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## Towards sustainable servicescape – tourists' perspectives of accommodation service attributes

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## ABSTRACT

The study uses content analysis to identify the sustainable attributes in 678 accommodation reviews from Finnish and Russian tourists published on the Tripadvisor website and examines the sustainability perceptions of these tourist groups. The servicescape framework was applied to the structuring of the attributes indicating sustainability in accommodation services. The sustainable attributes highlighted in the reviews were more frequently in the physical rather than in the social servicescape factor. The tourists also reported environmental sustainability attributes more often than those related to social, cultural and economic sustainability. Overall, the sustainable attributes were perceived positively. By analysing positive and negative tourists' perceptions in a sustainability context, this research provides insights drawn from tourists' perspectives to support the development of appealing and sustainable tourism accommodation products. The study also proposes a servicescape framework for managing environmental, social, cultural and economic sustainability in accommodation services.

## 1. Introduction

Tourists and tourism service providers are increasingly acknowledging the environmental and social impacts of the tourism sector. Simultaneously, tourists demonstrate positive attitudes towards sustainable alternatives. However, a gap persists between these positive sentiments and a tourist's goal of an enjoyable and indulgent vacation (Budeanu, 2007; Dolnicar, 2020; Dolnicar and Grün, 2009; Juvan and Dolnicar, 2014). Tourist motivation to gain meaningful and pleasurable experiences may contradict sustainability goals (Malone et al., 2014).

Several factors make it difficult to incorporate sustainability into services that offer a pleasure-related experience. Customers frequently fail to perceive sustainable features as a meaningful part of a product or service (Font and McCabe, 2017; Ottman et al., 2006). Sustainability attributes can sometimes be negatively associated with products or service attributes. A product or a service that is sustainable can be perceived as low quality (Font et al., 2017; Peng and Chen, 2019), more expensive or having reduced performance (Olson, 2013; Ottman et al., 2006), for example, when recycled materials are used. In addition, a sustainable attribute of a product may be perceived as inconvenient (Gupta et al., 2019) or compromise hedonistic benefits of an experience (Font and McCabe, 2017). In these situations, tourists often focus on

their enjoyment and set aside sustainable attributes and values (Budeanu, 2007; Miao and Wei, 2013). To manage this complexity, tourism providers require a well-developed understanding of how to design sustainable products that also provide enjoyable experiences.

The accommodation sector is an integral part of the tourism industry (Mossberg, 2007) and has significant economic, social and environmental impacts on societies (Melissen et al., 2016). Despite sustainability being increasingly important for businesses and customers (D'Acunto et al., 2020), few studies have addressed how sustainable attributes can be incorporated into accommodation services, such as hotels, boutique hotels, cottages and B&Bs, without disrupting tourists' personal benefits and enjoyable experiences.

The servicescape concept has been defined as a framework for the physical and social factors that serve as meaningful entities for customers and the perceptions of these environments that shape experiences (e.g. Baker, 1986; Bitner, 1992; Dedeoğlu et al., 2018; Kandampully et al., 2018; Lockwood and Puyn, 2019; Zomerdiijk and Voss, 2010). Sustainability is manifested as tangible attributes in the physical factor and as attributes that refer to human interactions in the social factor of the service environment; these attributes also influence customers' experiences (Gupta et al., 2019; Pecoraro et al., 2020). Both factors contain sustainable attributes that are related to environmental,

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social, cultural and economic sustainability dimensions. The sustainable attributes refer to measures and practices that improve sustainable development. Therefore, to examine how tourists perceive sustainability in accommodation, this study utilises a servicescape framework that includes both the physical factor (Bitner, 1992) and the social factor (e.g. Rosenbaum and Massiah, 2011; Tombs and McColl-Kennedy, 2003) as well as definitions of the sustainability dimensions. (Fig. 1).

Previous sustainable service environment frameworks (e.g. Kridler and Joseph-Mathews, 2009; Mishra and Gupta, 2018) have generally focused on environmental sustainability, whereas social, cultural and economic sustainability dimensions have received little attention. Environmental sustainability refers to conserving and managing resources, minimising air, land and water pollution, and conserving biological diversity and natural heritage (UNEP and WTO, 2005; Swarbrooke, 1999). The environment includes built and farmed surroundings as well as nature (Swarbrooke, 1999). In tourism, social sustainability is represented by aspects such as respecting human and labour rights, generating wellbeing, supporting safety, providing equal opportunities and accessibility, and treating all tourism stakeholders equally and fairly (UNEP and WTO, 2005; Swarbrooke, 1999). Cultural sustainability contributes to the preservation of local and traditional cultures (e.g. traditional practices, buildings and lifestyles, landscapes and food) and the prevention of overexploitation (Chhabra, 2015; Everett and Aitchison, 2008; Kim et al., 2019; Sims, 2009). Economic sustainability refers to increasing financial wellbeing and continued growth, both for the business and the destination. At the accommodation company level, sustainability means that expenses and income are balanced in the long term, thus enabling profitable operations. Profitability is pursued with fair prices that take into account the limits of the destination environment and the social conditions (Swarbrooke, 1999). The sustainability dimensions discussed above are recognised in the United Nations Sustainable Development Goals (UN, 2020) and by

tourism businesses (UNWTO and UNDP, 2017), but they have not previously been integrated in the tourism servicescape concept.

This paper aims to increase the understanding of sustainable attributes by addressing how they can be incorporated into tourism accommodation servicescapes while supporting enjoyable experiences. We apply the servicescape concept to systematically and comprehensively examine sustainability in accommodation services. The servicescape concept embodies sustainability and outlines how environmental, cultural, social and economic sustainability attributes of the accommodation environment are perceived and reported by tourists in Tripadvisor reviews.

In this study, tourists' perceptions of an accommodation service are based on their interactions with the physical and social servicescape factors. Tourists' online accommodation reviews reflect their positive, negative or neutral perceptions of a servicescape and level of satisfaction with their accommodation (Berezina et al., 2016; Zhou et al., 2014). Studies have established that the quality perception of servicescape attributes affects satisfaction (Berezina et al., 2016; Oviedo-García et al., 2019; Vilnai-Yavetz and Gilboa, 2010; Wakefield and Blodgett, 1994, 1996), which in turn leads to favourable behavioural intentions, such as repeat visits (Wakefield et al., 1996) and positive word-of-mouth recommendations (Hartline and Jones, 1996). Several studies have investigated the effect of sustainability practices on tourists' satisfaction and dissatisfaction in the hotel context (e.g. Berezina et al., 2014; Gil-Soto et al., 2019; Lee et al., 2016; Millar et al., 2012; Robinot and Giannelloni, 2010; Yi et al., 2018).

However, the previous research has primarily examined the perceptions of attributes associated with environmental sustainability. It is also known that tourists with diverse sociocultural backgrounds may consider sustainable attributes from different perspectives (e.g. Berezina et al., 2014; Kang and Moscardo, 2006; Soyez, 2012). When designing appealing services for tourists from different countries, an accommodation service provider is likely to achieve better results if they can identify the preferences associated with the sustainability attributes. Enhancing sustainability in tourism accommodation while considering customer satisfaction requires an understanding of how tourists perceive the attributes of sustainability. We aim to build on previous research by examining how tourists from different cultural backgrounds perceive sustainability in accommodation servicescapes. Finnish and Russian tourists' positive and negative perceptions of sustainability in servicescapes are investigated by analysing accommodation reviews on the Tripadvisor website.

## 2. Literature review

### 2.1. The sustainable servicescape concept

Bitner (1992) defined the concept of servicescape as a framework that refers to the physical surroundings that can influence the internal responses and external behaviours of customers and employees in a service establishment. Customers generally perceive the service environment holistically or as a composite of the following physical servicescape elements: 1) ambient conditions (e.g. temperature, noise and smell); 2) spatial layout and functionality (e.g. equipment options or layout of furnishings); and 3) signs, symbols and artifacts (e.g. explicit or implicit signals, communicative signs and the quality of materials) (Bitner, 1992).

The service environment should be considered not only in terms of the elements in the physical factor, but also in terms of the elements in the social factor, which identify human interactions and people as elements that affect internal responses (Bitner, 1992; Dedeoğlu et al., 2018). Interactions with employees influence a customer's experience in a service setting. In addition, the presence of other customers in the service environment is likely to have an impact on the behaviour of existing and potential customers (Tombs and McColl-Kennedy, 2003; Rosenbaum and Massiah, 2011).

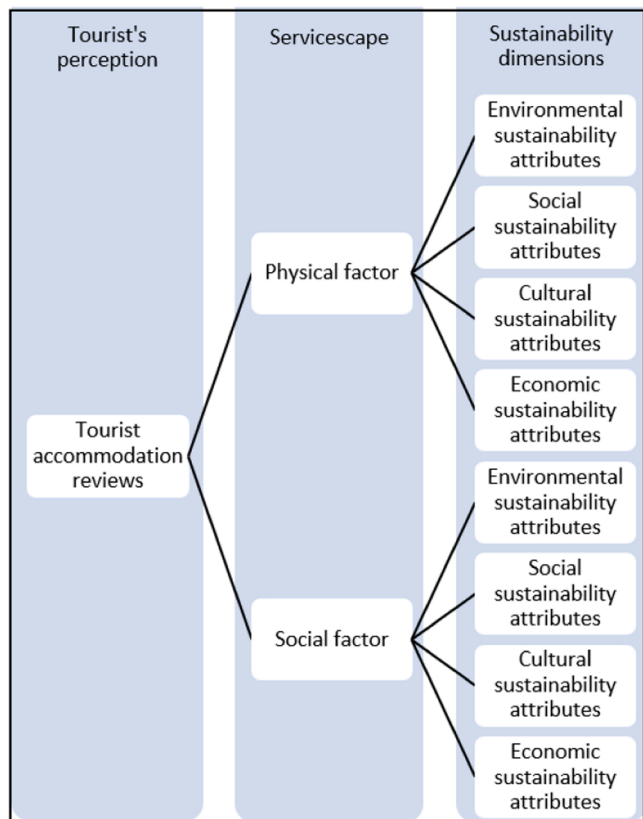


Fig. 1. A conceptual framework of sustainable servicescape in tourist accommodation.

Servicescape research has widely examined how single attributes affect customer perceptions (Mari and Poggesi, 2013); however, there is a lack of understanding regarding the sustainable attributes that are relevant in the accommodation servicescape. To promote sustainable development, accommodation service providers manage the various sustainability attributes in a servicescape. The environmental, social, cultural or economic sustainability attributes are embodied in the servicescape, and they elicit customers' responses. The customer is embedded in these servicescape entities, which accordingly facilitates an experience (e.g. Bitner, 1992; Dedeoğlu et al., 2018; Kandampully et al., 2018; Lockwood and Puyn, 2019). By employing this perspective, we can better understand the sustainable attributes observed by tourists in a servicescape and thus define how they contribute to accommodation perceptions.

Previous research examining the accommodation servicescape has focused on how it affects customers' perceptions of pleasure and value (Dedeoğlu et al., 2015), image (Dedeoğlu et al., 2015; Durna et al., 2015), emotional responses (Lockwood and Puyn, 2019), satisfaction (Arifin et al., 2013; Lee and Chuang, 2021) and behavioural intentions or responses (Dedeoğlu et al., 2018; Durna et al., 2015; Lockwood and Puyn, 2019). To date, the sustainability-oriented accommodation servicescape research has primarily addressed environmental sustainability (Mishra and Gupta, 2018; Sukhu et al., 2019). Mishra and Gupta (2018) proposed a green servicescape in hotels that includes three sub-dimensions: atmospherics (internal, external), motifs (functional, aesthetic) and humans (staff, other customers). In addition, they developed a set of green attributes observable by customers. Sukhu et al. (2019) extended the theoretical framework of servicescape by integrating green elements or environmentally friendly practices into the hotel servicescape model to predict customers' satisfaction.

In the following subsections, we review the relationship between servicescape and sustainability in the extant literature; we examine how environmental, social, cultural and economic sustainability attributes merge with the physical and social factors of the servicescape, and we consider how these attributes are perceived by tourists.

## 2.2. Sustainability in the physical servicescape

In the physical factor of servicescape, the measures focused on environmental sustainability include, for example, installing water-saving fixtures in bathrooms, reusing towels, sorting and recycling waste, avoiding disposable products, lowering room temperatures, purchasing low-energy equipment, and using organic and local materials (e.g. Ettinger et al., 2018; Dewhurst and Thomas, 2003; Garay and Font, 2012; Kim et al., 2018; Roberts and Tribe, 2008; Scanlon, 2007). These measures are aimed at improving the sustainability of accommodation and cover ambient conditions, spatial layout, functionality, and signs, symbols and artifacts.

Kreidler and Joseph-Mathews (2009) introduced a framework that presents modified atmospherics for green service environments using green attribute versions of Baker (1986)'s traditional ambient, design and social cues. For example, the ambient cue "air quality" (including room temperature) is determined as a green attribute by measures such as optimal and renewable energy usage and sufficient insulation. The effects of ambient conditions on servicescape perceptions are noticeable under certain conditions: when the conditions are extreme (e.g. loud music, high or low temperatures); when spending considerable time in a servicescape (e.g. holiday accommodation); and when the conditions conflict with expectations (e.g. loud music in a hotel at night) (Bitner, 1992).

The social sustainability of tourist accommodation is visible in the physical attributes companies employ to accommodate different customer groups, particularly guests with disabilities, families with children and customers with pets. The attributes will vary depending on the target group of the accommodation service provider. People with disabilities require the installation of suitable infrastructure that

facilitates accessibility and usability (Garay and Font, 2012). Families with small children may also require special furnishings and equipment. The management of rooms for guests with pets should also consider customers with allergies. These sustainability practices refer to Bitner's (1992) spatial layout and functionality. The physical attributes of social sustainability include safe and accessible structures and signs to ensure customers' health and safety (Garay and Font, 2012; Jones et al., 2014). Additional attributes of social sustainability encompass the use of ethnic symbols (objects or artefacts) that signal a welcoming environment for different ethnic groups (Rosenbaum, 2005) and a preference for local procurement to support local developments (Dewhurst and Thomas, 2003; Garay and Font, 2012). These social sustainability attributes represent the signs, symbols and artifacts in Bitner's (1992) servicescape framework.

Culturally sustainable attributes are manifested in the physical servicescape through the preservation of local cultures and the measures implemented to prevent overexploitation (Chhabra, 2015; Choi and Sirakaya, 2006; Everett and Aitchison, 2008; Kim et al., 2019; Sims, 2009). Service providers often incorporate local culture and history into their business operations, which can help support and maintain traditional practices and potentially increase the general public's appreciation of cultural knowledge. Traditional furniture or ethnic artifacts can be used in accommodation décor, and building designs and renovations can reference traditional styles of construction (Denman, 1994; Lee and Chhabra, 2015). The use of historic or heritage buildings as accommodation and the conservation of architectural characteristics are measures of sustainability that are readily visible to tourists (McIntosh and Sigs, 2005; Ngamsomsuke et al., 2011). Local food is also a significant and genuine cultural expression in a tourist destination that can promote the perception of responsible action (Everett and Aitchison, 2008; Sims, 2009). When implemented with sensitivity and respect, these signs, symbols and artefacts may manifest cultural sustainability in a servicescape.

Economic sustainability is reflected in the profitability of accommodation operations (Roberts and Tribe, 2008), which includes factors such as a sufficient number of customers year round (O'Neill and Mattila, 2006), cost management (Burgess and Bryant, 2001), pricing (Swarbrooke, 1999) and customer satisfaction (Reichheld, 1996). Customers evaluate price against quality (Ye et al., 2014). Quality attributes relate to room space, views, cleanliness, quietness, and to aspects such as breakfast options, relaxation opportunities and the hotel environment (Choi and Chu, 2001; Jang et al., 2018; Masiero et al., 2015; Matzler et al., 2006). When the accommodation quality attributes meet the customers' requirements, they signify value for money, which in turn drives satisfaction (El-Adly, 2019; Ye et al., 2012).

Achieving an ideal occupancy rate in the accommodation generates a sufficient income. However, a high occupancy rate also affects the customer's service experience (Liu et al., 2022). Unprofitability can lead to understaffing and the consequent deterioration of service quality; for example, rooms and common areas may be untidy or poorly maintained. Financial sustainability can also be achieved by increasing customer stays (Lee & Chhabra, 2015), and accommodation services can work towards this goal by offering a range of different activities.

Environmentally sustainable practices can include financially sound investments: costs are recovered comparatively quickly while savings over an extended period generate economic sustainability (Bader, 2005). These measures are easily observed in the physical environment and include, for example, colder rooms and low water pressure. In the long term, unprofitable companies are unable to invest in maintenance and renovations, leading to the deterioration of their premises.

## 2.3. Sustainability in the social servicescape

The social factor of servicescape refers to the human interactions in a service facility (Bitner, 1992; Dedeoğlu et al., 2018). Notably, many intangible sustainable attributes in servicescapes appear in interactions



between people (Rosenbaum and Massiah, 2011). Environmentally sustainable social measures include education-focused initiatives that promote environmental awareness and inform customers. For example, employees may provide guests with information on how they can participate in green initiatives (Yi et al., 2016) or inform customers about the company's environmentally sustainable services (Gupta et al., 2019; Lee et al., 2016). In addition, staff can demonstrate eco-friendly behaviour (Gupta et al., 2019) or an accommodation provider can share environmental promotional initiatives with customers (Garay and Font, 2012).

An employee's socially sustainable behaviour includes treating customers equally and fairly and respecting their unique ethnic, sub-cultural or marginalised societal status (Wattanakamolchai et al., 2016; Ivanov et al., 2014). The accommodation service provider can also implement social sustainability by employing local people (Lozano-Oyola et al., 2012) and providing customers with correct and sufficient information (Suki, 2014). Customers are also expected to behave responsibly by following the accommodation's code of conduct, which may include reducing noise levels and respecting privacy.

A crowded servicescape is often considered harmful to the environment and socially unsustainable for the local community; these associations can have a negative effect on approach decisions because of the loss of perceived control (Tombs and McColl-Kennedy, 2003). However, tourists can value a high social density servicescape when seeking enjoyable, light-hearted interactions (Rosenbaum and Massiah, 2011). Therefore, varying tourist preferences link high customer density (i.e. crowding) to both avoidance and approach behaviours (Line and Hanks, 2019; Rosenbaum and Massiah, 2011; Tombs and McColl-Kennedy, 2003). Crowded accommodation can also be associated with economic sustainability, as a large number of customers contributes positively to the occupancy rate and thus income (Stoddard et al., 2012). A busy environment can cause a decrease in the quality of the service; for example, customers may encounter increased delays (Choi and Chu, 2001).

Local community members contribute to cultural sustainability because their presence is indispensable to the tourists' experiences of a real and authentic local "way of life". Maintaining indigenous languages and supporting regional dialects embody authenticity and are often perceived positively by tourists (Chhabra, 2015; Crompton, 1979). In addition, employees can increase tourist awareness of the local cultural heritage by sharing information about the history of a building or place (Chhabra, 2015; Pecoraro et al., 2020).

Economic sustainability manifests in a social service environment in the attributes that guide the profitable management of a company's personnel and other human-related matters. Tourists' perceptions of a fair price-quality ratio have an impact on satisfaction and thus also affect profitability in the long term. In the social environment, attributes such as employing polite, friendly, knowledgeable and helpful staff (Choi and Chu, 2001; Jang et al., 2018; Matzler et al., 2006) influence the value for money perception and customer satisfaction.

Economic and social sustainability may overlap; for example, both dimensions are represented when a tourism company employs local people. While employment is often categorised as economic sustainability (Choi and Sirakaya, 2006; Stoddard et al., 2012), employing local people also has an impact on income, which contributes to wellbeing in the local population and thus can be regarded as social sustainability (UNEP and WTO, 2005; Lozano-Oyola et al., 2012).

#### 2.4. Tourists' perceptions of the sustainable accommodation servicescape

Recent studies addressing customer experiences in sustainable accommodation have primarily focused on environmental issues in green hotels (e.g. Berezan et al., 2014; Gil-Soto et al., 2019; Lee et al., 2016; Robinot and Giannelloni, 2010; Yi et al., 2018; Yu et al., 2017). While these studies revealed mostly positive experiences, negative experiences of green hotels have also been reported. The attributes perceived

positively included general green practices (e.g. common sustainable processes), education and innovation (e.g. green certification) and purchasing (e.g. use of local or organic food). Negative comments addressed purchases (e.g. plastic packaging), energy (e.g. cold rooms) and water (e.g. low pressure) (Gil-Soto et al., 2019; Lee et al., 2016; Yi et al., 2018; Yu et al., 2017).

Tourists' accommodation experiences are generally studied by measuring satisfaction and appealing attributes. In addition to physical and human interactions, studies have shown that both tangible and intangible attributes in servicescapes contribute to tourists' experiences (e.g. Dolnicar and Otter, 2003; Line and Hanks, 2019; Limberger et al., 2014; Mishra and Gupta, 2018; Tussyadiah and Zach, 2016; Vilnai-Yavetz and Gilboa, 2010; Walls et al., 2011). Tourists' perceptions of accommodation services are influenced by the tangible servicescape attributes as well as the intangible symbols that signal sustainability (Dedeoğlu et al., 2018; Kandampully et al., 2018; Lu and Stepchenkova, 2012). Tourists may perceive the attributes of the physical and social factors in accommodation servicescapes either positively or negatively and thereby feel satisfied or dissatisfied (Albayrak and Caber, 2015; Berezina et al., 2016; Gallarza et al., 2015; Lee and Chuang, 2021). Similarly, tourists' satisfaction can improve when an environmentally sustainable practice is perceived favourably, but the same practice can reduce satisfaction if it is regarded as unfavourable or unpleasant (Yu et al., 2017). Previous studies have shown that tourists tend to be satisfied when the accommodation meets their personal preferences, regardless of the sustainability arguments (Miao and Wei, 2016; Millar et al., 2012; Yu et al., 2017).

Sociocultural backgrounds influence perceptions of sustainability in accommodation services (e.g. Berezan et al., 2014), and tourists tend to express different views of environmental sustainability in hotels: some guests focus on the functional aspects of sustainability, while others identify with the emotional aspects of conservation. Tourists who carry out certain sustainable activities at home (e.g. sorting rubbish) will expect similar options in holiday accommodation (Berezan et al., 2014).

Tourists from diverse nationalities may consider different sustainable attributes as meaningful, in part because of their varying levels of awareness regarding the effects of tourism or general environmental issues (Baysan, 2001). Cultural values can explain attitudes towards sustainability or an interest in its different dimensions (Komppula et al., 2018). For example, Russian tourists' consumption of local food while abroad is motivated by an interest in local culture rather than environmental sustainability (Mynttinen et al., 2015). This behavioural motivation is related to the Russian tourists' interest in learning about the destination country and its culture (Whang et al., 2016). Russians tend to appreciate peaceful and quiet environments that offer a contrast to the lifestyles in Russian urban centres or metropolises (Lipkina, 2013). Quietness is understood as an underlying calmness and an absence of disturbances, and these qualities in an environment are preconditions for relaxation. Similarly, relaxing in a "rush-free" atmosphere is an important attribute for Finnish tourists (Pesonen, 2012). Russians are also attracted by the sense of safety in Finland as well as the clean environments and the well-maintained surroundings and buildings (Lipkina, 2013). However, the tangible attributes in the physical servicescape are often viewed as key factors influencing tourists' perceptions, regardless of their cultural backgrounds (Mishra and Gupta, 2018; Zomerdijs and Voss, 2010).

To conclude, the concept of servicescape has been used in the literature to analyse and define the sustainability dimensions of the physical and social surroundings of accommodation services. However, there is a need to extend the environmental focus and include social, cultural and economic sustainability in the analyses. In addition, tourists' perceptions of accommodation services are shaped by sustainable attributes in both the physical and social servicescapes.

In the following sections, we apply the servicescape framework to empirically examine the sustainability dimensions in the physical and social accommodation servicescapes and how tourists perceive

sustainability attributes in the leisure tourism context.

### 3. Method

#### 3.1. Data collection

The accommodation establishments selected for this study are located in the South Savo region in Finland. Tourism is a considerable economic sector in South Savo, and the region's share of gross domestic product from tourism is one of the highest in Finland. Three quarters of the tourists who visit the region are domestic and one quarter are foreign, with Russian tourists forming the largest group prior to the outbreak of the Covid-19 pandemic (The Regional Council of South Savo, 2018; see Fig. 2). Nature-based tourism tends to be more prevalent in Finland than mass tourism; therefore, the sustainable development activities within the tourism sector have been a key focus area.

The data were collected from online reviews published on the Tripadvisor website, which is one of the largest online review sites for the hospitality sector (Tripadvisor, 2023). Tripadvisor hosts voluntary user-generated content that is collated in a single data source. Online consumer reviews like Tripadvisor are widely considered to be rich data sources, and they provide a convenient and appropriate means of obtaining reviews of a range of accommodation companies from tourists from various countries (Schuckert et al., 2015).

The 678 reviews contained Finnish ( $n = 226$ , in Finnish) and Russian ( $n = 423$ , in Russian) tourists' evaluations of accommodation establishments. The participants were tourists who stayed in the accommodation for at least one night and provided a review on Tripadvisor. The main criteria for including these reviews in the data were as follows: the reviews 1) described tourists' perceptions of accommodation in the South Savo region; 2) reported identifiable perceptions regarding accommodation; and 3) were written by Finnish or Russian tourists. The Russian reviews were translated into Finnish using Google Translate and MOT Translation applications prior to the analysis phase.

The data were retrieved in April and May 2017 and contained reviews published between 2012 and 2017. Self-produced online review data provide tourists' personal insights and facilitate the retrieval of information regarding perceptions of sustainability in accommodation (García-Barricocanal et al., 2010).

The accommodation establishments reviewed in the data were operated by 46 different service providers and included hotels, boutique hotels, cottages, and bed & breakfast venues (B&Bs). It was presumed that most of the reviewers were leisure travellers, as most of the reviews

were provided in summer or in other holiday periods. Only three accommodation providers in the data were large chain hotels that operate all year round.

#### 3.2. Data analysis

In this study, we consider the tourists' online reviews as socially constructed perceptions that are suitable for analysing sustainable attributes in accommodation. We utilised a two-stage approach to analyse the review data. The first stage used qualitative content analysis (Schreier, 2012; Mayring, 2014) to identify and then code the tourists' accommodation perceptions. In the second stage, the data were analysed using classic content analysis (Drisko and Maschi, 2015; Krippendorff, 2012).

The servicescape concept and the four pillars of sustainable development guided the coding process. We utilised the qualitative data processing software ATLAS.ti (version 8.4.20) to construct and then combine the codes into sustainable attributes directly from the comment texts. The codes that shared similarities were then combined into sustainable attributes in accommodation. This study applied an iterative analysis process: the first author coded the data and then several discussion rounds followed in which all the authors reached agreement on the sustainable attributes.

The identified codes in the data included single words (e.g. noise) or longer descriptions of accommodation perceptions. For example, the sustainable attribute "maintenance" included codes that referred to 1) cleanliness or dirtiness (e.g. "...on the floor of the washroom was hair of the previous resident..."), 2) the physical condition of the building, room or surroundings (e.g. comments on peeling paints or damaged tiles), or 3) the features of the accommodation that did not function (e.g. "... door could not be locked..."). Appendix A provides a coding scheme of sustainable attributes.

The qualitative content analysis process resulted in a total of 34 codes that related to 20 sustainable attributes, which were further divided into the physical (15) and social (5) servicescape factors shown in Table 1. In addition, the positive, negative and neutral tone of the comments were coded according to the sustainable attributes. An expression was coded as neutral if the analysed sentence lacked adjectives or punctuation marks, such as exclamation marks.

The results from the first stage of the analysis identify the environmental, social, cultural and economic sustainability dimensions, which are embedded into the physical and social servicescape factors and report the tone of the reviews from the tourists' perspectives.

In the second stage, the data were analysed using content analysis, which is widely accepted as a standard method for analysing online reviews of tourist accommodation (Gil-Soto, 2019; Lee et al., 2016; Yi et al., 2018; Yu et al., 2017). The aim of this second phase was to 1) calculate the frequencies of the sustainable attributes identified in the data, 2) calculate the number of positive, negative and neutral comments regarding accommodation and 3) statistically compare the potential differences in the sustainable attributes between the Finnish and Russian tourists' reviews.

ATLAS.ti software was utilised to obtain the relative frequencies of the sustainable attributes reported by both nationalities. The presence or absence of the sustainable attributes were coded by assigning a numerical code ("1" or "0").

Quantitative data analyses were conducted using the statistical analysis software SPSS 27. Pearson's chi-square tests were used to determine the differences between the Finnish and Russian tourists by focusing on the physical and social servicescape factors and the environmental, social, cultural and economic sustainability dimensions. In the following section, we present the cross-tabulations of the frequencies and percentage values of the Finnish and Russian tourists' sustainability perceptions as well as the results from the Pearson's chi-square tests.



Fig. 2. Research site: the South Savo region in Finland and the number of tourists in 2018 (The Regional Council of South Savo, 2018).

**Table 1**

Environmental, social, cultural and economic sustainability attributes categorised in the physical and social factors of the servicescape in accommodation services.

| Sustainability dimensions    | Servicescape   |  |
|------------------------------|--|--|
|                              | Physical factor  | Social factor  |
|                              | Sustainable attributes   | Sustainable attributes   |
| Environmental sustainability | Energy: room temperature high/low, cooling/air conditioning system, heating method, use of renewable energy.<br>Pollution free: clean/fresh (air) outside, clean water.<br>Milieu/view: pleasant (or unpleasant) views/surroundings.<br>Noise/silence: unpleasant noises due to other customers, traffic or other activities, or no disturbing noises, aware of silence.<br>Maintenance: cleanliness (including hygiene), physical condition and functionality of the premises.<br>Materials: environmentally friendly materials.<br>Transportation: transportation via walking or by public vehicles. |  |
| Social sustainability        | Safety/security: aspects that make customers feel safe or unsafe.<br>Healthy choices: possibility to choose healthy activities or healthy food options.<br>Local (domestic) procurement: preference for local (domestic) products and services, support for local entrepreneurs.<br>Guide signs: guide signs in the accommodation establishment, in the surroundings and on route to the accommodation.<br>Special customer groups: services available for special customer groups, e.g. families, customers with disabilities or guests with pets.  | Employing: employing local and/or young people.<br>Equality: all customers are treated equally regardless of nationality, gender etc.<br>Crowding/social density: too many people in the same place.<br>Information: adequate and correct information provided about services, timetables etc. |
| Cultural sustainability      | Traditional practices: promote lifestyle-related cultural/traditional practices, e.g. sauna culture.<br>Culturally significant buildings/landscapes: maintain heritage buildings, traditional landscapes.<br>Food culture: provide traditional food.   | People as maintainers of culture: support given to the local language, culture-related storytelling, costumes.   |
| Economic sustainability      | Value for money: tourists' evaluations of the price-quality relationship.  |  |

**4. Results**

**4.1. Sustainability dimensions in the servicescape**

The sustainability dimensions consisted of the environmental, social, cultural and economic dimensions that were reflected in the attributes highlighted by the tourists. From a total of 678 reviews, 649 (Finnish n = 226, Russian n = 423) addressed at least one attribute in one of the four sustainability dimensions. The environmental and economic sustainability dimension only included attributes from the physical factor, while the social and cultural sustainability dimensions consisted of attributes from both the physical and social factors. Most of the comments focused on attributes connected to environmental sustainability (54,7%,

**Table 2**

Sustainability dimensions and attributes categorised in the physical and social servicescapes in tourists' reviews.

| Sustainability dimensions    | Sustainability attributes                            | Relative frequencies, % |               |         |
|------------------------------|--|-------------------------|---------------|---------|
|                              |  | Servicescape            |               |         |
|                              |  | Physical factor         | Social factor | Total % |
| Environmental sustainability | Maintenance  | 20,9                    | -             |         |
|                              | Milieu and view                                      | 15,1                    | -             |         |
|                              | Noise/Silence  | 9,2                     | -             |         |
|                              | Transportation                                       | 4,4                     | -             |         |
|                              | Energy   | 2,2                     | -             |         |
|                              | Pollution-free (air, water)                          | 2,1                     | -             |         |
|                              | Materials  | 0,8                     | -             |         |
|                              | Ecological, total %                                  | 54,7                    |               | 54,7    |
|                              | Healthy choices                                      | 6,5                     | -             |         |
|                              | Social sustainability                                | Special customer groups | 4,1           | -       |
| Local (domestic) procurement |  | 3,0                     | -             |         |
| Safety/Security              |  | 1,6                     | -             |         |
| Guide signs                  |  | 1,2                     | -             |         |
| Equality                     |  | -                       | 12,4          |         |
| Information                  |  | -                       | 2,8           |         |
| Crowded                      |  | -                       | 1,1           |         |
| Employing                    |  | -                       | 0,4           |         |
| Social, total %              |  | 16,4                    | 16,7          | 33,1    |
| Cultural sustainability      |  | Traditional practices   | 4,8           |         |
|                              | Culturally significant buildings/landscape/artefacts | 3,8                     |               |         |
|                              | Food culture   | 0,4                     |               |         |
|                              | People as maintainers of culture                     |                         | 0,2           |         |
| Economic sustainability      | Cultural, total %                                    | 9,0                     | 0,2           | 9,2     |
|                              | Value for money                                      | 3,0                     |               |         |
|                              | Economic, total %                                    | 3,0                     |               | 3,0     |
|                              | Total %  | 83,1                    | 16,9          | 100,0   |

Table 2), followed by social sustainability (33,1%), cultural sustainability (9,2%) and economic sustainability (3,0%).

**4.2. Physical servicescape: sustainability dimensions and attributes**

Comments associated with the physical factor (83,1% versus social factor 16,9%) in the servicescape dominated the reviews (Table 2). In the physical servicescape, the sustainable attributes mentioned most frequently focused on environmental sustainability (54,7%, Table 2). In particular, the comments addressed maintenance issues, such as the condition of the room and the cleanliness of the premises. The tourists also emphasised the milieu, view and soundscape, i.e. noise levels in and around the accommodation. The tourists' reviews associated quietness with the accommodation's surrounding environment, in most cases relating it to peace in nature. In contrast, high noise levels were described as unpleasant sounds caused by traffic or other customers.

The social sustainability attributes categorised in the physical servicescape included healthy food choices, such as berries and fruits at breakfast, or the opportunities for exercise and the availability of sports facilities. The physical servicescape was also reflected in the comments that considered the needs of children or other special groups, for example, requests for specific furniture. The cultural sustainability attributes were generally connected with the physical servicescape (in 9,0% of the reviews). Traditional practices (e.g. Finnish sauna) and issues pertaining to culturally significant buildings, landscapes and artefacts (e.g. the preservation of military artefacts or tangible elements of rural lifestyles) indicated cultural sustainability. The only attribute

associated with economic sustainability was value for money (3,0% of the reviews). When describing this price-quality ratio in the reviews, the tourists mentioned physical features such as the size of the room, breakfast options and cleanliness.

#### 4.3. Social servicescape: sustainability dimensions and attributes

Comments on the social servicescape primarily focused on social sustainability attributes (16,7% versus cultural sustainability 0,2%, Table 2). The quality of service was mentioned most frequently, with tourists valuing equal treatment and warm-hearted encounters with staff. The social servicescape was also reflected in comments concerning the delivery of information, for example, providing timetables and service details.

Cultural sustainability attributes were manifested via social contacts, which included issues such as the local dialect spoken by personnel. However, few comments mentioned interactions with staff, other tourists or local residents that provided histories of buildings, surroundings or historical events. The results show that cultural sustainability attributes are more easily discerned via tangible objects, such as buildings or cultural artefacts.

#### 4.4. Tourists' positive and negative perceptions of sustainable attributes in accommodation

Table 3 shows the positive, negative and neutral perceptions of the reviews. The valence of the sustainable attributes was mostly positive (77%), and the share of negative comments was relatively small (17%). The distribution of positive and negative comments was rather similar for both the physical (positive 77%, negative 16%) and social (positive 77%, negative 22%) servicescape factors. Likewise, environmental, social, cultural and economic sustainability dimensions were perceived positively, indicating that attributes in these dimensions contribute to tourists' enjoyable experiences. Positive perceptions were primarily influenced by the environmental sustainability attributes in servicescapes, for example, milieu and view and pollution-free air or water. The social sustainability attributes, such as equal treatment of customers and the use of local products, also featured strongly. The cultural sustainability attributes, for example, traditional practices and culturally significant buildings, landscapes, or artefacts, contributed to positive tourist perceptions. The price-quality ratio was regarded as positive when the tourist perceived that the services represented good value for money.

However, negative perceptions (more negative than positive comments on a single attribute) appeared in both the physical and social servicescapes, for example, a lack of sufficient and correct information delivered via guide signs (physical factor) or via face-to-face encounters with personnel (social factor). Most of the negative comments were related to the price-quality assessment (economic sustainability). Additionally, tourists reported a negative experience if they felt cold because of the accommodation's energy saving measures or too hot because of a lack of air conditioning (environmental sustainability attribute Energy). The least negative perceptions were related to cultural sustainability.

#### 4.5. Comparison between Finnish and Russian tourists' perceptions of sustainable attributes in accommodation

In the reviews, both Finns and Russians commented more often on attributes belonging to the physical servicescape (Finns 76,8%; Russians 86,7%) than the social servicescape (Finnish 23,2%; Russians 13,3%, Table 4). The Russians observed sustainable attributes in the physical servicescape more often than Finns ( $\chi^2(1) = 31,086$ ;  $p < 0.001$ ). In contrast, Russian tourists mentioned observations relating to the social servicescape less frequently than the Finns ( $\chi^2(1) = 29,493$ ;  $p < 0.001$ ).

When comparing the four sustainability dimensions, the Russian

tourists (58,6%) commented more on environmental sustainability attributes than the Finnish tourists (48,3%) ( $\chi^2(1) = 18,953$ ;  $p < 0.001$ ). In contrast, the Finns (38,0%; Russians 30,0%) provided more feedback on the social sustainability attributes ( $\chi^2(1) = 12,632$ ;  $p < 0.001$ ). In addition, the Finns provided slightly more comments on the cultural sustainability attributes ( $\chi^2(1) = 5,097$ ;  $p < 0.024$ ). The Russian tourists only commented on cultural sustainability in the physical servicescape. Finns and Russians commented equally on the economic sustainability. The most frequent environmental sustainability attribute that was noted by both nationalities was "Maintenance", i.e. the accommodation's physical surroundings and the room's condition.

Both nationalities perceived the physical and social servicescapes and the sustainable attributes mostly positively. Table 5 shows the percentages of the positive, negative and neutral perceptions of sustainable attributes among the two groups. In summary, the sustainable attributes that supported Finnish and Russian tourists' positive accommodation perceptions included milieu and views, local procurement, pollution-free air/water, equal and warm-hearted treatment of customers and tangible cultural attributes.

It is notable that only the Finnish tourists perceived the intangible cultural sustainability attributes positively. A particular feature of the Russian comments concerned the crowding or low social density of the social servicescape: they perceived the accommodation's social density positively if the facilities were quiet and they encountered few people. Correspondingly, dissatisfaction was reported when there were too many people present, especially if the other guests were also Russian. Finnish and Russian tourists both reported negative attributes in the physical and social servicescapes, for example, energy use, guide signs, provision of information and safety and security issues.

## 5. Discussion

This study contributes to the research on sustainable tourism and servicescape by providing a better understanding of how environmental, social, cultural and economic sustainability attributes can be incorporated into tourism accommodation servicescapes while supporting enjoyable customer experiences.

Previous sustainable service environment frameworks (e.g. Kreidler and Joseph-Mathews, 2009; Mishra and Gupta, 2018) have mainly focused on environmental sustainability and overlooked the social, cultural and economic sustainability dimensions. Therefore, the aim of this study was to identify the attributes of these four sustainability dimensions of accommodation services utilising tourists' perspectives. Furthermore, the sustainable attributes have been categorised in the physical and social servicescape contexts.

The environmental sustainability attributes in accommodation services are mostly tangible and thus represent the physical servicescape factor. Studies of green servicescape have shown that environmental sustainability attributes can also be categorised as a social servicescape factor (Kreidler and Joseph-Mathews, 2009; Mishra and Gupta, 2018). While many attributes of cultural sustainability are tangible and visible, some are intangible in accommodation services and only appear during human interactions. Therefore, they are categorised as part of the social factor in a servicescape. Likewise, some attributes of social sustainability in accommodation services are tangible; however, they also appear in human interactions. Accordingly, attributes of social sustainability are present in both the physical and social factors of accommodation servicescapes. Economic sustainability can be identified in the physical and social factors in the attributes that enable the company to remain profitable. From a tourist's perspective, economic sustainability is most clearly manifested as a price-quality ratio.

The results show that tourists most frequently identified the environmental, cultural, social and economic sustainability attributes in the physical servicescape rather than the social servicescape. These findings align with the results of previous studies in sustainable tourism (Mishra and Gupta, 2018; Gupta et al., 2019; Lu and Stepenkova, 2012) and



**Table 3**  
Frequency of positive, negative and neutral perceptions of sustainable attributes in the tourists' reviews.

| Sustainability dimensions              | Sustainability attributes                              | Total comments | Servicescape dimensions |                   |                  |                   |                   |                  | Physical + Social factors |                  |                 |
|--|--|----------------|-------------------------|-------------------|------------------|-------------------|-------------------|------------------|---------------------------|------------------|-----------------|
|  |  |                | Physical factor         |                   |                  | Social factor     |                   |                  | Positive total            | Negative total   | Neutral total   |
|  |  |                | Positive comments       | Negative comments | Neutral comments | Positive comments | Negative comments | Neutral comments |                           |                  |                 |
| Environmental sustainability           | Maintenance  | 396            | 272 (69%)               | 118 (30%)         | 6 (2%)           |                   |                   |                  |                           |                  |                 |
|  | Milieu and view  | 287            | 280 (98%)               | 4 (1%)            | 3 (1%)           |                   |                   |                  |                           |                  |                 |
|  | Noise/Silence  | 175            | 140 (80%)               | 32 (18%)          | 3 (2%)           |                   |                   |                  |                           |                  |                 |
|  | Transportation   | 84             | 68 (81%)                | 3 (4%)            | 13 (15%)         |                   |                   |                  |                           |                  |                 |
|  | Energy   | 42             | 13 (31%)                | 25 (60%)          | 4 (9%)           |                   |                   |                  |                           |                  |                 |
|  | Pollution-free (air, water)                            | 40             | 36 (90%)                | 0 (0%)            | 4 (10%)          |                   |                   |                  |                           |                  |                 |
|  | Materials  | 16             | 11 (69%)                | 2 (13%)           | 3 (19%)          |                   |                   |                  |                           |                  |                 |
|  | <b>Environmental, total</b>                            | <b>1040</b>    | <b>820 (79%)</b>        | <b>184 (18%)</b>  | <b>36 (3%)</b>   |                   |                   |                  | <b>820 (79%)</b>          | <b>184 (18%)</b> | <b>36 (3%)</b>  |
| Social sustainability                  | Equality   | 236            |                         |                   |                  | 221 (94%)         | 15 (6%)           | 0 (0%)           |                           |                  |                 |
|  | Healthy choices  | 123            | 85 (69%)                | 5 (4%)            | 33 (27%)         |                   |                   |                  |                           |                  |                 |
|  | Special customer groups                                | 77             | 62 (81%)                | 8 (10%)           | 7 (9%)           |                   |                   |                  |                           |                  |                 |
|  | Local (domestic) procurement                           | 56             | 52 (93%)                | 3 (5%)            | 1 (2%)           |                   |                   |                  |                           |                  |                 |
|  | Information  | 53             |                         |                   |                  | 9 (17%)           | 42 (79%)          | 2 (4%)           |                           |                  |                 |
|  | Safety/Security  | 30             | 12 (40%)                | 17 (57%)          | 1 (3%)           |                   |                   |                  |                           |                  |                 |
|  | Guide signs  | 23             | 4 (17%)                 | 17 (74%)          | 2 (9%)           |                   |                   |                  |                           |                  |                 |
|  | Crowded  | 20             |                         |                   |                  | 12 (60%)          | 8 (40%)           | 0 (0%)           |                           |                  |                 |
|  | Employing  | 8              |                         |                   |                  | 2 (25%)           | 6 (75%)           | 0 (0%)           |                           |                  |                 |
|  | <b>Social, total %</b>                                 | <b>626</b>     | <b>215 (34%)</b>        | <b>50 (8%)</b>    | <b>44 (7%)</b>   | <b>244 (39%)</b>  | <b>71 (11%)</b>   | <b>2 (0%)</b>    | <b>459 (73%)</b>          | <b>121 (19%)</b> | <b>46 (7%)</b>  |
| Cultural sustainability                | Traditional practices                                  | 91             | 67 (73%)                | 6 (7%)            | 18 (20%)         |                   |                   |                  |                           |                  |                 |
|  | Culturally significant buildings, landscape, artefacts | 72             | 66 (92%)                | 0 (0%)            | 6 (8%)           |                   |                   |                  |                           |                  |                 |
|  | Food culture   | 7              | 7 (100%)                | 0 (0%)            | 0 (0%)           |                   |                   |                  |                           |                  |                 |
|  | People as maintainers of culture                       | 5              |                         |                   |                  | 5 (100%)          | 0 (0%)            | 0 (0%)           |                           |                  |                 |
|  | <b>Cultural, total %</b>                               | <b>175</b>     | <b>140 (80%)</b>        | <b>6 (3%)</b>     | <b>24 (14%)</b>  | <b>5 (3%)</b>     | <b>0 (0%)</b>     | <b>0 (0%)</b>    | <b>145 (83%)</b>          | <b>6 (3%)</b>    | <b>24 (14%)</b> |
| Economic sustainability                | Value for money  | 57             | 38 (67%)                | 19 (33%)          | 0 (0%)           |                   |                   |                  |                           |                  |                 |
|  | <b>Economic, total %</b>                               | <b>57</b>      | <b>38 (67%)</b>         | <b>19 (33%)</b>   | <b>0 (0%)</b>    |                   |                   |                  | <b>38 (67%)</b>           | <b>19 (33%)</b>  | <b>0 (0%)</b>   |
|  | <b>Total</b>   | <b>1898</b>    | <b>1213 (64%)</b>       | <b>259 (21%)</b>  | <b>104 (5%)</b>  | <b>249 (13%)</b>  | <b>71 (4%)</b>    | <b>2 (0%)</b>    | <b>1462 (77%)</b>         | <b>330 (17%)</b> | <b>106 (6%)</b> |
| <b>Total in Physical/Social factor</b> |  |                | <b>77%</b>              | <b>16%</b>        | <b>7%</b>        | <b>77%</b>        | <b>22%</b>        | <b>2%</b>        |                           |                  |                 |

**Table 4**

The relative frequencies of sustainable attributes occurring in the Finnish and Russian tourists' reviews and the Chi-Square test results.

| Sustainability dimensions    | Sustainability attributes                              | Finnish            |                    | Russians            |                    | Pearson Chi-Square | Sig.         |
|------------------------------|--|--------------------|--------------------|---------------------|--------------------|--------------------|--------------|
|                              |  | Physical factor    | Social factor      | Physical factor     | Social factor      |                    |              |
| Environmental sustainability | Maintenance  | 160 (22,7%)        |                    | 236 (19,8%)         |                    |                    |              |
|                              | Milieu and view  | 78 (11,1%)         |                    | 209 (17,5%)         |                    |                    |              |
|                              | Noise/Silence  | 60 (8,5%)          |                    | 115 (9,6%)          |                    |                    |              |
|                              | Energy   | 19 (2,7%)          |                    | 23 (1,9%)           |                    |                    |              |
|                              | Transportation   | 18 (2,6%)          |                    | 66 (5,5%)           |                    |                    |              |
|                              | Pollution-free (air, water)                            | 4 (0,6%)           |                    | 36 (3,0%)           |                    |                    |              |
|                              | Materials  | 1 (0,1%)           |                    | 15 (1,3%)           |                    |                    |              |
|                              | <b>Environmental, total</b>                            | <b>340 (48,3%)</b> |                    | <b>700 (58,6%)</b>  |                    | 18,953             | <b>,000*</b> |
| Social sustainability        | Equality   |                    | 120 (17%)          |                     | 116 (9,7%)         |                    |              |
|                              | Healthy choices  | 35 (5,0%)          |                    | 88 (7,4%)           |                    |                    |              |
|                              | Local (domestic) procurement                           | 32 (4,5%)          |                    | 24 (2,0%)           |                    |                    |              |
|                              | Information  |                    | 32 (4,5%)          |                     | 21 (1,8%)          |                    |              |
|                              | Special customer groups                                | 26 (3,7%)          |                    | 51 (4,3%)           |                    |                    |              |
|                              | Safety/Security  | 10 (1,4%)          |                    | 20 (1,7%)           |                    |                    |              |
|                              | Guide signs  | 7 (1,0%)           |                    | 16 (1,3%)           |                    |                    |              |
|                              | Crowded  |                    | 0 (0,0%)           |                     | 20 (1,7%)          |                    |              |
|                              | Employing  |                    | 6 (0,9%)           |                     | 2 (0,2%)           |                    |              |
|                              | <b>Social, total %</b>                                 | <b>110 (15,6%)</b> | <b>158 (22,4%)</b> | <b>199 (16,7%)</b>  | <b>159 (13,3%)</b> | 12,632             | <b>,000*</b> |
| Cultural sustainability      | Traditional practices                                  | 47 (6,7%)          |                    | 44 (3,7%)           |                    |                    |              |
|                              | Culturally significant buildings, landscape, artefacts | 25 (3,6%)          |                    | 47 (3,9%)           |                    |                    |              |
|                              | People as maintainers of culture                       |                    | 5 (0,7%)           |                     | 0 (0,0%)           |                    |              |
|                              | Food culture   | 2 (0,3%)           |                    | 5 (0,4%)            |                    |                    |              |
| <b>Cultural, total %</b>     | <b>74 (10,5%)</b>                                      | <b>5 (0,7%)</b>    | <b>96 (8,0%)</b>   | <b>0 (0,0%)</b>     | 5,097              | <b>,024*</b>       |              |
| Economic sustainability      | Value for money  | 17 (2,4%)          |                    | 40 (3,4%)           |                    |                    |              |
|                              | <b>Economic, total %</b>                               | <b>17 (2,4%)</b>   |                    | <b>40 (3,4%)</b>    |                    | 0,258              | <b>0,611</b> |
|                              | <b>Total physical</b>                                  | <b>541 (76,8%)</b> |                    | <b>1035 (86,7%)</b> |                    | 31,086             | <b>,000*</b> |
|                              | <b>Total social</b>                                    |                    | <b>163 (23,2%)</b> |                     | <b>159 (13,3%)</b> | 29,493             | <b>,000*</b> |

consumer experiences in servicescapes (Oviedo-García et al., 2019; Pecoraro et al., 2020; Zomerdiijk and Voss, 2010). Tourists tend to emphasise easily perceived and tangible sustainability attributes in a physical servicescape (Bernini et al., 2021). Furthermore, physical attributes are relatively straightforward to manage and maintain, whereas social attributes are influenced by customers and context.

Despite their general visibility, the cultural sustainability attributes were the second least addressed in the reviews. However, the data in this study only included eight (17% of all accommodations) heritage-related accommodation facilities. Furthermore, the tourists struggled to identify cultural sustainability attributes or, for various reasons, they did not regard them as worth reporting. Tourists also have different levels of interest in cultural heritage (Teo et al., 2014); therefore, some individuals will not focus on cultural issues.

The economic sustainability attribute was mentioned occasionally in comparison to the attributes of the other sustainability dimensions, a finding that aligned with the results of Lu and Stepchenkova (2012) and Cottrell et al. (2004). Economic sustainability was manifested in the reviews that referred to the price-quality ratio, which the tourists evaluated by weighing the accommodation's tangible features against the cost.

Some sustainable attributes simultaneously represent the quality attributes of tourism accommodation and thus have an impact on tourist satisfaction or dissatisfaction (Barreda and Bilgihan, 2013; Dolnicar and Otter, 2003; Robinot and Giannelloni, 2010; Wattanakamolchai et al., 2016). Physical attributes tend to directly affect a satisfying or dissatisfying accommodation experience and may therefore generate the focus on physical environments (Barreda and Bilgihan, 2013; Lu and Stepchenkova, 2012; Yu et al., 2017). This could also explain the tourists' motivation to report issues relating to environmental sustainability in their reviews, an observation that aligns with previous studies (D'Acunto et al., 2020; Ettinger et al., 2018). More recently, because of the Covid-19 pandemic, tourists have experienced an increase in health and

safety measures in accommodation services; for example, hygiene and cleaning of hotel surfaces and guestrooms have been improved to meet both official requirements and guests' higher safety-related expectations. Contactless services have also been broadly introduced to minimise human contact during the pandemic period (Jiang and Wen, 2020).

This study indicates that the environmental, social, cultural and economic sustainability attributes in the physical and social servicescapes contribute to positive perceptions of accommodation. The combination of attributes from the physical and social servicescapes is central to tourists' experiences (e.g. Limberger et al., 2014; Ritchie and Hudson, 2009; Tussyadiah and Zach, 2016). While the valence of the tourists' perceptions of the sustainable attributes was mainly positive, there were also comments that described negative perceptions. These findings support previous research on guests' positive and negative perceptions of green or sustainable hotel practices (e.g. D'Acunto et al., 2020; Ettinger et al., 2018; Gil-Soto et al., 2019; Yu et al., 2017). However, our study extends the existing research results by showing that in addition to the environmental sustainability attributes, cultural, social and economic sustainability also contribute to positive accommodation experiences. Similarly, customer satisfaction is the result of an overall evaluation that requires a holistic examination of the sustainability dimensions of accommodation servicescapes (Lee and Chuang, 2021).

It appears that several sustainability attributes have the capacity to support positive customer experiences by eliciting enjoyment. Attributes such as milieu and view can evoke an aesthetic response: beautiful natural environments and clean, well maintained built environments create feelings of harmony and comfort. Accommodation providers are dependent on attractive surroundings, and these milieus need to be maintained as tourist attractions (e.g. architectural buildings, landscape architecture and aesthetically beautiful nature) (e.g. Chan and Baum, 2007; Liu, 2003). By offering local products, such as high quality and flavourful food, accommodation providers can elicit positive reactions

**Table 5**  
Percentages of positive, negative and neutral perceptions of sustainable attributes in the reviews of Finnish (FIN) and Russian (RUS) tourists.

| Sustainability dimensions                                   | Sustainability attributes                | Total comments<br>FIN/RUS | Servicescape dimensions          |                                  |                                 |                                  |                                  |                                 | Physical + Social factors     |                               |                              |
|---|--|---------------------------|----------------------------------|----------------------------------|---------------------------------|----------------------------------|----------------------------------|---------------------------------|-------------------------------|-------------------------------|------------------------------|
|   |  |                           | Physical factor                  |                                  |                                 | Social factor                    |                                  |                                 | Positive<br>total FIN/<br>RUS | Negative<br>total FIN/<br>RUS | Neutral<br>total FIN/<br>RUS |
|   |  |                           | Positive<br>comments FIN/<br>RUS | Negative<br>comments FIN/<br>RUS | Neutral<br>comments FIN/<br>RUS | Positive<br>comments FIN/<br>RUS | Negative<br>comments FIN/<br>RUS | Neutral<br>comments FIN/<br>RUS |                               |                               |                              |
| Ecological<br>sustainability                                | Maintenance                              | 160/236                   | 63%/72%                          | 35%/26%                          | 2%/1%                           |                                  |                                  |                                 |                               |                               |                              |
|   | Milieu and view                          | 78/209                    | 97%/98%                          | 3%/1%                            | 0%/1%                           |                                  |                                  |                                 |                               |                               |                              |
|   | Noise/Silence                            | 60/115                    | 73%/83%                          | 25%/15%                          | 2%/2%                           |                                  |                                  |                                 |                               |                               |                              |
|   | Transportation                           | 0                         | 72%/83%                          | 0%/5%                            | 28%/12%                         |                                  |                                  |                                 |                               |                               |                              |
|   | Energy                                   | 1                         | 26%/35%                          | 58%/61%                          | 16%/4%                          |                                  |                                  |                                 |                               |                               |                              |
|   | Pollution-free (air, water)              | 0                         | 100%/89%                         | 0%/0%                            | 0%/11%                          |                                  |                                  |                                 |                               |                               |                              |
|   | Materials                                | 0                         | 100%/67%                         | 0%/13%                           | 0%/20%                          |                                  |                                  |                                 |                               |                               |                              |
| Social<br>sustainability                                    | <b>Environmental, total</b>              | <b>340/700</b>            | <b>72%/82%</b>                   | <b>25%/14%</b>                   | <b>3%/3%</b>                    | -                                | -                                | -                               | <b>72%/82%</b>                | <b>25%/14%</b>                | <b>3%/3%</b>                 |
|   | Equality                                 | 120/166                   |                                  |                                  |                                 | 94%/93%                          | 6%/7%                            | 0%/0%                           |                               |                               |                              |
|   | Healthy choices                          | 35/88                     | 86%/63%                          | 11%/1%                           | 3%/36%                          |                                  |                                  |                                 |                               |                               |                              |
|   | Special customer groups                  | 26/51                     | 85%/78%                          | 12%/10%                          | 4%/12%                          |                                  |                                  |                                 |                               |                               |                              |
|   | Local (domestic)                         | 32/24                     | 88%/100%                         | 9%/0%                            | 3%/0%                           |                                  |                                  |                                 |                               |                               |                              |
|   | procurement                              |                           |                                  |                                  |                                 |                                  |                                  |                                 |                               |                               |                              |
|   | Information                              | 32/21                     |                                  |                                  |                                 | 16%/19%                          | 78%/81%                          | 6%/0%                           |                               |                               |                              |
|   | Safety/Security                          | 10/20                     | 10%/55%                          | 90%/40%                          | 0%/5%                           |                                  |                                  |                                 |                               |                               |                              |
|   | Guide signs                              | 7/16                      | 14%/19%                          | 86%/69%                          | 0%/13%                          |                                  |                                  |                                 |                               |                               |                              |
|   | Crowded                                  | 0/20                      |                                  |                                  |                                 | 0%/60%                           | 0%/40%                           | 0%/0%                           |                               |                               |                              |
|   | Employing                                | 6/2                       |                                  |                                  |                                 | 17%/50%                          | 83%/50%                          | 0%/0%                           |                               |                               |                              |
|   | <b>Social, total %</b>                   | <b>268/358</b>            | <b>31%/37%</b>                   | <b>9%/7%</b>                     | <b>1%/11%</b>                   | <b>44%/35%</b>                   | <b>14%/10%</b>                   | <b>1%/0%</b>                    | <b>75%/72%</b>                | <b>23%/17%</b>                | <b>2%/11%</b>                |
|   | Cultural<br>sustainability               | Traditional practices     | 47/44                            | 68%/80%                          | 13%/0%                          | 19%/20%                          |                                  |                                 |                               |                               |                              |
| Culturally significant<br>buildings/landscape/<br>artefacts |  | 25/47                     | 96%/89%                          | 0%/0%                            | 4%/11%                          |                                  |                                  |                                 |                               |                               |                              |
| Food culture  |  | 2/5                       | 100%/100%                        | 0%/0%                            | 0%/0%                           |                                  |                                  |                                 |                               |                               |                              |
| People as maintainers of<br>culture                         |  | 5/0                       |                                  |                                  |                                 | 100%/0%                          | 0%/0%                            | 0%/0%                           |                               |                               |                              |
| Economic<br>sustainability                                  | <b>Cultural, total %</b>                 | <b>79/96</b>              | <b>73%/85%</b>                   | <b>8%/0%</b>                     | <b>13%/15%</b>                  | <b>6%/0%</b>                     | <b>0%/0%</b>                     | <b>0%/0%</b>                    | <b>79%/85%</b>                | <b>8%/0%</b>                  | <b>13%/15%</b>               |
|   | Value for money                          | 17/40                     | 41%/78%                          | 59%/23%                          | 0%/0%                           |                                  |                                  |                                 |                               |                               |                              |
|   | <b>Economic, total %</b>                 | <b>17/40</b>              | <b>41%/78%</b>                   | <b>59%/23%</b>                   | <b>0%/0%</b>                    |                                  |                                  |                                 |                               |                               |                              |
|   | <b>Total</b>                             | <b>704/1194</b>           | <b>54%/66%</b>                   | <b>16%/10%</b>                   | <b>4%/7%</b>                    | <b>19%/13%</b>                   | <b>7%/4%</b>                     | <b>0%/0%</b>                    | <b>73%/79%</b>                | <b>23%/14%</b>                | <b>4%/7%</b>                 |
|   | <b>Total in Physical / Social factor</b> |                           | <b>73%/79%</b>                   | <b>22%/13%</b>                   | <b>5%/8%</b>                    | <b>73%/78%</b>                   | <b>26%/22%</b>                   | <b>1%/0%</b>                    |                               |                               |                              |

from tourists (Ettinger et al., 2018) and simultaneously support the region's economy and preserve local culture (Mynttinen et al., 2015; Sims, 2009).

However, despite the positive perceptions communicated in the reviews, there were a number of negative comments involving the environmental, social and economic sustainability dimensions. Similarly, studies have identified sustainable attributes that disrupt positive tourist experiences in the same sustainability dimensions. Dissatisfaction occurs when the physical facilities or the social interactions with personnel do not meet tourists' expectations. Previous studies have identified the social issues mentioned in negative reviews (Berezina et al., 2016; D'Acunzio et al., 2020) and the physical conditions that contribute to displeasure (Berezina et al., 2016; Lockwood and Pyun, 2019). Dissatisfaction relating to services and facilities affects tourists' price-quality ratio evaluations and may lead to negative perceptions regarding value for money (Choi and Chu, 2001; Matzler et al., 2006). Travellers rate comfort as an essential attribute (Walls et al., 2011), which implies that tourists prefer easy, seamless services, particularly when relaxation is a motivating factor.

This study examined the role of tourists' sociocultural backgrounds by focusing on Finnish and Russian tourists' sustainability perceptions of accommodation. The analysis showed that both groups focused on the sustainable attributes in the physical rather than in the social servicescape. The Finnish tourists noticed the sustainable attributes in the social servicescape more often than the Russian tourists. This may be due in part to language barriers limiting social interactions. Instead, the positive Russian reviews were largely directed towards the sustainable attributes of the physical servicescape, such as the milieu and view. This finding is supported by previous studies: Russian tourists generally travel from large cities and therefore appreciate the nature, purity, safety and ease of travel in Finland (Konu, 2017; Vespestad, 2010).

In addition to highlighting either the physical or social servicescapes, the Finnish and Russian tourists generally focused on different sustainability attributes. Previous studies have shown that a tourist's nationality has an impact on the weighting of sustainable attributes (Berezina et al., 2013; Leonidou et al., 2015). Russian tourists identified environmental sustainability attributes more frequently than the Finns, potentially because these attributes are often physical, concrete and easily observable when travelling abroad. Furthermore, several environmental sustainability attributes are highly valued by Russians when visiting Finland, such as silence and natural landscapes (Konu, 2017; Lipkina, 2013). Correspondingly, Finns commented on social sustainability attributes more frequently than the Russian tourists. Domestic travellers may easily recognise local products (Mynttinen et al., 2015), and social interactions are more animated and informative when people share the same language and cultural background. The Russian tourists' comments often addressed the low social density of the servicescape. This desire for silence and uncrowded spaces may be due to a motivation to seek relaxation and a temporary escape from busy lives and metropolitan noise (Konu, 2017; Lipkina, 2013). In summary, tourists' sociocultural backgrounds and potential language barriers seem to lead them to value certain sustainable attributes that contribute to a positive or negative perception of accommodation.

## 6. Conclusions

### 6.1. Theoretical implications

This study identified and defined four sustainability dimensions in accommodation servicescape from tourists' perspectives. The servicescape and sustainable tourism literature was applied to identify the environmental, social, cultural and economic sustainability dimensions and the related sustainable attributes in accommodation services. Utilising tourists' reviews, this study extended the servicescape framework by concretising and introducing sustainability as a prominent aspect in accommodation services. The attributes that form a sustainable

servicescape are clearly identified by revealing the connections between the physical and social factors of a servicescape and the sustainable attributes described by tourists.

Our results show that the sustainability measures of accommodation services presented in the literature are visible as attributes in the servicescapes; thus, the environmental, social, cultural and economic sustainability dimensions in the servicescape can be constructed from different sustainability attributes. The findings also support the division of the servicescape into physical and social factors (e.g. Baker, 1986; Bitner, 1992; Rosenbaum and Massiah, 2011) by showing that the identified sustainable attributes can be detected and classified as either physical or social. The structure of the sustainable accommodation servicescape is presented in Fig. 3.

In addition, this study outlines the sustainable attributes that trigger positive and negative experiences in the physical and social servicescapes. Our study shows that environmental, social, cultural and economic sustainability attributes contribute to a positive experience. Furthermore, both the physical and social factors in servicescapes influence a tourist's accommodation experience; thus, we advocate for a holistic view of a sustainable accommodation servicescape.

From a tourist's perspective, environmental sustainability primarily includes measures that relate to properties (e.g. maintenance, materials) and surroundings (e.g. view, pollution freeness). Respectively, the social sustainability issues focus on fair customer treatment, special requirements, healthy or local food and activity options and adequate information. In terms of cultural sustainability, tourists particularly note cultural heritage services, local food and cultural objects and surroundings, whereas economic sustainability is associated with a price-quality ratio assessment. While many of these attributes are currently included in accommodation services as sustainable measures (e.g. Chhabra, 2015; Ettinger et al., 2018; Garay and Font, 2012; Kim et al., 2018;), they are often implemented from a company perspective. Therefore, this study provides information to broaden the perspective of accommodation services to include the sustainable attributes that are valued by tourists.

Finally, this study provides insights into the role of a tourist's sociocultural background and addresses how different nationalities perceive the sustainability of accommodation. The results show that Finnish (domestic) and Russian (foreign) tourists generally perceive sustainable attributes in similar ways; however, there are differences in how the two groups focus on the attributes in either the physical or social servicescape factors. These results confirm previous findings (e.g. Berezina et al., 2014; Komppula et al., 2018) on the effects of sociocultural backgrounds on the perceptions of sustainable practices in tourist accommodation.

### 6.2. Managerial implications

The findings of this study can help facilitate the design and management of sustainable attributes in accommodation services. This research also provides information on sustainability issues utilising tourists' perspectives and highlights potential targets for marketing. The results support previous studies that emphasise the need for customer insight (Font et al., 2018) and a customer focus that extends beyond tourists who already favour sustainability initiatives (Font and McCabe, 2017).

Service providers can employ the servicescape concept to gain a systematic understanding of how tourists evaluate their services (Durnan et al., 2015). Likewise, the servicescape concept can be applied when considering sustainability in accommodation: the servicescape concept can be used to identify and manage issues in the physical environment and incidents in human interactions (such as a service encounter) in which sustainability attributes generate or potentially undermine a positive customer experience.

As many of the sustainability and service quality attributes overlap, accommodation service providers can take advantage of this double



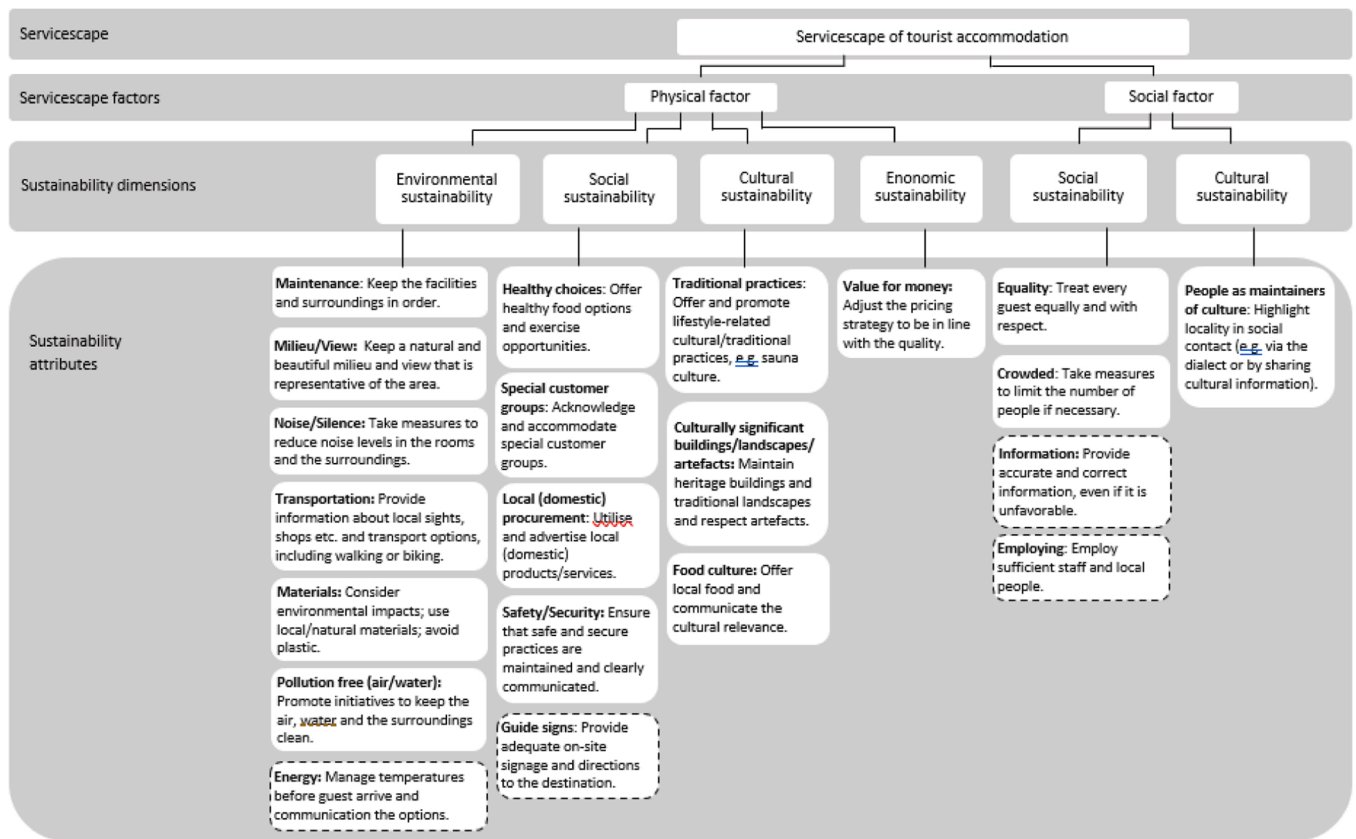


Fig. 3. The sustainable tourist accommodation servicescape and implications for managing sustainable attributes in accommodation services.

function to simultaneously develop sustainable services and increase customer satisfaction. However, measures implemented from a sustainability perspective can potentially lead to a negative experience from an accommodation service quality perspective. Furthermore, the salient attributes affecting customer satisfaction may not involve sustainability attributes, even in environments such as ecotourism (Lu and Stepchenkova, 2012).

The list of attributes presented in Fig. 3 can be used by managers to identify sustainable practices, determine their connections with the accommodation's quality goals and assess how they will affect customer satisfaction. This knowledge allows accommodation managers to realise the strengths and weaknesses of their operations and analyse the successes and failures of their services both in terms of sustainability and quality. Increasing environmental sustainability can lead to a decrease in tourists' perceptions of social or economic sustainability; therefore, managers could benefit from developing an enhanced understanding of sustainable practices to identify the interplay or potential conflicts between the sustainable attributes.

It appears that tourists' positive accommodation experiences are supported by all four sustainability dimensions and several attributes in both the physical and social servicescapes. The physical attributes tend to dominate tourists' experiences (e.g. Barreda and Bilgihan, 2013; Yu et al., 2017); thus, intangible sustainability attributes, such as those relating to cultural heritage (Lee and Chhabra, 2015), should be made visible via storytelling. Significantly, cultural sustainability has the potential to support enjoyable tourist experiences, as it was perceived positively more often than the other sustainability dimensions. In addition, enjoyable consumer experiences can be enhanced by offering local food and communicating information on local culture. Fig. 3 presents the sustainable attributes that support positive tourist experiences and provides guidelines for the practical implementation of sustainable attributes in accommodation services.

Our results indicate that sustainable attributes that are positively

perceived can also have an adverse effect: tourists' dissatisfaction may increase if these attributes are not provided, are poorly managed or are of low quality. However, the attributes that were most frequently perceived as negative (marked with dashed lines in Fig. 3) also require attention and if managed properly, they can generate positive or neutral reviews. For example, the temperature of a room can be raised or lowered before guests arrive to ensure their physical comfort, or an accommodation provider can avoid complaints by promptly informing tourists of any cancelled services via multiple channels. Furthermore, the findings suggest that tourists' sociocultural backgrounds should be considered when developing and managing sustainable accommodation.

### 7. Limitations and future research

The limitations of the study are primarily related to the geographically focused data. The South Savo region in Finland attracts tourists seeking a natural environment, which may lead to an emphasis on views and landscapes as attributes of positive experiences. In addition, the reviewed accommodation establishments were not green certified, and this could partly explain the absence of comments on conventional green practices; however, guests can still find it difficult to identify common sustainable practices in green-label accommodation (Kreidler and Joseph-Mathews, 2009).

Notably, tourists' general inclination to share positive holiday experiences may explain the positive perceptions in the reviews (Zins, 2002), although an online environment does allow people to share opinions openly and often anonymously.

Finally, it was not possible to assess and verify the authenticity of the evaluators and their reviews. Therefore, data obtained from Tripadvisor reviews should be viewed critically (Filiari et al., 2015). However, the aim of this study was not to examine the similarities between tourists' experiences and their online reviews. Instead, online comments were

viewed as socially constructed and valued as data that contain descriptions of the reviewers' subjective experiences.

Future research should obtain data from both urban destinations and nature-based destinations. In addition, the studies should compare reviews provided by tourists from different nationalities accessing a range of accommodation types. This comparison would facilitate more

substantiated statements regarding the usability of the sustainability attributes in the accommodation servicescape. Several sustainability attributes are closely aligned to the quality attributes and thus contribute to tourists' satisfaction; therefore, future studies should also address how these attributes are connected.

**Appendix A. Coding scheme of sustainable attributes**

| Review comments  | Codes   | Attributes                                   |
|--|---|--|
|  |   | Energy                                       |
| "The cabin was cold when we arrived but warmed up and dried out quickly when we turned on the radiator." "The house is very warm! Electric heaters in every room. In addition, a fireplace can be lit in the living room." "...[the house is] powered by solar panels and equipped more simply..." | - Methods of energy saving or wasting energy- Descriptions of the heating/ heating system- Environmentally friendly/renewable energy production or heating system                       |  |
| "Clean Saimaa [lake] water." "Silence, tranquility, clean air and everything within walking distance."   | - Clean/fresh water- Clean/fresh air  | Pollution free                               |
| "The nature around, however, is wonderful: a lake right next to the cottage and a forest!" "The courtyard is green and the buildings are beautiful."   | - Pleasant landscapes, ruined landscape- Well-maintained or poorly kept surroundings  | Milieu/view                                  |
| "...on the floor of the washroom was hair from the previous resident..." "... there were damaged tiles in the bathroom." "...the balcony door could not be locked..."  | - Cleanliness or dirtiness- The physical condition of the building, room or surroundings- Inoperative functions   | Maintenance                                  |
| "The rooms are cozy and fully equipped with products made from natural materials. You will not see here synthetic bedspreads, plastic cups or an artificial stone sink. Cotton, linen, wood, glass."   | - Environmentally/non-environmentally friendly materials- Natural/artificial materials  | Materials                                    |
| "Everything is a short walk away." "The hotel is located a stone's throw away from the center of Mäntyhärju and close to the main road, so you can easily get there by public transport."  | - Walking distance- Accessibility on public transportation  | Transportation                               |
| "When we got to the hotel after cleaning, we give a minus to the wet bathroom floor and the lack of a fire alarm."   | - Issues that make customers feel safe or unsafe  | Safety/security                              |
| "The breakfast is varied and there are berries on the table!" "Before going home, we went for a walk on the beautiful nature trail, which starts right next to Villa Aurora and follows the shore of the lake."  | - Healthy food options such as berries, fruits etc.- Healthy activities available such as walking on nature trails, berry picking, swimming etc.  | Healthy choices                              |
| "The rich and tasty breakfast uses products from local producers."   | - Local or domestic products or services  | Local (domestic) procurement                 |
| "The signs for the nature trail are non-existent, they should be updated."   | - Guide signs (or absence of them) in the accommodation establishment, in the surroundings and on route to the accommodation  | Guide signs                                  |
| "A crib was ready for our 3-year-old child." "Due to the narrow stairs to the upper floor, the apartment is not suitable for people with reduced mobility."  | - Services/equipment available for special customer groups, e.g. families, customers with disabilities or guests with pets.- Suitable/unsuitable facilities for special customer groups | Special customer groups                      |
| "It's a shame that a hotel in an excellent location ruins its reputation with inadequate cleaning. Wouldn't it be worth hiring students to clean the rooms in time for the opera party?"   | - Local and/or young people as employees- Lack of employees   | Employing                                    |
| "The staff was very friendly and helpful."   | - The way personnel treat customers   | Equality                                     |
| "But unlike some other similar places, here the houses were side by side - this is, in fact, a mini-village [...] do not count on privacy, even if you rent a house." "A place for those who seek solitude and want to take a break from city life."   | - Crowded/not crowded places/facilities   | Crowding/social density                      |
| "Information about the activity opportunities should be better available." "We missed the operating instructions for the underfloor heating and the air conditioner."  | - Adequate and correct information provided (or not) about services, timetables, activities- Information on how to use equipment provided   | Information                                  |
| "In the evening, the sauna was heated for us, where we bathed in complete peace."  | - Taking part in lifestyle-related cultural/traditional practices, e.g. sauna culture, or recognising cultural/ traditional practices   | Traditional practices                        |
| "The estate, upon closer and detailed examination, turns out to be an old hospital and clinic for Finnish war veterans [...] in the dining room, where the main manor restaurant is now, the walls are covered with tablets with lists of patients treated or who died here."                      | - Recognising heritage or traditional buildings, decorations in facilities or surroundings, or traditional landscapes   | Culturally significant buildings/ landscapes |
| "Traditional Finnish fried vendace can be enjoyed on a summer terrace."  | - Eating/buying traditional food or knowing the options in the accommodation  | Food culture                                 |
| "Friendly, relaxed service in the Savoland style." "The friendly staff also  | - Personnel using local language or wearing traditional costumes,- Culture-related storytelling   | People as maintainers of culture             |

(continued on next page)

(continued)

| Review comments  | Codes                            | Attributes      |
|--|----------------------------------|-----------------|
| showed us the other facilities and rooms of the mansion and told us the story of the place.” |                                  |                 |
| “I liked that at a relatively low price, the conditions are quite comfortable.”              | - The price-quality relationship | Value for money |

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