The Impact of Smart Technologies on the Compliance Behavior of Leisure Seekers : Balancing Communication Exchange and Expertise

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Introduction

The interaction between tourists and destination management organizations is increasingly characterized by digitalization and personalization, a trend that is equally relevant for providers of outdoor experiential services, such as ski resorts and bike parks. The utilization of digital communication tools, such as mobile applications, and smart technologies, such as QR codes, facilitates the dissemination of real-time information in outdoor environments, including updates regarding weather conditions or visitor density. By leveraging these technologies, service providers aim to enhance tourists' experiences, mitigate the likelihood of unsafe decisions, and foster self-responsible behavior among visitors. A salient feature of smart technologies is their capacity to support varying levels of communicative exchange, ranging from static, unidirectional information dissemination to dynamic, reciprocal real-time interactions. This research seeks to examine the incremental value derived from digital and personalized communication within the framework of experiential tourism experiences. Our central hypothesis posits that increased levels of communication exchange enhance tourists' willingness to adhere to behavior suggested by smart tools. We propose that this effect is moderated by the level of user expertise, with the influence of communicative exchange on compliance diminishing as expertise increases.

Literature Review

Recent research highlights the benefits of digital real-time information for outdoor services. Scholl-Grissemann et al. (2022) suggest that utilizing location-based beacons to provide tailored messages at specific points along the trail could supply real-time information regarding routes, potential hazards, huts, and notable features. This aligns with the conclusions of Bethune et al. (2022) and Buhalis and Sinarta (2019), who underscore the significance of real-time notifications and information sharing. Such capabilities allow destination management organizations to instantly communicate with visitors to encourage safe recreational behavior, such as alerting hikers to slippery paths or the swift onset of darkness during winter. Additionally, these technologies help to decrease visitors' risks and alleviate their concerns (Buhalis and Sinarta, 2019) and at the same time can enhance tourism or leisure experiences (Sustacha, Banos-Pino, & Del Valle, 2023).

Methodology

We examine our hypothesis within the setting of Alpine bike parks, which represent a prevailing trend in Alpine tourism. A digital sign provided bikers with real-time information and tips on which trail they should use for warming up. Using a one-factorial design we manipulated communication exchange as messages on safety signs presented bike parks at low (the sign presents a static tip) vs. moderate (the sign presents a QR leading to a dynamic tip when scanned) vs. high levels (the sign presents a QR code leading to a dynamic, personalized tip when scanned based on stated skills and weather conditions). In one pretest (n=63; female=74.2%; average age=33.3 years, SD=14.1 years) we show that the manipulation was successful. One lab experiment (Study 1: n=140; female=42.6%; average age=36.7 years, SD=11.8 years) and one VR

experiment (Study 2: n=144) tested the contingencies of expertise (4 items; e.g., "I can easily assess my skills in bike parks") on compliance behavior (single item: "How likely is it that you will use the recommended trail to start?" measured from 0 to 100%) as elicited by different levels of communication exchange.

Results

The manipulation checks of Study 1 show that we successfully manipulate low vs. moderate ($mean_{low}$=3.72 vs. $mean_{moderate}$=4.31, t=-2.16, p<.05) and moderate vs. high levels ($mean_{moderate}$=4.31 vs. $mean_{high}$=4.82, t=-1.92, p<.10) of communication exchange. Results of Study 1 show respondents' highest (vs. lowest) compliance when exposed to a moderate (vs. low/high) level of communication exchange, thus pointing towards an inverted u-shaped relationship between communication exchange and compliance behavior. Increasing expertise though, decreases compliance behavior for moderate communication exchange ($X1_{low}$=37.47, t=4.46, $X1_{medium}$=24.96, t=4.72, $X1_{high}$=17.15, t=2.43). Checking the manipulations' effectiveness in Study 2, results show that indeed low differs significantly from moderate ($mean_{low}$=3.63 vs. $mean_{moderate}$=4.26, t=-1.75, p<.10) and moderate significantly from high levels ($mean_{moderate}$=4.26 vs. $mean_{high}$=5.29, t=-3.04, p<.05) of communication exchange. Study 2 shows that relational value (3 items; e.g., "I felt a positive connection to the bike park") mediates the positive effect of moderate (vs. low/high) level of communication exchange on compliance behavior when expertise is low (2.92, Boot SE=1.75, [CI95%]: .15, 6.99) and moderate (2.40, Boot SE=1.34, [CI95%]: .12, 5.59). No such effect is found for high expertise.

Conclusion and Discussion

This research seeks to understand how smart technological tools can help to manage consumer behavior in leisure and tourism. This is possible to a limited extent and the results show that a moderate level of communicative exchange is more likely to result in behavior change. Although this changes as the respondent's level of experience increases, it shows that communication must be focused and accurate, particularly in a leisure context. This is also shown by earlier studies, which indicate that the experience can also lead to overestimation of risks in outdoor leisure behavior (Pröbstl-Haider, Dabrowska, & Haider, 2016).

It also plays a role how strongly the user feels connected to the region or the leisure offer. A change in behavior is then more pronounced. For destination and leisure marketing in particular, this means that the aim must be to appeal to leisure users emotionally and convey a sense of connection with the region. These users will then, for example, take moderate and less risk if appropriate information initiatives are implemented (Creyer, Ross, & Evers, 2003). Future research should explore the role of generative AI tools in risk communication, examining evolving trends resulting from the paradigm shift initiated by the emergence of these technologies (Sigala et al., 2024).

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