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Tourism Consumption through Smart Devices: Bridging Tourist-Smart Object Assemblage and the Non-Representational Theory

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**TTRA 2021 Extended Abstract:
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and the Non-Representational Theory**

Introduction

The Internet of Things (IoT) is reshaping the relationships between individuals and objects. The emergence of smart speakers with voice assistants has the potential to re-frame the interactions between tourists, destinations, and service providers. However, empirical evidence remains relatively scarce on how tourists develop their relationships with smart speakers when planning and deciding on a particular destination or service. Drawing on non-representational theory, we employ an interactionist/performative approach to explore tourists' information production, expressive roles, and information-processing style during interactions with and without smart speakers in a pre-visit stage. Our implications enrich current discussions on tourism theory, methodology, management, and tourist experiences.

Literature Review

How tourists interact with spaces through the mediation of IoT devices can be interpreted as a way to objectivize the physical world in terms of processing representation of distance, costs, and time, among other indicators. Social theory is observing that individuals' interpretation of spaces and foreign cultures necessarily prone individuals to produce subjective expectations to understand their realities of consumptions associated with myths, existential belief, and the need of what is authentic, and transformative (Crick, 1989; Haraway, 1988; Whatmore, 2008). However, the intense use of smart technology while searching information about physical spaces may impose an objective over a subjective comprehension of tourism places. Among the many IoT devices currently available, the so-called smart speakers with voice assistants have achieved the highest consumer acceptance rates worldwide (Statista 2019). When these devices are asked about destinations or tourism service providers, responses tend to be focused on objective indicators, such as distances, modes of transportations available, or numerical ratings of tourists about their satisfaction with hotels or tourism attractions. Given this, the use of IoT devices in pre-visit stages may challenge traditional understandings of the tourist planning behavior (Chi, Gursoy and Chi, 2020; Tussyasiah, 2020). We observe that academic tourism literature is lacking of contributing to social theories in the challenge of explaining whether the intensive use of smart objects in planning tourism consumption necessarily end of a more cognitive objectivization of spaces on behalf of tourists' reality interpretations.

To respond to the detected gap, we reflect on the last theoretical developments of Hoffman and Novak (2018) regarding the consumer/object experience. These authors analyzed individuals' roles and capacities during interactions with smart objects through the assemblage theory lens. Assemblage theory suggests that communicating parties can affect and be affected by each other when the consumer seeks a particular piece of information in a consumption context (DeLanda, 2016). Novak and Hoffman (2019) argued that "both consumers and objects are viewed as having some kind of experience and are able to express agentic and/or communal roles in their interactions as parts of an assemblage" (p. 219). The agentic role involves consumers/smart speakers proactively asking questions, requesting information, and complementing the feedback received with their ideas and comments. The communal role involves consumers/smart speakers developing cooperative capacities in the search for information or entertainment. Both roles (agentic and

communal) can have negative connotations. For example, the agentic role would involve a limitation in proactive capacity, and the communal role would create an inability to search for or receive information from a smart speaker. Table 1 presents the possible roles that could be analyzed in tourists' interaction with smart speakers, based on Hoffman and Novak (2018).

Table 1. Agentic and communal roles observed in the interaction with smart speakers

Roles	Enabling the experience	Constraining the experience
Agentic role	Tourist/smart speaker exercise their capacities, add components, and enable the development of the interaction.	Tourist/smart speaker remove their capacities and limit the development of the interaction.
Communal role	Tourist/smart speaker internalize emergent capacities from the interaction.	Tourist/smart speaker internalize the constrictions of any capacity from the interaction.

In the context of this research, we analyze the interactional phenomenon of planning tourism consumption in the presence and absence of a smart speaker. The trip planning is evaluated by an interactionist/performative perspective (Dirksmeier and Helbrecht, 2008), which observes behavior as a function of three sources of variation: individuals (and the smart speaker), an experience, and the interaction between the individuals/technology and the experience. In this sense, this research focus relies on what has been described as a non-representational theory approach. Following Thrift (2008), non-representational studies capture the *onflow* of everyday life, which means that non-representational theory reflects on how life takes shape and gains expression in shared experiences, everyday routines, fleeting encounters, precognitive triggers, and unexceptional interactions. For our investigation, conversations with a smart speaker are developed as an unexceptional interaction that can occur as part of individuals' everyday life in contact with IoT devices. We propose real and metaphorical interactions with a smart speaker as valuable scenarios to evaluate the emergence of individuals' motivations, expectations, experiences, and perceptions of destinations while interacting with a smart speaker. Our goal is not to elaborate a new lineal or hierarchical model of tourists' behavior when planning a trip. Rather, our main goal is to explore and understand, with an experiential/relational motivation (Novak and Hoffman, 2019), the triad formed by (a) information, (b) the role relationships (agency and communion) produced when tourists plan a trip with and without a smart speaker, and (c) tourist's cognitive information processing in said interactions. These three main elements of study are conceptualized as tourists' interactive experiences with smart speakers while planning a trip.

Methodology.

We evaluated the tourists' interactive experiences with smart speakers combining real (study 1) and metaphorical interactions (study 2) in a pre-travel stage. Real experiences refer to tourists' direct interactions with smart speakers (interactionist perspective). Metaphorical experiences refer to tourists' interactions with images representing individuals' conversations with a smart speaker (performative perspective). This combination of experiences aims to capture the motivation of non-representational research to "unlock and animate new (human and non-human) potentialities" (Thrift and Dewsbury, 2000, p. 411). Additionally, the methodological combination of real and

metaphorical experiences with technology is a novel procedure in tourism behavior research that challenges the validity of findings obtained in the real interaction with smart speakers with a metaphorical context of analysis. This procedure will enhance the triangulation of our conclusions about the tourists' interactive experiences with smart speakers while planning a trip (Coulter, 2016).

For study 1, through the focus-group technique, we compare two distinct participants groups' conversational interactions when they discuss and exchange information with (group 1) and without (group 2) a smart speaker (Google Home). The focus group comprised European university students (six participants including the smart speaker in group 1; and five participants in group 2). In group 1, all the individuals could freely interrogate the smart speaker and discuss with other members of the group their knowledge about a realistic destination to visit together. In group 2, the instructions were the same, the only difference was that the participants could share only their own knowledge of a potential destination.

The analysis of the collected data occurred in two phases. In the first phase, using the grounded theory approach, we coded each participant's testimony line by line, allowing us to theoretically define the central informational elements in the interactive experience with smart speakers while planning a group trip. For group 1, we included, as part of the grounded theory approach, all lines in which the participants and the smart speaker expressed their roles in the interaction: high/low agentic expressive role in combination with high/low communal expressive role. In the second phase, we conducted a computerized text analysis using Linguistic Inquiry and Word Count (LIWC) software. Participants' information-processing style in each group was evaluated according to the four main types of linguistic characteristics of discourse represented by LIWC's: analytical thinking, clout/status, authenticity, and emotional tone (Pennebaker et al., 2015).

Results of study 1

The coding results of focus group 1 permitted us to preliminarily identify six central information structures in the interactive experiences of a group of tourists when planning a trip to a destination in the presence of a smart speaker. These central informational elements comprised which destination to visit, mode of transportation, accommodation, budget, time planning, and activities at the destination. Said elements are directly linked to what the traditional information and decision-making literature in tourism has defined as informational goals/decisions while planning a trip (Grigolon, Kemperman, and Timmermans, 2012; Pan and Fesenmaier, 2006). In this context, we observed that the participants' discussion of which destination to choose in the presence of a smart speaker was related to the combination of transportation modes and associated monetary costs. However, in group 2, participants associated the decision on which destination to visit with the activities that they could enjoy at the location. Thus, in group 2, the central element of the destination reflects a combination of *destination* and *activities* (what to do) while, in group 1, the destination was proposed as a result of deciding on transportation and monetary costs (how to do). In addition, and in contrast to group 1, participants in group 2 included the aim of seeking consensus among the members when choosing a destination, indicating that the participants without the smart speaker tended, to a greater degree, to accommodate other members' opinions, feelings, and interests during the interaction.

The coding process in the interaction with the smart speaker (group 1), allowed us to describe the predominantly high agentic role of the participants and the low agentic role of the smart speaker. This combination of agentic roles implies an opposite communal dynamic during the consumers/smart-speaker assemblage characterized by high communal role of participants and low communal role of the smart speaker. That means that participants exhibited a non-correspondent master/servant interaction with the smart object (Novak and Hoffman, 2019). The non-correspondent master/servant relationship is based on interactions meant to obtain specific information from the smart speaker without the possibility of assigning a broader capability.

The analysis through LIWC 2015 generates a quantitative output score range for summary language variables related to psychological constructs (analytical thinking, clout/status, authenticity, and emotional tone in a range between 0 = minimum; 100 = maximum). A *t*-test analysis of the difference in the means revealed a significant difference in the groups' mean scores only for the dimension of analytical thinking ($M_{\text{group1}} = 79.06$; $SD = 7.89$ vs. $M_{\text{group2}} = 51.93$; $SD = 11.06$; $t(9) = 5$, $p < .05$), which was higher for the group with the smart speaker.

Study 2

In study 2, we sought to understand how the interactive experience of planning a trip with friends (with/without a smart speaker) would be processed by participants of different countries of resident than the participants in study 1. In the aim of triangulation, study 2 also varies in the methodological approach as we employed an online projective technique. The storyboard served as a pictorial stimulus to encourage the participants to consider the situations and context of discussing and planning a trip with a group of friends. We recruited 40 US residents enrolled in MTurk to participate. Participants in each study were randomly exposed to visual conversational scenarios about planning a trip with friends (one scenario with the presence of a smart speaker, the other scenario without it).

The first scenario was created to simulate a conversation with a group of friends who, in the presence of a smart speaker, are debating where to travel for their next vacation. The participants were then asked to view the images of a pre-designed storyboard in which we simulated the group conversation with a smart speaker derived from the questions and comments obtained in study 1. After reading the storyboard, the participants were asked to explain what questions they would pose to the smart speaker and the other individuals in the group in the displayed context of looking for a tourist destination with friends. At the same time, they were asked for their opinions on the idea of using a smart speaker in a meeting with friends to decide where to travel together. The second online scenario mimicked the conditions of the first simulated group discussion, but, in this case, the storyboard did not include a smart speaker in the conversation among the characters. All the questions and responses between individuals in the group were taken directly from data gathered in study 1, specifically from the conversation of the group without a smart speaker (group 2 of study 1). After reading all the conversations, the participants were asked to write down what questions they would pose to the group.

Results of study 2

The coding in study 2 followed the informational structure patterns observed in study 1 for each simulated scenario, with and without the smart speaker. The only difference found from study 1

were that the participants' comments in study 2 revealed two further central informational elements while planning a trip (the destination's weather and gastronomic appeal). Among the participants' comments in the scenario with a smart speaker present, a new role in the interaction assemblage emerged. We observed that some participants described the smart speaker as an authoritative source of information that was able to contribute to the task of trip planning a number of capacities ranging from saving on travel costs to providing instantaneous information and giving individuals an air of being more sophisticated. All these references can be linked to a complementary master/servant relationship, that is, when an individual expresses a high agentic role and the smart speaker a low agentic role but both exhibit a high communal role in the interactional assemblage. In consequence, the assemblage leads to the self-extension and self-expansion of the individual due to the ability to extract from the smart speaker an augmented capacity to implement the planning process and recognize new identities (Hoffman and Novak, 2018). Some participants also reported a non-correspondent master/servant relationship with the smart speaker because the smart speaker was also recognized as a limited part of the interaction.

The psycholinguistic analysis of study 2 was consistent with study 1. A *t*-test analysis found significant differences in the mean scores of the scenarios only for the dimension of analytical thinking, study 2 ($M_{\text{group1}} = 60.58$; $SD = 17.48$ vs. $M_{\text{group2}} = 47.92$; $SD = 21.07$; $t(38) = 2.07$, $p < .05$).

Final Discussion

Our theoretical contributions can be presented through the informational, relational, and psycholinguistic elements observed in the studies developed. First, we confirmed differences in how the central informational elements emerged during the interactions of different groups of participants. For individuals choosing a destination with the smart speaker, the informational elements were specifically linked to monetary transportation costs. By contrast, participants without a smart speaker were more focused on choosing a destination on the basis of the activities they could enjoy at the location. Here, the presence or absence of the smart speaker is theoretically parallel to our understanding of individuals' distinct ways of describing experiences and situations with an abstract or concrete focus. In this context, the construal level theory (Liberman and Trope, 1998) argues that events or objects can be represented at distinct levels of construal (high: *abstract and decontextualized representation*; vs. low: *concrete and contextualized representation*) depending on the perceived psychological distance between the self and the event. Our study made clear that participants accompanied by the smart speaker were more focused on *how* to get to the destination, trying to control their budget and establishing a separation between transportation methods and accommodations, activities, and other elements. Consequently, consumers planning a trip in the presence of a smart speaker are more prone to express a low level of construal toward the information they gather in the interaction. Conversely, consumers in this study who debated among themselves in the absence of the smart speaker demonstrated a sharper informational focus on *what* they could enjoy at a given destination. That focus can be interpreted as a tendency to exhibit a high-level construal while planning a trip in the absence of a smart technology device.

In the second case, during real and simulated interaction with a smart speaker, participants developed a high agentic role and the smart speaker a low agentic role. However, roles assigned to the smart speaker in real interactions were low agentic (non-correspondent master/servant) and varied from a high communal role (complementary master/servant) to a low communal role (non-correspondent master/servant) in simulated interactions. These findings point that tourists can use

the smart speaker as an authoritative source of information capable of lending them a sophisticated air during the interaction. In the same regard, tourists can also process the smart speaker interaction with disillusionment, distrust, and skepticism of the device's ability to generate useful information.

We found evidence of more analytical thinking on participants' narratives in the presence of the smart speaker. This analytical processing style in planning a trip argues for interpreting the smart speaker as a medium of the objectivization of consumption. We argue that the effects of the objectivization of the trip planning task are linked to what non-representational studies (Lefebvre, 1991) have described as the *representation of the space*. The representation of the space implicates the production of factual, objective, and measurable elements while individuals are interpreting a spatial consumption rather than an interpretation of the *representational space* and *spatial practices*, in which more subjective information emerges about how consumers will process cultural practices at some location. Participants exposed to interactions without the smart speaker reveal through their comments a greater degree of interest in how the destination is socially and culturally constructed rather than demonstrating a sharper focus on the quantification of trip costs, flight times, or geographical distances.

Our findings indicated that interaction with smart speakers could influence how tourists interpret physical spaces in the pre-visit stage. Here, tourism managers can configure their promotional information on smart speakers, not only focusing on measurable aspects of the tourism consumption but also offering how the cultural uses of physical spaces at destinations can be understood. Future research must indicate whether more culture-related information from destinations on smart speakers drives tourists to a more immersive comprehension of physical places and culture and perhaps a more sustainable relationship with them.

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