

Opportunity of the accommodation establishment development: a need for nature-based services and eco-friendly activity

Valentyna Stolyarchuk

Abstract

Purpose – The purpose of this paper is to investigate the opportunities of development of the accommodation establishments by accepting the current shifting in travellers' needs and the possibilities of reducing the impact on nature.

Design/methodology/approach – The Drucker's approach is used to investigate the opportunities of development for the accommodation establishments. The case study method is used to confirm the possibility to develop hospitality in a discovered way.

Findings – Accommodation establishments located in the natural space can supply the nature-based accommodation services simultaneously providing the eco-friendly activities. On the other side, the accommodation establishment that is not located in the natural space can also accept the provision of nature-based accommodation services as an opportunity for development.

Originality/value – The current shift in the guests' needs prompts accommodation establishments to enlarge supplying of the nature-based services. However, if these services are supplied by hospitality facilities located in natural space, the threats to nature also grow. On the other hand, if the hospitality infrastructure is not located in natural space, hoteliers accept current needs of guests as threats to their business. The paper presents the possibility of solution of this contradiction and shows the opportunities for moving forward in the field of environmental sustainability in the hospitality industry.

Keywords Nature-based accommodation services, Over-tourism, Eco-friendly, Environmental sustainability, Opportunity of development

Paper type Research paper

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1. Introduction

Hospitality is not an industry that traditionally comes to mind when somebody thinks about change in climate and environmental sustainability. Scientists actively discuss threats to the hospitality business caused by natural disasters and climate change (especially, by the rising sea levels and mean temperatures, hurricanes, typhoons, earthquakes, etc.) (Demiroglu *et al.*, 2020). The hoteliers are also concerned about the impact of climate change on their business (in particular, the risks caused by drought and inadequate water supply physically damage or cause destruction of property due to the wild fire, flooding, etc.) (Pierce, 2021). On the other hand, a growth of these threats is caused by the human activities. The activity in the hospitality subsector, as one of them, impacts the nature dramatically. Recently, this problem is not in focus due to global problems (such as the COVID-19 pandemic, economic crisis, Russia invasion of Ukraine). Nevertheless, scientists point out a need to reduce the impact of hospitality and tourism on nature

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to prevent the serious threats in future (Adams *et al.*, 2022; Trišić *et al.*, 2021; Mathisen *et al.*, 2022). A number of the academic approaches and concepts have been suggested to resolve this problem, in particular, “green” standards and eco-certification (Duric and Topler, 2021; Pereira *et al.*, 2021; Trišić *et al.*, 2021), the environmental sustainability strategy (Choy *et al.*, 2021; Duric and Topler, 2021), “the reciprocity of soil, soul and society” (Mathisen *et al.*, 2022), etc. However, the need to reduce the impact of hospitality on nature is still the problem of current importance.

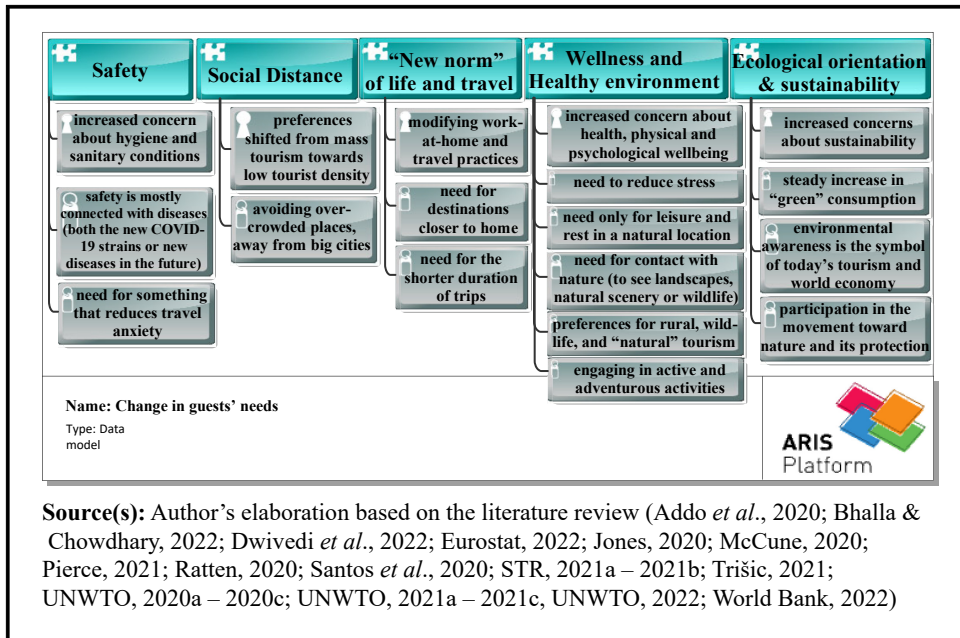
It should be emphasized that scientists focus on the change caused by current global crises and “black swan” events. Undoubtedly, the COVID-19 pandemic as one of them has deeply affected the world. In turn, the hospitality business has shifted significantly to adapt to new conditions over the last three years (Eurosstat, 2022; STR, 2021a, b; UNWTO, 2020a, b, c; UNWTO, 2021a, b, c; UNWTO, 2022; World Bank, 2022). And the hospitality guests’ needs have also changed considerably. Especially, the international organizations recognize a growth in demand for the nature-based accommodation services (World Bank, 2022). This change triggers new challenges and threats not only for hospitality business (especially, for the urban and luxury hotels) (Bhalla and Chowdhary, 2022; Eurostat, 2022; STR, 2021a, b; World Bank, 2022) but also for the natural environment (Adey, 2021; Becker, 2021; Farzan, 2021; Khrushch and Karpiuk, 2021). Thus, the aim of this paper is to investigate the opportunities of development for accommodation establishments by accepting the current shift in their guests’ needs and the possibilities of reducing the impact on nature.

2. Literature review

2.1 *The nature-based activities as a key factor of change in hospitality*

The guests’ needs in the accommodation industry change permanently. However, scientists and hoteliers point out that the COVID-19 pandemic has caused a large, clear break with existing practices (Addo *et al.*, 2020; Jones, 2020; McCune, 2020; Santos *et al.*, 2020; UNWTO, 2020a, b, c; World Bank, 2022). Moreover, hoteliers do not believe that after recovery demand will follow traditional patterns (McCune, 2020). They recognize this change in the short term and accept that it will persist in the medium-term and long-term period (Santos *et al.*, 2020, p. 22; UNWTO, 2020a, b, c). Scientists point out the changes in both a number of the accommodation establishments’ visitors and the guests’ behaviour and need (Addo *et al.*, 2020; McCune, 2020; Jones, 2020; UNWTO, 2020a, b, c; UNWTO, 2021a, b, c; UNWTO, 2022; World Bank, 2022). The result of the literature review shows several trends of the shift in the accommodation guests’ needs during the “pandemic” period 2020–2022 (Figure 1). Safety and security are the top priorities but not the only one issue that travellers consider in post-COVID-19 period (Figure 1). Nowadays, “a new norm” of life and travel is highly discussed. Ratten (2020, p. 505) points out that the need for physical and social distancing “has resulted in major cultural changes in terms of how individuals interact and behave in society”. In pre-pandemic period demand in hospitality was focussing on “customer service and technology-driven personalization” (World Bank, 2022, p. 1). An “experiment” on pandemic lockdowns has caused the current work-from-home setups, intensive use of digitalization for video conferences, enhancement in the number of online consultations and online meetings. As a result, business leaders think over a change in the business model and reconsider a need for travels or in-person meetings (Santos *et al.*, 2020). The economic crisis and new spread of diseases also make it more difficult to re-establish business travels (Santos *et al.*, 2020; STR, 2021a, b). Additionally, scientists point out that “business travellers are usually more affected by decreases in the GDP than leisure travellers” (Santos *et al.*, 2020, p. 23). At the same time, since 2020, when most people shifted to work-from-home setups, “a nostalgia for nature” has emerged. Nowadays, people are tired of various digital technologies and smart equipment. They often need only leisure and rest in a natural location (Figure 1). Due to uncertainty and current economic instability, the household budget allocated to holidays is also lower (Santos *et al.*, 2020, p. 23). Therefore, the hotels’ guests prefer the trip closer to home and shorter duration (Figure 1). The result of the literature review shows that several international organizations recognize the shift in travellers’ needs towards visiting the natural spaces and less populated areas in the period of 2020–2022 (Eurostat, 2022; World Bank, 2022). The hotel executives also point out a deep

Figure 1 Data model of the shift in travellers' needs in the period 2020–2022



division between the large cities and leisure markets (STR, 2021a, b). Moreover, scientists underline that the COVID-pandemic has not only increased a travellers' interest in outdoor and nature-based activities but focused on the "eco-friendly" destinations (World Bank, 2022) and "greener choices" (Pierce, 2021). Thus, the afore-mentioned changes have caused new consumer preferences for not only nature-based but eco-friendly services.

The result of the literature review shows that the hotels' guests currently need something more than an accommodation and safety or basic facilities with modern smart technologies (Bhalla and Chowdhary, 2022). Recent data present that psychological and behavioural risk factors (such as stress, depression, loneliness, poor health behaviours, etc.) were highly prevalent during the COVID-19 pandemic lockdowns (Dwivedi *et al.*, 2022; Madison *et al.*, 2021; Bhalla and Chowdhary, 2022). Scientists conclude that the work-from-home setup triggers psychological distress, anxiety, depression, and "nostalgia for nature". Current factors (e.g. sheltering at home due to new COVID-cases or new diseases, natural disasters, war, economic crisis, etc.) aggravate this problem. On the other hand, scientists point out that the natural views evoke a peaceful, calming sensation, restoration, and healing (Lee *et al.*, 2020; Bhalla and Chowdhary, 2022). Moreover, scientists recognize that psychological and behavioural interventions can increase vaccine efficacy (Cohen, 2021; Madison *et al.*, 2021). The more these benefits become aware, the more the accommodation guests will need contact with nature for obtaining a sense of healing. The scientists conclude that "future research and policy will require a closer link at lifestyle factors and what changes are needed to cope with the new normal (norm)" (Ratten, 2020, p. 505). Hotel owners and managers through increasingly becoming more aware of this shift in guests' needs will offer the nature-based accommodation services (enlarging subtypes and growing in number). It gives a good opportunity for development of the hospitality business but, on the other hand, it could trigger new threats to the natural environment.

2.2 Impact on nature and efforts to develop the eco-friendly accommodation activities

Nowadays scientists distinguish different aspects of the impact of hospitality on nature (Duric and Topler, 2021; Khan *et al.*, 2021; Migdadi, 2022; Newsome, 2021; Rabbany *et al.*, 2013).

The harmful influence of travellers' activities on environment is considered as one of them (Newsome, 2021; Rabbany *et al.*, 2013). Scientists are concerned about the overcrowding of natural attractions as one of the system's greatest perils (Adey, 2021; Farzan, 2021; Newsome, 2021; Rabbany *et al.*, 2013; World Bank, 2022). The environmentalists point out that the overcrowding of natural attractions started back in the 2010s (Adey, 2021). It seemed that the Covid-19 pandemic (especially, lockdowns) had given a solution to this problem (Newsome, 2021). In particular, environmentalists discuss that the mountains were not packed with "traffic jams" of climbers in the spring of 2020 and it was the first time in decades. But the summer season 2021 had set an explosion of travellers' attendance and nowadays the mountain peaks are reopened and overcrowded with tourists (Farzan, 2021). On the other hand, the regional tourism is also popular and travellers have a passion for hiking and cycling (Adey, 2021). The environmentalists emphasize that the number of the natural attraction visitors (especially, mountains, parks, forests) has reached an unprecedented level (Adey, 2021; Khrushch and Karpiuk, 2021). They consider this trend of travellers' behaviour as a "therapy session". But, this unprecedented quantity of visitors affects nature through damage to vegetation, soil, and wildlife. So, scientists not only recognize that the travellers affect natural environment but underline that uncontrolled over-mass tourism poses potential threats to natural areas around the world (Adey, 2021; Farzan, 2021; Newsome, 2021; Rabbany *et al.*, 2013). Experts discuss a large number of violent cases (such as the acts of different types of vandalism, graffiti, noise pollution causes distress on wildlife, etc (Figure 2) (Rock, 2021; Goblin Valley, 2021). Nowadays, travellers leave behind a significant amount of waste and such a pollution causes damage to the ecosystem in the natural locations (Figure 3) (Hadid and Sattar, 2020; Erickson, 2022.; Balita-Centeno, 2020).

Figure 2 Acts of vandalism of amazing natural wonders committed by tourists

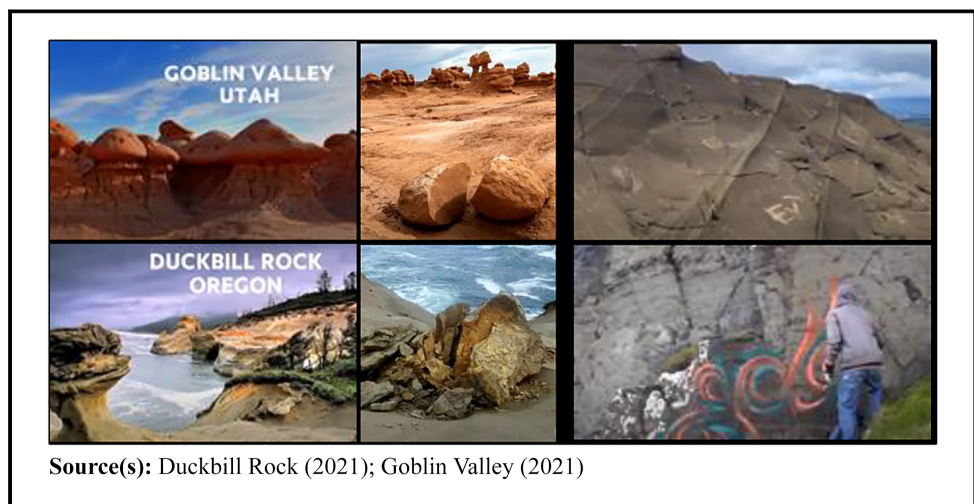


Figure 3 Waste in the natural locations generated by travellers



Therefore, scientists consider possibility of applying a reservation system in order to cope with crowds of people (Eller, 2017). Over-tourism also leads to an increase in transport (rail, road and air) that is not friendly to the ecosystem. Therefore, the “impacts from the travel to a destination” is also considered as another category of negative factors (Rabbany *et al.*, 2013; Sun *et al.*, 2022). The result of the literature review shows that not only tourists’ activities but also the tourism infrastructure (such as accommodation and restaurants facilities) causes destabilization of the ecosystem. Therefore, scientists identify a group of the negative factors that covers the creation, operation, and maintenance of the infrastructure facilities (Adams *et al.*, 2022; Choy *et al.*, 2021; Rabbany *et al.*, 2013; Migdadi, 2022; Trišić *et al.*, 2021). At the same time, scientists point out that “the lodging sector is a major contributor to environmental problems consuming natural resources” (Adams *et al.*, 2022, p. 9). For instance, they are concerned about a fresh water overuse and highlight that the water consumption by the hotel industry is three times more than the average per capita (Gautam *et al.*, 2015). Scientists also discuss a direct impact of the hotel business on biodiversity, due to the excessive use of resources, a large amount of waste, and unsustainable design (Choy *et al.*, 2021; Pierce, 2021). They point out that the hotel industry needs to reduce its energy consumption, carbon emissions, etc (Duric and Topler, 2021; Khan *et al.*, 2021; Migdadi, 2022; Pierce, 2021). The environmental protection is becoming increasingly important in hospitality (Choy *et al.*, 2021; Duric and Topler, 2021).

The literature review shows that the impact of hospitality and tourism on nature has been increasing over a long period (Adams *et al.*, 2022; Verma and Chandra, 2018; Sloan *et al.*, 2009). Hence, experts appeal to the government to take steps in order to limit the number of people visiting different natural attractions (e.g. mountains, forests, national parks, etc.) (Adey, 2021; Becker, 2021). Hospitality business affects the natural environment but it is good for society and the economy (Choy *et al.*, 2021; Gu, 2022; Sun *et al.*, 2022). Therefore, scientists attempt to solve the afore-mentioned issues of the impact on natural environment. The origin of the sustainable development of the accommodation industry “has been traced back to the 1960s” (Adams *et al.*, 2022, p. 10). However, due to several gaps in the existing theory, scientists still consider effectiveness of applying other concepts and approaches (Mathisen *et al.*, 2022; Bellato *et al.*, 2022). The literature review shows that scientists also associate an environmental aspect in hospitality with the terms “green hotels” and “green standard” (Dwivedi *et al.*, 2022; Fauzi *et al.*, 2022; Gu, 2022; Khan *et al.*, 2021; Migdadi, 2022; Olorunsola *et al.*, 2022; Trišić *et al.*, 2021). They consider possibility of implementing different concepts such as the zero discharge of waste water (Gautam *et al.*, 2015), zero carbon imperatives (Causone *et al.*, 2021; Sun *et al.*, 2022), zero food plate waste (Cozzio *et al.*, 2021), etc. in hospitality. Scientists study effectiveness of applying various initiatives such as “eco-friendly business” (Fauzi *et al.*, 2022; Olorunsola *et al.*, 2022; Trišić *et al.*, 2021), “environmentally friendly” practices (Choy *et al.*, 2021; Fauzi *et al.*, 2022; Migdadi, 2022), exclusion of dangerous substances and use of organic products (Adams *et al.*, 2022; Sloan *et al.*, 2009), etc. There is also a growth in a number of tourists turning to green consumption (Fauzi *et al.*, 2022; Olorunsola *et al.*, 2022; Trišić *et al.*, 2021; World Bank, 2022). Scientists point out that “the interest in sustainable travel and accommodation has grown rapidly since 2016” (World Bank, 2022, p. 1). However, they stress that the COVID-pandemic has spurred it (Pierce, 2021; World Bank, 2022). Therefore, scientists emphasize that the awareness of the sustainable environmental occupies an important place in the world economy nowadays (Choy *et al.*, 2021; Dwivedi *et al.*, 2022; Gu, 2022; Khan *et al.*, 2021; Migdadi, 2022; Newsome, 2021; Trišić *et al.*, 2021). The results of the literature review show that hoteliers increasingly become more aware of the importance of supplying the nature-based services by providing the eco-friendly activities. Nevertheless, they have not overcome the above-mentioned negative issues yet. So, this problem needs more attention, due to growing demand for the nature-based accommodation services.

2.3 The initial exploration of existing theory for finding propositions

The current shifting in the travellers’ needs (Figure 1) prompts the accommodation establishments to enlarge supplying of the nature-based services. It gives a good opportunity for hoteliers to get a

new trend for the development of their business. Scientists based on the last results of study point out that “destinations will need to adapt to new markets demands to compete for the travellers” (World Bank, 2022, p. 1). They investigate the opportunities to implement this adaptation. For instance, Pereira et al. (2021, p. 1) point out that “the intersection between business and the environment is transforming existing markets, creating new ones, and increasingly promoting the principles of sustainability in business strategies”. Thus, in order to foster the development and adoption of the new practices, there is a need to study the opportunity of change in the accommodation industry more thoroughly. Classical approach of Drucker (1985) represents a solution to such type of problems. Scientist gives a framework to provide the exploration of the issues of practice (represented in above-mentioned literature review) as a change in Industry Structure (Figure 4). Based on this approach the nature-based accommodation services could be considered as a “major factor” (Figure 4). The accommodation establishments located in natural space focus on new customers’ needs. Thus, currently, the nature-based accommodation activities could be considered by hoteliers as the major factor of opportunity for them. Therefore, based on the Drucker’s approach (1985), nowadays, the major factor provides opportunities of development of the accommodation establishments located in natural space (as new sector that is “outside” the industry core). On the other hand, the “inside sectors” (the main sectors of the industry in the pre-COVID-19 pandemic period, especially, urban hotels) consider this new type of activity as threat. However, according to the Drucker’s classical approach (1985), they can consider the major factor not as a threat but as an opportunity for development. Based on the literature review the Proposals P1-P2 are formulated for study.

Proposition 1. If the accommodation establishment is located in a natural space, the supplying of the nature-based accommodation services while providing the eco-friendly activities simultaneously can be accepted as an opportunity for development.

Proposition 2. If the accommodation establishment is not located in the natural space, the supplying of the nature-based accommodation services can be accepted as an opportunity for development.

3. Methodology

In this paper the “theory-oriented research” is realized to test theory by confirming proposals P1-P2, based on the Dul & Hak’s approach (2008, p. 37). To facilitate this study, the Conceptual Model of Study Process has been elaborated (Figure 5). Scientists consider a theory as “a set of

Figure 4 Data model of the source for opportunities for the development

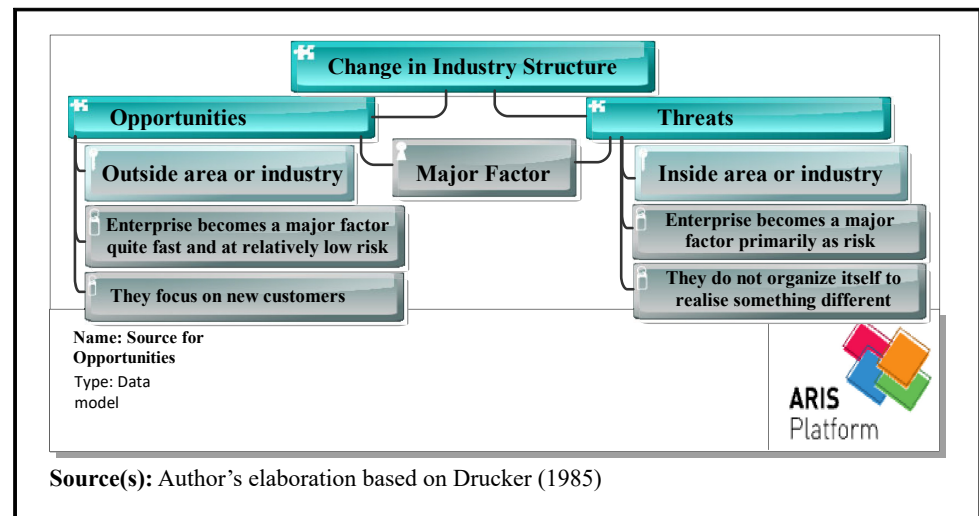
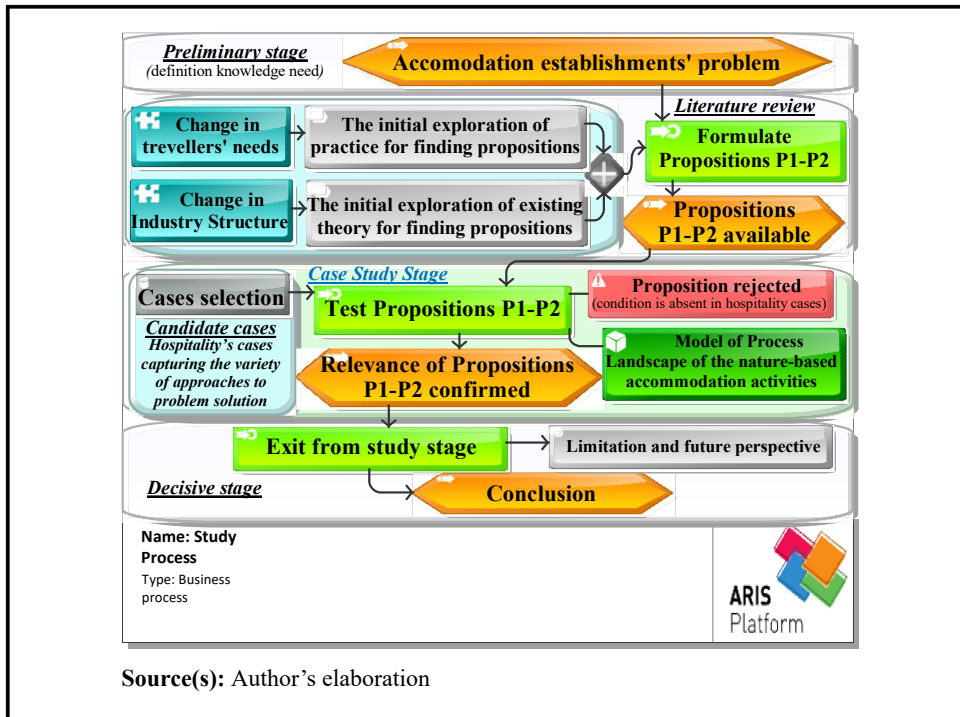


Figure 5 Conceptual model of study process

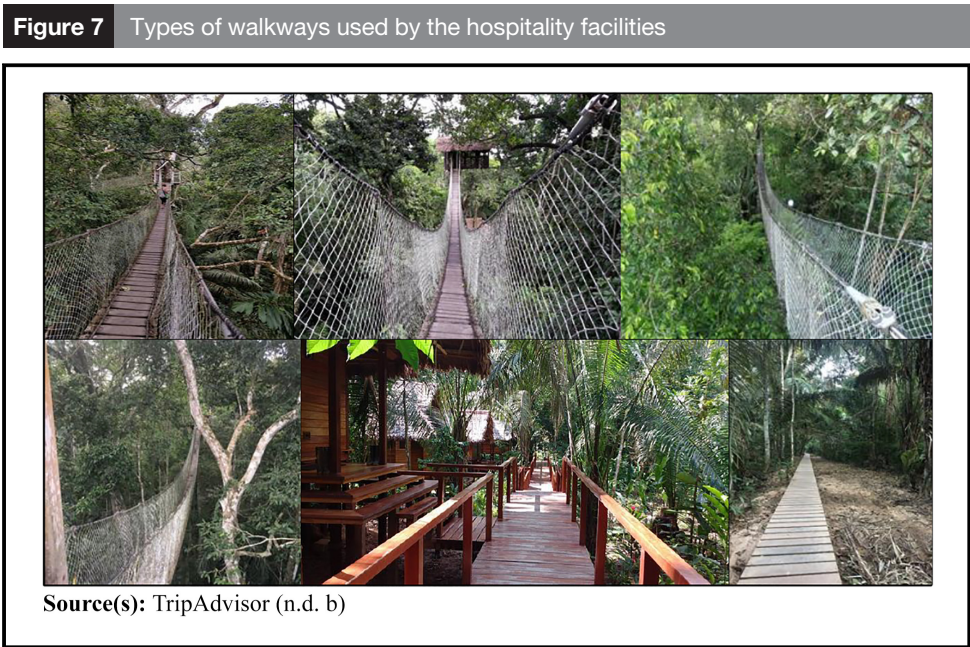


propositions” and make decision to use the case study to enhance “the degree of confidence that it is correct for a specified domain” (Dul and Hak, 2008, p. 37). They distinguish two main activities in the theory development that are represented in the Conceptual Model of Study Process (Figure 5). Dul and Hak (2008, p. 37) point out that a theory could be “a new combination of (parts of) extant theory” and propose to start any theory-oriented research “with an exploration of theory and practice”. The initial exploration provides background to formulate propositions. This approach has been taken into account in the process of elaboration of the Conceptual Model of Study Process and realized on the literature review study stage (Figure 5). As the second activity, scientists distinguish testing whether propositions can be supported (Dul and Hak, 2008). This process of testing Propositions P1-P2 is represented as “Case Study Stage” in the Conceptual Model of Study Process (Figure 5). Hence, in the paper the case study method is used to check whether the Propositions P1-P2 are correct. Scientists recognize an efficient use of the case study from both business and academic perspective (Dul and Hak, 2008; Rashid et al., 2019; Sousa et al., 2013). The case study has been also efficiently applied by solving different problems in a hospitality domain (Bellato et al., 2022; Causone et al., 2021; Duric and Topler, 2021; Pereira et al., 2021; Gautam et al., 2015; Sousa et al., 2013; Trišić et al., 2021). Scientists recognize that a case study facilitates an investigation within some particular naturally occurring context and provides the additional benefits through showing the prospects how a specific problem appears in real-life. In this paper, the theory-testing study is applied for testing the type of proposition “Sufficient condition: if there is A, then there will be B” (Dul and Hak, 2008, p. 91). Therefore, in order to establish the correctness of the proposition, the studied case has to show that condition is present or absent. A domain of study is specified by hospitality boundaries. Hence, the instances of the object of study have been confined by the identification of the potential cases in the accommodation industry. This selection is essentially an arbitrary choice, which is only regulated by the connection to nature due to high travellers’ needs for it nowadays. According to the Dul and Hak’s approach (2008, p. 33), the cases could be searched “both in the general media (such as newspaper and television) and in specialized media (such as managerial,

professional, and trade literature)”. Taking into account this approach, the cases on the hotels’ sites have been investigated. All cases have been studied in order to analyse the decision of hoteliers under current circumstances. To focus on the problem, the factors that caused the lack and weakness of the particular hotel are not presented in detail in this paper (because these factors need a thorough analysis that is beyond this paper).

4. Results

In this section, the cases of accommodation establishments are presented to prove the aforementioned Propositions P1-P2. At first, the accommodation establishments that are located in the natural space and have implemented the eco-friendly initiatives have been investigated. There are evidences that the hoteliers pay attention to the creative nature reserves and initiate the conservation of biodiversity (Pierce, 2021; Inkaterra, 2022). Some hoteliers try to be eco-friendly with flora when building their facilities (Figure 6) (TripAdvisor, 2022c). The other, for example, Inkaterra try to protect flora and fauna by creating different “canopy walkways” (Figure 7) (Inkaterra, 2022; TripAdvisor, 2022b). Their guests may observe various species of amphibians, birds,



mammals and abundant flora, and can be attached to this lush ecosystem in such a way. At the same time, they do not impact nature. Moreover, hoteliers provide a study on flora and fauna and set their own guidelines based on the results (Inkaterra, 2022). Further, the accommodation establishments, providing these types of services, also accomplish different additional eco-friendly activities, such as the raising public awareness of biodiversity and educating guests to minimize the impact on the environment, etc (Pierce, 2021; Inkaterra, 2022).

There are reports of accommodation establishments about their energy efficiency (Pierce, 2021; Inkaterra, 2022; Tierra Hotels, 2019, 2022a). For instance, Tierra Atacama (a small company with three hotels in Chile) minimizes its carbon footprint by using energy from their own solar farms (Figure 8a) (Tierra Hotels, 2019, 2022a). Hoteliers also have optimized the building's structure and use the natural energy sources (in particular, the light and heat of the sun absorbing; the natural cross ventilation, etc.) (Figure 8b). The possibility of achieving the carbon-neutral status of hotels is recognized based on the case of the eco-resort Inkaterra, Peru (Pierce, 2021; Inkaterra, 2022).

There are evidences about effective use of various resources by the accommodation establishments. Hoteliers use a reverse osmosis plant that enables effective water supplying to the facilities (Tierra Hotels, 2022a, b). Hoteliers “reuse the greywater for irrigation, reviving arable land” and abandoned land has been “now transformed into gardens brimming with native species” (Tierra Hotels, 2019, 2022a, b). The Tierra Atacama reports about “reforestation projects on their grounds, reintroducing native species, in addition to planting traditional crops and kitchen gardens for food” (Tierra Hotels, 2019, 2022a, b). Thus, this case also proved that the hoteliers can use resource effectively, supplying the nature-based accommodation services.

Hoteliers also realize eco-friendly “archaeological” projects. Inspired by traditional architecture they create designs using the native local materials. Designers find the complex solutions that provide ability not only to build in harmony with the environment, but also protect the ground and avoid soil erosion. For instance, Tierra Hotels discover pre-Hispanic materials and use age-old pottery techniques (Tierra Hotels, 2019, 2022a, b). The hotel facilities are designed in such a way that they are architecturally in harmony with their natural and cultural surroundings and implement sustainable solutions (Figure 9). So, the afore-mentioned cases prove that accommodation establishments located in the natural space can carry out eco-friendly activities by supplying nature-based accommodation services (Proposition 1). They can focus on new needs of travellers (Figure 1) and accept the nature-based accommodation services as a major factor of development at a relatively low risk (Figure 4).

Figure 8 Energy efficiency of the accommodation establishments: a) Tierra Hotel's solar farms; b) Efficient structure of Tierra Chiloés' building

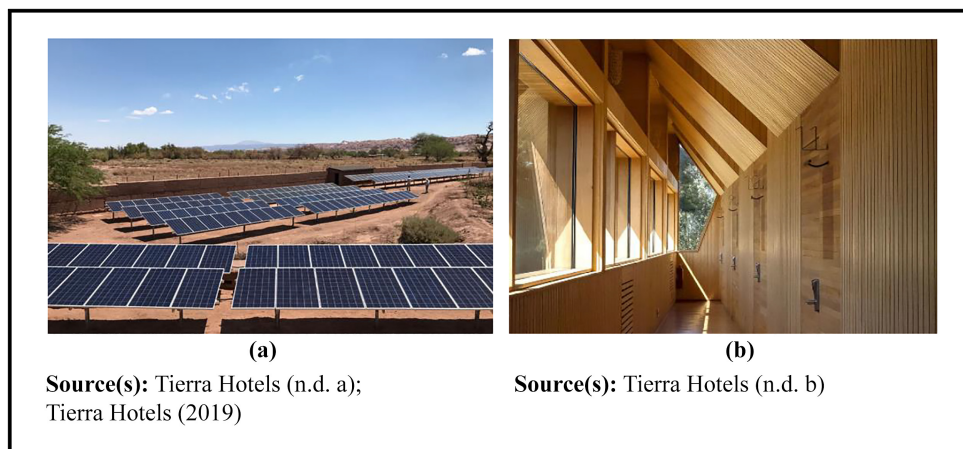


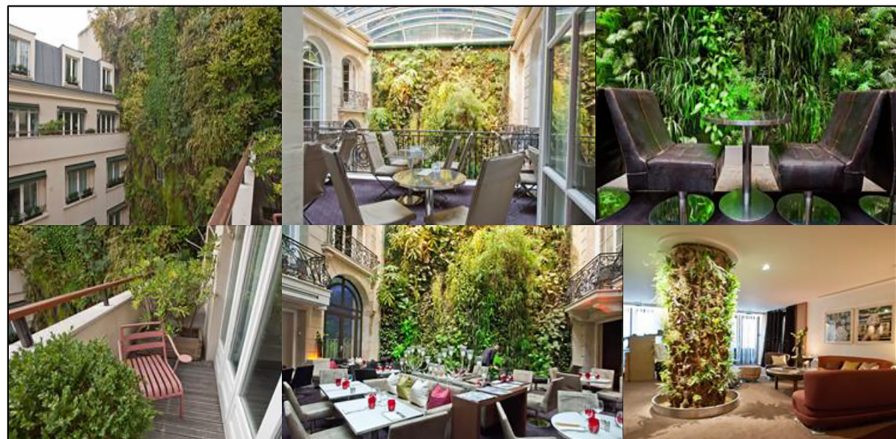
Figure 9 Hotel design with a use of native local materials



Source(s): Tierra Hotels (n.d. a)

The results of the initial exploration of the existing theory in the literature review shows the “inside area” of industry (the accommodation establishments that are not located in natural spaces) can also accept the nature-based accommodation services as an opportunity for development. Therefore, the hospitality cases that confirm [Proposition 2](#) is investigated on the second stage of the case study. There are cases that show an implementation of the “Green Building Concept” in hospitality. For instance, the Hotel Pershing Hall ([TripAdvisor, 2022a](#)) has an Indoor Vertical Garden ([Figure 10](#)). The designers usually locate the green wall in the hotel’s relaxation area providing a possibility for guests to enjoy nature in such a way. Undoubtedly, this biophilic design is a challenge for hoteliers, because it is not easy to maintain the indoor living plants. Therefore, a complex of several approaches is often implemented in such hotels. The first of them is an integration of nature into the hotels’ space. The second is the recreation of a natural image through the use of a natural analogue of materials and patterns. In this regard, the design of hospitality facilities by using elements of the local natural environment plays an increasingly important role. Therefore, the designers often create hospitality facilities using the regional relevant materials and colours. So, the accommodation establishment that is not located in the natural space can accept the supplying the nature-based accommodation services as opportunity for development that confirms the [Proposition 2](#).

Figure 10 Green building concept implemented in Hotel Pershing Hall



Source(s): TripAdvisor (n.d. a)

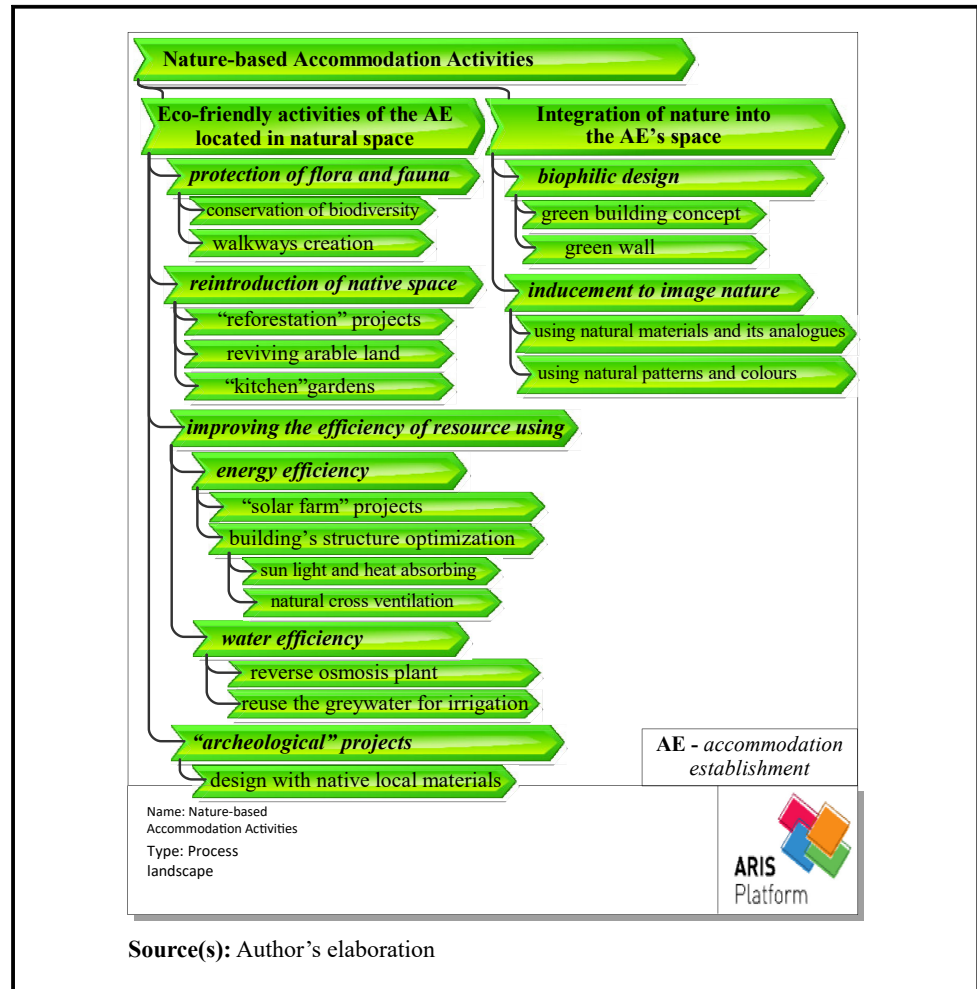
5. Discussion

Scientists and international organizations recognize a growth in the hospitality guests demand for the nature-based accommodation services at the global and national levels under different crisis conditions (Rohoza and Stolyarchuk, 2022; World Bank, 2022). The literature review also shows the increase in demand for the nature-based accommodation services caused by the shifting in travellers' needs in the period 2020–2022. Hoteliers try to accept this opportunity for development and enlarge the supply of the nature-based services. Therefore, the impact of both the accommodation establishments and their guests on nature increases. So, ways to meet the current travellers' needs should be rationalized to reduce the impact on the natural environment. Some scholars consider hospitality as exploitative industry and call for a reduction of activities. Undoubtedly, tourism (in the traditional way) is not good for the ecosystem but it is good for the economy, health and well-being. Scientists recognize that the human-nature interaction offers the opportunities to support global health. For instance, they discuss an effect of the “green therapy” on such issues as heat-related illness, blood pressure, obesity, etc. Scientists note that the human-nature interaction facilitates psychological health, positive impacts on the restorative mental wellbeing benefits, etc. Currently, Russian war in Ukraine has extensive and unprecedented negative impacts on the natural environment and human life (Khrushch *et al.*, 2023). Moreover, scientists discuss the scenario of impacts in the long term. Thus, the nature-based accommodation services have a potential to support the recovery of war-affected Ukrainians. Therefore, development of the nature-based accommodation services is a beneficial trend to hospitality. Several cases studied in this paper prove the possibility for the accommodation establishments located in the natural space to implement the eco-friendly initiatives. So, hoteliers should go further and implement this type of activities more widely.

In order to summarize the research results, the Model of Process Landscape of the Nature-based Accommodation Activities has been elaborated (the PLNBA Model) (Figure 11). The PLNBA Model shows a multifaced nature of eco-friendly activities (provided by the accommodation establishments located in natural space) and gives an overview of the possibilities to implement the different subtypes of them. These possibilities should be accepted by both hoteliers (implementing in their business) and designers (elaborating the theoretical concepts and methodological tools of development of hospitality). The first part of the PLNBA Model shows that the accommodation establishments located in the natural space have a wide possibility to provide eco-friendly activities. According to the initial exploration of the existing theory in the literature review (Figure 4), the hoteliers accept nature-based accommodation services (the Major Factor) in accommodation establishments that are not located in natural space (the “inside area” of industry) as a risk and do not organize themselves to implement this type of services. This theoretical approach explains why the PLNBA Model (Figure 11) represents a restricted group of possibilities to integrate nature into the accommodation establishment's space. Nevertheless, the research result proves that managers of the accommodation establishments that are not located in natural space can also consider this Major Factor as opportunity to develop their business. Moreover, they could take into account the represented possibilities of the providing the eco-friendly activities. Thus, the PLNBA Model points out the opportunities to move forward in a progression of the environmental sustainability in hospitality.

The identified opportunities for eco-friendly development of the hospitality business should be taken into account in exchange for a move towards increasing the offer of the nature-based accommodation services in a traditional way or reduce the hospitality services. But it should be a collective effort. In order to fulfil it, the theoretical framework has to be thoroughly elaborated. There are several issues that could benefit from being developed and implemented. For instance, the nature-based accommodation services could be considered as a part of the plan under the biophilic city program. The implementation of the nature-based services (in accommodation establishments not located in the natural space) provides possibility to reduce the traffic load affect caused by transporting guests to the natural locations. The literature review reveals possibility to improve the people's wellbeing and health through realizing the nature-based accommodation

Figure 11 Model of process landscape of the nature-based accommodation activities



services in hospitality. Thus, accommodation establishments by providing the nature-based accommodation services could contribute to the social issues. The studied cases have also proved possibility to foster guests' sustainable behaviour. Hence, the additional outcomes beyond the hospitality domain could be considered. Thus, this trend of development of accommodation establishments has a potential and requires a more thorough study in the future. Currently, scientists discuss two interdependent parts of the effects of Russian war in Ukraine: environmental damages from war and psychological injuries from environmental damage (Khrushch et al., 2023). There is an urgent need to understand how the eco-friendly human-nature interaction could be developed in hospitality to support Ukrainians. The considered integration of nature into the accommodation establishment's space makes it possible to achieve this goal (Figure 11). Thus, hoteliers urgently need a thoroughly elaborated way to implement this type of activities in practice.

The study result shows the shift in the needs of tourists. In turn, this change requires an alteration of the structure of the accommodation industry in the future. The growth in demand for the nature-based accommodation services involves an increase in the number of the accommodation facilities of the corresponding types. Currently, the accommodation establishments and their guests negatively impact on the natural environment. The study results show possibility of providing a wide variety of the eco-friendly activities in hospitality. Thus, there is the opportunity to accept the needs of guests and change the structure of the accommodation industry in the near

future, taking into account the aspects of sustainable development. In order to reduce the impact on the natural environment in the future, the natural elements should be integrated into the accommodation establishment's space. The study results show two possible approaches to such integration: biophilic design and inducement to the natural images.

6. Conclusion

Current shift in the travellers' needs leads to overcrowding of natural locations and, in turn, posing a threat to nature. Tourists and travellers affect nature deeply. On the other hand, the hospitality facilities (e.g. hotels) also misuse the natural resources and have a destructive effect on the natural environment. A shift in the hospitality guests' needs causes a growth in supplying the nature-based accommodation services and in the number of establishments that provide them. In turn, the impact on nature grows. The reduction in the number of visitors is an irrational solution due to high economic and social contribution of hospitality. The result of the case studies confirms that the accommodation establishments supplying the nature-based services can carry out a variety of eco-friendly activities. Moreover, they could encourage this trend of development, elaborate and spread new types of activities and services. The application of the Drucker's approach makes it easier to discover another opportunity for development. Accommodation establishments that are not located in the natural space can also consider the need for the nature-based services as the major factor for development. The research result confirms that hoteliers can accept this opportunity for development. The studied cases prove a possibility to integrate nature into the accommodation establishment's space. Thus, hoteliers have to look toward the implementation of new development trends rather than toward the reduction in the number of visitors. The current hospitality business has a negative impact on nature but it has possibilities to be eco-friendly and sustainable if the development strategy will be properly rethought. Scientists and hoteliers have to aware the importance of the nature-based accommodation services. Firstly, they have to aware the possibility and opportunity to provide sustainable activity. They must not only be eco-friendly but involve their guests into eco-friendly human-nature interaction. In turn, it impacts on culture, health and well-being. This study results also help to understand the relevance of the integration of nature into the accommodation establishment's space in the Ukrainian hospitality. This approach provides an opportunity to support Ukrainians to restore health and well-being under conditions of environmental damage from Russian war in Ukraine.

The study result shows the shift in the needs of tourists. Hoteliers and scientists recognize this change in the short term and accept that it will persist in the medium-term and long-term period. They do not believe that demand will follow traditional patterns in the post-COVID-19 period. This change requires appropriate accommodation services and involves an alteration of the industry structure in the future. On the other hand, both hospitality establishments and their visitors negatively impact on the natural environment. The high level of the global eco-problems requires their solution. The study results show a possibility to implement the eco-friendly accommodation activities. The integration of natural elements into the accommodation establishment's space is considered as trend that additionally reduces the impact on the natural environment. Several ways of implementing the eco-friendly activities of the accommodation establishments located in natural space are revealed. Their awareness and implementation by hoteliers provide possibility to focus on the eco-friendly activities in hospitality in the future.

7. Limitation and future directions

This paper is an initial study. The future investigations should be carried out with more robust data and analytical approaches. Statistical data that cover the nature-based activities in hospitality are not recorded thoroughly by the national and international organizations. The current academic literature represents only partial study of the problem (e.g. based on local or national data, observed only one accommodation establishment or activity type, etc.) (Choy *et al.*, 2021; Demiroglu *et al.*, 2020; Duric and Topler, 2021; Khan *et al.*, 2021; Gu, 2022). There is a need to

eliminate this lack in the future. The study result shows that both the accommodation establishments and their guests cause the threats to nature. Thus, diversified statistical data that cover the nature-based services and eco-friendly activities provided by the accommodation establishments should be recorded and studied to evaluate threats, elaborate a strategy of reduction the impact on nature, conduct the process of regeneration and monitor results. In this paper, only a few cases are studied, due to limitation. Therefore, the paper provides a framework for future studies. Firstly, the possibility to provide new subtypes of eco-friendly activities in hospitality has to be investigated. The suggested Model of Process Landscape of the Nature-based Accommodation Activities should be expended through an involvement of new activities. Secondly, the opportunity to apply each of them in accommodation establishments that are not located in the natural space should be also carefully studied. Additional outcomes beyond the hospitality domain should be thoroughly investigated. Nowadays, hotel owners and managers, supplying the nature-based accommodation services, could offer a strong support to implement different measures and initiatives that reduce factors of the psychological and behavioural risk for their guests. Accommodation establishments could improve the people's well-being and health through supplying nature-based accommodation services. Additionally, the result of the case studies reveals that hoteliers educate the guests to minimize the impact on the environment at their establishments. Thus, hospitality could contribute to the social issues, but this aspect needs a deep investigation and development. Additional outcomes are very important and could be also a part of future research.

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