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I felt like we were together! Insights into socio-technological value formation practices in virtual tourism experiences

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Abstract

This practice theory-based study explores value formation in the context of virtual experiences in tourism. In this study, virtual experiences are live, interactive sessions delivered on a digital platform that allow individuals to engage with others and virtually explore destinations worldwide, thus promoting more responsible and sustainable tourism. Virtual experiences offer an interesting case to examine practices in a socio-technological context. The study adopted a qualitative approach consisting of eight interviews with the experience hosts, eight focus groups with guests, 35 reflection papers written by guests of virtual experiences, and participant observations. The empirical data was analysed thematically. The research identifies four socio-technological value formation practices: connecting, interacting, materialising, and disconnecting. Drawing from practice theory, the study provides examples of how these practices either contribute to value co-creation (congruence) or value co-destruction (incongruence) in virtual experiences. The key findings in the study advance understanding of the role of technology in value formation practices and contribute to the discussions related to technology, experiences, and social practices in tourism. Considering the need to gain richer insights into the practices of value formation in technological encounters, theoretical and managerial implications are offered to understand how value is formed in socio-technological practices in the tourism context.

***Keywords**: Sustainable tourism, Virtual experiences, Practice theory, Socio-technological practices, Value formation*

Introduction

In recent decades, digitalisation has played a critical role in transforming the tourism and hospitality industries (Buhalis, 2025; Bulchand-Gidumal et al., 2024; Gössling, 2021; Lugosi, 2021; Mele & Russo-Spena, 2024; Neuhofer et al., 2014; Pesonen, 2017; Tuomi et al., 2020; Tussyadiah, 2020; van Nuenen & Scarles, 2021). According to UN Tourism, we are witnessing the fourth industrial revolution, which is characterised by technological innovations such as artificial intelligence (AI), augmented and virtual reality, and a diversity of digital platforms (UN Tourism, 2025). Digitalisation is often associated with e-commerce, the development of tourism services relying on virtual or augmented reality, technology to enhance tourism management, marketing practices, or smart tourism (Buhalis, 2025; Chen et al., 2021; Kirova, 2021; Ren et al., 2018).

However, digitalisation has also played an important role in driving both innovative business models interconnecting virtual and physical tourism consumption spaces (Mele & Russo-Spena, 2024; Zhang et al., 2022), and conversations about virtual travel distributed by digital platforms as a novel form of tourism (e.g. Cenni & Vásquez, 2021; Flavian et al., 2019). Technological developments – ranging from virtual experiences that reduce the environmental impact of travelling to innovations in tourist infrastructure – are transforming tourism (Lugosi, 2021) and thereby, opening possibilities for more sustainable practices (Fennell, 2021).

In particular, the travel bans during the pandemic triggered the emergence of new forms of travelling, such as webcam travel and virtual experiences (e.g. Alegro et al., 2023; Cenni & Vásquez, 2021; García-Rosell, 2022; Jarratt, 2020; Li et al., 2024; Liu et. al., 2023; Verma et al., 2022; Yamada & Matsuda, 2023). While webcam travel refers to the act of viewing places through a webcam (Jarratt, 2020), virtual experiences are understood as live, interactive sessions (e.g. city tours, nature walks, and cooking courses) offering the ability to connect with expert hosts around the world via a digital connection (Cenni & Vásquez, 2021; Yamada & Matsuda, 2023). Sharing economy-based digital platforms (hereafter referred to as digital platforms) played a central role in commercialising and facilitating virtual experiences that enabled people to connect with others and share knowledge online (Buhalis et al., 2019; Camilleri & Neuhofer, 2017). Virtual experiences provided through digital platforms compete for consumers' attention alongside other entertainment possibilities and social media such as Netflix, TikTok, and YouTube. The key differentiator and value in the virtual experiences is the live and authentic presence of the host, interaction possibilities, and the quality of the system of the platform (Alegro et al., 2023; Li et al., 2024; Yamada & Matsuda, 2023).

Building on a practice-based approach to value formation (Camilleri & Neuhofer, 2017; Echeverri & Skålén, 2011, 2021; Skålén, 2024) and noting a non-human perspective on how value is formed (García-Rosell et al., 2019; Kaartemo & Helkkula, 2022), this study aims to explore the human and non-human arrangements involved in the co-creation and co-destruction of value in virtual tourism experiences. More precisely, this research investigates the integration of technology, experiences, host-guest relationships, and socio-technological value formation practices in the context of virtual experiences. By doing so, the study advances understanding of the role of technology in value formation in experiences and contributes to ongoing discussions on technological and socio-technological practices in tourism. The study follows the idea that there is a socio-technological system deeply integrated with digital encounters in tourism (den Hond & Moser, 2022; Lugosi, 2016, 2021; Ren et al., 2018), influencing practices of value formation (Skålén, 2024). Practice theories and practice-based approaches have proven to be useful in marketing and tourism research (e.g. Camilleri & Neuhofer, 2017; Echeverri & Skålén, 2011, 2021; Schau et al., 2009; Skålén, 2024; Warde, 2005; de Souza Bispo, 2016; Lamers et al., 2017; Rantala, 2010; Ren et al., 2018; Paloniemi, 2024). While there is a stream of literature examining drivers, interactions, and practices shaping value formation in technology-mediated tourism experiences (e.g. Camilleri & Neuhofer, 2017; Neuhofer et al., 2014; Sthapit & Björk, 2021), they tend to focus on human-to-human interaction and practices through which value emerges. As a result, this study offers new theoretical insights by demonstrating how practices in virtual experiences foster

value co-creation (congruence) or lead to value co-destruction (incongruence), in settings where both human and non-human agencies may play a role. By doing so, this research contributes to the discussions related to the role of technology in tourism (e.g. Buhalis, 2025; Gössling, 2021; Lugosi, 2021; Lamers et al., 2017; Philip et al., 2019; Ren et al., 2018b) and provides novel insights into socio-technological value formation practices emerging at the intersection of experiences and technology.

Empirically, this research is based on a single case study of a European digital platform, which was among the first to launch virtual experiences onto the market. This digital platform aggregated, facilitated, and provided diverse virtual experiences, ranging from city tours to handicraft workshops and meditative nature walks. Due to the sharing economy and peer-to-peer background of the platform, from now on, the terms 'guest' and 'host' are used to refer to customers and service providers respectively. The data in this study consists of participant observations, eight interviews with hosts, eight focus groups with guests, and 35 written reflections provided by guests of the virtual experiences. The remainder of the paper is structured as follows. First, the theoretical foundations of the practice theory approach to value formation in virtual experiences is elaborated. Second, the methodological choices guiding the study are explained. Third, the findings are presented, followed by a discussion section that contextualises the results within the relevant scholarly literature and highlights the study's contributions and implications. Finally, the conclusion summarises the key insights of the study, reflects on its limitations, and outlines potential avenues for future research

Literature Review

Value formation in virtual experiences in tourism

Virtual experiences have recently gained significant interest in both the tourism industry and tourism research (Fennell, 2021; Market Data Forecast, 2025; Verma et al., 2022; Yamada & Matsuda, 2023). Within the context of this study, virtual experiences are understood as platform-based live and interactive sessions (e.g. virtual city tours) between the hosts and guests (Cenni & Vásquez, 2021; Yamada & Matsuda, 2023). Previous research suggests that virtual experiences can be perceived as valuable when the quality of the virtual experience system, the host's personality and skills, the interaction and co-creation methods available for participants, and the consistency with expectations and preconceptions are of high quality (Yamada & Matsuda, 2023; Tussyadiah et al., 2018). Figure 1 illustrates the research setting of value formation in virtual experiences in tourism. Within this setting, hosts, guests, and digital platforms play central roles. Virtual experiences may lead to either value co-creation or value co-destruction in a setting where both human and non-human agencies have a role.

Within this context, technology plays an essential role in facilitating host-guest interactions and value formation, such as social bonding and economic transactions (Zhang et al., 2022). Technology is not only a fundamental part of an experience offering, but it also influences value formation in tourism (see Pine & Gilmore, 2014). For example, digital platforms actively promote and regulate host-guest interactions for the sake of value co-creation (Buhalis et al., 2019;

Camilleri & Neuhofer, 2017; Zhang et al., 2022). These platforms consolidate various virtual experiences, streamline the processes of selling and buying, ensure quality control, offer support and educational resources, and enforce regulations. In these cases, technology contributes to decreasing the time and costs of finding information, controlling transactions remotely, and externalising most service production activities to individuals, the hosts and the guests, who interact in a peer-to-peer manner in the setting and co-create value like social connections and shared knowledge. Technology, as well as users, is configured through the practices that they are part of (Larsen, 2018).

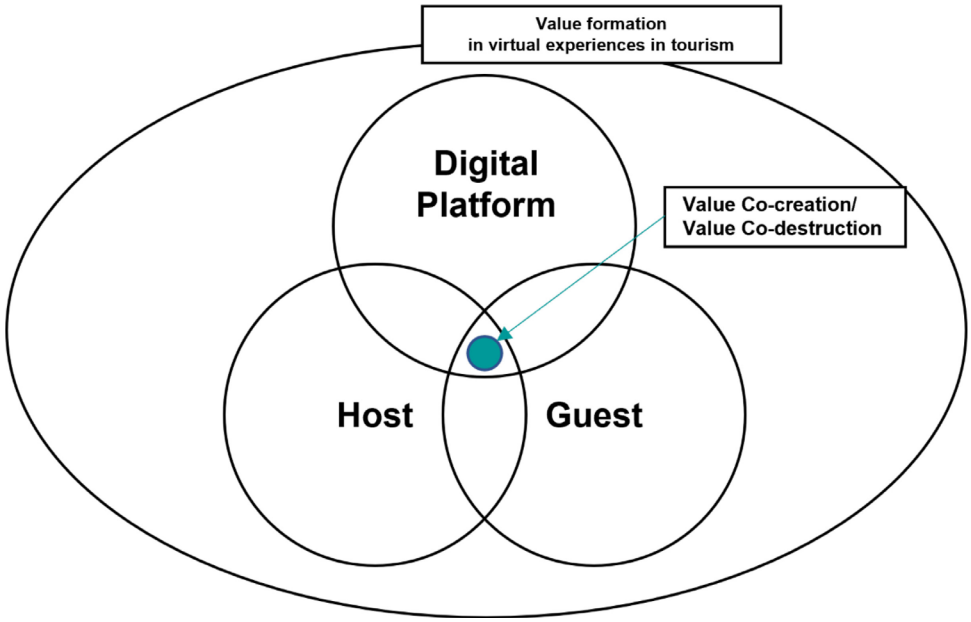

Figure 1. Value formation in virtual experiences in tourism

Technology plays a crucial role within virtual experiences, and its involvement is twofold: it serves as a passive instrument and, at times, it becomes relationally agentic by constituting, enabling, and constraining social interactions (Airoldi & Rokka, 2021; Haanpää, 2022; Lugosi, 2016; den Hond & Moser, 2022; Schönian, 2011). Technology as an instrument is usually considered to have a positive effect on consumer experiences by allowing efficient interactions among consumers and between consumers and service providers (Neuhofer et al., 2014; Pine & Gilmore, 2014). Although technology plays a central role in facilitating value formation and enhancing tourism experiences, it can also have unintended consequences that can decrease the value and lead to value co-destruction. Indeed, as argued by den Hond and Moser (2022), technology is not only instrumental but also relationally agentic and value-laden, influencing both human and non-human entities. By taking a practice theory approach to value formation, it is possible to explore the human and non-human arrangements involved in technology-mediated tourism experiences.

Practice-based approaches to value formation

Practice theories focus on understanding how institutions, actors, and materials connect, stay together, recreate, and reorganise to enable what is known as tourism (Ren et al., 2018a) or virtual experiences. Accordingly, practices constitute a temporally evolving and spatially dispersed network of behaviours, encompassing practical activities, performances, and representations or discourse (Warde, 2005). Practices can be exemplified as 'routinized ways in which bodies are moved, objects are handled, subjects are treated, things are described, and the world is understood' (Reckwitz, 2002: 250). Practices are carried out by their participants, who use their know-how and motivational knowledge according to the particular practice (Reckwitz, 2002). This study follows the idea that tourism or virtual tourism is a set of ongoing organising practices that emerge from bundles of practices (de Souza Bispo, 2016). In this study, the practices are empirically 'zoomed in' (Nicolini, 2012: 3) in a technology-mediated context of virtual experiences.

The study builds upon existing practice-based approaches to value formation (Echeverri & Skålén, 2011; 2021; Skålén, 2024; Schau et al., 2009), as well as the foundational work of practice theory by Schatzki (2002, 2019) and Reckwitz (2002). Value is conceptualised in terms of congruences or incongruences between the elements of practice enacted by participants (Echeverri & Skålén, 2011). Accordingly, value is formed through the practices of multiple participants and the integration of a wide range of resources. However, value is a subjective concept and is determined by each beneficiary taking part in these processes (Vargo & Lusch, 2017). While practices refer to background coping skills that simultaneously limit and enable interactions between participants, the notion of value formation highlights the fact that such practices may not always lead to the co-creation of value but possibly also to its co-destruction (Echeverri & Skålén 2021; Plé & Chumpitaz Cáceres, 2010; Skålén, 2024).

Following the ideas of Echeverri and Skålén (2011; 2021), Schau et al. (2009), and Warde (2005), this study adopts the position that practices consist of three elements: procedures, understandings, and engagements. Procedures are the rules, the principles, and the instructions; understandings include issues like practical know-how and knowledge; and engagements can be the goals, commitments, and motivation that are emotionally charged as people are committed to them (Schau et al., 2009; Warde, 2005). The practices are analysed through these three elements. The interest lies in understanding how they influence each other and configure a practice in the context of virtual experiences. Elements are enacted by practitioners whose skills and motivations are sometimes shaped by the elements rather than their individual preferences (Larsen, 2018).

As actions and interactions stem from a tightly interconnected bundle of practices (Schatzki, 2019), it can be argued that value co-creation is a function of how well different practice elements and practices work together (Echeverri & Skålén, 2011). To facilitate congruence and alignment, it becomes imperative to integrate resources within practices (Korkman & Araujo, 2019; Shove et al., 2012). Even if the practices are of interest here, both hosts and guests must possess 'practical intelligibility' (Schatzki, 2010) to align the elements. In this process, elements are being performed and reproduced to become normalised (Larsen, 2018). The role of materials is crucial in the

practices; the materials are carriers of activities in the socio-material dimension of practices (Schönian, 2011; Skålén, 2024). In virtual experiences, materials like computers, smartphones, and cameras are carriers of activities that configure practices in the way that human and non-human actors assemble during a variety of practices (Suchman, 2007). When new technologies are entering the practices, they display a different level of 'fit' or 'misfit' with regard to the existing order of things (Spaargaren, 2011). Considering this, the study conceptualises socio-technological practices by building on prior research that examines the role and arrangements of technology in social practices (Lamers et al., 2017; Lugosi, 2016; 2021; Philip et al., 2019; Ren et al., 2018b). Through this conceptual lens, this study contributes to existing knowledge by demonstrating how practices in virtual experiences may lead to either value co-creation or value co-destruction, shaped by the interplay of both human and non-human agencies. This research contributes to scholarly discussions on the role of technology in tourism (e.g. Buhalis, 2025; Gössling, 2021; Lugosi, 2021; Lamers et al., 2017; Philip et al., 2019; Ren et al., 2018b) and provides new insights into socio-technological value formation practices emerging at the intersection of experience and technology.

Methodology

Data Collection

Practice theory provides specific approaches to gathering, managing, and interpreting data (Närvänen, 2013). The data represents a holistic story that gives insights into the phenomenon. As is common to practice theory, it is essential to note that the focus is not on the individual carriers of practice, but on the practice itself. The data is a social text produced and utilised in culturally specific and socially organised ways (Moisander & Valtonen, 2006) following an interpretivist paradigm. Methodologically, this study applies an abductive research process that combines both inductive and deductive phases. The study was conducted in the context of a European digital platform, which was among the first to launch and market virtual experiences. The virtual experiences listed on the platform included virtual city tours, virtual cooking sessions, wine tasting, songwriting sessions, handicraft workshops, farm visits, and meditative nature walks, among others. Geographically, the virtual experiences took place mostly in Europe. The data includes a combination of interviews, written reflections, participant observation, and focus groups with the hosts and guests attending these experiences, as Table 1 shows. Eight virtual experience hosts were interviewed via Microsoft Teams between April and June 2021. The hosts were initially identified through purposive sampling. Of the eight interviewees, six were female and two were male. The hosts were city guides, entrepreneurs, and private experience hosts. Overall, the interviews produced 670 minutes and 250 pages of data.

The data also consists of reflection notes written by 35 virtual tourism guests and eight focus groups with them. The guests in this research were tourism students attending a master's level service design course at the University of Lapland between March and May 2021, as during the period of data collection, two of the authors were teachers of that specific course. The students represent different nationalities and cultural backgrounds. As part of the course, the participants were asked to freely choose and book one virtual experience from a collection of 16 different

offerings listed on the digital platform. After participating, each guest wrote a reflection considering their experience, reactions, and feelings. A total of 86 pages of written reflections were produced. All 35 guests were subsequently invited to join focus groups to reflect further on the experiences (Stewart & Shamdasani, 2017). The first author moderated a total of eight focus groups. Each group consisted of 3-6 guests, and discussions lasted from 60 to 90 minutes. The discussions covered topics on the experience in general, diving into the different perspectives of value formation. All focus group discussions were video-recorded and transcribed, yielding a total of 680 minutes and 197 pages. The first and second authors also conducted participant observations of 12 different virtual tourism experiences between December 2020 and June 2021. Observational data were captured in field diaries (Arnould & Wallendorf, 1994). The participant observations triangulate the insights from the interviews, focus groups, and written reflections (Guest et al., 2013). The fieldwork consists of approximately 40 hours of observation, about 20 pages of field notes, and visual material. The data was primarily collected in English. However, most of the host interviews (88 %) were conducted in Finnish, as both the interviewer and the hosts were native Finnish speakers, making it a more natural choice. These interviews were later translated into English by an official translator. Table 1 shows the basic information related to the data of this research

Table 1. Basic information related to the data

Type of the data	File format	Size	Sensitivity	Coding
Transcribed interview data, virtual experience hosts.	Word.docx	437 kb, 250 pages	Pseudonymised.	Host 1…8
Transcribed interview data, virtual experience guests, focus groups.	Word.docx	292 kb, 197 pages	Pseudonymised.	Focus group 1…8, Guest 1…35
Transcribed interview data, virtual experience guests, written reflections of guests and the researchers.	Word.docx, pdf	5764 kb, 86 pages (some reflections including visual material such as photos)	Pseudonymised.	Guest Reflection 1…35 Fieldnotes, Researcher 1 or 2

The study was conducted with the university's consent and following the general principles of research ethics established by the National Advisory Board on Research Integrity. All participants were fully informed about the study through various data collection activities. It was made clear to them that participation was voluntary and that they could withdraw from the study at any time without facing any consequences. All participants were assured that the data would remain confidential and anonymous and would only be used for research purposes. All research participants gave their informed consent to take part in the study.

Data Analysis

To align with practice theories, the data analysis follows a 'flat' ontology where the social is conceptualised as inhabiting the level of practices (Ren et al., 2018a). The analysis does not view

the data as mere individual experiences of hosts and guests, but rather as a social text produced and utilised in culturally specific and socially organised ways (Moisander & Valtonen, 2006) following an interpretivist paradigm. The study relies on qualitative thematic analysis (Braun & Clarke, 2006; Maguire & Delahunt, 2017) supported by Nvivo 12 Pro. Following the thematic analysis framework suggested by Braun and Clarke (2006), an initial list of ideas was generated about what is in the data concerning value formation in relation to virtual experiences. Next, the data was organised by going through the list of ideas, and each segment of data was coded and assessed in a meaningful way regarding the phenomenon (Braun & Clarke, 2006). Altogether, 35 codes were created. Examples of the codes are technological challenges, platform, getting close online, sharing local secrets, restricted use of senses on digital encounters, and digital materials.

Third, the different codes were sorted into potential themes, and the relevant coded data extracts were collated within the identified themes to find repeated patterns of meaning. Although the frameworks developed by Echeverri and Skålén (2011; 2021) and Skålén (2024) were considered when organising the codes into empirical themes, the authors also kept an open mind about identifying themes specifically connected to virtual experiences. Fourth, refinement of these themes was conducted by moving back and forth between them (Braun & Clarke, 2006). A formative reliability check was accomplished, as examples from coded content were compared to the deductively labelled practices separately by the authors. Then, the final themes for the analysis were defined. Through this last step, the 'essence' of each theme was defined, and it was determined which aspects of the data are captured within them. Based on the themes delineated in the study, it was possible to identify socio-technological practices emerging within the context of virtual experiences. It was also possible to make observations on the role of technology following the previous research (Lamers et al., 2017; Lugosi, 2016; 2021; Philip et al., 2019; Ren et al., 2018b). The findings of the research are presented and illustrated in Table 2 and in the findings chapter.

Table 2. Socio-technological practices and the elements of practices of value co-creation and value co-destruction during a virtual experience (see Echeverri & Skålén, 2011; Schau 2009)

Practice		**Elements of practices**		
	Description	**Procedures (Schau, 2009) —explicit rules, principles, precepts and instructions**	**Understandings (Schau, 2009) —knowledge of what to say and do, skills and projects, or know-how**	**Engagements (Schau, 2009) ends and purposes that are emotionally charged**
Connecting (on the digital platform)	-Access -Digital platform -Descriptions of the hosts and the experience -Instructions -Correspond-ence – ques-tions	**Value co-creation (congruence)** -Platform shapes the procedure -Information on and descriptions of the platform -Hosting -Correspondence	**Value co-creation (congruence)** -Connecting with a new person via the platform (description) -Communication skills (correspondence)	**Value co-creation (congruence)** -Buying decision -Feelings towards the experience and between the participants (trust, excitement, empathy)

	-Buying decision, payment transaction	V**alue co-destruction (incongruence)** -Unclear information (on the content, the host or the procedure of the virtual experience) -Unclear instructions on how to act on the platform -Unclear how to buy	**Value co-destruction (incongruence)** -Unclear understanding of the required skills, material and know-how to take part in the virtual experience -Unclear understanding of how to behave online	**Value co-destruction (incongruence)** -Fear of technology -Fear of unknown persons and situations
Interacting	-Rules for interacting -Collaborative process of co-creating the virtual experience	**Value co-creation (congruence)** -Getting into the virtual reality -Starting on time -Clear rules for procedure and interacting **Value co-destruction (incongruence)** -Technological problems -Low-quality internet connection or infrastructure -Unclear or unknown rules for interacting -Timing and the length	**Value co-creation (congruence)** -Understanding the situation of the other person – personalisation, tailoring, empathising -Possibility to ask questions and create a deeper understanding and connection **Value co-destruction (incongruence)** -Challenges related to technology (not being able to use the required technology, poor quality of materials, or poor internet connection) -Unclear understanding of how to act and behave online	V**alue co-creation (congruence)** -Getting to know a new person, a new destination, or a skill -Learning from each other -Having a good time together -Feeling of authenticity and relationship (close to friendship) **Value co-destruction (incongruence)** -Negative feelings related to restricted interaction, the use of cameras or mics -Sometimes forced interactions ("introduce yourself")
Materialising	The materials needed during the virtual experience Instructions on the location and space-making	**Value co-creation (congruence)** -Clear information on the procedure -Information on the suitable location (place in nature/ place at home) -Information on the required technology (for instance headset, phone, computer) -Informing on the required materials (for instance guitar, spices, wine)	**Value co-creation (congruence)** -Empathising, instructing to utilise the materials (making a dough, quizzes on PowerPoint, touching the tree) -Materials activating senses (tasting the wine) Involving other participants or materials	**Value co-creation (congruence)** -Getting the result (baking a bun, writing a song, learning, experience) -PowerPoints -Getting to know the other person, learning and recreation

		Value co-destruction (incongruence) -Technological equipment or platform not working properly -False materials or the materials needed not available	**Value co-destruction (incongruence)** -Inauthentic environment or host -Place-related disturbance	**Value co-destruction (incongruence)** -Not getting what is expected -No authentic connection
Dis-connecting	- Finishing actions -Feedback	**Value co-creation (congruence)** -Clear information (for instance on timing) -Feedback on the digital platform **Value co-destruction (incongruence)** -Procedure was not what was expected -Pressure for feedback on digital platform	**Value co-creation (congruence)** -Possibility to continue the relationship on social media or to communicate afterwards -Sending PowerPoint presentations afterwards **Value co-destruction (incongruence)** -Disturbing automatic messages afterwards (automatic digital system on the platform)	**Value co-creation (congruence)** -Plans to meet later (physically or virtually) -Utilising the knowledge later **Value co-destruction (incongruence)** -Silence – awkward feelings

Findings

The study unveils socio-technological practices within the context of virtual experiences. After practice theory, the point of departure and the unit of analysis comes the practice itself (Schau et al., 2009; Warde, 2005; Skålén, 2024). The socio-technological practices identified in this study were connecting, interacting, materialising, and disconnecting. These practices significantly contribute to the value co-creation (congruence) or value co-destruction (incongruence) of virtual tourism experiences, as the results of this research indicate. Next, each of these practices is being illustrated in connection to the practice elements – procedures, understandings, and engagements, as well as their role in both co-creating and co-destructing value. In doing so, the significance of human-to-human (guest-host) and human-to-non-human (guest-host-technology) interactions is being elucidated in the value formation process.

(1) Connecting

The connecting practice engages people worldwide in virtual experiences through procedures facilitated by a digital platform (Li et. al., 2024). The internet and digital platforms enable people to connect and share online (Belk, 2014; Camilleri & Neuhofer, 2017). As the excerpts below illustrate, technology takes both an instrumental and relationally agentic role in the virtual experiences under scrutiny (Lugosi, 2016; den Hond & Moser, 2022; Schönian, 2011).

> *The platform functioned well, the experience was easy to book, and it was nice how easy it was to communicate via the chat with the host. But there was a strict policy announced at the beginning that cameras should not be on for technological reasons, to have a good enough internet connection. (Excerpt 1, Focus Group 5, Guest 1)*

> *I cannot influence the content of the messages myself, I don't even know what kind of messages the platform sends to my customers. (Excerpt 2, Interview, Host 2)*

Factors such as internet connectivity and automated messages on the digital platform actively influence the practice and impact the value formation for participants. Connecting online and entering the digital space of the virtual experience is a crucial moment and full of tension, as can be seen in Excerpt 3 below. The diverse levels of technological understandings contribute to an increased risk of co-destructing the value of the experience. As a result, the host needs to empathise with the guest and possess the know-how to implement effective alignments that contribute to value co-recovery. This may even turn the situation into an opportunity for value co-creation.

> *The code I got did not work and I was late. I got stressed that the others were waiting for me. I called the host and told her about my problem. The host had guessed my situation and had already sent me a new link to sign in. I was in a panic but she was so calm and made me feel good in the end. (Excerpt 3, Focus Group 7, Guest 2)*

The example above reflects the effective alignment of resources between elements of practice; *procedures, understandings and engagements*, and how it enables value formation. In other words, the host comprehends the *procedure* and technical circumstances well, demonstrates *understanding* and a commitment to resolving the situation, and can effectively create *engagement* with the guest. Below a host expresses similar thoughts:

> *First of all, you have to be able to handle the technical side. Even if there are connection problems, you have to have different solutions in mind. You have to practise using the technology with which you work. (Excerpt 5, Interview, Host 2)*

In terms of practice, the digital platform, the processes of authentication and the socio-technological arrangement steer the procedure and produce the qualities and materials that are redefined and executed (Lugosi, 2016): the product descriptions, interaction via messaging, and the payment transactions. Materials are elements and carriers of these procedures (Schönian, 2011; Reckwitz, 2002). The platform is programmed to send automatic messages and reminders to the participants. Also, the platform allows participants to exchange personal messages, which creates mutual trust and *engagement*. During the connecting practice, the participants are required to be prepared to use technological materials such as computers, smartphones, microphones and cameras, and sometimes they have to install and use video conferencing software. In situations where the technological *procedure* is ambiguous, technology transcends its instrumental function, adopting an agentic role, as the following excerpt illustrates.

> *The guidelines provided in emails for joining the experience were not satisfactory and I did not know how to join the event, so I needed to ask for some more guidance. I left with a slight feeling that I was expected to know how to use the technology. (Excerpt 4, Guest Reflection 29)*

Practices are filled out and reproduced through repetitive doings (Shove, et al., 2012). The findings indicate that when the practice elements are aligned, technology primarily plays a passive instrumental role during the connecting practice. However, there are instances where technology takes on an agentic role in influencing the experience, human behaviour and feelings, thus it

cannot be considered only as a representation assigned by human agents (Reckwitz, 2002). These situations are frequently associated with challenges related to technology. The interplay between the possibilities the technology offers and people's actual usage of technology is crucial (Schönian, 2011; Yamada & Matsuda, 2023).

(2) Interacting

The data shows that one important reason to participate in virtual experiences is the desire to connect with people and places around the world. The ordinary everyday life of the participants is shared and performed on the move in these practices, and the social aspect transpires through situated activities (Larsen, 2018; Schönian, 2011). From the host's perspective, the interacting practice encompasses practice elements; procedures such as welcoming guests, hosting activities, storytelling and facilitating dialogues (Cenni & Vásquez, 2021), which increase *understanding* and *engagement*. As the excerpt below illustrates, hosts and guests co-create value mostly by establishing social bonds. In the interaction practice value was not only co-created for the guests but also for the hosts.

> *Virtual experience widens everyone's social circle. The guest can discuss with a native or an expert on the topic whom they could never meet otherwise in real life. To differentiate from YouTube content, the live person, the host, has to be present. (Excerpt 6, Interview, Host 2)*

Value co-creation occurs when the elements of practice – *procedure, understanding and engagement* – are aligned, as the excerpt below illustrates. The host and the guest reach a common agreement, anticipate the course of the virtual experience, actively engage in the situation, and ensure proper integration of resources (Echeverri & Skålén, 2021). The role of technology is aligned when it acts as an instrumental part of the practice.

> *She [the host] was really welcoming and excited online. She was authentic. She took into consideration what we already knew [about wine]. She skipped the basic knowledge and told us about the things that we were more interested in. (Excerpt 7, Focus Group 5, Guest 3)*

When the internet can be treated as a concrete tool rather than an activity (Schönian 2011), it enables the co-creation of social value between hosts and guests situated in different locations. The agentic role of technology manifests itself in how the internet connection influences human practices within virtual experiences, often associated with value co-destruction. Poor internet connectivity may lead the host to choose materials like pre-recorded videos instead of live forest exploration. Similarly, during a real-time virtual guided forest walk, guests need to choose a location with a reliable internet connection, underscoring the significance of technological infrastructure in shaping and steering the virtual experience.

> *Technology is the challenge. I have been thinking about whether I should rent a flat in town to have a better internet connection. For internet reasons, I have chosen to show the videos, but then unfortunately the system does not work if ten guests all have their cameras on. (Excerpt 8, Interview, Host 2)*

The findings highlight significant differences in the interaction practice between virtual and physical experiences. Excerpt 9 illustrates how technology, acting as an agent, not only shapes but also influences the entire experience and practice, causing discomfort among guests who feel

uncertain about appropriate behaviour (den Hond & Moser, 2022; Kaartemo & Helkkula, 2022).

> *And I can't imagine being on a walking tour without talking to the host, and then it would actually feel rather awkward to not ask questions, and then when it's online it feels awkward to ask questions. (Excerpt 9, Focus Group 5, Guest 4)*

From the host's perspective, managing situations in virtual encounters is relatively straightforward; they can mute or even remove a participant who engages in disruptive behaviour. While this *procedure* may ensure a disturbance-free experience, it also reinforces the role of technology by limiting the possibilities of human actors from fully expressing empathy, interacting spontaneously and co-creating value (Kaartemo & Helkkula, 2022). The host below articulates both scenarios and the challenges associated with empathising with guests in an online setting.

> *You can easily delete a person, and the others can continue. I often ask them to turn the mic off because otherwise, all the others will hear the kid that goes to the mum or the dog that barks. But when the cameras are closed it is hard to recognise from the tones of voice or in the text on chat. In live situations, you can read the body language. In an online situation, you cannot make this kind of analysis of how everything is going. (Excerpt 10, Interview, Host 2)*

The excerpt below illustrates a situation where the guest lacked the necessary technological *understanding*, thus hindering the possibility of full *engagement* with the virtual experience. However, the guest refrained from seeking assistance to avoid disrupting other guests' experiences.

> *I felt so stupid because I didn't even ask if it was OK that I had only this small screen here, only as the size of a stamp, and the video was also blurred. (Excerpt 11, Focus Group 3, Guest 3)*

The failure to integrate a resource within a practice can diminish value in virtual experiences. This is evident in the previous excerpt, where despite the host offering a well-designed tour and possessing knowledge about the city, the negative impact of skills and video quality affected the overall experience. In such cases, technology becomes agentic and substantially influences the formation of value.

(3) Materialising

Based on the findings, *understanding* how to integrate resources and materialise the virtual experience is the key issue for fostering *engagement* and value co-creation in virtual experiences. The materialising practice refers to the *procedure* of selection, creation and adaptation of the material setting used by the guest and the host in the virtual experience. The materialising practice involves tangible and intangible resources, along with spatial, sensory and aesthetic elements. Technology plays an agentic role as it determines the place where the guest will experience the virtual tour, as demonstrated in the excerpt below.

> *I was at home, I had to prepare the space for establishing the connection. It has to be a good place with an armchair and good light. A place where nobody else is walking in the background. It has to be quiet and also there should be space for my laptop. Also, earphones have to be available. (Excerpt 12, Field Notes, Researcher 2)*

A notable distinction between virtual and physical experiences lies in the limited engagement of the senses during the former. Virtual experiences often constrain guests to only two senses – sight and hearing. Achieving an embodied holistic experience appears to be more challenging in the online realm. In a physical experience, such as a walking tour, all guests are immersed in the same surroundings (Haanpää et al., 2022). However, in virtual tours, the spatiotemporal dynamics of the experience and the use of senses vary and depend on the initiative of the guest. The virtual guiding *procedure* is choreographed, but the place and surroundings might evoke different affectivities within each participant similar to the physical experiences (see Haanpää et al., 2022). The data indicate that virtual experiences like baking, wine tasting, or handicrafts involve a greater embodiment with multiple senses and material elements at play. As seen in Excerpt 13, using senses and materials contribute to enhancing the sense of belonging and reducing the perception of physical distance.

> *It was a cooking lesson and I used my five senses. I smelled the same things, I touched the dough, it was the same as they did. I didn't feel like we were in three separate houses, I felt like we were together. Like I didn't feel that I was in my kitchen. (Excerpt 13, Focus Group 1, Guest 1)*

Indeed, practices are embedded within social, material and technological encounters, charged with energy, diverse feelings and different weather conditions, and affected by non-human actors (Pink, 2012). As Excerpt 14 illustrates, the host actively seeks information from the guests and adapts the virtual experience to suit their circumstances, effectively aligning *elements of practice* and available materials, natural surroundings, and even a companion animal. Here, technology serves as an instrument facilitating value co-creation.

> *I might ask where you are, what it looks like there, and what the weather is like so I can act accordingly. If the guest is on the riverside I might take the river as an element. If the customer has got a dog with him, the dog can be included. So I might modify the plan and improvise. (Excerpt 14, Interview, Host 1)*

As exemplified in the extract below, some hosts actively encourage guests to use various senses and share their experiences with others. The inclusion of multiple senses and the sharing of material resources serve to reinforce the engagement and value of the virtual experience, potentially blurring the significance of both social and geographical boundaries (Cenni & Vásquez, 2021).

> *She [the host] asks to smell some spices and then she explains to us oh, it makes me think about my grandpa or something like that. It was nice. We were like three friends just cooking together. (Excerpt 15, Focus Group 1, Guest 2)*

In the materialising practice, it becomes evident that significant instances of value co-destruction emerge when technology is not employed appropriately as an instrument when transforming a physical experience into a virtual experience. When new technologies enter the practices, they can either 'fit' or 'misfit' to the existing order of things (Spaargaren, 2011). Excerpt 16 depicts a situation in which the host fails to understand to empathise with the guest's sensory experience. The host shows reluctance to engage and adapt to the encounter, leading to value co-destruction for the guest.

> *I took part in a storified city tour. I wanted to get to know the city better and to see how spring is in that part of the country. Unfortunately, the host did not show us the surroundings at all. The tour lasted more than two hours, and he was mostly filming his face for us. At one point, I asked politely whether he could film the surroundings a bit more as I would like to see the locations. He answered angrily that he would show more when we stopped on a hill. I accepted the answer but felt rather bad, and also ashamed because of the other participants. (Excerpt 16, Field notes, Researcher 1)*

In certain instances in the dataset, as shown in Excerpt 17, virtual experiences take place outdoors, where hosts guide guests to utilise the natural surroundings as material for the experience. This joint physical *engagement i*n nature involves exchanging descriptions and emotional responses, leading to value co-creation, even when geographically separated. This represents a 'physical-virtual experience' within the spectrum, spanning from virtual to fully physical experiences.

> *We talked on the phone, she called me, and I went to a forest where she guided me through this experience. She introduced the method where nature-based well-being and mind skills are combined. We tried to be present in the moment, did exercises, and focused on the details and beauty of nature. (Excerpt 17, Focus Group 6, Guest 1)*

The findings show that the use of diverse materials and spatial resources to materialise the virtual experience significantly influences value formation, contributing to either value co-creation or, occasionally, value co-destruction. Materials are not only part of, but also actively configure practices. When technology serves as an instrument, it facilitates value formation. However, both hosts and guests must possess 'practical intelligibility' (Schatzki, 2010) to align the elements of practices.

(4) Disconnecting

The disconnecting practice includes finalising procedures of the virtual experience like farewell greetings, feedback, sharing feelings, and continuing acts of the relationship. In some cases, strong emotions linger at the end of virtual experiences. Handling these sensations and feelings demands *understanding* a delicate balance of professionalism and empathetic skills, and is more challenging in virtual experiences compared to physical ones due to the limited use of senses. Additionally, the transition to virtual encounters unfolds dramatically. With the press of a button, individuals from different backgrounds converge within a new socio-technological environment for a brief moment together before departing again (Bialski, 2012). In particular, hosts must be well prepared to facilitate value co-recovery practices while caring for their guests. The excerpt below underscores these dynamics.

> *At first, I didn't want to go back from the woods to civilisation... In the end, she gave me the option to choose if I wanted to share my feelings or if I wished to keep them to myself, like to choose if it's more of a private or shared experience, which I think was important. (Excerpt 18, Focus Group 6, Guest 1)*

Sometimes, the consistency with expectations and preconceptions is misaligned (Yamada & Matsuda, 2023) as guests had expectations that were not met during the experience, as evidenced in Excerpt 19. The 'ultimate' goal of the experience that was promised in the description of the virtual experience was not reached. Here, the configuration between different practice elements

is needed to prevent value co-reduction in the future.

> *It was a good experience, but we had hoped that we would have a ready-made song as a result of the songwriting session. (Excerpt 19, Focus Group 5, Guest 5)*

Some hosts advise guests to apply the skills they have acquired in future endeavours or guide them to where they can find more information on the topic. Additionally, these newly acquired skills or other virtual experiences may become integrated into individuals' everyday lives, shaping and influencing their activities (Schönian, 2011). Moreover, as Excerpt 20 shows, some hosts share hints on how to keep in touch after the virtual experience by relying on technological tools such as social media, which serves to enhance *engagement* and relationships between host and guest.

> *She told us that she has got a blog and also she gave us her Instagram, which was really nice so we can stay in touch. (Excerpt 20, Focus Group 4, Guest 1)*

In the disconnecting practice, technology also functions as an instrument, for example, when soliciting feedback and instantly posting it on the digital platform. However, when a device is programmed to automatically execute *procedures* like sending feedback requests and reminders (Kaartemo & Helkkula, 2018), technology becomes agentic, influencing the guests' feelings, as illustrated in the excerpt below.

> *I got more than 10 automatic emails afterwards for feedback, which was annoying because I got them every single day, sometimes twice a day. (Excerpt 21, Focus Group 3, Guest 2)*

This excerpt shows an example of a situation where a host is captured by a practice and the practice is not in accordance with the preference of the host or the guest (Larsen, 2018). In such instances, the practice elements and the practices are not incongruent, thereby contributing to value co-destruction. It was observed that value diminishment in the disconnecting practice is primarily rooted in technological issues. At the end of the disconnecting practice, if the *procedures* are clear to everyone, the participants have acquired the necessary *understanding* and learned something new, and if they are engaged and have gained a valuable experience (Echeverri & Skålén, 2011), the platform-based virtual experience has the potential to offer value as is explained by the host below:

> *It's this responsibility mindset, that hey, don't consume. Hey, we can share. This stems from deeper global value changes that exist in Western countries. And of course, these technologies have made it possible. (Excerpt 22, Interview, Host 5)*

Discussion

This research indicates that socio-technological practices have a capacity to create value if the procedure is carefully designed by considering the peculiarities of the virtual setting – the restricted senses and diverse embodiment in different locations. Interaction and materialising practices pose a capacity to sense, shape, and enforce the experience by empathising, activating senses, and using materials in the setting. Specific objects are necessary components as they carry specific symbolic meanings to experienced practitioners and enable agency, competence, and action (Larsen, 2018; Shove et al, 2012: 9; Skålén, 2024; Warde, 2005). Instead of considering technology as an external element in the formation of value through social practices, this research

demonstrates how technology and social practices merge to form socio-technological value formation practices in the context of experiences and technology. The formation of value in technology-mediated tourism practices is not solely determined by how humans interact with each other using available technology, but also by managing the influence and impact that technology can have on such interactions. Understanding the role of technology in the practices involves a wider perspective – one cannot only focus on users, as software as well as users are configured through the practices, they are part of (Schönian, 2011). The findings of this study highlight the crucial role of technology in shaping social practices and have important implications not only for the management of virtual tourism but also for the benefit of other recreational experiences in tourism.

The research aligns with a recent study by Skålén (2024) that emphasises the crucial role of materials in practices. The elements form an entity that enables specific routinised practices that have enduring existence across individual moments of activity, performed by many, more or less knowledgeable and capable participants. By analysing practices with these elements, some important issues related to value formation were revealed. For example, as recent studies have indicated (e.g. den Hond & Moser, 2022; Kaartemo & Helkkula, 2022), technology has primarily been seen as instrumental, often overlooking its relational and agentic dimensions. The study highlights the crucial role of technology, recognising it not only as an instrument but also as having relational agency.

If technology is considered as an agent with the capacity to act with a degree of autonomy and an ability to shape practices (den Hond & Moser, 2022; Kaartemo & Helkkula, 2022), a practice theory approach can contribute to a better understanding of the role and impact of technology (Spaargaren, 2011) and how value is formed through human-to-non-human interactions. It allows us to look into technology as part of an enmeshed socio-technological fabric and to explore the complex interplay between human-human and human-non-human interactions in value formation practices. Within the setting, the practices shape and are being shaped by an intelligent human-non-human network of materials and actions (see Hoffman & Novak, 2018) in configurations that work (Shove et al., 2012) and can form new practices (Airoldi & Rokka, 2022; Lugosi, 2021). For example, virtual experiences can be integrated into other organisational practices, like the selling and marketing practices of a company.

The results align with prior studies that indicate that virtual experiences are successful when the host is live and authentically present, interaction works, and the quality of the system of the platform is appropriate (Alegro et al., 2023; Li et al., 2024; Yamada & Matsuda, 2023). As an instrument, technology provides hosts and guests with the opportunity to engage in live interactions and learning, and to cultivate authentic relationships, which emerge as significant values in virtual experiences. Indeed, when the elements of practices are aligned, technology becomes a valuable tool for hosts and guests to co-create value. At the same time, through its agency, technology can sometimes contribute to the diminishment of value. In such cases, incongruence between the practice elements and the practices arises, resulting in value co-destruction. These instances may occur due to deficiencies in technological infrastructure,

inadequate understanding of technology use, or a lack of awareness of others' spatial, sensual, or emotional situations. Indeed, the research indicates that the conjunction of technology with the activation of the senses and materialising the virtual experience reinforces the experience – the sensual, embodied dimensions, effectively reducing the feeling of physical distance. It is through its agentic role that technology creates these circumstances, and in turn, it is also capable of influencing and shaping virtual tourism experiences. For instance, interactions may be constrained due to technological reasons, resulting in the restricted use of resources, like using pre-recorded video materials instead of live-streaming, controlling discussions, or limiting social engagement. The technology could benefit value co-creation, for example, in helping to select a location, creating content, and even hosting and guiding with the help of artificial intelligence, taking into account the risk of losing the feeling of authenticity in the situation.

Given concerns related to the environment, crises, social inclusion, and financial considerations, there is notable interest in advancing the emergent forms of tourism. However, there is a paradox in the endeavor to foster traditional tourism and same time promote the sector's sustainable development to achieve the Sustainable Development Goals of the United Nations (UN Tourism, 2025). Virtual experiences, compared to traditional ways to travel, are environmentally friendly and represent examples of responsible and sustainable tourism experience innovations with technology (Fennell, 2021). Thus, obviously, the results of this article contribute to the interface of experiences, technology, and responsibility. Practices evolve and change due to crises, innovations, societal trends, and changing consumer preferences, and change can be viewed to happen in societies via practices.

Conclusion

The objective of this study was to explore practices of value formation in the context of virtual experiences. Digital platforms offering virtual experiences provide an interesting research setting for exploring emergent practices in technology-mediated tourism encounters. Through the data analysis, the four main socio-technological value formation practices were identified in virtual tourism experiences: connecting, interacting, materialising, and disconnecting, and provide examples of how these practices either contribute to value co-creation (congruence) or value co-destruction (incongruence) in the setting. The key findings in the study advance understanding of the role of technology in value formation practices and contribute to the discussion about the relationship between experiences, technology, and social practices. These practices highlight the crucial role of technology, whether as an instrument or an agent, in value formation within digital encounters in the context of virtual experiences.

As a theoretical contribution, this study contributes to practice theory research in tourism studies, especially the ones dealing with technology (Camilleri & Neuhofer, 2017; Lamers et al., 2017; Ren et al., 2018b; Philip et al., 2019) and to service marketing discussions related to value formation (Echeverri & Skålén, 2011; 2021; Skålén, 2024). In line with Schatzki (2002) and Echeverri and Skålén (2021), this study shows that the actions and interactions are intertwined through multiple linked socio-technological practices that contribute to either value co-creation or value co-destruction. In this research, the position was adopted whereby practices consist of three

elements: procedures, understandings, and engagements (Echeverri & Skålén, 2011; 2021; Schau et al., 2009; Warde, 2005). As a managerial contribution, this research brings new practical insights into practices of value formation in the context of virtual experiences. For tourism companies, virtual experiences can serve as marketing tools or as independent and responsible tourism experiences for individuals who prefer not to fly but still wish to explore and learn about various destinations.

This study has three main limitations that should be considered. First, it relies on data collected from a single digital platform and includes virtual experiences that were produced and consumed within a European geographical and cultural context. Secondly, the empirical data related to the guests was partly created by students enrolled on a master's level tourism course with participants positioned in a supervisory relationship. It is important to acknowledge that the data may have been influenced by the learning activities, despite efforts to mitigate such influence. Thirdly, some data derive from the authors' observations. These limitations are acknowledged and reflected in the research process. The positionality of the participants is reflected and considered throughout the research process.

Also, the acknowledged limitations in this study give rise to questions that warrant further research: To what extent can the socio-technological value formation practices and the diverse roles of technology identified in this study be validated across different technology-mediated services? How do value formation practices emerge in virtual experiences across diverse cultural and geographical contexts? Considering the increasing influence of digital innovations in tourism and the experience economy, including the metaverse, augmented reality, and AI (Neuhofer et al., 2014; Pine & Gilmore, 2014), it is also pertinent to continue studying the role that technology plays in value formation in tourism experiences for ethical reasons. Indeed, as some scholars have suggested (Airoldi & Rokka, 2022; Philip et al., 2019), platform-based algorithms can be viewed as social actors with power. This research shows that practice-based approaches enrich tourism and marketing studies by enabling a deeper analysis of tourism encounters and enhancing our understanding of emerging tourism practices in the interface of experiences, technology, and responsibility. Given the growing role of technology in everyday life – and the urgent need to advance responsible and sustainable tourism – further investigation into socio-technological practices of experiences is both timely and essential.

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