Komiak & Benbasat, 2006). The robot use self-efficacy leads consumers to have a positive perception of robot use (Latikka et al., 2019). The social influence promotes the formation of trust externally through the effects of group norms (Gursoy et al., 2019) and group beliefs (Althuizen, 2018). Technology attachment provides a psychological connection between a person and an AI social robot, promoting the positive evaluation of a technology product (Perlaviciute & Steg, 2014). Lastly, trust stance in technology, as a disposition of trust, leads consumers to have a high tendency to trust AI social robots (Tussyadiah et al., 2019).

The trustworthy function and design of an AI social robot are found to be determined by three factors. Anthropomorphism represents the advanced technologies embedded in a robot, enabling a human-like interaction in service delivery (Choi et al., 2019; Tuan & Au, 2018; Xu, 2019) and leading to a higher level of trust. Robot performance measures the robots' functionality, helpfulness, and performance comparing to human employees and it is a primary determinant of the trust toward AI social robots in terms of the utility expectation (McKnight et al., 2011). Moreover, effort expectancy measures the perceived psychological effort required for a customer to learn human-robot interaction (Gursoy et al., 2019) and has been found to cause significant distrust toward AI social robots in service delivery.

The trustworthy service task and context is measured by three factors. Perceived service risk indicates that consumers' perception of service uncertainty plays a negative role in the formation of service evaluation (Wu and Cheng, 2018), undermining the trust in AI social robots. However, facilitating robot-use condition can compensate consumers' perceived service risk and help consumers effectively use and interact with AI social robots

in service delivery, contributing to the trustworthy service context. Finally, robot-service fit highlights the relationship between robot functions and service expectations, confirming that consumers evaluate robots differently across different service tasks (Ivanov et al., 2018).

This study argues that AI social robots differ from traditional technologies. The traditional view of IT conceives technology products as tools to enhance productivity or to facilitate certain services. Thus, traditional technology trust heavily concentrates on the utility value of the technology product (McKnight et al., 2011). In contrast, AI social robots in service delivery are used to directly interact with consumers and therefore, are perceived as social entities (Gursoy et al., 2019; Van Doorn et al., 2017). In addition, the proposed scale of Social Service Robot Trust (SSRT) treats the trust in AI social robots as a third-order reflective-formative construct. This third-order measurement scale not only provides a comprehensive and holistic overview of trust in AI social robots that is evidenced by its significant explanatory power (Barki et al., 2007; Cenefetelli & Bassellier, 2009) but also exhibits significant predictive power to predict trust in AI social service robots, outperforming traditional well-established trust scales (e.g., Interpersonal Trust Scale or Technology Artifact Scale).

The proposed SSRT scale offers a comprehensive and holistic assessment tool to measure consumers' trust in AI social robots. The formative structure of the measurement scale allows managers to understand the level and importance of each trust attribute, which can be used to diagnose performance gaps of service robots and develop corrective actions accordingly. This study also finds that perceived service risk reduces consumers' trust in AI social robots in service delivery. However, this does not necessarily mean that

consumers have a low level of performance expectations from AI social service robots. In fact, via semi-structured interviews, this study found that most interviewees believe that AI social robots can provide more consistent and prompt services than do human-employees. In high risky services (e.g. medical diagnosis), the interviewees indicate an unwillingness to use social robots mainly due to the uncertainty of who would take the responsibility of a service failure.

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NorthEast Travel and Tourism Research Association (NETTRA)

Annual Conference Research Colloquium

January 21, 2021 (virtual/online)

Examining the Impacts of Robot Service on Hotel Customer Experiences

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Abstract

The current period is said to be “the universe of innovation (Jakhete & Mankar, 2015)”. Many new technologies have been used to improve customer experience in hospitality, such as robots (Tung & Au, 2018). A robot is defined as an “actuated mechanism programmable in two or more axes with a degree of autonomy, moving within its environment, to perform intended tasks (Virk et al., 2008)”. Recently, the hospitality and tourism industry has embraced the trends of using robotic services (Ivanov et al., 2017). At present, robots are utilized in lodging facilities for completing tasks such as checking visitors in, vacuuming floors, conveying things to visitors, attendant services, and other regular tasks.

Regardless of the increasing popularity of using robots in hotels and other tourism and hospitality businesses, there is an absence of research examining the state of adoption level of robots (Ivanov et al., 2019). Similarly, very few studies have looked into how robot services impact tourists’ experiences and/or their perceived value of the related hospital products (Kaarremo & Helkkula, 2018). Value co-creation is a concept that emerged from the consumer science literature and has been used in tourism and hospitality to examine the perceived quality of consumer experiences (Chathoth et al., 2016). Customer experience is strictly personal and reflects the customer’s involvement at different levels, such as rational, emotional, sensorial, physical, and spiritual levels (Gentile et al., 2007, p. 397). Customer satisfaction is the outcome of customer’s perception of the value received in a transaction or relationship (Blanchard & Galloway, 1994). Achieving high levels of customer satisfaction is a business philosophy that allows businesses to create exceptional values for customers, manage their expectations, and satisfy their needs. Quality of service and customer satisfaction are critical factors for successful hospitality and tourism business (Gronoos, 1990; Parasuraman et al., 1988).

Accordingly, the purpose of the study is to assess the impact of robot service on customer's experience in hotels and to investigate if such influences may lead to different outcomes such as satisfaction and revising intentions. Guided by the value co-creation framework, this exploratory study used a deductive approach and analyzed online reviews from hotels that use robotic services. The following research questions were used to guide the study:

- How does the robotic service influence customer experience in hotels?
- How does the robotic service influence customers' intention to revisit?
- How does the robotic service contribute to the value co-creation process?

A total of 2383 reviews posted between January 2014 to October 2020 from TripAdvisor and Yelp referencing hotels that use robots in their service were included in the sample. The Leximancer software was applied to analyze the content of these reviews. Visual idea maps and statistical output were created that helped with offering more prominent insights and perception of language (Wu et al., 2014). The network rate percentage from Leximancer (2013) determined the connectedness of concepts along with the themes and mirrored the significance of each theme.

The results revealed five major themes that were closely related to robotic services in hotels. These themes are *Staff*, *Room*, *Check-in*, *Hotel Experience*, and *Amenities* (i.e., F&B services, restroom). Further analysis indicated that the *Robot* theme was positively related to the overall theme *Hotel Experiences* as well as positive reactions such as *cool* and *fun*. Reviews with positive ratings are also more likely to be associated with the theme *Robot*, indicating a stronger level of satisfaction among hotel guests.

From a theoretical perspective, the findings of this study show that incorporating robotic services not only improve the perceived value assumed by hotel guests, but also

increase their satisfaction. This is highly consistent with previous literature, highlighting the importance of consumer engagement and involvement in co-creating experiences (Chathoth et al., 2016). From a practical perspective, the findings of this study provide useful references for hotel managers regarding the consideration if robotic services should be included in their property. Future research can be done for commonplace robots to see if they hold the same perceptions.

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Assessing the validity of SafeGraph data for visitor monitoring in
Yellowstone National Park

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Abstract

It is essential to understand the number of visitations in national parks for park management (Tenkanen et al., 2017). An increased demand of visitors may lead to negative impacts on ecosystem and biodiversity and challenge the sustainable utilization of national parks (Kerlinger et al., 2013; Pickering & Hill, 2007). Therefore, monitoring the number of visitors will be helpful for allocating resources, developing infrastructure, and predicting demands of visitors (Cessford & Muhar, 2003). However, the traditional method to count visitation number is very costly, time-consuming and laborious (Di Minin et al., 2015; Sessions et al., 2016).

With the rapid development of information and communication technology, big data with structured and unstructured types are generated, possessing ‘3V’ characteristics, namely high volume, high value and high velocity (Laney, 2001). Mobile data, one of big data source, has been gradually applied in tourism-related research, providing us an opportunity to investigate tourists’ spatial-temporal patterns (Li et al., 2018). The advantages of mobile data include low cost, availability in less visited places, and availability tracking tourist origins (Li et al., 2018).

Data & Methodology

POI refers a specific point location that someone may find useful or interesting. SafeGraph is a commercial company to provide POI data and Location-based Service data in the United States and Canada (Juhasz & Hochmair, 2020). The POI data of SafeGraph are compiled from several sources, including mobile phone GPS data and government open data, etc. Currently, academic researchers can access SafeGraph POI visitation data freely that provide us an opportunity to study temporal patterns of visitor behaviors in national parks. Therefore, the purpose of this study will assess how well the SafeGraph POI visitation data can be used to estimate visitation patterns in Yellowstone National Park (YNP).

The main product of SafeGraph is SafeGraph Places, consisting of three datasets, namely Core Places, Geometry, and Patterns (SafeGraph, 2020). This study retrieved data from Core Places and Patterns datasets. The Core Places dataset contains basic information of about 6.1 million POIs, such as POI's address, category, open hours, brands, and unique SafeGraph ID, in the US and Canada. The Patterns dataset contains visitation patterns for unique POIs. Numbers of monthly official visitation were retrieved from NPS Stats Park Report (National Park Services Visitor Use Statistics, n.d.). The Geometry dataset contains polygon representations of POIs.

Results

To select POIs in Yellowstone National Park, first, we set a rectangle (latitude: 44 ~ 45.5, longitude: -111.5 ~ -109.5) based on YNP's latitude and longitude. This step selected POIs roughly since there are over 6 million POIs in SafeGraph POI visitation data. Next, to accurately select POIs inside the boundary of YNP, the roughly selected points from the first step were visualized in ArcMap 10.7.1 and were checked whether POIs were inside the boundary of YNP. After this step, there are 80 POIs inside the YNP selected from SafeGraph POI visitation data. Thirdly, unique SafeGraph IDs of 80 POIs in YNP were utilized to retrieve visitation patterns from Patterns dataset (Figure 1).

However, not all POIs contain visitation pattern information; in addition, some POIs only had low visitation numbers. Therefore, to select POIs with popular and comprehensive visitation pattern information, annual visitation number for each POI was calculated. The top 10 POIs with the most visitation numbers in 2019 were selected, including Canyon Lodge and Cabins, Old Faithful General Store, Yellowstone Art & Photography Center, Canyon Lodge Cafeteria, Yellowstone Park Service Stations, Geyser Grill, Sinclair Oil, Bike Rentals at old Faithful Snow Lodge, Hamilton's Store, and Outwest T's (Table 1). The 10 POIs were conducted Pearson r

correlation with numbers of monthly official visitation to assess how well the SafeGraph POI visitation data can be used to estimate visitation patterns in Yellowstone National Park (YNP).

The Pearson r correlation revealed that there were strong relationships between POIs and official data regarding monthly visitation number (Table 1). The r correlations are higher than 0.9 for all POIs with official data except for one POI, Bike Rentals at old Faithful Snow Lodge since bicycling is influenced by seasonality most.

The current progress of this study is only at an initial stage to evaluate the validity of SafeGraph POI visitation data. Next step, we will request weekly visitation patterns from official source to explore whether SafeGraph data have strong relationship with official data at a short period. This exploration of SafeGraph visitation patterns in national parks can be not only used for monitoring visitors' temporal patterns, but also for predicting visitor demands.

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Tables

Table 1

Summary of Top 10 POIs in Yellowstone National Park and Correlations with the Official Data

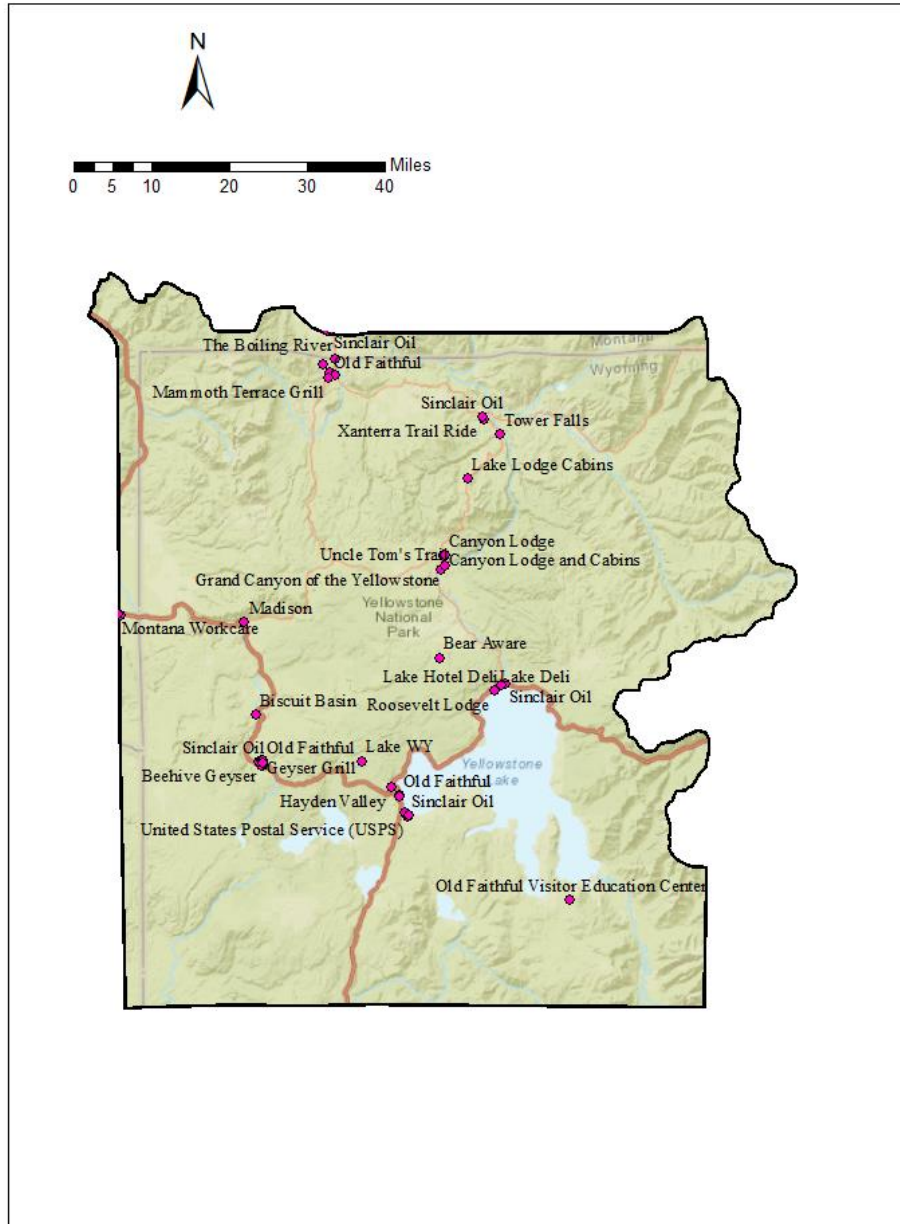
Location Name	Top Category	Sub Category	Latitude	Longitude	City	Region	Correlation with Official Data (n=12)
Canyon Lodge and Cabins	Traveler Accommodation	Hotels (except Casino Hotels) and Motels	44.73	-110.49	Yellowstone National Park	WY	0.971
Old Faithful General Store	Office Supplies, Stationery, and Gift Stores	Gift, Novelty, and Souvenir Stores	44.46	-110.83	Yellowstone National Park	WY	0.937
Yellowstone Art & Photography Center	Other Professional, Scientific, and Technical Services	Photography Studios, Portrait	44.46	-110.83	Wyoming	WY	0.962
Canyon Lodge Cafeteria	Restaurants and Other Eating Places	Full-Service Restaurants	44.73	-110.49	Canyon	WY	0.967
Yellowstone Park Service Stations	Gasoline Stations	Gasoline Stations with Convenience Stores	44.98	-110.70	Yellowstone National Park	WY	0.969
Geyser Grill	Restaurants and Other Eating Places	Full-Service Restaurants	44.46	-110.83	Yellowstone National Park	WY	0.924
Sinclair Oil	Gasoline Stations	Gasoline Stations with Convenience Stores	45.03	-110.70	Gardiner	MT	0.915

Location Name	Top Category	Sub Category	Latitude	Longitude	City	Region	Correlation with Official Data (n=12)
Bike Rentals at old Faithful Snow Lodge	Museums, Historical Sites, and Similar Institutions	Nature Parks and Other Similar Institutions	44.56	-110.40	Yellowstone National Park	WY	0.883
Hamilton's Store	Clothing Stores	Children's and Infants' Clothing Stores	44.46	-110.83	Yellowstone National Park	WY	0.967
Outwest T's	Clothing Stores	Women's Clothing Stores	45.03	-110.71	Gardiner	MT	0.969

Figure

Figure 1

Selected POIs in Yellowstone National Park





NorthEast Travel and Tourism Research Association (NETTRA)

Annual Conference Research Colloquium

January 21, 2021 (virtual/online)

The importance of wildlife value orientations for ecotourism development

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Abstract

The concept of ecotourism is popular and considered as one of the fastest growing segments in the tourism industry. Ecotourism as a concept and its application is even more important in protected area settings where ecotourism projects are increasingly adopted to improve the livelihood of the local communities while consistently serving the conservation goal. Historically, human-wildlife conflicts have been prominent and significantly affected the conservation goals. This was particularly true in developing economies. Several interventions are adopted to minimize such conflicts, one of them being ecotourism development. The purpose of ecotourism development in that context was to create avenues for local communities as well as environmental conservation to derive socio-economic benefits. However, socio-economic benefits are not distributed equally while communities are in a state of pessimism that ecotourism development will have any benefits to them. Historical aspect of community alienation along with ongoing human-wildlife conflicts play a critical role for their state of pessimism. For a successful ecotourism development, it is important that local communities appreciate wildlife and support conservation activities. Therefore, understanding communities' value orientation towards wildlife is important to positively influence the outcome from the ecotourism development. Therefore, the purpose of the study is to understand local communities' value towards wildlife in the context of Bardia National Park (BNP), Nepal. A total of 871 survey questionnaires were collected from 8 buffer zone communities of BNP to serve the purpose of the study. The cluster analysis was performed to (i) identify distinct characteristics of residents based on their value orientation towards wildlife and how their value orientation differs among the resident clusters, (ii) examine the differences among the clusters for value orientation towards wildlife and resource management attitudes, and (iii) examine the differences among

clusters regarding socio-demographic variables. We identified four clusters with distinct characteristics which will be important to reconsider while promoting ecotourism development in the BNP region. These identified clusters retain different values towards wildlife where four dimensions of values included: appropriate use beliefs, hunting beliefs, social affiliation beliefs, and caring beliefs. Likewise, distinct clusters exhibited differences in knowledge towards wildlife law and regulations, support for tourism, willingness to adjust livelihoods for conservation, enforcement of wildlife rules and regulations, needs for community in conservation. Finally, different socio-demographic characteristics such as age, gender, education, income, land-holding size, annual crop damage from wildlife, and satisfaction level with existing compensation mechanism influence the clustering. The findings suggest that for successful ecotourism development to take place in BNP, local communities, their socio-demographic characteristics, their perceived values towards wildlife, and their attitude towards resource management, play critical roles. The detailed findings and their implications are further discussed.



**TRAVEL AND TOURISM
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NorthEast Travel and Tourism Research Association (NETTRA)

Annual Conference Research Colloquium

January 21, 2021 (virtual/online)

Emotion Detection of TripAdvisor Reviews of Yellowstone National Park

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<https://www.nettra.org/conference-proceedings.html>

Abstract

Today, social media becomes an omnipresent element of people's lives. With the development of information technology, more and more people share different aspects of their lives on social network platforms. TripAdvisor is one of the most popular travel websites, providing a large amount of travel-related information. In 2019, there were more than 859 million reviews posted by users (Statista Research Department, 2020), covering different travel-related topics, such as hotels, transportations, restaurants, and tourist destinations, revealing tourist's experiences, feelings, and opinions. The massive user-generated content as a good source for researchers to understand tourists fundamentally changes how information is generated and consumed (Alaei, Becken, & Stantic, 2019). Reviews shared by tourists are very influential information sources that influence various tourism sectors regarding the reputation and quality of services. Advances in big data technology enable us to analyze tourist's feedback in an efficient way. Many studies have discussed how to process and understand massive amounts of online reviews. The hospitality and food service fields adopted sentiment analysis extensively to understand their guests. Sentiment analysis is a popular technique in text mining and natural language processing, extracting users' attitudes and opinions from their reviews (Basiri & Kabiri, 2017).

However, less attention is paid to nature-based destinations. National parks make important contributions to the economy and people's well-being. User-generated content shared by tourists on TripAdvisor offers opportunities to understand people's preferences, feelings, and opinions of national parks during nature-based travel experiences (Hausmann, 2020). Although the study of sentiment analysis from social

media grows, few studies have focused on emotion detection. Many current studies adopt machine learning methods to categorize different emotions expressed by reviewers. In contrast to machine learning approaches, lexicon-based approaches do not require a large annotated training corpus, saving a lot of time (Basiri & Kabiri, 2017). So, these advantages make lexicon-based methods prevalent in the sentiment analysis of a large volume of data. In general, sentiment analysis categorizes reviews in bipolar sentiments, which are not enough to understand the complex emotions of tourists. The automatic detection of emotions in natural language is a complicated task due to the unstructured and free text posted by reviewers. This study focused on detecting the emotions from informal textual reviews of Yellowstone National Park based on the NRC Word-Emotion Association Lexicon (EmoLex). NRC Emotion Lexicon assigns words to two sentiments (positive and Negative) and eight basic emotions, including anger, fear, anticipation, trust, surprise, sadness, joy, and disgust (Mohammad, 2020). The eight primary emotions refer to Plutchik's emotion wheel. This study found that most tourists expressed positive sentiments with emotions such as joy, surprise, anticipation, and trust. There are few occurrences of reviews with negative sentiments.

Also, COVID-19 broadly impact the tourism industry. The pandemic has spread all over the world, and many countries are still fighting against the virus. Accordingly, people adjust their travel plans and behaviors under the influences of the pandemic. More and more people tend to travel to a nature-based destination to avoid potential risks. It is feasible for tourists to maintain social distance in the natural environment (Slater, Christiana, & Gustat, 2020). This study investigated the impacts of Covid-19 on emotions

expressed through tourists' reviews. Sentiment analysis based on the NRC lexicon is automatic, inexpensive, and suitable for TripAdvisor reviews' emotion detection.

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