

Taking your next vacation from home: Motivations and impacts of using live-streaming tourism

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Introduction

Background

In today's reality of travel and tourism, several transformations are significantly enriching the ways that tourists interact with and experience the world. One prominent trend is the infiltration of technologies and digital solutions in tourism experiences (Wang, So, & Sparks, 2017; Pencarelli, 2020). With the acceleration of internet speed (e.g., 5G technology) and the elaboration of software programs and smartphones, people are now able to co-create their destination experiences virtually (Neuhofer, Buhalis, & Ladkin, 2014; Stankov & Gretzel, 2020). The scope of virtual travel is rather broad and involves various visual media and continuously evolving technologies. From watching a recorded ski video to wearing a headset to be immersed in a 3D museum exhibition, one common characteristic of virtual tourism is that it is not spatially constrained (Mura, Tavakoli, & Sharif, 2017). With proper mediums, people could visit real destinations without leaving their houses. Among these virtual tourism encounters, live-streaming tourism, a unique and perhaps substitute for physical travel, has started to grow in popularity (Deng, Benckendorff, & Wang, 2019).

Live-streaming tourism involves a streamer to launch a real-time video and audio content to audiences who could watch the streamer traveling from a thousand miles away (Deng et al., 2019). Audiences, to some extent can experience what the streamer experiences in the tourism destination (Deng et al., 2019). During the streaming, not only audiences can communicate with each other via text- and/or video-based chat synchronously, but the streamer could have dialogues with audiences, making the entire tourism experience immediately interactive and co-created. The main difference between live-streaming tours and other virtual tours is that the former has real-time interaction and multiway communication. The recent flourish of live-streaming tourism signals its promising potential in the tourism market. For example, Fliggy, Alibaba's online travel platform, has launched around 29,000 live broadcasts with over 250 million views since February 2020 (Cui, 2020). Airbnb's new live interactive platform, "Online Experience", has reportedly become the experience-sharing company's fastest-growing product, surpassing its traditional home rental and offline services (Oliver, 2020). More than half of the users who have booked "Online Experience" indicated that they would like to keep booking even after in-person activities are resumed after the pandemic (Airbnb, 2020)

Meanwhile, as the COVID-19 pandemic slowed travel and tourism to almost a halt, humans' needs for leisure and to physically connect with the world were severely hindered (Gössling, Scott, & Hall, 2020). Live-streaming tourism empowers individuals to experience new destinations at home without the risks associated with large-scale travel, whether those are medical, personal, or environmental (Mirk & Hlavacs, 2014; Rao & Krantz, 2020). Yet the societal impacts of live-streaming tourism are far beyond its ability to enable a new way of traveling during the pandemic. Those impacts include but are not limited to creating new job opportunities (e.g., virtual tour guides, videographers, drone pilots) and rejuvenating the hardest-hit travel and tourism sector, allowing people with physical disabilities to experience new destinations easier, or even reducing environmental harms caused by over-tourism (Fennell, 2020; Jones, 2020; Rao et al., 2020). As

Fennell noted (2020), personalized, interactive, real-time virtual tours (PRITs) may change the way people consume touristic experiences in the new age of disruption.

Research Objectives

Despite its rapid development and benefits brought to the industry and the society, live-streaming tourism has received inadequate and limited attention in the field, whether being from the perspective of live-streaming audiences, streamers, or streamed destination communities. In most instances, destination marketers use short live-streamed tourism videos as promotion tools to provoke physical travel intention (Eluwole, Elidemir, Lasisi, & Ozturen, 2020; Fennell, 2020). In addition, few researchers compared live streaming with conventional visual media such as photos or recorded videos used in tourism and found live streaming superior in being more engaging (Deng et al., 2019; Haimson & Tang, 2017), due to its unique characteristics of interactivity, authenticity, and immersion (Haimson & Tang, 2017; Huertas, 2018; Wymer, 2019). Some tourists show a high willingness to share travel experiences with others. Technologies such as wearable computing devices (e.g., Google Glass) facilitate the development of live-streaming tourism as tourists can share real-time travel experiences (Tussyadiah, 2013). Furthermore, Fennell (2020) viewed live-streaming tourism as a substitute for physical travel for eco-tourists who want to minimize human footprints on the planet. To the best of the authors' knowledge, a summary of the six existing studies focusing on live-streaming tourism is presented in Table 1. In particular, the streaming content, the streaming platform, key research findings, and methodology are laid out.

Table 1. Summary of Existing Studies on Live-streaming Tourism

Author	Content	Platform	Research Focus	Methods
<u>Tussyadiah, 2013</u>	Live tours	Wearable computing device (e.g., Google Glass)	<ul style="list-style-type: none"> ▪ Motivations to use wearable devices for recording and streaming travel and tourism experience ▪ One motivation is to share real-time travel experiences with others, driven by self-esteem, belonging, and altruism 	Empirical, qualitative
<u>Haimson & Tang, 2017</u>	Live events	Facebook Live, Periscope	<ul style="list-style-type: none"> ▪ Comparison between live streams and recorded videos ▪ Determinants of engagement: immersion, immediacy, interactivity 	Empirical, mixed method
Huertas, 2018	Live tours	Instagram Live Videos	<ul style="list-style-type: none"> ▪ Characteristics of live-streaming tourism (i.e., immediacy, interactivity, relationship) ▪ Outcomes of live-streaming tourism (i.e., authenticity, attraction, overall experience, and destination image) 	Empirical, qualitative
<u>Deng et al., 2019</u>	Live tours	N/A	<ul style="list-style-type: none"> ▪ Comparison between live streams with conventional visual media ▪ Research agenda 	Conceptual
<u>Wymer, 2019</u>	Live events	Facebook Live	<ul style="list-style-type: none"> ▪ Determinants of engagement: exclusive content, authenticity, 'real-time', immersion, interaction ▪ Management challenges using live streaming; types of live videos based on engagement 	Empirical, qualitative
Fennell, 2020	Live tours	N/A	<ul style="list-style-type: none"> ▪ Comparison between traditional ecotour and PRITs in terms of sustainability criteria ▪ Pros and cons of PRITs 	Research note

As Table 1 presented, there is a limited number of and lack of depth in research of live-streaming tourism. Up to now, most studies touching on people's motivations or consequences of using live-streaming tourism have been descriptive and explorative in nature (e.g., Deng et al., 2019; Huertas, 2018). One study employed mixed methods to investigate the determinants of engagement of live-streaming tourism yet is limited to live events, which is inherently different from live-streaming tours (Haimson & Tang, 2017). The current study aims to fill the gaps by providing a comparatively large quantity of empirical evidence with a national survey of 1,000 live-streaming audiences. The study also furthers our understanding of live-streaming tourism by investigating audiences' experiences and perceptions of live-streaming tours. Despite the importance of live streaming in the virtual tourism experience, there remains a paucity of research on a holistic view of viewers' motivations, consequences, as well as the underlying mechanism of using live-streaming tourism. This study addresses the research gap by arguing that live-streaming tourism experience is innately co-created (Deng et al., 2019). Through making comments, asking questions, and engaging in dialogues with the streamer and other audiences, an individual is able to integrate his/her own resources (e.g., knowledge and skills, emotions) to construct a unique experience from which values are experientially and contextually co-created by him/herself (Malone, McKechnie, & Tynan, 2018; Prebensen, Vittersø, & Dahl, 2013). In sum, the current study contributes to the existing literature by empirically testing a conceptual model to understand audiences' motivations and consequences of using live-streaming tourism and its underlying mechanism through co-creation values.

Previous research has used the United Theory of Acceptance and Use of Technology 2.0 (UTAUT2, Venkatesh, Thong, & Xu, 2012) to explain technology acceptance and use of information and communication technology (ICT) (e.g., Macedo, 2017), as well as adoptions of ICT in tourism contexts (e.g., Gupta & Dogra, 2017). Based on the UTAUT2 model, our research objective is to propose and test a theoretical model of audiences' motivations and consequences of using live-streaming tourism (LST). Specially, we expand UTAUT2 by incorporating three antecedents related to the adoption of LST – interactivity, authenticity, and presence – to the original model. Meanwhile, our model investigates the multi-dimensional co-creation value (Verleye, 2015) as a mediator. In other words, the model examines how existing UTAUT2 antecedents, together with LST antecedents, influence audiences' recommendation intention and reuse intention of LST, through co-creation value (See Figure 1). Our research questions are: (1) What will motivate tourists to participate in live-streaming tourism? (2) Which factors/antecedents will more significantly impact value co-creation in live-streaming tourism? And (3) What is the impact of live-streaming tourism on the intention of recommendation and reuse?

Literature Review

Live-streaming tourism

Live streaming refers to online streaming media which records and broadcasts simultaneously (Ali, Mathur, & Zhang, 2006). Online live streaming allows people to create, share, and watch videos in real time. All one needs to watch a streaming video is an internet-enabled device such as a computer or smartphone, along with an appropriate live-streaming platform such as a website or a mobile app. One of the most inimitable features of live-streaming tourism is its capability to transport viewers in real time to a real destination. Unlike pre-captured photos and recorded videos, live streaming tourism videos enable “nowness” (Buhalis & Sinarta, 2019) and

cross over the temporal and spatial boundaries. Meanwhile, regardless of its relatively low requirements for technology gears, live-streaming tourism offers audiences direct access to genuine, actual tourism sites, rather than computer-generated simulations in most cases of virtual reality tourism applications (including augmented reality) (Guttentag, 2010). Such a vivid transition to a real destination is realized through the digital lens equipped with high-speed internet and high-resolution imaging technologies, leading to a feeling of “almost being there” (Advani, 2015; Deng et al., 2019). The multiway, reciprocal communication of live-streaming tourism further facilitates interactivity. Viewers can freely publish their messages and collect reactions at once from the streamer and their fellow viewers (Hou, Guan, Z., Li, & Chong, 2019).

UTAUT2

The United Theory of Acceptance and Use of Technology 2.0 (UTAUT2) provides an empirically validated causal framework which is designed to explain technology acceptance and use (Venkatesh et al., 2012). This theoretical model is an advancement based on its first generation (i.e., UTAUT; Venkatesh, Morris, Davis, & Davis, 2003), which consist of four antecedents (i.e., performance expectancy, effort expectancy, social influence, facilitating conditions) and a few moderators (e.g., gender, age, experience) in predicting user acceptance of information technology (e.g., behavioral intention). In UTAUT2, Venkatesh et al. (2012) expanded the model with three additional antecedents including hedonic motivation, price value, and habit. Based on the UTAUT2, our study takes together with findings in live-streaming tourism and value co-creation, to develop a conceptual model on user adoption of live-streaming tourism (See Figure 1). Many previous studies provide empirical evidence for incorporating the UTAUT and UTAUT2 when investigating technology acceptance in the context of tourism and hospitality. For example, Lu and colleagues (2019) utilized the UTAUT to identify the key dimensions of customers’ acceptance of service robots (Lu, Cai, & Gursoy, 2019). Morosan and DeFronco (2016) revisited the UTAUT2 to examine customers’ intention to use contactless mobile payments in hotels. Thus, we predict the UTAUT variables would have the same positive effects on intention to reuse and recommend live-streaming tourism.

Antecedents related to live-streaming tourism

A review of key literature in live-streaming tourism and commerce, as well as virtual tourism indicates that there are a few antecedents that outstand to influence people’s reuse and recommendation intention of live-streaming tourism. *Interactivity* refers to the extent to which “two or more communication parties can act on each other, on the communication medium, and on the messages and the degree to which such influences are synchronized” (Liu & Shrum, 2002, pp. 54). Liu (2003) conceptualized interactivity in a digital context and concluded that interactivity is a second-order construct composed of three dimensions, active control, two-way communication, and synchronicity. In the current study context, active control describes the degree to which an audience could autonomously participate in and constructively influence an interaction; two-way communication means that the information flows reciprocally between the audience and the streamer; synchronicity delineates the immediacy of the message flow (Liu, 2003; Hou et al., 2019). Interactivity in live-streaming commerce positively influences users’ continuous watching intention (Hou et al, 2019). While in virtual tours, user-driven interaction results in augmented attitudes (Spielmann & Mantonakis, 2018), increased purchase intention, and word of mouth (Cowan & Ketron, 2020).

Meanwhile, tourists always demand their experience to be more *authentic*, even in a virtual setting (e.g., Kim, Lee, & Jung, 2020; Yeoman, Brass, & McMahon-Beattie, 2007). Traditionally, tourism scholars view authenticity as an objective concept as opposed to counterfeit (Cohen, 1988). Others challenge this static notion and argue that authenticity is an existential state of being activated by tourism (Steiner & Reisinger, 2006; Wang, 1999). The current study took the latter perspective and employed Kim et al.'s (2020) definition of authenticity in the context of virtual tourism. Compared to recorded videos or simulated scenes, live-streaming tours allow audiences to engage with real, unedited visual frames (Deng et al., 2019). Therefore, it is more likely to capture objects, events, places, and people in an authentic way due to the lack of post-production editing (Tiberghien, Bremner, & Milne, 2017). Previous research shows increased authenticity in a virtual tourism experience leads to enhanced attachment to the virtual travel tool (Kim et al., 2020). Huertas (2018) found that because of its immediacy and real-time nature, live-streaming tour attains more authenticity, causing an improved overall experience of the virtual tour.

The third antecedent, *presence*, generally consists of two dimensions – spatial presence and social presence (Nowak & Biocca, 2003). Spatial presence refers to the feeling people have that they are physically “inside” a virtual environment; social presence is defined as the perceived ability of the virtual medium in connecting people (Nowak & Biocca, 2003). Virtual tourism offers audiences a strong sense of presence via the higher elaboration of mental imagery (Deng et al., 2019; Bogicevic, Seo, Kandampully, Liu, & Rudd, 2019). Likewise, studies in live-streaming events reveal that presence is significantly associated with viewing engagement and viewing intention (Haimson & Tang, 2017; Wymer, 2019).

Co-creation Value

The present study argues that customers' co-creation value indirectly connects the relationship between the antecedents and the outcome variables of the proposed model. With that being said, we argue that the UTAUT2 antecedents, as well as the live-streaming tourism antecedents, lead to co-creation value, which in turn influence customers' recommendation and reuse intention after using live-streaming tourism. The concept of value co-creation in tourism means customers' active participation and engagement in experience value chains as co-producers of their own tourism experiences (Vargo and Lusch 2004; Zhang, Meng, & So, 2020). Previous research concludes that customer value generated from co-creation experience commonly encompasses hedonic, cognitive/learning, social, and personal forms (Verleye, 2015; Zhang et al., 2020) as a second-order construct. Customer value co-creation is often discussed in contexts of service or experience innovations driven by technologies (Buonincontri & Micera, 2016; Polo Peña, Frías Jamilena, & Rodríguez Molina, 2014). This is because technology adoptions generally require a higher degree of customer inputs and participation (e.g., viewers need to know how to interact and participate in conversations in live-streaming tourism). Particularly, information communication technology such as live-streaming tourism pertains to capabilities (e.g., interactivity, authenticity, presence) to promote users' co-created values, eventually causing improved loyalty and other outcomes (Polo Peña, et al., 2014). Because of the word amount limit, we did not include discussions on all the proposed hypotheses depicted in Figure 1 in Literature Review.

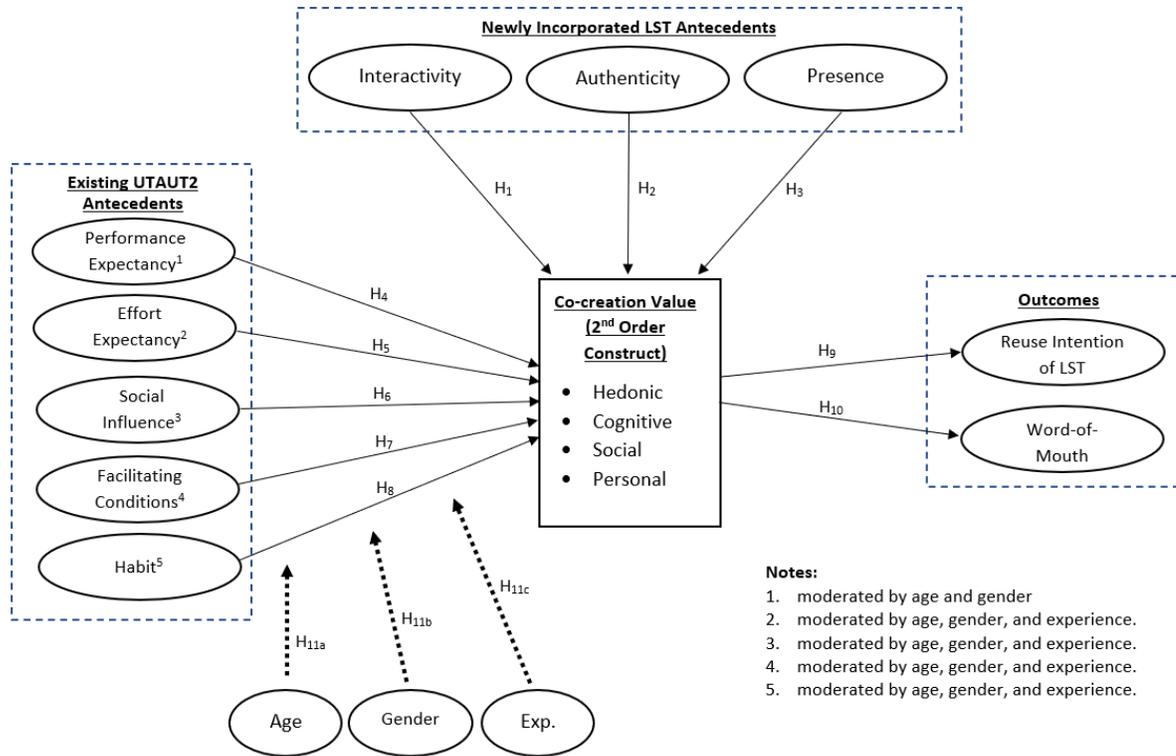


Figure 1. Proposed Conceptual Model

Methodology

The *target population* of the current research is U.S. adults who have participated in live-streaming tourism in the past 12 months. The scope of live-streaming tourism includes both paid and unpaid tours streamed on either commercial platform (e.g., Airbnb “Online Experience”), or free platforms such as those offer in destination marketing websites. A national online survey hosting company, Qualtrics™, will be hired to recruit the target respondents. Thus, the *sampling frame* will be obtained from Qualtrics™ national consumer online panel (e.g., Kees et al., 2017; Oh et al., 2014). Additionally, we adopt Jackson’s (2003) N: q rule to determine our expected sample size (i.e., N = 1,000). Jackson (2003) suggests adopting a minimum sample size in terms of the ratio of cases (N) to the number of model parameters that require statistical estimates (q). An acceptable sample size-to-parameters would be 10:1. Similar guidelines are also reported by other scholars (Bentler & Chou, 1987; Kline, 2011).

The current study will employ an online survey method to collect viewers’ responses based on their most recent experiences with live-streaming tourism. The survey instrument was developed using existing scales from previous studies. All items were measured on a five-point Likert scale. Upon giving consent, participants will answer a questionnaire that asks screening questions of their previous experiences of LST. Respondents will then report their perceptions of live streaming tourism including performance expectancy (Paulo, Rita, Oliveira, & Moro, 2018; Venkatesh et al., 2012), effort expectancy (Venkatesh et al., 2012), social influence (Melián-González, Gutiérrez-Taño, & Bulchand-Gidumal, 2019; Venkatesh et al., 2012), facilitating

conditions (Venkatesh et al., 2012), habit (Venkatesh et al., 2012), interactivity (Hou et al., 2019), authenticity (Kim et al., 2020), presence (Nowak & Biocca, 2003), co-creation values (Verleye, 2015; Zhang et al., 2020), reuse intention (Lee, Hsu, Han, & Kim, 2010), and Word of Mouth intention (Lu, Zhang, & Zhang, 2020). After that, participants will report their demographics, such as gender, age, and education level.

Data Analysis and Significance

The collected data will be analyzed using co-variance based Structural Equation Modeling with IBM® SPSS® Amos 27 (Arbuckle, 2020). Confirmatory Factor Analysis followed by reliability and validity tests will be performed before hypothesis testing. The current research is significant in both its theoretical and practical contributions. Before the study, thorough, quantitative evidence about the motivations and impacts of using live-streaming tourism is purely anecdotal. Our work is the first comprehensive investigation of forces driving and consequences following people's adoption of this new form of virtual travel. The research also contributes to the existing knowledge of virtual tourism by unveiling understandings of a different yet growing way of virtual travel in today's societal and technological reality. The unification of a well-validated theory (i.e., the UTAUT2), together with factors specifically concentrating on experiences of live-stream commerce and virtual tourism, has extended our knowledge of the UTAUT theories in specific contexts. Furthermore, value co-creation, as the underly mechanism of the causal model, brings up new insights on how virtual tourism and/or ICT experiences may be constructed. By integrating recent findings from value co-creation literature, we argue that participating in live-streaming tourism generates an enjoyable, learning, connected, and user-centered experience.

Practically, the present study establishes a quantitative framework for predicting people's continuous usage and recommendation intention of using live-streaming tourism. The findings will be of interest to a great amount of population including micro-entrepreneurs who work or want to work as virtual tour guides or other related occupations, traditional travel companies (e.g., destination marketing organizations, hospitality firms such as hotels) who are thinking about alternative ways in the promotion or connecting with their target audiences, non-profits who help people with disabilities of travel or whose aim is to reduce the impact of mass tourism. The insights gained from this study will be of assistance to design a better live-streaming tourism experience for the users as well, eventually improving the value of participating in such kind of virtual tour.

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