Geographies Studies Planning Tourism

GPT StudioS

Year: 2022 Volume:2 Issue:1 (June)

ISSN: 2791-7460

GPT StudioS

Geographies Planning Tourism StudioS

YEAR: 2022 VOL: 2 ISSUE: 1

GPTStudioS is a peer-reviewed international journal, publishing two-issue a year (June/December). GPTStudioS has been published online in English.

Although it is a peer-review academic journal, the authors have complete responsibility for the content of the papers.

ISSN

2791-7460

Journal's website

www.gpt-studios.org

e-mail & social media

gptsjournal@gmail.com
@GPT_Studios

Indexes

Directory of Research Journals Indexing
Turkey Tourism Indexing
ResearchBib
EuroPub

Geographies, Planning & Tourism StudioS

Content

		Pages
Editorial		I-VI
Research Articles		
Eda HAZARHUN Reşat ARICA Burçin Cevdet ÇETİNSÖZ	*Ecological Sustainability Activities in Travel Agencies: A Research on Encourages and Barriers*	07-20
Ergin CANPOLAT	*Evaluation of Geomorphosite Potential and the Tourism Attractiveness of Uçansu Waterfall (Gündoğmuş-Antalya)*	21-32
Tuğçe ÖZOĞUL BALYALI Ezgi BAYRAM ÖZ	*Metaphoric Perceptions of Tourist Guides Regarding the Destination Image of Van Province*	33-39
Münevver Özge BALTA	*An AHP-Based Multi-Criteria Model for Adaptive Reuse of Heritage Buildings*	40-45
Review Article		
Şirin Gülcen EREN Seema Mehra PARIHAR	*International Sustainability Indices*	46-57

Editorial

The Melting Pot of Geography, Planning, and Tourism: GPTStudioS… Summer 2022

In memory of the beloved Prof. Martin J. Haigh…

Aiming and underlining the significance of interdisciplinary and national-international studies on Geography, Planning, and Tourism, the 1st issue of 2022, and the 3rd issue of the journal of GPTStudioS is now ready to read. As we have mentioned before, 'Studio Studies' are activities that stimulate innovative ways of problem solving and using new techniques to deal with mainly place-related cases; GPTStudioS continues to carry a very relevant platform for disseminating interdisciplinary works combining both theory and practice in associated fields.

The 1st Issue of volume 2 of GPT-StudioS includes five papers; four research and a review article from the disciplines of tourism, geography, and urban planning. These respectively, are "Ecological Sustainability Activities in Travel Agencies: A Research on Encourages and Barriers"; "Evaluation of Geomorphosite Potential and the Tourism Attractiveness of Uçansu Waterfall (Gündoğmuş-Antalya)", "Metaphoric Perceptions of Tourist Guides Regarding the Destination Image of Van Province", "An AHP-Based Multi-Criteria Model for Adaptive Reuse of Heritage Buildings", and "International Sustainability Indices".

□ The first research is by Hazarhun, Arıca & Çetinsöz, and mainly from the Tourism field while intersecting social sciences, gastronomy and culinary arts, and tourism Management to determine the factors that encourage and barrier to the ecological sustainability practices of travel agencies. In this perspective, semi-structured interviews are conducted with travel agency managers operating in Istanbul. The data was analysed using MAXQDA 2020 analysis software. The analysis showed that travel agencies do not have enough knowledge regarding sustainable tourism and ecological sustainability concepts, and applications. In addition, very few travel agencies have written policies, principles, and rules regarding ecological sustainability applications, which may lay a path for firms and managers during managerial processes and have a low rate of participation in voluntary environmental programs and certification applications for preserving the ecological environment.

□ The second article is from the discipline of Geography, by Canpolat, and provides outputs to the tourism and planning fields. It points out that natural resources are the main elements that create attraction in tourism. Waterfalls, which can be natural or artificial, can be centers of attraction due to their unique sights, noises, and ecosystem features in the immediate vicinity. In this study, the geomorphosite potential and the tourism attractiveness of Uçansu Waterfall were evaluated. The Geosite Assessment Model (GAM) which was supported by Analytical Hierarchy Process (AHP) was employed to explain the geomorphosite and tourism attractiveness values. According to the set of evaluation criteria, geological and geomorphological values make the waterfall a unique natural resource, and the climate of the region supports this potential.

□ The third article is once more from the tourism discipline, by Balyalı-Özoğul & Öz-Bayram, and focuses on destination image with stimulating findings and examines the metaphors developed by tourist guides that play an important role in the formation of the destination image. It aims to determine the perceptions of the Van province destination image of the tourist guides through metaphors and concentrates on the key role that tour guides have

in affecting tourists' destination perceptions. It is the first study in the literature that reflects the destination image of Van from the point of view of the guides by using qualitative research methods; a phenomenological approach is used to understand the perceptions of tourist guides towards Van. The metaphors of "paradise", "pearl mullet", ''miniatürk'', ''mosaic'', ''marbling art'', ''a garden with many different fruits'', ''an ore that needs to be unearthed'', ''an abstract treasure waiting to be discovered'', ''an unfinished poem because its poet died'', and ''sleeping beauty'' were the main outputs those will inspire each tourism stakeholder working to improve the destination image of Van".

□ The fourth article is from the discipline of City Planning, by Balta, and it relates to the fields of preservation planning and architecture, providing clues for tourism priorities in the reuse of historic buildings. It studies the priority order of the reuse alternatives of the heritage buildings by employing an Analytical Hierarchy Process (AHP) to optimise the assessment process in Aksaray Case. A decision-making model was established by the research, with the support of a literature review. The results revealed that the changes in factors of building features, accessibility, and environmental value directly influenced the priority order of the historic building reuse alternatives.

□ Finally, the fifth article is a review, and from the discipline of City Planning, by Eren & Parihar. It explores the range of international sustainability indices and the contributions that they may make to sustainable urban development, asking for the question of which the indexes constitute one of the best basses for the sustainability efforts of urban developers and planners. The contents of the indices vary by the country due to the development strategies adopted by different cities and regions. A descriptive analysis method is adopted and supported by a review of the literature and an internet-based search. The objective was to create awareness about the indices and to contribute to the effective implementation of decisions and strategies for achieving the SDGs.

At last, but not the least the first year issues of the GPTStudioS have been indexed in the Directory of Research Journals Indexing, Turkey Tourism Indexing, ResearchBib, and EuroPub in 2021 and will continue to work in the coming period to reach the target of being recognized in international indexes.

We would firstly like to thank the issue authors and the referees who contributed to the process of successfully turning the studies into published articles by expending intensive and invaluable scientific effort and time. We would also like to thank all the editorial team and the copy-editing editor of the journal for their invaluable help and support.

We hope you find this issue informative, and grow future expectations that they inspire your curiosity to take part in the next issues…

Editors

Dr. Emine CİHANGİR (Van Yuzuncu Yil University), eminecihangir@yyu.edu.tr
Dr. Kübra CİHANGİR ÇAMUR (Gazi University), ccamurster@gmail.com
Dr. Mehmet ŞEREMET (Van Yuzuncu Yil University), mseremet@yyu.edu.tr

June 2022/Ankara-Van

Geographies, Planning & Tourism StudioS

2022 Vol.2 Issue:1

Ecological Sustainability Activities in Travel Agencies: A Research on Encourages and Barriers

Eda Hazarhun[a], Reşat Arıca[b], Burçin Cevdet Çetinsöz[c]

[a] Institute of Social Science, Dokuz Eylül University, İzmir, Turkey. ORCID: 0000-0003-4798-1857
[b] Department of Gastronomy and Culinary Arts, Batman University, Batman, Turkey. ORCID: 0000-0003-1238-7313
[c] Department of Tourism Menagement, Tourism Faculty, Alanya Alaaddin Keykubat University, Alanya, Turkey. ORCID: 0000-0003-1703-8067

Abstract

In the research, it is aimed to determine the factors that encourage and barriers the ecological sustainability practices of travel agencies. In this regard, semi-structured interviews were conducted with 18 travel agency managers operating in Istanbul. The data analyzed by the use of MAXQDA 2020 analysis software. Results of the analysis revealed that travel agencies don't have enough knowledge in regards to sustainable tourism and ecological sustainability concepts and applications. In addition, it is seen that very few of the travel agencies have written policies, principles, and rules, in regards to ecological sustainability applications, which may lay a path firms and managers during managerial processes. Along with these, it is also determined that travel agencies have a low rate of participation to voluntary environment programs and certification applications for preserving ecological environment. First of all, this study is important in terms of contributing the literature since there are very limited number of studies which inspect the subject of ecological sustainability from the perspective of travel agencies. Secondly, it is also important to create a scale in regards to ecological sustainability applications and to provide managerial insight to travel agencies which are critical actors in terms of managing ecological sustainability due to their role of mediation between supply and demand.

Article History

Received: 11.06.2022
Accepted:30.06.2022

Keywords

Sustainability
Travel agencies
İstanbul

Corresponding Author

E. Hazarhun:
edahazarhun@gmail.com

To cite: Hazarhun, E., Arıca, R. & Çetinsöz, B.C. (2022). Ecological sustainability activities in travel agencies: A research on encourages and barriers. *Geographies, Planning & Tourism Studios, 2*(1):07-20.
https://doi.org/10.5505/gpts.2022.52724

1. Introduction

The main purpose of the businesses in the tourism sector is to increase their economic outputs, thus improving their competitiveness and ensuring its continuity. Although economic indicators are taken into focus, it is clear that tourism practices that will be carried out without considering the socio-cultural and natural environment will cause serious losses in the future. The importance of businesses working to build their own future in the tourism sector in terms of saving the socio-cultural and natural environment, which are the main supply sources of tourism, and carrying it to the future and ensuring sustainability cannot be ignored (Amoako et al., 2022).

Travel agencies have the ability to manage and influence sustainability initiatives at the sectoral level, due to their intermediary role between supply and demand components in the tourism sector (Sigala, 2008: 1590). The power of managing the preferences of tourists and influencing the practices of suppliers and destinations, increases the importance of travel agencies in the process of managing the effects of touristic activities. At this point, travel agencies should tend to sustainability activities and integrate sustainable management practices into their business processes, in order to reduce the negative effects on the economic, socio-cultural and natural environment caused by touristic activities and to increase the positive effects. This situation has led to the questioning and discussion of the function and role of travel agencies in the sustainability process (Kıvılcım, 2020 ; Russell et al., 2008: 126).

The importance of the implementation of the sustainability process of travel agencies at the sectoral level, enabled the evaluation of sustainability initiatives in this businesses. In this context, sustainability areas in travel agencies

(Arıca, 2020; Budeanu, 2005; Hamid & Isa, 2020; Kıvılcım, 2020; Marin-Pantelescu et al., 2017), eco-labeling (Tepelus, 2005; UNEP, 2005), factors which barriers sustainability initiatives (Arıca & Çorbacı, 2017; Budeanu, 2007; Khairat & Maher, 2012; Tepelus, 2005) and the opportunities that sustainability will create (Arıca, 2020; Khairat & Maher, 2012) have been evaluated in the literature.

Turkey is among the countries that attract the most tourists in the world, it is a country where sustainable use of touristic resources is important. Thus it is inevitable for the negative effects of tourism to emerge and spread more rapidly in countries that are heavily flooded by tourists. This situation necessitates the implementation of sustainability initiatives by all stakeholders in the tourism sector. The aim of the research is to examine the sustainability situation in travel agencies. In addition, the research aim to determine the factors that encourage and barriers the ecological sustainability practices of travel agencies from the perspective of managers. With the research, the sustainability practices in travel agencies in Turkey will be revealed from the manager's point of view, and the framework for improving the activities at the sectoral level will be presented by determining the point of sustainability in tourism. In addition, it will be possible to determine the opportunities that sustainability will provide in travel agencies. At this point, in the research, the path will be presented in terms of determining the factors which barriers the sustainability initiatives in the agencies, determining the steps to be taken to eliminate these factors and thus accessing the opportunities.

2. Literature Review

Sustainability and sustainable development, which has its origins in the 1970s and is accepted as a universal agreement, is defined as meeting the needs of the present and saving the resources that will meet the needs of the next generation (Brundtland, 1987: 8). Middleton and Hawkins (1998: 247) explain sustainability as a state of balance between the activities of the human population and their natural and socio-cultural environment. Çakar (2013) and Dönmez (2016) associate sustainability with the balanced consumption of natural and socio-cultural resources. Tourism is one of the sectors where natural and socio-cultural resources can be consumed quickly and unconsciously. This situation causes the idea of sustainability, which is at the forefront of the economic development policies of countries, correspondence to the concept of sustainable tourism in the tourism sector.

World Tourism Organization (UNWTO) defines sustainable tourism as the management of all resources in such a way that economic, social and aesthetic needs are met while creating cultural integrity, necessary ecological processes, biological diversity and life support systems (UNEP, 2005: 7). Leung et al. (2001: 23) describe sustainable tourism as a development that aims to reduce possible threats while preserving opportunities for the future, while meeting the requirements that will ensure the development of destinations that accept tourists.

According to Arıca (2020), there are some prerequisites for the sustainability idea in the tourism sector to be met in practice. The most important of these is the active participation of all stakeholders in the sustainability process within the sector. Accordingly, public and private sector, businesses, local folk, tourists, civil society actors should establish cooperation mechanisms with the focus on managing the sustainability process effectively and efficiently and all stakeholders should support the process. Budeanu (2007) emphasizes that travel agencies have an important position in ensuring sustainability in the tourism sector with their relations with both tourists and service providers, touristic region management and local people. Amoako et al. (2021) points out that travel agencies have an important function in mobilizing and enabling sustainable development at the sectoral level with the power to affect tourism supply and demand components. Travel agencies have a critical role in determining the direction of the tourist flow, contributing to the development in the tourist region, and ensuring that stakeholders in the sector can contribute to sustainability by directing their behaviors, intentions, attitudes and practices (Fennell, 2003: 116). While travel agencies may cause an increase in tourism-related destruction with wrong practices (Kıvılcım, 2020), they will be able to minimize the destruction and deterioration caused by touristic activities by supporting the development of sustainable tourism forms (Wijk & Persoon, 2006: 383).

Travel agencies' attempts on sustainability has come into agenda with the American Society of Travel Agents (ASTA). ASTA has created a green travel program guide consisting of five pages and nine sections for environmentally friendly travel. The most comprehensive framework for sustainability activities in agencies was presented by Tour Operators Initiatives (TOI) (2003) and Travellife (2007). These organizations have set criteria in five areas for effective

and efficient sustainability initiatives in travel agencies. These areas are described as: internal management, supply chain, product production and management, relations with destinations and relations with customers. TOI (2003) and Travellife (2007) point out that the implementation of sustainability initiatives in these areas is important for travel agencies to promote sustainability at sectoral level.

Despite the role and function of travel agencies in ensuring sustainability at the sectoral level, there are some obstacles to their orientation towards sustainability activities. In the researches, these obstacles are explained as obstacles arising from state, public and local governments (Budeanu, 2000; Schwartz et al., 2008; Polat, 2022), organizational obstacles (Arıca & Çorbacı, 2017; Curtin & Busby, 1997), financial obstacles (Dinica, 2006; Kıvılcım, 2020; Marin-Pantelescu et al., 2017; Tepelus, 2005; Türkoğlu, 2022), employee-based obstacles (Arıca & Çorbacı, 2017; Budeanu, 2007; Khairat & Maher, 2012), customer-based obstacles (Arıca, 2020; Budeanu, 2007; Khairat & Maher, 2012; Tepelus, 2005), supplier-based obstacles (Budeanu, 2007; Hamid & Isa, 2020; Kıvılcım, 2020), market-based obstacles (Arıca, 2020; Khairat & Maher, 2012), touristic region-based obstacles (Budeanu, 2007; Khairat & Maher, 2012; Kıvılcım, 2020;) and international barriers (Arıca, 2020; Polat, 2022). Arıca (2020) argues that agencies that support sustainable development at the sectoral level can gain some opportunities with the elements that lead travel agencies to be passive and defensive in participating in sustainable tourism activities. Accordingly, travel agencies can provide efficiency and efficiency in organizational structure and functioning with sustainability initiatives (Arıca, 2020; Tepelus, 2005; UNEP, 2005), develop employees (Arıca, 2020; Budeanu, 2005; Budeanu, 2007;), achieve financial outputs (Khairat & Maher, 2012; Kıvılcım, 2020; Kilipiris & Zardava, 2012; Marin-Pantelescu et al., 2017), improve service outputs (Arıca, 2020; Marin-Pantelescu et al., 2017), increase competitive power (Arıca, 2020; Budeanu, 2007; UNEP, 2005), improve the brand and its image (Arıca, 2020), and improve relations with stakeholders in the sector (Arıca, 2020; Budeanu, 2000).

3. Methodology

This study, which aims to examine the sustainability situation in travel agencies towards ecological sustainability applications, adopts phenomenology, one of the qualitative research designs, as its research design. In qualitative research, phenomenology is defined as discovering participants' past experiences related to a phenomenon or a concept (Cresswell, 2013). According to Baş and Akturan (2017), in phenomenology research, studies focus on individuals' subjective experiences and try to determine their perceptions or the meaning they assigned to the phenomenon in question. Moreover, phenomenology design helps researchers to discover the facts individuals experience during their daily lives but can't explain in detail (Yıldırım & Şimşek, 2016). In this regard, since this study aims to reveal the subjective experiences and perceptions of personnel working in travel agencies towards ecological sustainability applications in detail, the researchers chose to adopt the phenomenology design. The phenomenon in question in the research is *"ecological sustainability applications"*. Additionally, phenomenology studies are varied in two subcategories as interpretive (Van Manen, 1990) and experimental (Moustakas, 1994). In this study, the experimental phenomenology approach which is presented by Moustakas (1994) is adopted. In experimental phenomenology studies, a detailed description of the participants' experiences takes a larger part while the researchers' interpretations take a lesser part (Moustakas, 1994). In this regard, this study mainly focuses on determining the facts through direct quotations inferred from the interviews while it has little focus on researchers' interpretations.

3.1. Sample Group

Sampling strategy of phenomenology studies is purposeful sampling strategy which is commonly used in qualitative research (Baş & Akturan, 2017). Purposeful sampling helps to obtain detailed information from individuals who are considered to be knowledgeable about the subject (Yıldırım & Şimşek, 2013). In this regard, in the name of obtaining detailed information from travel agency managers on ecological sustainability applications, the sample had been determined through purposeful sampling method. Purposeful samples vary as several types (Patton, 2014) and in this study the sample had been determined through maximum variation sample method. In maximum variation sampling, the aim is to ensure maximum reflection of the variety of individuals in small sample groups (Patton, 2014). In accordance with that, 18 people who work at various group A travel agencies which operate in Istanbul with various educational levels, genders, positions, and years of expertise had been identified through maximum variation sample method as the sample group of this study. Demographic information of the participants is presented in Table 1.

Table 1. Demographics of the participants

Participant No	Gender	Position
P1	Male	Manager
P2	Male	Manager
P3	Male	Manager
P4	Male	Manager
P5	Male	Manager
P6	Male	Manager
P7	Male	Manager
P8	Male	Manager
P9	Male	Sales Director
P10	Male	Sales Director
P11	Male	Sales Director
P12	Male	Sales Director
P13	Male	Manager
P14	Male	Manager
P15	Male	Manager
P16	Male	Manager
P17	Famale	Manager
P18	Famale	Manager

There isn't a precise limit of number of participants required for the sample group in qualitative studies. Common method is to stop adding participants when the new participants aren't able to provide new information, in other words when the data reached a saturation point (Miles & Huberman, 1994). Shenton (2004), identified the repetition of the information as the main criterion for determining the sample size. In this study, repetition of the information started with the 16th interview. Researchers carried out two more interviews to check If there are any more new information that can be acquired. Finally, they decided to end the interviews since the repetition continued in the last two interviews and no new information acquired.

3.2. Data Gathering Method and Tools

In phenomenology research, it is important to carry out concentrated and profound interviews during data gathering stage to reveal the experiences of participants with the phenomenon. In addition, it is also advised for researchers to take notes and record the interviews (Sanders, 1982). In this regard, semi-structured interviews were carried out with 18 people who works at group A travel agencies which operate in Istanbul. In qualitative research interviews, participants don't just answer the research questions but also researchers get insight in regards to participants' subjective perspectives towards facts and happenings (Weiss, 1995). In accordance with that, in this study researchers adopted interview method to discover the perspectives of managers of travel agencies towards the concept of "ecological sustainability applications" in detail. The interviews took place in the participants' offices and took 30-45 minutes. Before the interviews, participants were informed about the purpose of the study and they were ensured about their confidentiality. In addition, participants were asked for their permission for the recording of the interviews and with the consent of participants all interviews have been recorded with a voice recorder. The interview questions were formed after a detailed examination of related literature with the help of expert academicians on the field of tourism. During the interviews, following questions were asked to the participants:

- What is the concept of sustainable tourism? Could you explain briefly?
- Do you practice sustainable tourism activities in your workplace? If you do, are there any policies, rules, or principles in regards to sustainable tourism activities that you resort as a pathway? If your answer is yes, were those policies, rules, or principles constituted by yourself or you are taking benefit of already existing policies, rules, or principles?

- Do you consider to take part in voluntary environment programs and certifications systems for a more preserved ecological system.
- In your agency, is it preferred to have small tours with long continuity or high profits with short term sectoral continuity?
- Are there any social responsibility projects that your firm takes place in? If there are any, could you give information about those projects?
- Could you share your opinions on the applications of sustainable tourism activities in Turkey?
- What are the factors which barriers or restrict your firm to have tendency for ecological sustainability?
- What are the factors that encourage ecological sustainability initiatives? Do sustainable tourism activities provide economic benefits to firms?
- Do sustainable tourism activities provide benefits in terms of image?

Answers of the participants to those questions were transcribed without any changes got prepared for the analysis.

3.3. Analysis of the Data

In the study, the data analyzed through content analysis method. During the content analysis, researchers aimed to determine the data which is obtained from the participants and categorize the information derived from the data under themes to present it in a way that readers can have a better understanding (Yıldırım & Şimşek, 2013). Before starting the content analysis, the researchers read all the data carefully. After a thoroughly inspection of the data researchers started the process of coding. During the coding similar codes have been gathered in related groups and categories have been formed. While naming the categories researchers made use of the related literature. During the content analysis, researchers used qualitative data analysis software MAXQDA 2020. MAXQDA 2020 is a qualitative analysis software that helps researchers to analyze "interviews, reports, tables, online surveys, focus groups, videos, voice files, literature, visuals, and pdfs" (MAXQDA, 2020). Cresswell (2017), emphasizes that he uses MAXQDA 2020 because of its ability to do a better documenting, easiness of coding and mapping function. During the study, to ensure trustworthiness and reliability, researchers applied strategies Yıldırım and Şimşek (2013) emphasized which are peer review, detailed description, and purposeful sampling. In this regard, by having prolonged interactions with the participants, researchers prioritized to gain the trust of the participants and by doing so aimed to obtain more trustworthy information from them. During the preparation of the interview questions researches referred to opinions of experts and related literature. In the name of transferability, detailed descriptions have been presented with direct quotations from the participants' answers and purposeful sampling was preferred.

4. Findings

4.1. Sustainable Tourism

Participants identified sustainable tourism as a tourism type which prioritizes quality service during travels, considers the customers satisfaction, provides important benefits in terms of continuity of the firms, doesn't constitute a problem, doesn't prevent anti-growth policies in destinations. In Figure 1, sustainable tourism theory model, consists of the participants perspectives, is presented. Statements of P2 and P3 support the statements above.

> *"An important feature of sustainable tourism is that the products it offers is more quality than the products of mass tourism. In addition, since this tourism type has more considerate approach towards both nature and people, the services are provided without issues. Customer satisfaction is prioritized" (P2).*

> *"Sustainability leads to a controllable development and it isn't against growth. It also plays an important role for the continuity of the firms" (P3).*

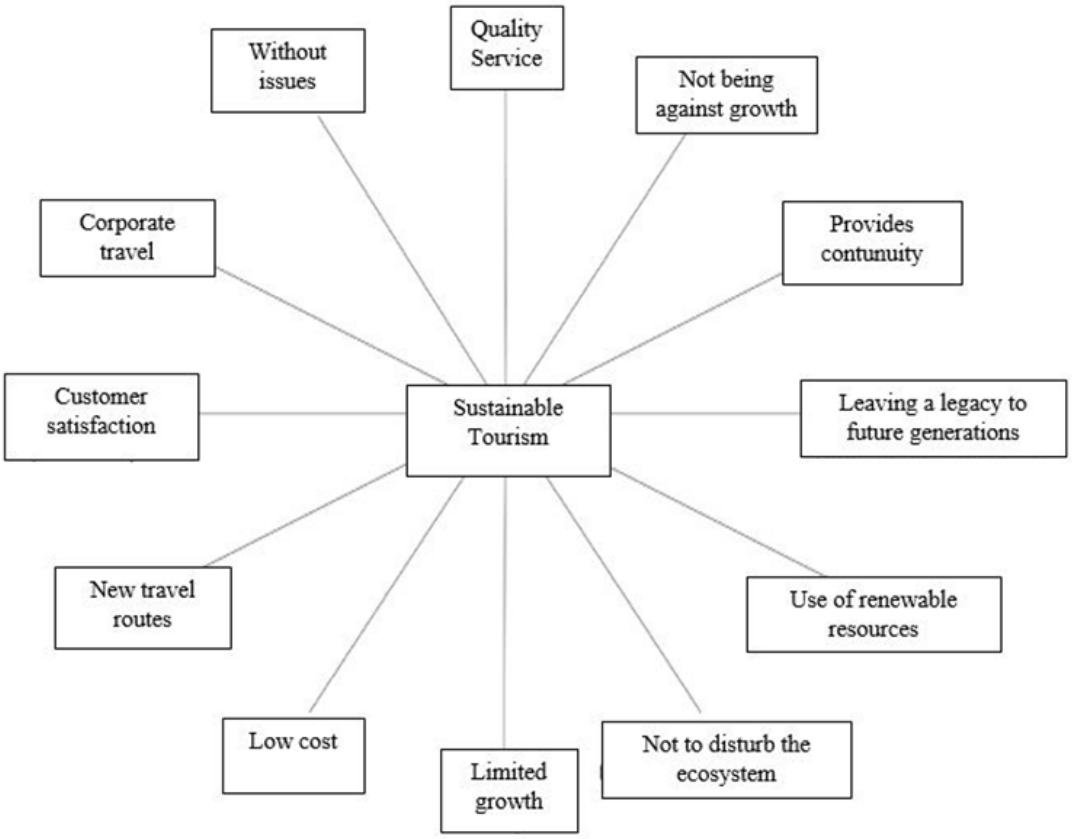

Figure 1. Sustainable tourism Code-Theory Model

Some participants identified sustainable tourism as a tourism type which creates new travel routes for destinations, decreases the costs of agencies, emphasizes the use of renewable resources such as solar power, safeguards our legacy to future generations by protecting the nature, and gives a more corporate characteristic to the travels of customers. Along with that, participant 5 expresses that contrary to being anti-growth sustainable tourism actually supports a controllable growth in his following statement.

> *"In my opinion, sustainable tourism offers controllable and limited growth opportunities rather than an uncontrolled growth" (P5).*

4.2. Sustainable Tourism Activities Applications

As the prominent sustainable tourism application in travel agencies, it is revealed that participants try to use social media tools such as Facebook, Instagram, and Twitter instead of traditional media materials such as banners and hand brochures. P8 emphasizes the role of social media among sustainable tourism applications by saying *"Previously promotion activities were being carried out with brochures and that were causing more paper consumption but now social media is the primary material for promotion and marketing activities".* Sustainable tourism activities in travel agencies is presented in Figure 2 with code-subcodes divisions model.

Along with social media, there are several other sustainable tourism applications takes place in travel agencies such as preventing high power consumption by less electricity usage, using recycle bins for recyclable waste, and choosing materials which are made of recyclable materials. P15 shares his opinion on this subject with following statement:

> *"In our agency, we are using waste bins with different colors to ensure the recycle of plastic, paper, battery, and glass wastes and we prefer materials that can be recycled" (P15).*

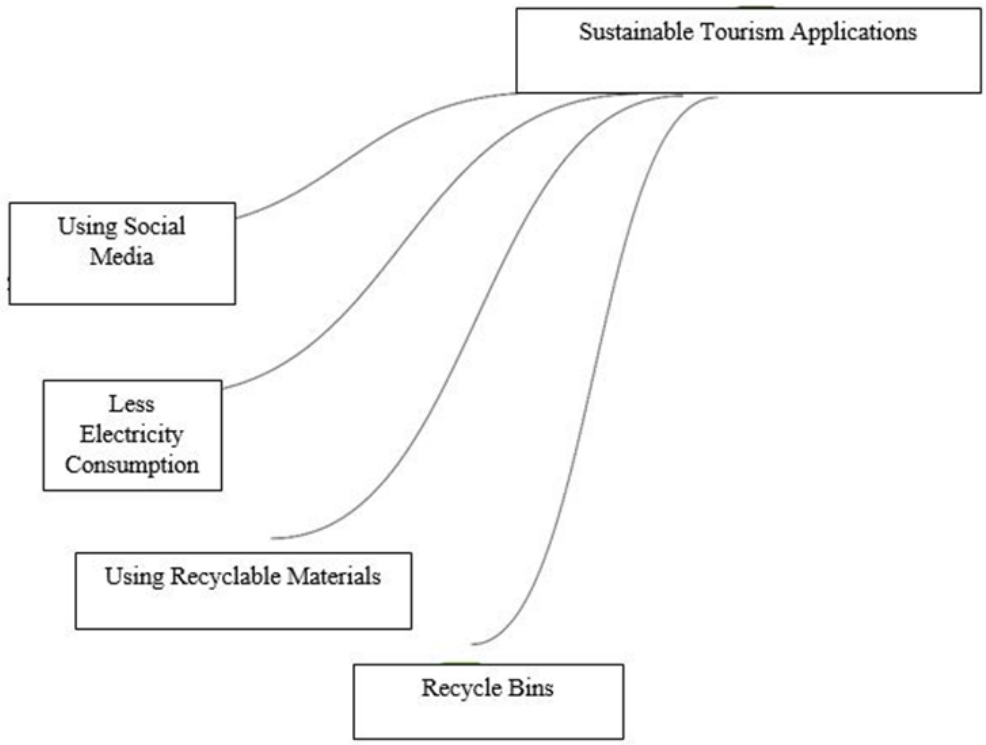

Figure 2. Sustainable tourism activities applications Code-Subcodes Divisions Model

4.3. Short Tours

Participants from the travel agencies emphasized that they mostly prefer short tours since they have long term profitability, they provide momentum, they are appropriate for every type of customers and they have minimal risks for the agencies. Especially P15 states the importance of short tours with the following: *"I prefer long continuity with short tours. They provide more development for both the firm and employees. It is also more impressive to make a name for the firm".*

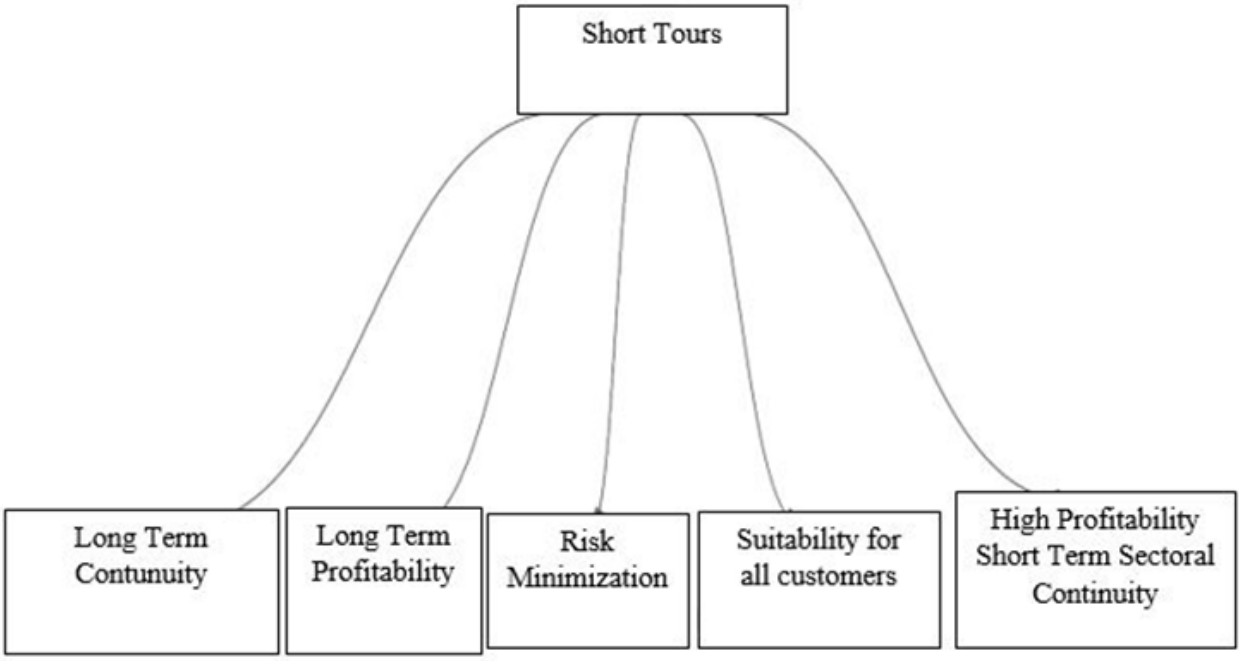

Figure 3. Short tours Hierarchical Code- Subcodes Model

On the contrary, some participants state that they prefer short term continuity with high profit instead of long-term continuity. Participant 17 expresses her opinion on the subject with the following statement: *"I prefer short term sectoral continuity with high profit. Because in my opinion high profits have more productivity".*

4.4. Suggestions to Improve Sustainable Tourism in Turkey

In the name of improving sustainable tourism activities in Turkey, participants offered several suggestions such as recruiting highly educated personnel who are sensitive to natural environment, prioritizing the protection of the country's ecological balance, providing governmental incentive to the agencies that suffered financial losses during COVID 19 pandemic, approaching the ecological tours not only with commercial purposes, working towards Turkey's promotion at the international fairs by the participants from travel agencies, and using touristic attractions affectively for promotions.

Opinions of P9 and P13 are as follows:

> *"Nature isn't something we inherited from previous generations. It is something we borrowed from future generations. In this regard, it is highly important to preserve ecological balance with sustainability activities. Preservation must be ensured not by penalties but by the activities carried out voluntarily" (P9).*

> *Agencies shouldn't view ecological tours, organized as a part of sustainable tourism activities, with only the motivation of making income. Making only money in ecological tours must be excluded from being the main focus" (P13).*

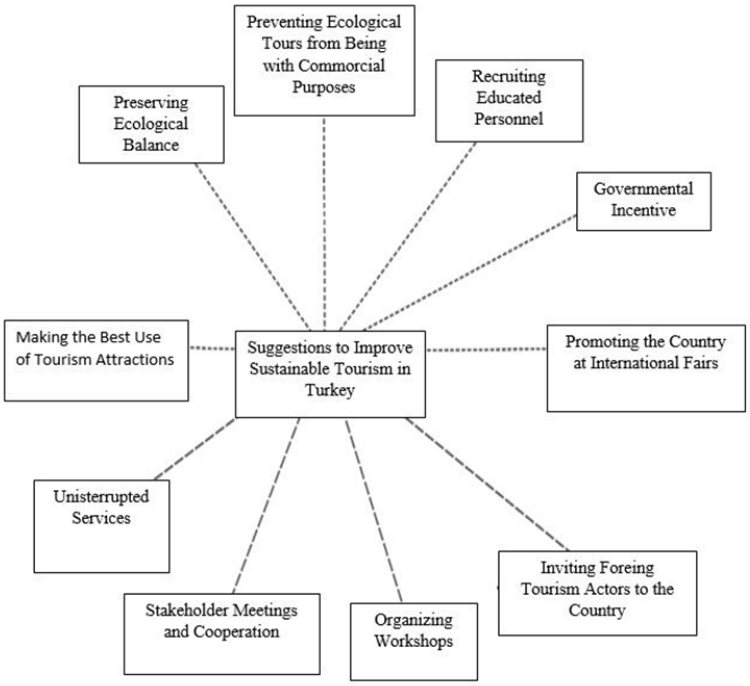

Figure 4. Suggestions to improve sustainable tourism in Turkey Code- Subcodes Divisions Model

Some other suggestions from the participants to improve the sustainable tourism applications in Turkey are; uninterrupted services offered in ecological or some other tours organized by the agencies, getting the support of stakeholders with cooperation, inviting foreign stakeholders from abroad who works at public or private sectors and organizing workshops to promote our country.

4.5. Social Responsibility Projects

Participants state that agencies are providing support for several social responsibility projects. Especially in this regard, it is seen that the projects supported by the agencies are quite diversified. Examples of primary projects are presented with hierarchical code-subcodes model in Figure 5. According to Figure 5, agencies provide book donations, organize special tours for sick or poor kids, and providing support for The Foundation for Children with Leukemia within the concept of social responsibility projects. Opinions of P8 and P14 about this subject are as follows:

"Our agency place emphasis on social responsibility projects. This year we provided financial support for the foundation works for the children with leukemia" (P8).

"Our agency provides support for the needs of children with cancer and down syndrome, we even organize tours we donate all the income to the association" (P14).

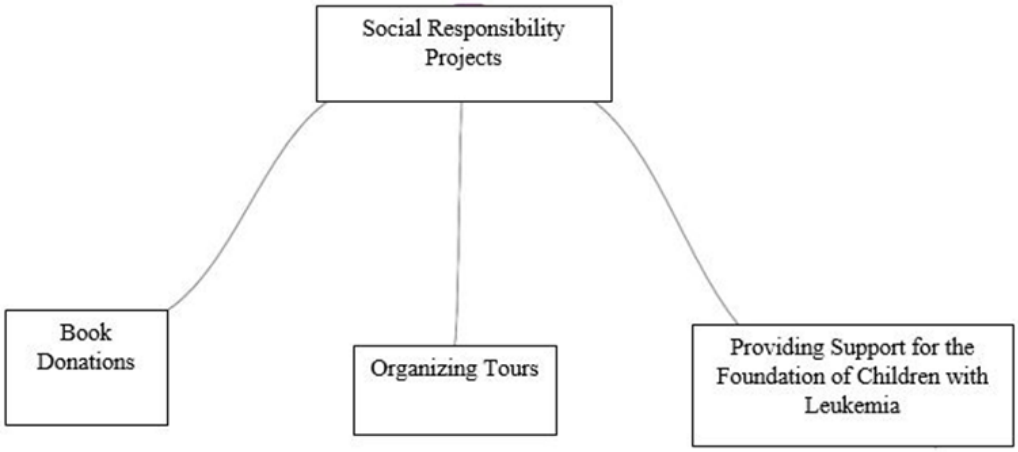

Figure 5. Social responsibility projects Hierarchical Code- Subcodes Model

4.6. Factors Barriers Ecological Sustainability

According to the participants there are several factors barriers the sustainability of ecological tours. Not having any compulsory policies for ecological tours on a governmental degree, the ease of mass founding agencies without having proper means and tools, agencies being more profit oriented than being service oriented, TURSAB's lack of written policies on sustainability, lack of demand from customers towards sustainable tourism product and services and high demand for mass tourism products, lack of awareness in society in terms of protecting the nature, existence of commercial barriers, illegally established agencies are some of those factors. Following statements of P7 and P12 supports those claims.

"According to me, TURSAB's lack of policies is a big restriction. A policy is needed which may guide agencies in terms of organizing nature tour packages and applying the sustainability principles in their work places. TURSAB must create a procedure such as Green agency and provide green flags to agencies" (P7).

"Registered agencies are struggling with taxes and many legal procedures, and trying to survive. But the next thing you see is illegal agencies managing their deals through their connections and organizing tours for 80-90 people. This needs to be prevented. If this can be barriers, registered agencies can get stronger and develop themselves. The agencies that develop themselves approach those kinds of international concepts with more honesty and seriousness" (P12).

In Figure 6, factors barriers ecological sustainability is presented with hierarchical code-subcodes model.

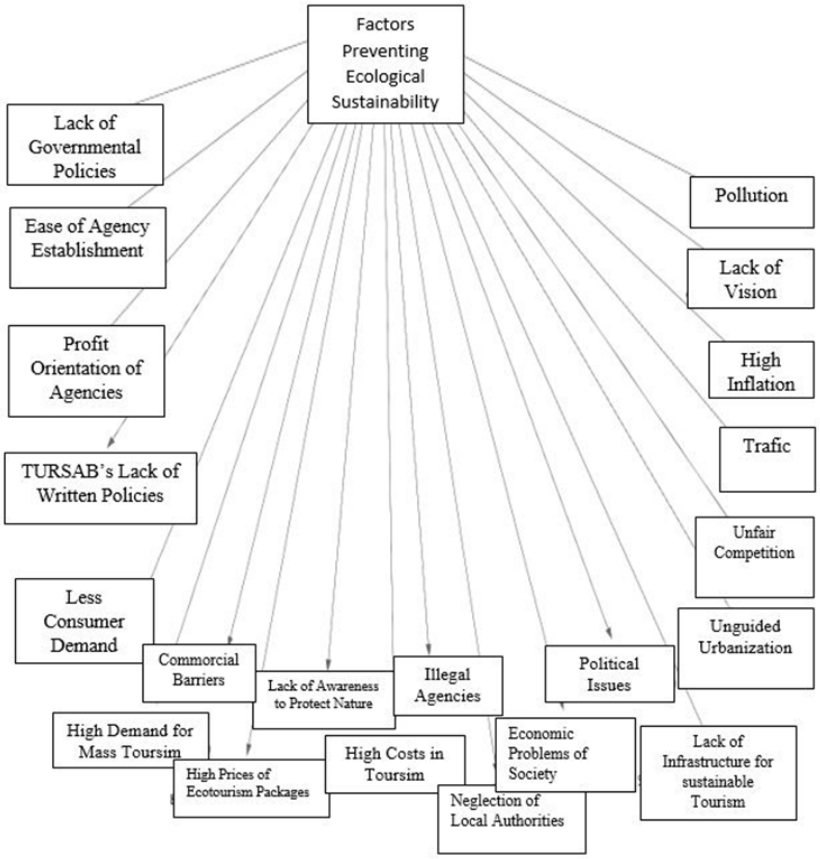

Figure 6. Factors barriers ecological sustainability Hierarchical Code-Subcodes Model

P12 states that high pollution in Turkey and unguided urbanization on important natural sites is a grand restriction for ecological sustainability and continues as follows; *"Important sites we can have ecotourism tours are being threatened by pollution. In addition, rate unguided urbanization in rural areas is rapidly increasing. Those kinds of negativities barriers ecological sustainability"* (P12). In addition to that, participants mentioned some other restrictions such as increasing cost in tourism sector, neglection of local authorities towards sustainability policies, Turkish peoples' struggle against high inflation and economic problems, political issues, infrastructure issues, unfair competition between agencies, increasing traffic within tourism sites due to increased number of cars, and agency personnel's lack of vision.

4.7. Factors That Encourage Ecological Sustainability Initiatives

Ecological activities in travel agencies provides opportunities for both the agencies and society. In Figure7, factors that encourage ecological sustainability initiatives code-subcodes theoretical model is presented. Participants claim that ecological sustainability activities create a stronger image for the agency and especially makes the firm quite sympathetic in the eyes of customers who are sensitive towards nature. This situation plays an important role in terms of customer satisfaction, increased demand for agencies' products and continuity of the agencies. P5 supports these claims with the following statements:

> *"Some customers who are sensitive towards nature pays attention to agencies' sustainability applications and activities during their tours. They feel sympathy for those agencies which offer nature sensitive products and services. Image of those agencies get stronger. Customers gets satisfied and they buy more tours from those agencies" (P5).*

In travel agencies, especially some participants state that by the use of social media, recyclable products and power saving bulbs they manage to decrease their consumption on resources. P10 states the following about that subject:

> *"We used to have banners printed for our promotion. It was more costly. Now we are making our promotion without any costs thanks to social media. In addition, it prevents paper usage and provides sustainability" (P10).*

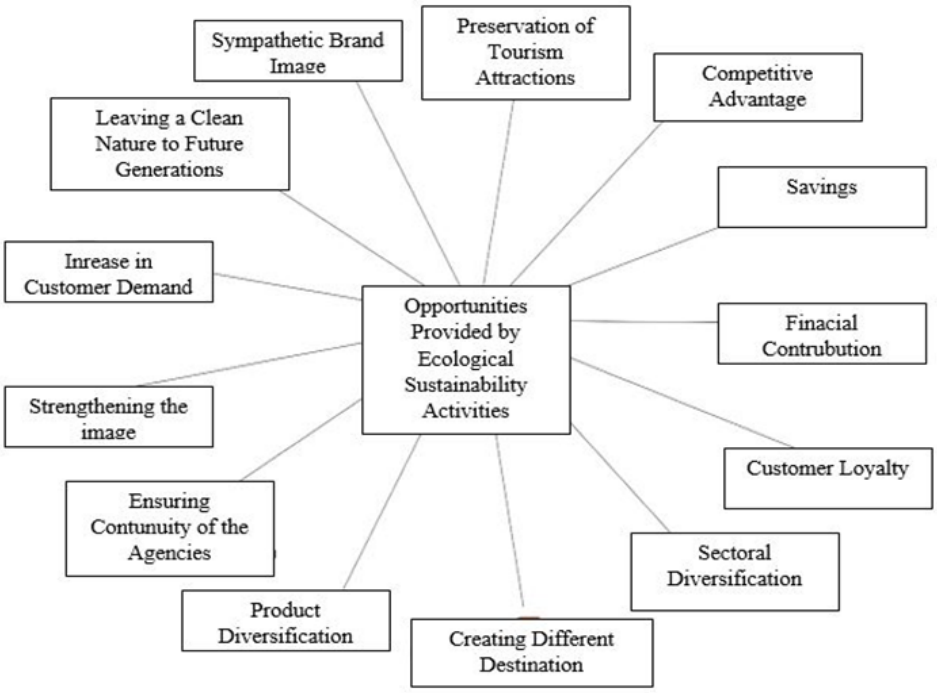

Figure 7. Factors that encourage ecological sustainability initiatives Code-Subcodes Theory Model

P8 emphasized that ecological sustainability activities barriers the destruction of tourism attractions in tourism destinations and help us to leave those attractions to the future generations as our legacy. In addition, some participants state that agencies that apply ecological sustainability activities cause product diversification, have increased incomes, cause a sectoral diversification, and may lead to creation of different destinations that host ecological tours.

5. Result

5.1. Theoretical Implications

The aim of the research is to examine the sustainability situation in travel agencies. In addition, the research aim to determine the factors that encourage and barriers the ecological sustainability practices of travel agencies from the perspective of managers. Different results were obtained from this research. Firstly, the travel agency managers' opinion on the concept of sustainable tourism was assessed. According to this; managers' sustainable tourism, quality service, customer satisfaction are important strategies for the continuity of their businesses, and it is seen as a type of tourism which does not possess obstacles against the expansion policies at destinations. Sustainable tourism is seen as an instrument, and a type of tourism, that enhances the quality of services (Budeanu, 2007) and increases the customer satisfaction (Arıca, 2013), a strategy that helps the businesses continuity (Amoako et al., 2021; UNEP, 2005) and contributes to the development of destinations (Arıca, 2020; Budeanu, 2000; Khairat & Maher, 2012). So, we can say that the result of research is corresponds with the studies.

Secondly, the sustainability practices implemented by travel agencies were examined. Results show that, in agencies; practices that support saving energy, water, paper and recycling applications are exercised within the scope of sustainability. This result is composed of performed activities within internal management under one of the dimensions of sustainability by the agencies by TOI and Travellife. According to most of the research that handle sustainability, there are certain proofs that support that sustainability is done in an efficient way within internal management of agencies (Arıca, 2020; Budeanu, 2007; Khairat & Maher, 2012; Türkoğlu, 2022). And in addition, it has been shown that agencies prefer boutique tours rather than mass tours regarding the endeavours for reduction of destruction of socio-cultural environment. These endeavours have clearly shown us, that agencies consider sustainability when it comes to product, production and management. We can observe many studies that agencies consider sustainability when it comes to courses of product, production and management (Arıca, 2013; Budeanu, 2007; Hamid & Isa, 2020; Tepelus, 2005). These results are in accordance with the known literature.

However, when the five dimensions of the sustainability areas are considered (internal management, supply chain, product production and management, relations with destination and customers), three of these dimensions have no equivalence when in comes to implementation in Turkey. This result creates the part of differentiation from the known literature. Budeanu (2007) It shows that, the sustainability applications may vary depending on country or business.

Thirdly, factors that barriers the sustainability orientation were examined. According to results of this research, the reasons are; the lack of policies of government that enforce ecological tours, the ease when it comes to creating agencies that lack the requirements, agencies focus on profit rather than service, TÜRSAB having no written sustainability policy, low demand for sustainable tourism, products and services and high demand for mass tourism products, lack of awareness towards environmental conservation of society, existence of commercial obstacles and unofficial agencies. These results are supported by many of the research. Budeanu (2007) Claims that demand for sustainable tourism practices are low because of travel agencies' policy insufficiency, whereas Arıca and Çorbacı (2017) mentions, insufficiency of policies, lack of regulations and unlicensed agency activities possess obstacles against sustainability. Whereas Khairat and Maher (2012) claim; reasons of restriction to sustainability practices comes through the agencies' profit orientation and domination of demand for mass tourism products. Hamid and Isa (2020) mention that the lack of demand and market structure is what blocks the practices for sustainability actions. Moving on from here, we can state that these results are in accordance with the literature.

Fourthly, the opportunities that may appear considering travel agencies' orientation towards sustainability ventures are evaluated. Regarding this; results state that, with sustainability applications, agencies can improve service outputs (profit, customer satisfaction, customer loyalty), increase savings, improve the image and competitivity power in market, diversify the products, differentiate within industry, conserving the touristic attraction and leaving a clean nature for future generations. Budeanu (2005) and Arıca (2013) advocates that travel agencies can enhance their service outputs and power in market with usage of sustainability applications. Carbone (2004) emphasizes that sustainability is a method of saving for travel agencies whereas Hamid and Isa (2020) states that sustainability can be a strategy for agencies to differentiate them. If we evaluate these results as a whole, then we can say that it is in accordance with the literature.

Lastly, requirements for improval of sustainability applications in agencies were examined. Regarding the research results; In order to improve sustainable tourism activities in Turkey emphasizing the importance of highly educated and responsive employees, caring about conserving the ecological balance of the country, state substitution for businesses that were affected by the recent Covid 19 pandemic by means of economy, approaching ecological tours not only as commercial purposes, promotion of Turkey in international conferences that are attended by agency executives and using tourism attraction efficiently when it comes to advertising and promoting. These results are supported by the literature. Türkoğlu (2022) states that agencies' success in sustainability applications are in the same class with the quality of employees, whereas Cavlek (2002) and Arıca (2020) mentions that state substitution would encourage sustainability applications in agencies. According to Kilipiris and Zardava (2012), sustainability is possible when agencies can balance their economic interests with the sensitivity of conserving the natural and socio-cultural environment. Lozano et al. (2016) claims that sustainability in agencies are possible with the awareness on business level and tourist's demands. Regarding these claims, results are supported by the literature.

5.2. Managerial Implications

Travel agencies play a critical role when it comes to their position between supply and demand components within tourism sector and proactive realization of sustainable tourism policies. At this point, it is clear that sustainability practices in agencies would mobilize the sectoral stakeholders and have an impact in sectoral scale. So, perception towards sustainability tourism and obstacles against sustainability within agencies should be detected in order to come up with more efficient implementation in sectoral scale.

Results of the research shows us, the travel agencies' managers have information regarding sustainable tourism and its requirements. In addition, managers are aware of the opportunities that may appear with the sustainability applications. Yet, although the awareness, research results shows that sustainability when it comes to application in agencies are insufficient. This situation is closely tied with the exitance of factors that block sustainability. So, for a

general agreement on sustainability applications and their development on sectoral scale, obstacles that block the sustainability ventures should be mitigated or removed.

Research results show that the biggest obstacles against sustainability in travel agencies are bureaucratic inabilities and financial worries. At this point, it is important that state should have an active attendance to process as a regulator, law maker and incentive. Encouragement towards sustainability applications, ratification of inclusive laws and putting them into use and their regulation would contribute to process. It is known that most of the market is dominated by agencies that promote mass tourism, and sustainability applications are mostly practiced by smaller travel agencies. And smaller travel agencies' power when it comes to competitiveness is weaker compared to bigger enterprises. On this matter, state should subsidize agencies that contribute to sustainability implementations in order to encourage more and more. Awareness and education are other points when it comes to implementation of sustainability. In tourism sector, sustainability is possible with participation of public and private sectors, local people, tourists, civil society organizations. At this point, in order to achieve sustainability at a sectoral level, increase in the number of applications that would raise the awareness of stakeholder, giving weight to attempts for raising the awareness both in written and visual media, educating employees should be emphasized.

To sum up, in a structure that is; being binded by canon, activated by regulation, optimised by infra and superstructure, actively participated by stakeholders, in agencies that inform both employees and customers in order to raise their awareness and achieve sustainability would led us to a point of reduced environmental damage and mitigated commodification.

Reference

Amoako, G.K., Obuobisa-Darko, T., & Marfo, S.O. (2021). Stakeholder role in tourism sustainability: The case of Kwame Nkrumah Mausoleum and centre for art and culture in Ghana. *International Hospitality Review, 35*(1), 1-12.

Arıca, R. (2020). *Seyahat acentalarında sürdürülebilir ürün üretimi ve yönetimi : Doğa temelli turların sistemleştirilmesi.* Nobel Yayıncılık.

Arıca, R., & Çorbacı, A. (2017). A review of barriers of tour operators sustainable tourism activities. *In 7th International Interdisciplinary Business-economics advancement conference.* (pp. 48-55) April 9-14.

Baş, T., & Akturan, U. (2017). *Sosyal bilimlerde bilgisayar destekli nitel araştırma yöntemleri.* Seçkin Yayıncılık.

Brundtland, G.H. (1987). *Our Common Future the World Commission on Environment and Development.* Oxford University Press.

Budeanu, A. (2000). *A tour to sustainability? A discussion on tour operators' possibilities for promoting sustainable tourism.* [Unpublished master's thesis]. Lund University.

Budeanu, A. (2005). Impacts and responsibilities for sustainable tourism: A tour operator's perspective. *Journal of Cleaner Production. 13*, 89-97.

Budeanu, A. (2007). *Facilitating transitions to sustainable tourism the role of the tour operator.* [Unpublished doctoral dissertation]. Lund University.

Carbone, G. (2004). Tour operators' responsibility and best practices example. *Tour Operator Initiative Program Officers*, UNEP.

Cavlek, N. (2002). Tour operators and sustainable development–A contribution to the environment. *Journal of Transnational Management Development, 7*(4), 45-54

Cresswell, J. W. (2013). *Nitel araştırma yöntemleri beş yaklaşıma göre nitel araştırma ve araştırma deseni.* (M. Bütün & S. B. Demir, Çev.). Siyasal Kitapevi.

Curtin, S., & Busby, G. (1999). Sustainable destination development: The tour operator perspective. *International Journal of Tourism Research*, (1), 135-147.

Çakar, U. (2013). *Ekolojik örgüt üzerine epistemolojik bir yaklaşım*. Detay Yayıncılık.

Dinica, V. (2006). Policy measures and governance for sustainable tourism and recreations in the Netherlands an evaluation. *Professional Paper. 54*(3), 245-258.

Fennell, D. (2003). *Ecotourism*. (Second Edition). Routledge.

Gümüş-Dönmez, F. (2016). Sürdürülebilirlik kavramı, tanımı ve sürdürülebilirliğin tarihsel gelişimi. H. Çeken (Ed.). *Sürdürülebilir turizm (temel kavramlar ve ilkeler)* içinde (ss. 1-10). Detay Yayıncılık.

Hamid, M.A., & Isa, S.M. (2020). Exploring the sustainable tourism practices among tour operators in Malaysia. *Journal of Sustainability Science and Management. 15*(1), 68-80.

Khairat, G., & Maher, A. (2012). Integrating sustainability into tour operators business: An innovative approach in sustainable tourism. *Tourismos: An International Multidisciplinary Journal of Tourism. 7*(1), 213-233.

Kıvılcım, B. (2020). *Sürdürülebilir turizm kapsamında seyahat acentalarının ekoturizm faaliyetleri: Doğu Karadeniz Bölgesinde bir araştırma.* [Yayınlanmamış doktora tezi]. Atatürk Üniversitesi.

Kilipiris, F., & Zardava, S. (2012). Developing sustainable tourism in a changing environment: issues for the tourism enterprises (travel agencies and hospitality enterprises). *Procedia - Social and Behavioral Sciences*, 44, 44-52.

Leung, Y., Marion, J.L., & Farrell, T.A. (2001). The role of recreation ecology in sustainable tourism and ecotourism. In S. McCool & R.N. Moisey (Eds.). *Tourism, recreation and sustainability: Linking culture and the environment* (pp. 21-39). CABI International.

Lozano, J., Arbulu, I., & Rey-Maquieira, J. (2016). The greening role of tour operators. *Environmental Management.* 57, 49-61.

Marin-Pantelescu, A., Tăchiciu, L., Căpușneanu, S., and Topor, D.I. (2019). Role of tour operators and travel agencies in promoting sustainable tourism. *Amfiteatru Economic, 21*(52), 654-669.

MAXQDA, (2020). Maxqda. https://www.maxqda.com/lang/tr.

Middleton, V.T.C., & Hawkins, R. (1998). *Sustainable tourism: A marketing perspective.* Butterworth-Heinemann.

Miles, M, B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook.* (2nd edition). Sage.

Moustakas, C. (1994). *Phenomenological research methods.* Sage.

Patton (2014). *Nitel araştırma ve değerlendirme yöntemleri*. (M. Bütün & S. B. Demir, Çev.). Pegem Akademi.

Polat Sesliokuyucu, İ. (2022). Havayolu işletmelerinde ekolojik sürdürülebilirlik. R. Arıca (Ed.), *Turizm işletmelerinde ekolojik sürdürülebilirlik.* Uygulamadan örnekler içinde (ss. 147-160). Paradigma Akademi Yayıncılık.

Russell, S.V., Lafferty, G., & Loudoun, R. (2008). Examining tour operators' responses to environmental regulation: The role of regulatory perceptions and relationship. *Current Issues in Tourism. 11*(2), 126-143.

Sanders, P. (1982). Phenomenology: A new way of viewing organizational research. *Academy of management review, 7*(3), 353-360.

Schwartz, K., Tapper, R., & Font, X. (2008) A sustainable supply chain management framework for tour operators, *Journal of Sustainable Tourism, 16*(3), 298-314

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information,* 22, 63-75.

Sigala, M. (2008). A supply chain management approach for investigating the role of tour operators on sustainable tourism: The case of TUI. *Journal of Cleaner Production. 16*(15), 1589-1599.

Tepelus, C.M. (2005). Aiming for sustainability in the tour operating business. *Journal of Cleaner Production.* 13, 99-107.

Tour Operators Initiative (2003). *Sustainable tourism: The tour operators' contribution.* TOI, Paris.

Travellife (2007). *Travellife, sustainability in tourism.* Travellife. https://www.travelife.info/index_new.php?menu=about_travelife&lang=tr .

Türkoğlu, N. (2022). Seyahat acentalarında ekolojik sürdürülebilirlik. R. Arıca (Ed.), *Turizm işletmelerinde ekolojik sürdürülebilirlik.* Uygulamadan örnekler içinde (ss. 75-88). Paradigma Akademi Yayıncılık.

UNEP (2005). I*ntegrating sustainability into Business: A management guide for responsible tour operations.* UNEP, WTO.

Weiss, R.S. 1995). *Learning from strangers: The art and method of qualitative interview studies.* Free Press.

Wijk J. V., & Persoon W. (2010). A long-haul destination: Sustainability reporting among tour operators. *European Management Journal, 24*(6), 381-395.

Van Manen, M. (1990). *Researching lived experience: Human science for an action sensitive pedagogy.* Albany State University Press.

Yıldırım, A. & Şimşek, H. (2016). *Sosyal bilimlerde nitel araştırma yöntemleri* (13. Baskı). Seçkin Yayıncılık.

Geographies, Planning & Tourism StudioS

2022 Vol.2 Issue:1

Evaluation of Geomorphosite Potential and the Tourism Attractiveness of Uçansu Waterfall (Gündoğmuş-Antalya)

Ergin Canpolat[a]

[a] Department of Geography, Svience an Literature Faculty, Hatay Mustafa Kemal University, Antakya, Hatay, Turkey.
ORCID: 0000-0003-2123-3551

Article History

Received: 22.06.2022
Accepted:30.06.2022

Keywords

Uçansu Waterfall
Gündoğmuş
Antalya
Geomorphosite,
Analytic Hierarchy Process (AHP)

Corresponding Author

E. Canpolat:
ergincanpolat@gmail.com

Abstract

Natural resources are the basic elements that create attraction in tourism. Waterfalls, which can be natural or artificial, can be centers of attraction due to their unique sights, noises and ecosystem features in the immediate vicinity. In this study, the geomorphosite potential and the tourism attractiveness of Uçansu Waterfall was evaluated. The Geosite Assessment Model (GAM) which is supported by Analytical Hierarchy Process (AHP) was used to explain the geomorphosite and tourism attractiveness value. The basis parameters as the tourism-related natural features of the waterfall and the tourism-related human characteristics of the nearby environment were weighted in scores. Scoring was done by expert teams who visited the field and evaluated the waterfall and its surroundings through the visuals in the office. According to the evaluation, the geological, geomorphological and climatic parameters of the waterfall and its surroundings have a high weight value. Socio-cultural characteristics, current tourism conditions and transportation potential are the parameters that have relatively low weights. Geological and geomorphological values make the waterfall a unique natural resource, and the climate of the region supports this potential. However, in some years, the water scarcity that starts early in the summer, the inadequacy of tourism investments, the forestry and protected area features require the use of ecotourism, which is compatible with nature in and around the waterfall.

To cite: Canpolat E. (2022). Evaluation of geomorphosite potential and the tourism attractiveness of Uçansu Waterfall (Gündoğmuş-Antalya). *Geographies, Planning & Tourism Studios, 2*(1):21-32.
https://doi.org/10.5505/gpts.2022.99608

1. Introduction

While water creates a source of life in nature, it is also an important attraction in tourism. Especially the landscapes created by the water in the topography motivate people to see these parts of nature closely or to be in them. Waterfalls are the units that attract attention as the sections where the normal flow of the stream is changed. Waterfalls are geomorphological elements where water falls due to high slope or flows very fast and creates noise. This rapid movement of water creates an aesthetic structure in terms of visual as well as sound and falling movement. In addition to these features of the waterfalls, the visuality and water ecosystem that they gain with the giant cauldrons formed in front of them attract the attention of tourists or excursionists (Canpolat et al., 2021). Waterfalls, in addition to giving pleasure due to their aesthetic stances, also provide activities for life incompatible, outdoor activities (Hudson, 2006; Zeybek et al., 2020). Knowing the effect of waterfalls on local tourism and revealing the tourism potential are important in determining and maintaining tourism investments. In recent years, waterfalls have been declared as landscape parks and geoparks with their visuals, biosphere reserves (Rutynskyi & Kushniruk, 2021).

Geomorphosite was first described by Panniza and it emerged in Piagente's (1993) study. Geomorphosites are landforms and they have scientific, historical, cultural, aesthetic, socio-economic values (Pereira et al., 2007). Geomorphosite; landscape, value by society social and economic, cultural and scientific measured by taking advantage of the angles it is a geomorphological resource (Jorge & Pereira, 2006; Panizza, 2001; Pereira & Pereire,

2010; Pralong & Reynard, 2005; Reynard, 2005). Geomorphosites, human perception or gaining special value because of its use are understood as landforms (Panizza & Piagente, 1993). These landforms contribution to the development of sustainable tourism is large (Corotza et al., 2008). Geomorphosites such as waterfalls, caves, canyons, cliffs, glacial landforms, coral reefs, atolls, sinkholes, sinkholes, travertines, volcanic areas, areas with biological differences attract attention are the subject of geomorphotourism (Canpolat et al., 2020).

The attraction of a tourism destination is any natural, cultural or man-made thing that is unique, attractive and has value. According to Pradana and Pantiyasa (2018), tourists are interested in those assets because they can give a different effect, a new understanding and gain to the tourist. According to some scientists, tourism attraction is being able to see, do, bought or enjoy certain things in a tourism destination (Werpani, 2007; Pantiyasa et al., 2018; Moridsadat et al., 2020).

The aim of the this study is to evaluate geomorphosite potential and tourism attractiveness of the Uçansu Waterfall. For this purpose, the natural factors that are effective in the formation of the visual characteristics of the waterfall and the human parameters that are effective in tourism have been determined. Weight values were assigned to the parameters. This scoring or weighting process was carried out by experts in geography and tourism.

Uçancu Waterfall is located in the administrative borders of Gündoğmuş District of Antalya province, southeast of Güzle Village, southwest of Kayabükü Village (Figure 1). It is also called Uçansu Waterfall, Uçan Waterfall, Cündere Waterfall. The names Uçansu or Uçarsu are frequently used for waterfalls in Turkey. The Uçarsu Waterfall in Antalya Elmalı (Bayrakdar & Görüm, 2012) and the Uçansu Waterfall in Antalya Gebiz (Atayeter et al., 2007) are examples of these. The Uçansu Waterfall, which is the subject of this study, is 164 km from Antalya, 76 km from Alanya, 90 km from Manvagat, and 24 km from Gündoğmuş district center. Transportation is provided through a partially tarmac road and a dirt road within the Güzle district. Waterfall has been registered as a "Natural Site-Qualified Natural Protection Area" with the approval of the Ministry of Environment, Urbanization and Climate Change, dated 28.04.2021 and E.870231 (Web 1).

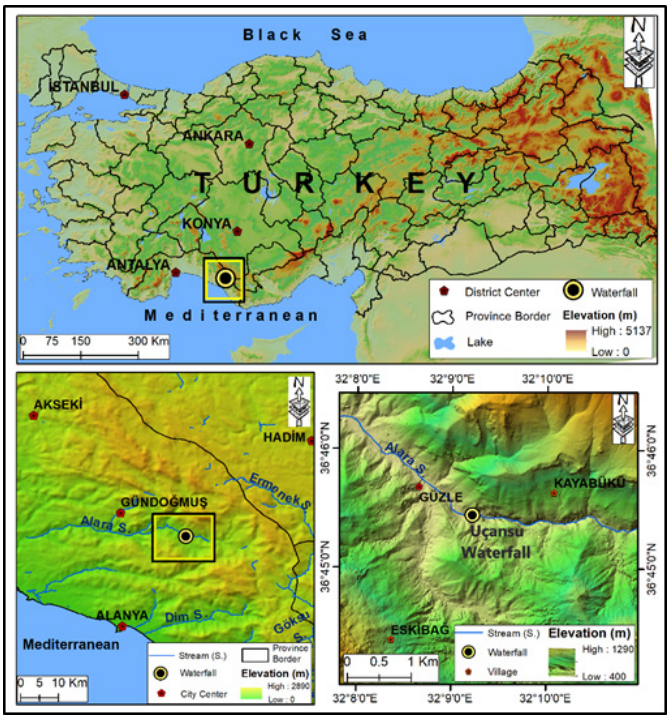

Figure 1. Location map of the study area.

Uçansu Waterfall was formed from the northern slope of Ulugüney Valley, which forms a part of the Alara Stream, by the semi-free falls of water from a height of 30 m, coming out of many points, including the large one in the middle. The waterfall part in the west is the part where the water falls from higher and is seen first by those who come to the site. The waterfall section in the east, on the other hand, has the characteristics of water falling from a relatively lower level in the part where the valley narrows. At the point where the waters fall from Uçansu Waterfall, the altitude of Ulugüney valley is 467 m.

The water of Uçansu waterfall is fed from karst springs. These springs are in the area where the Upper Jurassic-Cretaceous limestones are in contact with the lower Middle Triassic-Upper Triassic Sandstone-Mudstone. Since the waters infiltrating deep from the limestone ground cannot infiltrate deeper than the sandstone-mudstone ground, they emerge as water sources from the high inclined valley slope in this section. Faulting has also been effective in the outflow of water to the surface. These waters that make up the waterfall come from Akdağ, which is located in the north and has a peak height of 2720 m There are many dolines and uvalas, in other words karstic pit-like depressions, on this mass consisting of Upper Cretaceous Limestones (Şenel et al., 2016). In this mountainous mass, which receives snowfall in winter with the effect of altitude, the melting snow waters and the water leaking underground with precipitation are the source that feeds the waterfall. The waters of the waterfall are abundant in winter and spring. The waters gradually decrease in the middle of summer depending on the weather and temperature conditions of the current year. In fact, a very large part of the waterfall structure may not be observed after mid-summer (Figure 2).

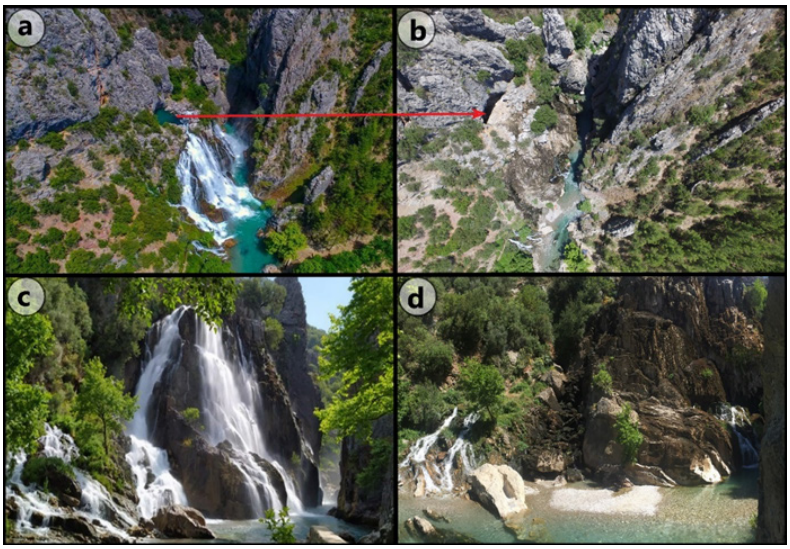

Figure 2. a-c: Spring season images (Source: https.www.ntv.com.tr.galeriseyahat-dagin-icinden-cikangizemli-guzellik-ucansu-selalesi) b-d: 3rd of July 2021.

The closest meteorology station to the waterfall is in Gündoğmuş. Gündoğmuş, which is 900 m above sea level, is in a region where the Mediterranean climate conditions partially approach the continental climate. Winters are relatively cold and summers are somewhat warmer. While the annual average temperature is 15,9 °C, the annual precipitation total is 930 mm (MGM, 2020) (Figure 3). According to the Köppen Climate Classification climate type of region is Csa which mean 'Temperate, dry summer, hot summer' (Yılmaz & Çiçek, 2018). Around the waterfall, Pinusbrutia Forests are widespread. Where there is no forest, macchia dominates. Vineyard and garden farming and olive growing activities are carried out in the vicinity.

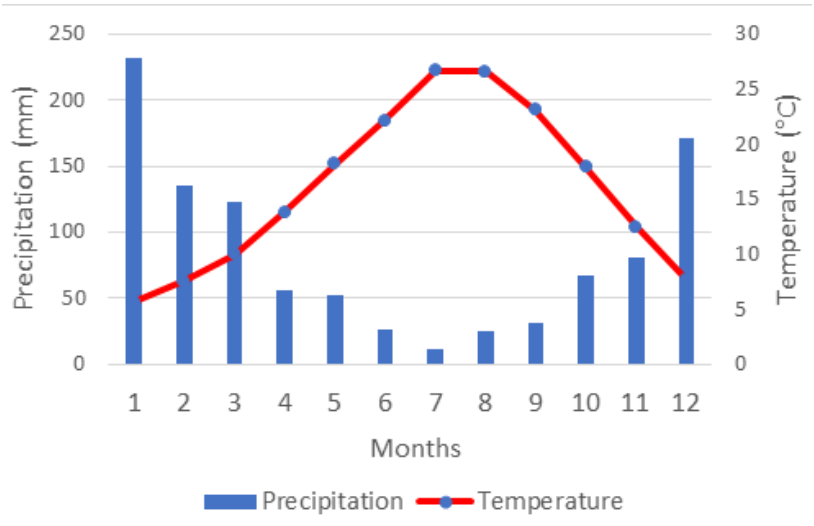

Figure 3. Climograph of Gündoğmuş Meteorology Station.

2. Material and Method

In the study, 30 m resolution SRTM DEM data was used to explain the topographic features. For the detailed topographic images of the section where the waterfall is located, 10 cm resolution DEM data produced by using DJI Phantom 3 Enterprise drone. Within the scope of field studies, 1/100 000 scaled geological map created by General Directorate of Mineral Research and Exploration (MTA) was used. Climatic data are from Gündoğmuş Forest Station. The data covers the years 2012-2020. Agisoft Metashape Professional Version 1.6.4 was used to process the images taken by drone with ArcMap-10.8 software was used to make morphometric analysis and make maps in print version.

The evaluation of the tourism attractiveness and potential with the quantitative and qualitative parameters collected through field studies was carried out by experts. In this study, Uçansu Waterfall Geomorphosite considering the evaluation criteria has been analyzed. In this context scientific value, landscape and aesthetic value, historical and cultural value, economic / tourism value, hazards and risks are taken into account. In order to evaluate the geomorphosite potential, the "Geosite Assessment Model (GAM)" which developed by Vujičić et al. in (2011) was used. According to the studies, the Geosite criterion can also be used for geomorphocytes (Aylar et al., 2022). This model uses a table, and this table includes parameter groups. There are a total of 5 parameter groups such as Scientific/Educational value (VSE), Scenic/Aesthetic (VSA), Protection (VPr), Functional (VFn), Touristic values (VTr). The first three parameter groups are the main parameter groups and the last two parameter groups are the additional parameter groups. A value between 0-1 is assigned to each sub-parameter under the parameter groups by using the findings obtained by the expert in the field. Evaluation is made over a total of 27 points, 12 points in the main parameter group and 15 points in the additional parameter group. The scores obtained at the end of the process are entered into the x-y matrix table as sign, where the main values score on the x-axis and the additional values score on the y-axis are located. Thus, the value of the geological or geomorphological element is explained.
In this study, the biggest difficulty encountered in data entry and score assignment to GAM is the numerical determination of parameter weights. Since GAM analysis is mostly done on a qualitative basis like SWOT analysis, the use of this analysis depends on the knowledge and skills of the experts involved in the planning process (Akbulak, 2016). It is difficult to state that the factor weights of the parameters evaluated in GAM are equally important in determining strategy. This situation is at least factors are not independent of each other, but comparative and simultaneous (Akbulak, 2016; Aylar et al., 2022; Kajanus et al., 2004;). In order to eliminate this deficiency, the AHP method, which is normally used in decision-making processes with multiple factors, was used and qualitative features could be expressed numerically.

AHP is based on the principle of subjecting parametric data with different characteristics to Multi Criteria Evaluation. Results are obtained by superimposing parameters with weight values (Saaty, 1990). AHP is one of the most used and most advanced science management and economics subjects. However, the method has a complex application. Especially developing software and computers provide some convenience in the use of this tool. In addition, the expertise of the decision makers in the field and their objective approach to the subject are effective in the success of the method. Because the parameters and sub-parameters and their evaluations depend on the expert's interpretation (Saaty, 1990). In AHP, each criterion in the hierarchy works depending on the previous criterion and is included in the model by calculating its weight according to this criterion (Bozdoğan & Canpolat, 2022). Researchers consider it possible to make some plans regarding land use as a result of the evaluations made with the AHP (Das et al., 2013; Kayastha et al., 2013; Klimes & Escobar, 2010). In addition, researchers believe that the AHP method is compatible with the data in the field (Bhatt et al., 2013; Komac, 2006). The Analytical Hierarchy Process (AHP) breaks down the items that are considered to be problems. AHP compares these disassembled items in a binary way; hierarchically determines their weight (impact power) and starts to operate consistently (Akıncı, 2011). In the system, each criterion works depending on the previous criterion and is included in the model by calculating its weight according to this criterion. The preference scale developed by Saaty (1980) is used in the creation of the weight score and the pairwise comparison matrix for these criteria. For each n item in the pairwise comparison matrix, n (n-1) /2 comparisons are created (Öztürk & Batuk, 2010).

In the AHP method, the goal is in the highest of the hierarchy. Criteria and sub-criteria are placed in sub-levels. Alternatives are given at the lowest level of the model. A comparison is made between the criteria at each step level. At this point, the expert makes his preferences or scoring according to the level of importance. The importance evaluation calculations given to the main parameter, sub-parameter and related elements in the alternatives can be applied for each step. Then the main parameters are synthesized. The main parameter weight value in the upper step is calculated with the sum of each weighted parameter in that category. Then precision or accuracy is calculated (Atanasova-Pacemska et al., 2014).

Possible inconsistencies that may arise in the AHP can be evaluated using the Consistency Ratio-CR developed by Saaty (1980). In fact, the consistency ratio is used to calculate the accuracy or consistency ratio, the upper limit of this value in the literature is 0.10 (%10). That is, if the value between the pairwise comparison parameters is 0.10 or lower than this value, there is generally a consistency between the relevant parameters; on the contrary, if the value is 0.10 or more, it can be said that there is an inconsistency between the relevant parameters in general.

In AHP method, geology (Presence of water, Rock feature and visuality, Fault), geomorphology (Uniqueness of geomorphological element, Construction suitability for tourism enterprises, Elevation, Slope, Aspect), climate (Sunbathing time, Relative humidity, Wind speed, Precipitation), Socio-cultural characteristics (Sociocultural activities in the region, Presence of handicrafts and local cultural items, Agricultural activities, The importance given to tourism by the local people, Promotion and advertisement of touristic items, Home type hostel presence, hygiene), Current tourism conditions (Alternative tourism assets such as trekking, rafting and mountaineering, Ecotourism potential, Availability of Accommodation and Recreation Facilities, Economic carrying capacity, Social carrying capacity, Environmental carrying capacity) and transport (Distance to villges roads, Distance to highways, Distance of the airport, Distance to marine transportation) parameters are used. These parameters were chosen by adhering to the geographical research approach. These parameters were chosen from recent studies that related to the attractiveness of tourism (Moridsadat et al., 2020; Pantiyasa, 2018; Rutynskyi & Kushniruk, 2021; Uzun et al., 2005).

Social media such as Twitter, Instagram, Facebook and Youtube were checked in order to evaluate the promotion and advertising parameters of Uçansu Waterfall. On these platforms, the name control of the Uçansu Waterfall was made and the number of times the name was mentioned on these platforms was counted, and the number of views of the videos related to the waterfall was calculated.Social media research also shows the current state of interest in the waterfall.

3. Results

The evaluation result of the parameters of the AHP is given in Table 1 and Table 2. GAM result is given in Table 3 and in matrix Figure 8. According to the AHP, the geology parameter is the parameter with the highest total weight (0, 32). The presence of water that forms the waterfall and the presence of water in the valley where the waterfall waters are poured have been seen as the most important actor of the tourism attraction and tourism potential. The water outflow created by faulting and digging of the valley, the stance of the rock layers, their plunges and the visuality they create are criteria that increase the value of the landscape. On the other hand, the decrease in water depending on the season or its drying in some years has relatively reduced the weight of the potential. The geomorphology parameter is the second parameter with the highest weight (0.25).

At a point in the valley where the geomorphological view turns into a canyon, the waterfall formed by the water coming out of a high point on the edge of the valley and the large water potential especially in the spring season creates an aesthetic appearance with little similarity (Figure 4a-b). In order to be in the waterfall environment, the elevation, slope and view of the geomorphological conditions are suitable for the construction of tourism establishments such as cafeterias, camping areas, dressing cabins, WC, parking lot, guardhouse and information office, which will increase the value of the touristic item and potential af attraction (Figure 5a-b). The location of the waterfall is suitable for tourism due to the Mediterranean climate conditions. For this reason, the climate parameter was a parameter with a relatively high weight (0,2). In addition to sunbathing opportunities, the presence of low-speed wind created by the canyon, the shadow opportunities created by the presence of trees, the ideal level of relative humidity created by the effect of waterfalls and streams will increase bioclimatic comfort. However, the fact that the water decreases in some years due to the summer drought creates a disadvantageous situation

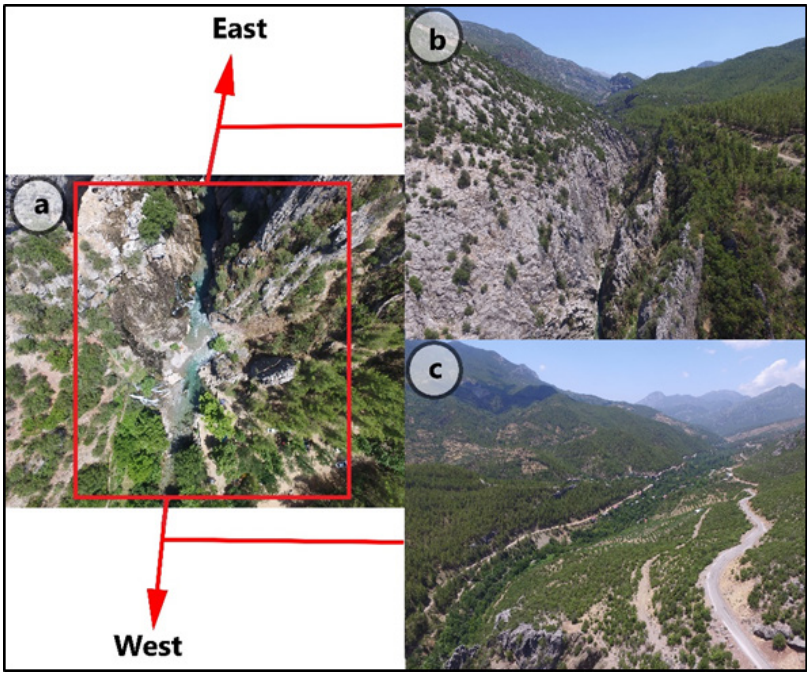

Figure 4. a. Areal photo of the waterfall b. View of valley to the east above waterfall. c. View of the valley to the west obove the waterfall.

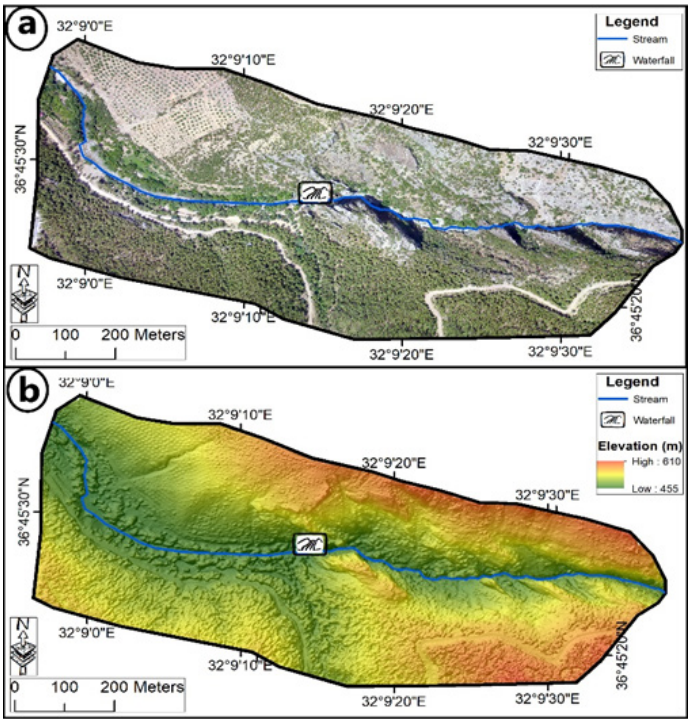

Figure 5. a. Ortophoto of the study area b. Digital elavation map of the study area.

Socio-cultural characteristics parameter (0,1) affects the readiness of the local people for tourism. In the nearby villages where rural living conditions prevail, socio-cultural activities are partially carried out in a traditional way. Barley, wheat production, beekeeping, viticulture and animal husbandry activities are carried out in a decreasing manner in Kayabükü (Beledan, Çündere) Village (Sezen, 2007; Özkan, 2010). Kayabükü village is an old settlement recorded during the reign of Yavuz Sultan Selim (Sezen, 2007). The young population mostly works in tourism facilities in the nearby Manavgat, Alanya, Side and Antalya regions. Accordingly, young people from the local people are knowledgeable about tourism and care about tourism. But the elderly population does not have this awareness much. Some local handicrafts are also sold as souvenirs, as initiatives have started to evaluate places with natural attractiveness. The restaurant and souvenir sales in the Güzle area and on the nearby Dağdere Stream are examples of this (Figure 6).

Figure 6. A resting place in harmony with nature, which also offers eating and drinking activities by the river in Dağdere.

In the current tourism condition parameter (0.07), alternative tourism assets such as trekking, rafting and mountaineering and Ecotourism potential parameters have high values due to reasons such as the rurality of the area, the suitability of the valley for hiking and the availability of camping opportunities in some locations. Beside this local people are conscious of protecting nature. The best example of this is their protest against the Hydroelectric Power Plant, which is planned to be built in the region in recent years and includes the Alara Stream, by taking actions together. This determination and stance of the people enabled the decision to build a hydroelectric power plant to be stopped.

According to research and evaluation, the promotion of Uçansu Waterfall is mostly carried out through local and national media. In addition, those who visit this place share their social media accounts. Waterfall has been the subject of more than 50000 interactions on social media such as Twitter, Instagram, Facebook, Youtube from 2013 to 2022. Some videos shown via Youtube have been watched more than 10000 times. Accommodation facilities in the research area are insufficient in terms of number and quality. One of the most important problems is neglect. In the past, the area around the waterfall was a location where plane trees were common and livestock activities in the form of goat breeding were carried out. Then, for about 10 years, a person hired this place from the forest administration and made it work. He built the picnic place etc. Later, the person stopped operating this place. Although some arrangements were made for picnickers before, there are problems such as the lack of WC, the garbage problem created by the picnickers, the lack of hygiene problems, the lack of dressing cabins, the unplanned and unorganized camping area, and the unplanned parking area (Figure 7). Therefore, the weight of these parameters was low (Table 1- 2).

Transport parameter (0.06) has the lowest overall weight. The scarcity of public transport facilities and the distance to the main roads are the reasons for the low value. On the other hand, the sub-parameters distance to villges roads and distance to highways were partially high values.

Table 1. Comparison matrix for parameters.

Parameter	1	2	3	4	5	6	Weight	Weight (%)
1) Geology	1	2	3	4	5	6	0,32	32
2)Geomorphology	1/2	1	2	3	4	5	0,25	25
3) Climate	1/3	1/2	1	2	3	4	0,2	20
4) Socio-cultural characteristics	1/4	1/3	1/2	1	2	3	0,1	10,2
5) Current tourism potential	1/5	1/4	1/4	1/2	1	2	0,07	7
6) Transport	1/6	1/5	1/5	1/3	1/2	1	0,06	6

Table 2. Weight score of the parameters related to the tourism potential of the waterfall.

	PARAMETERS	Weight (Total)	Weight
Geology	Presence of water	**0,32/1**	0,54
	Rock feature and visuality		0,30
	Fault		0,16
Geomorphology	Uniqueness of geomorphological element	**0,25/1**	0,42
	Construction suitability for tourism enterprises		0,26
	Elevation		0,16
	Slope		0,10
	Aspect		0,06
Climate	Sunbathing time	**0,2/1**	0,47
	Relative humidity		0,28
	Wind speed		0,16
	Precipitation		0,10
Socio-cultural characteristics	Sociocultural activities in the region	**0,1/1**	0,35
	The importance given to tourism by the local people		0,24
	Promotion and advertisement of touristic items		0,16
	Agricultural activities		0,11
	Presence of handicrafts and local cultural items		0,07
	Home type hostel presence		0,05
	Hygiene		0,03
Current tourism condition	Alternative tourism assets such as trekking, rafting and mountaineering	**0,07/1**	0,38
	Ecotourism potential		0,25
	Availability of accommodation and recreation facilities		0,16
	Economic carrying capacity		0,10
	Social carrying capacity		0,06
	Environmental carrying capacity		0,04
Transport	Presence of water	**0,06/1**	0,47
	Presence of water		0,28
	Presence of water		0,16
	Presence of water		0,10

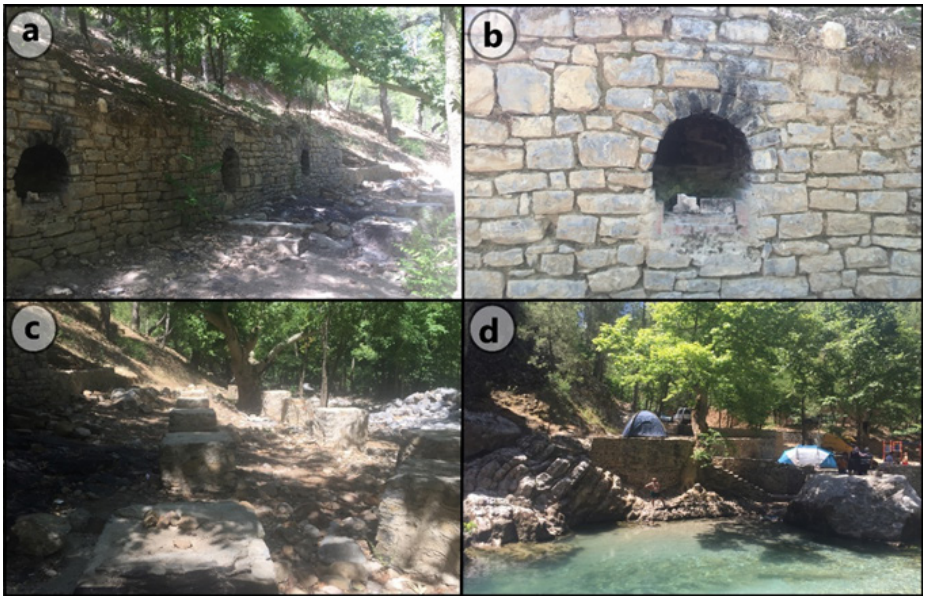

Figure 7. Some neglected structures around the waterfall, landscaping and waste problems.

In the study, the (GAM) scale was used to determine the geomorphosite value and the associated tourism value. In order to create this scale, AHP data, which performs value assignment by applying double comparison to the parameters, was used.

In the GAM model (Table 3), sum of the main parameters score is (VSE+VSA+VPr) 9,2. Scientific/Educational (VSE) value scored with total of 3,1 points. (VSE) consist of sub parameters such as Rarity, Representativeness, Knowledge on Geoscientific Issues, Level of Interpretation. Scenic/Aesthetic (VSA) value scored with total of 2,9 points. (VSA)

Table 3. The structure and scores of Geomorphosite Assessment Model (GAM) (Source: Vujičić et al. in 2011).

Indicators/Subindicators	Score
Scientific/Educational value (VSE)	
Rarity	0,8
Representativeness	0,8
Knowledge on geoscientific issues	0,5
Level of interpretation	1
Scenic/Aesthetic (VSA)	
Viewpoints	0,6
Surface	0,5
Surrounding landscape and nature	1
Environmental fitting of sites	0,8
Protection (VPr)	
Current condition	0,9
Protection level	0,8
Vulnerability	0,7
Suitable number of visitors	0,8
Sum of Main Parameters (VSE+VSA+VPr)	**9,2**
Functional (VFn)	
Accessibility	0,7
Additional natural values	0,5
Additional anthropogenic values	0,4
Vicinity of emissive centers	0,6
Vicinity of important road network	0,6
Additional functional values	0,4
Touristic values (VTr)	
Promotion	0,7
Organized visits	0,7
Vicinity of visitors center	0,3
Interpretative panels	0,4
Number of visitors	0,5
Tourism infrastructure	0,2
Tour guide service	0,2
Hostelry service	0,2
Restaurant service	0,6
Sum of Editional Parameters (VSE+VSA+VPr)	**7**
GAM Value	**16,2**

consist of Viewpoints, Surface, Surrounding Landscape and Nature, Environmental Fitting of Sites. Protection (VPr) value scored with total of 3,2 points. (VPr) consist of sub parameters such as, Current Condition, Protection Level, Vulnerability, Suitable Number of Visitors.

Sum of Editional Parameters (VFn, Vtr) score is 7. In this section Functional (VFn) scored with 3,2 points. (VFn) consist of sub parameters such as Accessibility, Additional Natural Values, Additional Anthropogenic Values, Vicinity of Emissive Centers, Vicinity of Important Road Network, Additional Functional Values.

Touristic Values (VTr) scored with 3,8 points. (VTr) consist of sub parameters such as Promotion, Organized Visits, Vicinity of Visitors Center, Interpretative Panels,Number of Visitors, Tourism Infrastructure, Tour Guide Service, Hostelry Service, Restaurant Service.

According to the result of the GAM table, which is the evaluation criterion of geomorphocytes and also reveals the attractive features of the geomorphological unit, the GAM value was determined as 16.2 out of 27 (Table 3). This score is then displayed in the matrix table. The Matrix table is a table divided into nine areas (regions). The value of the geomorphosite according to the score collected from the main or additional parameters is shown in the matrix table Z(i,j) (i,j=1,2,3). The main gridlines that make up the matrix area have a unit value of 4 for the X-axis and 5 for the Y-axis (Visicic). According to the evaluation made in this study, if the sum of the main values is 9.2 and the sum of the additional values is 7, the geosite will be in the Z32 area (Figure 8). This means that the main parameter values are very close to the top, and additional values are moderate.

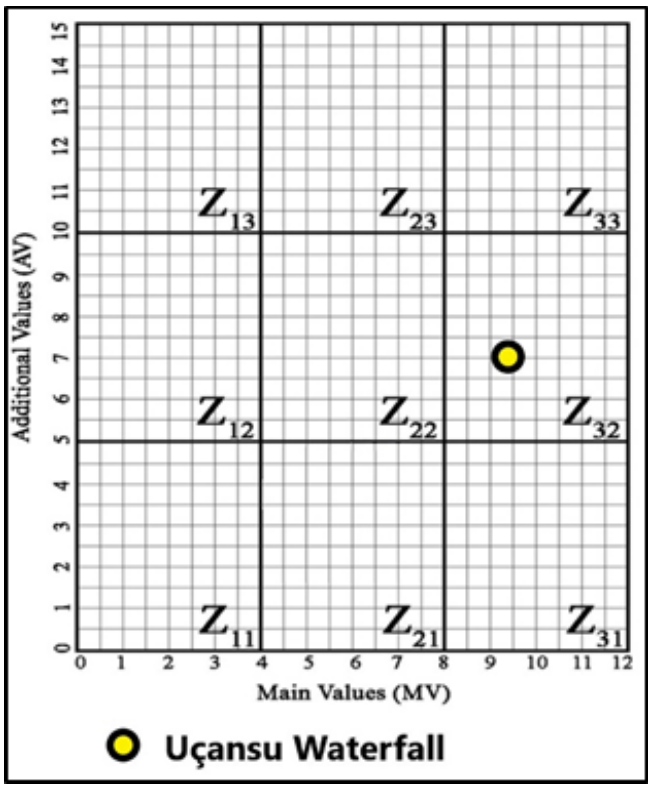

Figure 8. Disposition of geomorphosite to certain fields according to GAM (Source: Vujičić et al. in 2011) .

4. Conclusion

According to the AHP model applied to enumerate the qualitative data and compare the parameters among themselves, Uçansu Waterfall is a formation with high geological and geomorphological value. The slope formed by the effect of geological-geomorphological features and the presence of water have created an important landscape potential. In addition, the climatic conditions and vegetation of the area increase the tourism value of the landscape. In some years, the absence of precipitation in the high mountain areas feeding the waterfall creates water scarcity in the spring that forms the waterfall. This situation causes the tourism attractiveness and potential to be negatively affected. Socio-cultural features, existing tourism features, transportation features create a slightly lower value in tourism attractiveness and potential. The rural characteristics of the region, forest potential, nature of the protected area, natural beauties, hiking opportunities, the availability of water in Ulugüney Stream in all seasons, the waterfall and its surroundings reveal that it is a resource that can be benefited from in terms of ecotourism.

According to the Preliminary Geomorphosite/Geosite Assessment Model (GAM) Uçansu Waterfall is a geomorphological element of high value in terms of its scientific-educational, landscape and aesthetic features, as well as its preservation features. It offers a medium value feature in terms of transportation opportunities, proximity to the city center, social and cultural features in terms of human, presence of other items in the close environment, promotion, tourism organizations, tourism guidance, accommodation facilities and restaurant features.

Depending on all these, the ecology of the waterfall and its immediate surroundings should be protected, camping, accommodation, etc. tourism investments should be increased within the scope of ecotourism. More attention should be paid to the promotion of the waterfall.

Aknowledgement

The author would like to thank Assoc. Dr. Cihan Bayrakdar, Research Assistant Ferhat Keserci and Master Degree Student Mahsum Bozdoğan and Doctorant Çetin Furkan Usun for their scoring and great support.

References

Akbulak, C. (2016). Ardahan ilinde kırsal turizm potansiyelinin sayısallaştırılmış Swot Analizi ile değerlendirilmesi. *Humanitas, 4*(7), 1-30.

Akıncı, H., Doğan, S., Kılıçoğlu, C., & Temiz, M. S. (2011). Production of landslide susceptibility map of Samsun (Turkey) city center by using frequency ratio method. *International Journal of The Physical Sciences, 6*(5), 1015-1025.

Atanasova-Pacemska, T., Lapevski, M., & Timovski, R. (2014). Analytical hierarchical process (AHP) method application in the process of selection and evaluation. *In Proceedings of the International Scientific Conference "UNITECH 2014,* Gabrovo, Bulgaria, 21–22 November 2014.

Atayeter, Y., Çiloğlu, M. H., & Büyükkal, A. H. (2007). Uçansu Çağlayanları (Gebiz-Antalya). *Marmara Coğrafya Dergisi,* (16)*,* 205-220.

Aylar, F., Gurgoze, S., Uzun, A., & Zeybek, H. I. (2022). Yerköprü Doğal Tüneli'nin jeomorfolojisi ve turizm potansiyeli, Vezirköprü/Samsun. *Cografya Dergisi.* Advanced Online Publication. https://doi.org/10.26650/JGEOG2022-981930.

Bayrakdar, C. & Görüm, T. (2012). Yeşil Göl Heyelanı'nın jeomorfolojik özellikleri ve oluşum mekanizması. *Türk Coğrafya Dergisi, 0*(59), 1-10. https://dergipark.org.tr/tr/pub/tcd/issue/21222/227760.

Bhatt, B. P., Awasthi, K. D., Heyojoo, B. P., Silwal, T., & Kafle, G. (2013). Using geographic information system and analytical hierarchy process in landslide hazard zonation. *Applied Ecology and Environmental Sciences, 1*(2), 14-22.

Bozdoğan, M. & Canpolat, E. (2022). Analitik Hiyerarşi Süreci (AHS) ile Delibekirli (Kırıkhan/Hatay) Havzası'nın kütle hareketleri duyarlılık analizi. *Ege Coğrafya Dergisi, 31*(1), 33-53. DOI: 10.51800/ecd.1054815.

Canpolat, E., Çılğın, Z., & Bayrakdar, C. (2020). Jeomorfoturizm potansiyeli bakımından Emecik Kanyonu/Şelalesi (Çameli/Denizli). *Jeomorfolojik Araştırmalar Dergisi,* (5), 64-86. DOI: 10.46453/Jader.784270.

Coratza, P., Ghinoi, A., Piacentini, D., & Valdati, J. (2008). Management of geomorphosites in high tourist vocation area: An example of geo-hiking maps in the Alpedifanes (Natural Park of Fane Senes-Braies, İtalian Dolomites). *Geojournal of Tourism and Geosites, 2*(2), 106–117.

Das, H. O., Sönmez, H., Gökçeoğlu, C., & Nefeslioğlu, H. A. (2013). Influence of seismic acceleration on landslide susceptibility maps: A case study from NE Turkey (The Kelkit Valley). *Landslides,* 10, 433-454.

Hudson, B. J. (2006). Waterfalls, Tourism and landscape. Geography: *An International Journal*, 91, 3-12.

Jorge, P., & Pereira, S. (2006). Património geomorfológico: Conceptualização, avaliação e divulgação. Aplicaçãoao Parque Natural De Montesinho. Universidade Do Minho, 19/9/2006.

Kajanus M., Kangas J., & Kurtilla, M. (2004). The use of value thinking and the A'WOT hybrid method in tourism management. *Tourism Management,* 25, 499-506.

Kayastha, P., Dhital, M. R., & De Smedt, F. (2013). Evaluation of the consistency of landslide susceptibility mapping: A case study from the Kankai Watershed in East Nepal. *Landslides,* 10, 785-799.

Klimes, J., & Escobar, V. R. (2010). A landslide susceptibility assessment in urban areas based on existing data: An example from the Iguana Valley, Medellin City, Colombia. *Natural Hazards Earth Syst. Sci,* 10, 2067-2079.

Komac, M. (2006). A landslide susceptibility model using the analytical hierarchy process method and multivariate statistics in perialpine Slovenia. *Geomorphology, 74*(1-4), 17-28.

MGM. (2020). Türkiye Cumhuriyeti, Çevre, Şehircilik ve İklim Değişikliği Bakanlığı, Meteoroloji Genel Müdürlüğü, Gündoğmuş Orman Deposu İstasyonu verileri.

Moridsadat, P., Roumiani, A., & Sanaei-Moghaddam, S. (2020). Prioritizing tourism destination waterfall for tourism investment and development in lorestan province, Iran. *Sustainable Earth Review, 1*(3), 24-32. DOI: 10.52547/Sustainearth.1.3.24.

Özkan, H.S. (2010). *Osmanlı'dan Cumhuriyet'e Gündoğmuş (Kise ve Nağlu Nahiyeleri),* Alanya Ticaret ve Sanayi Odası Yayını.

Öztürk, D., & Batuk, F. (2010). Konumsal karar problemlerinde Analitik Hiyerarşi Yönteminin kullanılması. *Mühendislik ve Fen Bilimleri Dergisi,* 28, 124-137.

Panizza M., & Piacente S. (1993). Geomorphological assets evaluation. *Zeitschrift. Für Geomorphologie N.F.*, Suppl. Bd, 87, 13–18.

Panizza, M. (2001). Geomorphosites: Concepts, methods and examples of geomorphological survey. *Chinese Science Bulletin, 46*(S1), 4–5. https://doi.org/10.1007/BF03187227.

Pantiyasa, I.W., Pradana, G.Y., & Nale, O.B. (2018). Tourists perception about tourist attraction of waterfall in the village of senaru district of Bayan North Lombok. *Universal Journal of Management,* 6, 155-164.

Pereira P., Pereira D.I., & Alves M.I.C. (2007) Geomorphosite assessment in Montesinho Natural Park (Portugal). *Geographica Helvetica,* 62, 159-168.

Pereira, P., & Pereira, D. (2010). Methodological guidelines for geomorphosite assessment. *Geomorphologie: Relief, Processus, Environnement*, (2), 215–222. https://doi.org/10.4000/Geomorphologie.7942.

Pradana, G.Y.K., & Pantiyasa, I. W. (2018). Makotek as a tourist attraction in Munggu Village, Badung. *Proceeding of International Conference 2nd Tourism, Gastronomy and Tourist Destination.* 2018.

Pralong, J.P., & Reynard, E. (2005). A proposal for the classification of geomorphological sites depending on their tourist value. *Il Quaternario, Italian Journal of Quaternary Sciences 18*(1), 315–321.

Reynard, E. (2005). Géomorphosites et paysages. Géomorpholo- Gie: Relief, processus, environnement 3, 181-188.

Rutynskyi, M., & Kushniruk, H. (2021). Waterfalls of the Eastern Carpathians (Ukraine) as objects of geoheritage and geotourism. *Geografický Časopis-Geographical Journal.* 73 (2021) 3, 265-282.

Saaty, T. L. (1980). *The Analytic Hierarchy Process: Planning, priority setting, resource allocation.* Mcgraw-Hill International Book Company.

Saaty, T. L. (1990). *Multicriteria decision making: The Analytic Hierarchy Process.* 2nd Ed. RWS Publications.

Sezen, N., (2007). *Antalya Gündoğmuş Kayabükü (Çündere).* Çündüreliler Derneği Yayını.

Şenel, M., Bedi, Y., & Çörekçioğlu, E. (2016). *1/100 000 Ölçekli Türkiye Jeoloji Haritası Alanya O-28 Paftası.* MTA, Ankara.

Uzun, S., Uzun, A., Yılmaz, C., & Zeybek, H. İ. (2005). Erfelek Çağlayanları-Sinop. *Doğu Coğrafya Dergisi,* 14, 331-349.

Vujičić MD, Vasiljević DA, Marković SB, Hose TA, Lukić T, & Hadžić O. (2011). Preliminary Geosite Assessment Model (GAM) and it's application on Fruška Gora Mountain, potential geotourism destination of Serbia. *Acta Geogr Slov. 2011*; 51:361–77. DOI: 10.3986/AGS51303.

Warpani, S.P., & Indira P.W. (2007). Pariwisata Dalam Tata Ruang Wilayah. ITB, 2007.

Web 1. Türkiye Cumhuriyeti, Çevre, Şehircilik ve İklim Değişikliği Bakanlığı, Tabiat Varlıklarını Koruma Genel Müdürlüğü, Antalya Gündoğmuş Uçan Şelale tescil ilanı, 05.05.2021. https://Tvk.Csb.Gov.Tr/Antalya-Gundogmus-Ucan-Selale-Tescil-İlani-Duyuru-415355.

Yılmaz, E., & Çiçek, İ. (2018). Detailed Köppen-Geiger climate regions of Turkey (July 15, 2018). *International Journal of Human Sciences*, ISSN:2458-9489, *15*(1), DOI:10.14687/Jhs.V15i1.5040.

Zeybek, H.İ. Aylar, F., & Dinçer, H. (2020). Değirmendere Şelalesi (Ulus/Bartın), Doğal ortam özellikleri ve turizm potansiyeli. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 24*(1), 333-357.

Geographies, Planning & Tourism StudioS

2022 Vol.2 Issue:1

Metaphoric Perceptions of Tourist Guides Regarding the Destination Image of Van Province

Tuğçe Özoğul Balyalı[a], Ezgi Bayram Öz[b]

[a] Department of Tourism Guidance, Tourism Faculty, Van Yüzüncü Yıl University, Van, Turkey. ORCID: 0000-0002-2263-4122
[b] Department of Tourism Guidance, Tourism Faculty, Van Yüzüncü Yıl University, Van, Turkey. ORCID: 0000-0001-5391-6248

Article History

Received:08.06.2022
Accepted:29.06.2022

Keywords

Destination image
Metaphors
Tourist guides
Van province

Corresponding Author

E. Bayram Öz:
ezgibayramoz@yyu.edu.tr

Abstract

This research examines the metaphors developed by tourist guides that play an important role in the formation of the destination image. It is aimed to determine the perceptions of the Van province destination image of the tourist guides through metaphors. The fact that tour guides have a key role in affecting tourists' destination perceptions' is the importance of this research. The problem of the research is that there is no study in the literature that reflects the destination image of Van from the point of view of the guides. By using qualitative research methods, a phenomenological approach was used to understand the perceptions of tourist guides towards Van. As a result of the interviews with 29 guides living in Van, the guides developed 25 different metaphors about Van. Positive metaphors are 17 and 9 are negative. The 'pearl mullet' metaphor was included under the themes of both negative and positive metaphors. Among the metaphors, the most frequently repeated metaphor is ''paradise'' for Van. Some guides associate the city of Van with the metaphor of ''paradise'', indicating that Van has all kinds of beauty. Different guides emphasized the harmony of ethnic diversity living in Van with metaphors such as ''miniatürk'', ''mosaic'', ''marbling art'', ''a garden with many different fruits''. On the other hand, the guides also described Van with metaphors such as ''an ore that needs to be unearthed'', ''an abstract treasure waiting to be discovered'', ''an unfinished poem because its poet died'', and ''sleeping beauty''. These negative metaphors point to the discourse that what needs to be done is not done enough for the development of the province of Van. The research outputs will guide each tourism stakeholder working to improve the destination image of Van.

To cite: Balyalı-Özoğul, T. & Öz-Bayram, E. (2022). Metaphoric perceptions of tourist guides regarding the destination image of Van province. *Geographies, Planning & Tourism Studios, 2*(1):33-38.
https://doi.org/10.5505/gpts.2022.08208

1. Introduction

The image creation process, by its nature, is a process of creating value together by all stakeholders. One of the stakeholders in the tourism sector is tourist guides. Tourist guides are stakeholders that attract tourists to destinations, have them come back and recommend the place and contribute to creating a positive destination image. When a tourist visits a tourism destination, the tourist's perception of the destination image is affected by the guide. Therefore, guides play an important role in building an attractive and unique image necessary for the development of tourism.

Metaphor is a structure of our cognitive system (Casey & Moran, 1989). Metaphors affect the way we perceive the world, categorize experiences and organize our thoughts (Casakin, 2007). In a rapidly changing social world, metaphors offer new ways to understand ongoing transformations when existing dictionaries are inadequate (Adu-Ampong, 2016). This new way is nothing different from the expression of the feelings and thoughts in our memories through words. Different words compatible with the changing social world, make it easy to interpret and explain destinations. Evaluating the destination image through metaphors can serve as a tool to understand the context, in which a particular metaphor for a destination emerges and to evaluate its usefulness in terms of tourism.

The destination image perceptions of guides are reflected in their behavior and discourses in the guiding process. As Urry (1990) emphasizes, the various discourses of tourist guides provide a lens through which the tourist gaze is

directed. Therefore, determining the destination image perceptions of the guides through metaphors may allow us to gain a more in-depth understanding.

In the literature, no study has been found in which the destination image perceptions of tourist guides towards the province of Van are examined through metaphors. In the process of creating a positive image, it is thought that it is important to determine the destination image perceptions of tourist guides towards the province of Van, which affect and change the perceptions of tourists regarding the image of a destination. In this context, the aim is to examine the destination image perceptions of tourist guides in Van through metaphors.

2. Literature

Destination image is defined as the whole of individuals' beliefs, ideas, and impressions about destinations (Crompton, 1979: p. 18). According to another definition, destination image expresses not only the perceptions of individuals regarding the qualities of destinations, but also the holistic impressions that destinations leave on tourists (Echtner & Ritchie, 1991: p. 43). Image is an important element for destinations, because places can be understood through their images or people's perceptions of them (Kavaratzis, 2017). Many studies emphasize the importance of creating an attractive and unique destination image in tourism development (Mackay & Fesenmaier, 1997; Hsu et al., 2004; Tasci & Gartner, 2007). It is noteworthy that the word 'heaven' is used when describing the destination in most holiday advertisements. Undoubtedly, this definition has been one of the easiest ways to connect with a target audience to highlight the image of the destination and to make the destination attractive. In this sense, the metaphors used when defining destinations become highly functional (Butler, 1980 as cited in Belhassen, 2020; Cheer et al., 2019; Cohen, 1972 as cited in Belhassen, 2020). Metaphors represent, in many cases, a way of looking at, seeing, understanding and indeed reordering the world. In the relevant literature, the 'tourist area life cycle' (Butler, 1980 as cited in Belhassen, 2020), which aims to describe the development of the destination, is the 'tourist bubble', which physically expresses the experience of tourists traveling to different regions by bus while staying at a holiday resort or a backpacker residential area. It can be seen that metaphors, such as those from Cohen, (1972, as cited in Belhassen, 2020) are used. Metaphors such as 'overcrowding' and 'resilience' (Cheer et al., 2019) are examples of metaphors that have emerged recently.

Tourist guides, who know the characteristics of destinations well and undertake the task of explaining these features to incoming tourists, play a leading role in creating a destination image. Guides, who describe the urban architecture, food culture, traditions, and local people of a destination, have a significant impact on tourists, in particular, the direct communication of tourist guides with tourists deepens this effect.

It is important for destinations that want to gain a competitive advantage to determine the features that will enable them to become brands, and to look for ways to benefit from these features (Altunbaş, 2007). Metaphors are common in everyday language and therefore play an important role in our cognition (Adu-Ampong, 2016). In creating a destination image, metaphors can be used as a tool to produce innovative and creative solutions. Therefore, determining the destination image perceptions of tourist guides, which affect tourist views through metaphors, can contribute to image creation studies.

3. Method

The qualitative research method was used in the research. The phenomenological approach was used to understand the perceptions of the guides towards the province of Van. In the phenomenological approach, it is understood how people in a certain situation perceive events and interactions. Therefore, it is possible to explain an experience (Bogdan & Biklen, 2007, pp. 25-26). The understanding of phenomenology enables one to focus on the destination image based on the nature of the experience (Rodrigues et al., 2011).

In phenomenological research, purposive sampling types are used in the selection of participants (Ersoy, 2017, pp. 108-110). In this direction, twenty-nine tourist guides, who act as guides for the province of Van, constitute the sample of the research. Six of the guides are women and twenty-three are men. Their ages range from twenty-six to forty-six. Two of the guides are registered with the Ankara Chamber of Guides and the others are registered with the Şanlıurfa Chamber of Guides.

Metaphors can be used to classify certain phenomena from a different perspective (Schmicking & Gallagher, 2009). Metaphors are especially useful in conveying comprehensive and abstract concepts, such as images (Hill &

Levenhagen, 1995). Therefore, it was attempted to determine the perceptions of the destination image of the guides through metaphors. A structured interview form was prepared to determine the destination image perceptions of Van of the guides. The opening question read: 'If you could compare Van to something (animate, object, machine, and suchlike) in the form, what would that thing be? Please fill in the blanks. I liken Van to …… ; because ……'. The form was sent to all of the guides by way of a Whatsapp group, where they share their professional issues. Participants were informed about the scope of the study and their consent was obtained. The data collection process was carried out between 20-23 June, 2021.

Content analysis was performed on the data obtained through the questionnaire. The metaphors were coded separately by the researchers and put into their final form by making comparisons. The real names of the participants were not included in the study. The participants were named such as TG1, TG2, …, and TG29.

4. Results

The metaphors developed by the tourist guides for the province of Van are given in Table1.

Table 1. Metaphors developed by tourist guides

Metaphor	***Frequency***
Paradise	3 Times
Garden	2 Times
Music	2 Times
Pearl Mullet	2 Times
Treasure	1 Time
Ore	1 Time
Van Cat	1 Time
Hangzhou City (China),	1 Time
Coeur D'Alene, Idaho (USA)	1 Time
America Waiting to be Discovered	1 Time
An Unfinished Poem	1 Time
Marbling Art	1 Time
Oasis	1 Time
Pearl of the East	1 Time
The Capital of Civilization	1 Time
Miniaturk	1 Time
A Closed Box	1 Time
Sleeping Beauty	1 Time
Basil	1 Time
A Star far Away	1 Time
A Monster That Can't Get Enough	1 Time
Rubik's Cube	1 Time
Novel	1 Time
A Confused Individual	1 Time
Mosaic	1 Time

Source: *Researchers*

Twenty-nine tourist guides participating in the research developed twenty-five metaphors. The most frequently repeated metaphor for the province of Van by the guides is 'Paradise' (n=3). It is determined that the most repeated metaphors are 'garden' (n=2), 'music' (n=2), and 'Pearl Mullet' (n=2), respectively. Apart from these, each of the twenty-one metaphors was produced by different tourist guides.

The metaphors developed by the tourist guides are grouped under themes based on the meaning and features of the words. The metaphors obtained are grouped under two themes; 'positive metaphors' and 'negative metaphors'. The 'pearl mullet' metaphor was included under the themes of both negative and positive metaphors.

4.1. Positive Metaphors

It was understood that the tourist guides participating in the research associated the province of Van with positive metaphors. There were seventeen metaphors under this theme: paradise; novel; treasure; garden; Hangzhou; miniaturk; marbling art; basil; Coeur d'Alene; pearl of the east; oasis; mosaic; music; capital of civilization; pearl mullet; Van cat; and rubik's cube. A number of expressions in this theme are given below:

TG1: *"I liken Van to a novel; the language is simple, but the content is deep and meaningful because this is where my story begins."*

TG2: *"I liken Van to an abstract treasure waiting to be discovered because I see a great power that can attract people with its natural and historical beauties."*

TG3: *"I liken Van to original music. Because I think it is an unique urban texture that simultaneously contains various opportunities that address the needs of modern times, with its location close to the sun with the taste of a highland, its fresh air every season, its sincere people, the harmonic color of the cosmopolitan cultural structure that smells of history.''*

TG4: *''I liken Van to a colorful flower garden because as you travel, your travel comes.''*

TG6: *"I liken Van to Hangzhou, China because in the city of Hangzhou there are beautiful bays, restaurants, and a vibrant economy, as well as historical, religious, and tourist structures in and around the lake. ''*

TG8: *"I liken Van to the capital of civilization because history starts here.''*

TG9: *"I liken Van to a garden with many different fruits because it has contained many different religions and civilizations throughout history."*

TG10: *"I liken Van to heaven because I think it is the first among Turkey's most important cities in t erms of nature, culture, sanctity, and importance"*

TG11: *''I liken Van to Pearl Mullet and Van cat because fish cannot live without water. The people of Van are lakeless and there is no such thing as a cat.''*

TG12: *"I liken Van to a brain teaser because there is every color, every language, and every race there.''*

TG14: *"Van is like heaven because it has running waters, tourism and agricultural activities, and flora and fauna resembling paradise.''*

TG15: *''Van is like Miniatürk. It always contains a piece of all the beauties of Turkey."*

TG17: *"I liken Van to Ebru Art. The combination of different colors and tones creates a unity with tremendous beauty, just like the corpus stemming from our common heritage and the ethnic diversity of our geography.''*

TG19: *"Van is like basil because when you first look from the outside, it is no different from a normal plant. However, as time passes, its pleasant and indescribable smell and texture affect our entire soul. It is also a place where historical, social, and cultural values are understood as they live and touch us.''*

TG21: *"I liken Van to a tune that affects people deeply because every listener will find something for himself. Those who live that melody are always a little sad and sometimes cheerful like a mischievous child; Those who listen to the tune from afar are curious for more.''*

TG22: *"I liken it to Coeur d'Alene, which is in the state of Idaho in America because the air, the lake, and the island in the middle of the lake are just like the lake, island, and air in Van."*

TG23: *I liken Van to the pearl of the east because there is nature, history, culture, everything.''*

TG24: *"I liken Van to an oasis in the middle of arid climate and steppe because, with its historical and geographical natural beauties, this oasis standing in the middle of the desert is almost an evil eye bead.''*

TG29: *"I liken Van to a mosaic because it is a place where many cultures and different civilizations lived and their traces continue around Lake Van.''*

4.2. Negative Metaphors

It was determined that the guides used negative metaphors besides positive ones. Under this theme, the guides produced nine metaphors: ore; a confused individual; a monster that can't get enough; an unfinished poem; Pearl Mullet; a closed box; sleeping beauty; America waiting to be discovered; and a star far away. Certain of the expressions in this theme are given below:

> ***TG5:*** *"I liken Van to an ore that is waiting to be mined under the ground and that no effort is made to extract it because Van is a city whose real potential is not used in every sense."*
>
> ***TG7:*** *"I liken Van to a confused individual because he has not yet decided what kind of person he will be."*
>
> ***TG13:*** *''I liken Van to a paradise waiting to be discovered, actually a paradise of unknown value because if you look for natural beauty, there is water (Van sea), which is the source of civilization. If you look for mountains, for example, there are mountains to feel safe with, and if you seek the fertility of the soil, there is that too. There is a geography where living things live comfortably. On the other hand, the people living here do not know its value. Since tens of generations did not live in the region without interruption, its value was not appreciated. Its value could have been better known."*
>
> ***TG16:*** *"I liken Van to a monster that can't get enough when he eats because there is no institution or employee with merit, and that gets Van nowhere. Despite the high season of tourism, all the hotels are empty.''*
>
> ***TG18:*** *"I liken Van to an incomplete poem because its poet died. This is because the meaning is very deep, but the words are not complete, the feelings it gives are very beautiful, but there is no rhyme. Everyone who reads this poem tries to add something in their own way, but they do not see that the poem is starting to lose its meaning. Even if it is written on a Gazelle's skin in golden letters, this poem will still be meaningless this time. A poet needs to complete this beautiful poem.''*
>
> ***TG20:*** *"I liken Van to Pearl Mullet because he is also experiencing the process his fish went through; he is struggling to survive; he is trying to survive.''*
>
> ***TG25:*** *"I liken Van to a closed box with all mysteries unsolved because it is a place that contains many stories, but cannot be told as it deserves. Van needs a serious brand and advertising strategy, and this strategy needs a serious plan that needs to be established. When we realise this plan, we can discover the mysterious stories about Van, and then we can understand the tourist value it deserves.''*
>
> ***TG26:*** *"I liken Van to sleeping beauty because Van has always suffered from three great curses (wars, earthquakes, and rocky terrain) in its historical adventure going back 5000-7000 years as a settlement, and 3000 years ago since the Urartians. It is an unfortunate province that has never progressed socially and economically because it carries its legacy to this day. I liken this stagnation to a state of sleep. On the other hand, Van is a beautiful city with natural, historical, and partly cultural riches. This situation reminds me of the beautiful, but unfortunate, fairy tale hero 'Sleeping Beauty'."*
>
> ***TG27:*** *"I liken Van to America waiting to be rediscovered because despite having great wealth, I know that he has the potential that will make a name for himself, waiting for someone to come and reveal all his riches.*
>
> ***TG28:*** *"I liken Van to a very distant star because it is as bright as a star, but because it is far away, no one can see it.''*

5. Conclusion and Recommendations

Tourists' perceptions of destination, which are formed spontaneously while visiting the province of Van, create the general image of the destination, and those who contribute more concretely to the formation of this image are the guides working in the Van region. Every word formed regarding Van in the cognition system of the guides is transferred to the tourists during spoken transmission. For this reason, it is important to examine the metaphors used by the guides in-depth.

The association of a number of the guides with the metaphor 'heaven' indicates that Van has various beauties and charms. Different guides emphasized the harmonious ethnic diversity of the people living in Van with metaphors, such as 'miniatürk', 'mosaic', 'marbling art', and 'a garden with many different fruits'. These metaphors can help tourists create a perception of a destination image that opens up more room for tolerance. On the other hand,

the guides also described Van with other metaphors, such as 'an ore that must be unearhed', 'an abstract treasure waiting to be discovered', 'an unfinished poem because its poet died', and 'sleeping beauty'. These statements can be a source for the development of a more passive destination image for Van. This passive image may mean that something is not considered worth doing for Van, that sufficient resources are not transferred, that it is not supported for its development, and it also indicates that it should be discovered implicitly or that sufficient promotion and investment should be made.

These negative metaphors point to the discourse that what needs to be done is not done enough for the development of the province of Van. Tourist guides are the most observant of a destination. Therefore, destination image studies could be carried out by taking their discourses into account. In this research, the perceptions of the guides regarding the destination image of Van province are examined through metaphors. Different studies could be conducted involving tourists and local people. Metaphors that provide in-depth understanding, and reflect our knowledge from different angles, can serve as tools in the study of creating a destination image.

Based on the results of the research, the following suggestions were presented to the tourism stakeholders.

- First of all, all tourism stakeholders (local people, non-governmental organizations, development agencies, local governments, Van Provincial Directorate of Culture and Tourism, tourist guides, travel agencies, educational institutions, accommodation businesses, food and beverage businesses, transportation businesses, tourists and students) should work collaboratively for the development of the Van province.
- Destination management organization should be established.
- The job descriptions of the institutions and organizations that will take place in the organization should be determined.
- Planning, organizing, directing, coordination, and control units should be established for the development of the destination image within the organization.
- Training should be given to the local people to raise awareness about the destination image of Van.
- Promotional activities highlighting the unique features of Van should be increased.
- Entrepreneurs who will invest in the development of Van should be encouraged with projects.

References

Adu-Ampong, E. A. (2016). A metaphor analysis research agenda for tourism studies. *Annals of Tourism Research,* (57), 248-250. https://doi.org/10.1016/j.annals.2015.12.013.

Altunbaş, H. (2007). Pazarlama iletişimi ve şehir pazarlaması şehirlerin markalaşması. *Selçuk İletişim, 4*(4), 156-162. https://dergipark.org.tr/en/pub/josc/issue/19014/200747.

Belhassen, Y. (2020). Metaphors and tourism paradoxes. *Tourism Management, 79,* 104095. https://doi.org/10.1016/j.tourman.2020.104095

Bogdan, R., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theory and methods.* Pearson Allyn & Bacon.

Casakin, H. (2007). Metaphor in design problem solving implications for creativity. *International Journal of Design, 1*(2), 21-33. http://www.ijdesign.org/index.php/IJDesign/article/view/53/27.

Casey, G., & Moran, A. (1989). The computational metaphor and cognitive psychology. *The Irish Journal of Psychology, 10*(2), 143-161. https://doi.org/10.1080/03033910.1989.10557739

Cheer, J. M., Milano, C., & Novelli, M. (2019). Tourism and community resilience in the Anthropocene: Accentuating temporal overtourism. *Journal of Sustainable Tourism, 27*(4), 554-572. https://doi.org/10.1080/09669582.2019.1578363

Crompton, J. L. (1979). An assessment of the image of Mexico as a vacation destination and the influence of geographical location upon that image. *Journal of Travel Research, 17*(4), 18-23. https://doi.org/10.1177/004728757901700404

Echtner, C. M., & Ritchie, J. B. (1991). The meaning and measurement of destination image. *Journal of Tourism Studies, 14*(1), 37-48.

Ersoy, F. (2017). Fenomenoloji. A. Saban ve A. Ersoy (Ed.), *Eğitimde nitel araştırma desenleri içinde* (ss. 237-277). Anı Yayıncılık.

Hill, R. C., & Levenhagen, M. (1995). Metaphors and mental models: Sensemaking and sense giving in innovative and entrepreneurial activities. *Journal of Management, 21*(6), 1057-1074. https://doi.org/10.1177/014920639502100603

Hsu, C. H. C., Wolfe, K., & Kang, S. K. (2004). Image assessment for a destination with limited comparative advantages. *Tourism Management, 25,* 121-126. https://doi.org/10.1016/S0261-5177(03)00062-1

Kavaratzis, M. (2017). *The participatory place branding process for tourism: Linking visitors and residents through the city brand.* In N. Bellini & C. Pasquinelli (Eds.), *Tourism in the City* (pp. 93-107). Switzerland: Springer.

Mackay, K. J., & Fesenmaier, D. R. (1997). Pictorial element of destination in image formation. *Annals of Tourism Research, 24*(3), 537–565. https://doi.org/10.1016/S0160-7383(97)00011-X

Rodrigues, A. I., Correia, A., & Kozak, M. (2011). A multidisciplinary approach on destination image construct. *Tourismos: An International Multidisciplinary Journal of Tourism, 6,* 93-110. http://doi.org/10.13140/RG.2.1.2566.8325

Schmicking, D., & Gallagher, S. (2009). *Handbook of phenomenology and cognitive science.* Springer.

Tasci, A. D., & Gartner, W. C. (2007). Destination image and its functional relationships. *Journal of Travel Research, 45*(4), 413-425. https://doi.org/10.1177/0047287507299569

Urry, J. (1990). *The tourist gaze.* Sage.

Geographies, Planning & Tourism StudioS

2022 Vol.2 Issue:1

An AHP-Based Multi-Criteria Model for Adaptive Reuse of Heritage Buildings

Münevver Özge Balta[a]

[a] Department of City and Regional Planning, Faculty of Architecture and Design, Uşak University, Uşak, Turkey.
ORCID: 0000-0001-5818-4023

Abstract

Reusing heritage buildings requires solving complex decision-making problems. Many challenges of reusing heritage buildings can be modeled by the multi-criteria decision-making (MCDM) method. In this study, the Analytical Hierarchy Process (AHP) method which is one of the most commonly used MCDM methods was employed to optimize the assessment process of heritage building reuse that was examined in Aksaray, Turkey. A decision-making model was established by using a literature review. By the way, the priority order of the reuse alternatives of the heritage buildings was defined by an Analytical Hierarchy Process. Therefore, changes in factors of building features (design quality, number of rooms, building quality, garden plots, landscape), accessibility (accessibility of the main road; traditional city center; health care; tourism destination; cultural heritage), environmental value (commercial services, recreation, socialization, health care facilities, urban aesthetics) directly influenced the priority order of the historic building reuse alternatives. The results revealed that the most suitable reuse alternative of the heritage buildings was for community activity centers, museums, galleries, and boutique hotels. Adaptive reuse of heritage buildings should be provided through sustainable urban planning to adapt to potential changes in the built environment. This study can play a significant role in ensuring sustainable urban planning for the adaptive reuse of heritage buildings and also in guiding decision-makers.

Article History

Received:08.06.2022
Accepted:29.06.2022

Keywords

Heritage buildings
Multi Criteria Decision Making (MCDM)
Analytic Hierarchy Process (AHP)

Corresponding Author

M. Ö. Balta:
munevver.balta@usak.edu.tr

To cite: Balta, M.Ö. (2022). An AHP-Based Multi-Criteria Model for adaptive reuse of heritage buildings. *Geographies, Planning & Tourism Studios, 2*(1):40-45. https://doi.org/10.5505/gpts.2022.36854

1. Introduction

Adaptive reuse can be defined as giving a new function by preserving the structural features of buildings that lost their original function over time (Ahunbay, 2011; Işık, 2021). Reusing buildings has been applied worldwide in many areas, including government buildings, industrial buildings, offices, schools and religious buildings (Langston et al., 2008). Adaptive reuse of heritage buildings requires a comprehensive evaluation process as Multi Criteria Decision Making (MCDM) problems (Chen et al., 2018; Yau, 2009). In recent years, the reuse of heritage buildings and decision-making process has become increasingly important. In this process, environmental and social structure of the historic buildings should be taken into consideration as well as the economic value. The MCDM method has been used in historical buildings and reuse as well as in many different areas (Chen et al., 2018; Ferretti et al., 2014; Kutut et al., 2014). The AHP method has been widely applied in the process of policy-making, including the reuse of historic buildings (Ferretti et al., 2014). In this study, it is aimed to evaluate alternatives in the reuse of historical buildings. In the study, a decision-making model has been created to evaluate alternatives in the reuse of historical buildings in Aksaray case. Also, one of the aims of this study is to regulate the evaluation procedure of reuse alternatives.

Aksaray has a fast urbanization and transformation process since it promoted to province in 1989. However, the rapid growth in city resulted in problems as infrastructure, environment and urbanization. By 2000, rural areas were incorporated into city boundaries. Increasing housing demand and changing reality real estate values have led to

the transformation of one-story houses with gardens into apartment buildings. The urban growth of Aksaray had resulted from the creation of opportunities without a plan for infrastructural and social consequences. However, comprehensive strategic plan was prepared just as the 2000s (Aksaray Belediyesi, 2003). The plan involves in environmental and economic development issues to urban quality of life. The strain of rapid urbanization came out in urban fabric by 2008. These observations from Aksaray could come from any other rapidly urbanizing mid-sized cities. The first development plan of Aksaray was prepared by C. Esat Arseven in 1948 (Yenice, 2017). The plan had nearly 6 ha area. This plan has a systematic way for designing residential areas around single centre in the city. Urbanization was to be a stimulant for industrialization and economic growth after 1950s. Aksaray was an Anatolian town of nearly 10000 inhabitants in 1946. Population was quickly transformed reaching 24000 in 1965 (Aksaray Belediyesi, 2003). Due to the rapidly increasing population and insufficient housing stock, it was necessary to prepare a new development plan. So, second development plan was prepared in 1967 by Development and Investment Bank of Turkey. Current area of central business district has been created in this plan. This plan put forward a systematic way for designing commercial and residential area in the city by creating squatter prevention area. The plan was prepared in 1985 with 5646 ha planned area by Mehmet Ali Topaloğlu and Bülent Berksan. The density of residential areas has been determined in 1985 Development Plan using existing cadastral data. Also, squatter prevention area has been applied with subdivision and parcellation. This plan was determined residential areas approximately 60% of planning area to solve housing needs (Aksaray Belediyesi, 2003). New residential areas started to emerge along the northern and southern axis. The most important decisions affecting the urban transport system is to put forward one of the main arterial of Aksaray. Compared with the 1985 plan and the 1967 plan, although, the share of urban land use of residential and commercial areas seems to increase, the urban open green space with urban social and technical infrastructure seems to proportionally reduced. So, this planning decisions resulted density increase, caused by changes in green areas and social and technical infrastructure areas into buildings plots. 2003 development plan that prepared by Selcuk University is an additional zoning-revision plan and continuation of the 1985 development plan. This plan was approved by the Aksaray municipality and Special Environmental Protection Agency. Different building conditions on Residential development and commercial areas have been created with this plan. Planning began with the North Development Area. The southern part of the city was planned with large parcels to rural housing areas, the northern part was a development area. Major spatial decisions of 2003 development plan are planning residential development area and the university campus area (Aksaray Belediyesi, 2003).

The reuse of historical buildings in Aksaray is very important for the sustainability of heritage. There are important historical buildings in Aksaray such as İbrahim Kaya Mansion, Guzelyurt Mansion and Corakci Mansion etc. In this study, MCDM method was used to optimize the reuse process of heritage in Aksaray, which was determined as the study area.

2. Material and Method

In this study, AHP approach is used for determining the sustainable and optimum model for adaptive reuse of heritage buildings considering the alternatives. And also, a systematic approach has been conducted on the assessment of these alternatives for adaptive reuse of historic buildings according to characteristics of each alternative. Additionally, specific objectives are defined. The methodology is used for the determination of an adaptive reuse in Aksaray case. The study may contribute to the literature with comparative analysis to determine an adaptive reuse of heritage buildings. AHP is a MCDM method which determines the criteria and weights to solve complex problems. AHP is to transform the decision problem into a typical hierarchical scheme consisting; goal, criteria and sub-criteria. AHP involves a binary comparison of the decision for a given hierarchical level (Saaty, 1977; Türk, 2018). “Binary comparisons are defined as a result of surveys conducted with decision makers (Kurdoğlu et al., 2016) (Table 1). In AHP method each criterion must be evaluated by experts. The evaluation of the adaptive reuse of heritage buildings with AHP measures the importance of different functions objectively by experts in architecture, urban planning, landscape architecture and other subjects combined with field research result.

Table 1. Definition of the importance degree of AHP fundamental scale (Saaty & Vargas, 2012)

Importance Degree	Definition
1	Equal importance
3	Moderate importance
5	Strong importance
7	Very strong importance
9	Extreme importance
2,4,6,8	Secondary values

Random index numbers are used for consistency ratio on the criteria (Saaty 1977) (Table 2).

Table 2. The random index numbers for consistency ratio (Saaty, 1977)

n.	3	4	5	6	7	8	9	10
RI	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49

Criteria (building features, accessibility, environmental value) and sub-criteria were determined by literature review in the study. Hierarchical structure scheme is given in Figure 1.

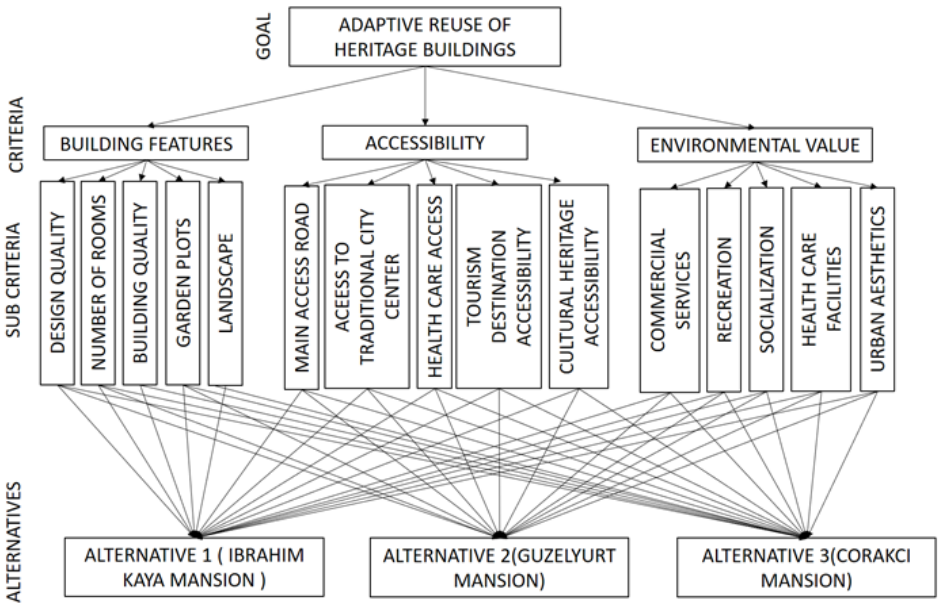

Figure 1. Hierarchical structure scheme of adaptive reuse of heritage buildings

3. Research Findings

The main characteristics of the three alternatives are listed below.

First Alternative / Ibrahim Kaya Mansion:

The mansion is located in downtown of Aksaray and at an accessible to commercial areas, health facilities, shopping centers, recreation areas. The mansion has been restored and is in good condition. The mansion with a square plan, with a total of 10 rooms, has a large courtyard. the mansion's potential superiority is accessibility to urban functions. With its design / building quality and accessibility, this mansion is expected to be a good alternative to adaptive reuse of heritage buildings.

Second Alternative / Guzelyurt Mansion:

The mansion is located in the center of Güzelyurt settlement and has high accessibility to historical places. This

mansion has not been restored and is in dilapidated condition. The mansion has a total of 10 rooms and has an inner courtyard. With its location and landscape, this alternative is expected to contribute to adaptive reuse of heritage buildings.

Third Alternative / Corakci Mansion:

The mansion is located close to the center and main access road. the mansion has not been restored and is in dilapidated condition. The mansion has a total of 10 large rooms and has a big courtyard. This alternative can be expected to contribute to adaptive reuse of heritage buildings by recreation and socialization.

The weighting score for criteria to an adaptive reuse of heritage buildings is given in Table 3.

Table 3. The weighting score for criteria to an adaptive reuse of heritage buildings

Goal	Main Criteria	Weighting Score	Sub Criteria	Weighting Score	Weighting Scores of Alternatives		
					A1	A2	A3
Adaptive reuse of heritage buildings	Building Features	0.416	Design quality	0.153	0.518	0.132	0.350
			Number of rooms	0.049	0.365	0.223	0.412
			Building quality	0.257	0.552	0.166	0.282
			Garden plots	0.177	0.443	0.282	0.275
			Landscape	0.364	0.285	0.384	0.331
	Accessibility	0.321	Main access road	0.115	0.376	0.120	0.504
			Access to traditional city center	0.182	0.487	0.156	0.357
			Health care access	0.139	0.433	0.148	0.419
			Tourism destination accessibility	0.359	0.230	0.457	0.313
			Cultural heritage accessibility	0.205	0.191	0.494	0.315
	Environmental value	0.263	Commercial services	0.110	0.434	0.133	0.433
			Recreation	0.162	0.333	0.190	0.477
			Socialization	0.270	0.324	0.135	0.541
			Health care facilities	0.201	0.438	0.149	0.413
			Urban aesthetics	0.257	0.387	0.212	0.401
Inconsistency rate	0.00133						

The main findings of the three alternatives are listed below.

Alternative 1. Community based – Public services: Contributing to social life and developing community awareness through functions such as libraries and community activity centers. Reusing of the building as libraries and community activity centers is possible because it requires only minor intervention and will increase the public use of the building. It will contribute to the urban identity because of the public functions around it and its accessibility.

Alternative 2. Nature and history based- mix use of nature/culture interactions: Contributing to cultural heritage through museums, galleries, exhibition centers or auditoriums. The best performing reuse for this building are the museums galleries, exhibition centers or auditoriums; because the building is in harmony with the historical texture around it.

Alternative 3. Economics based - Commercial and tourism services: Contributing to the economy through shops, restaurants and boutique hotels. The building provides the most benefit from the surrounding areas by areas that commercial, tourism and residential uses.

The comparison of the alternatives considering to main criteria is given in Figure 2.

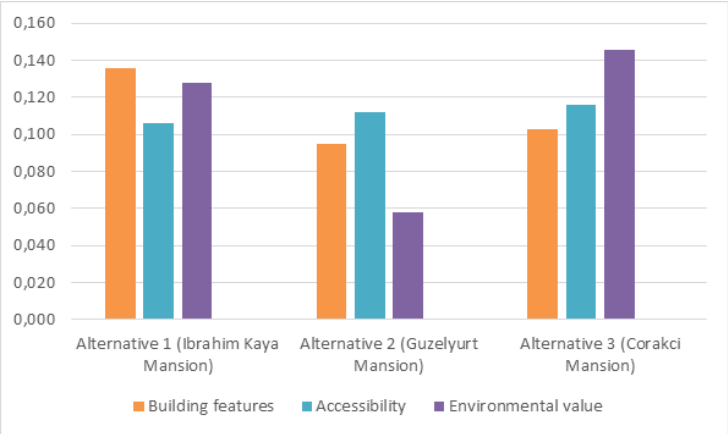

Figure 2. *The comparison of the alternatives considering to main criteria*

The specifications for the alternatives is given in Figure 3.

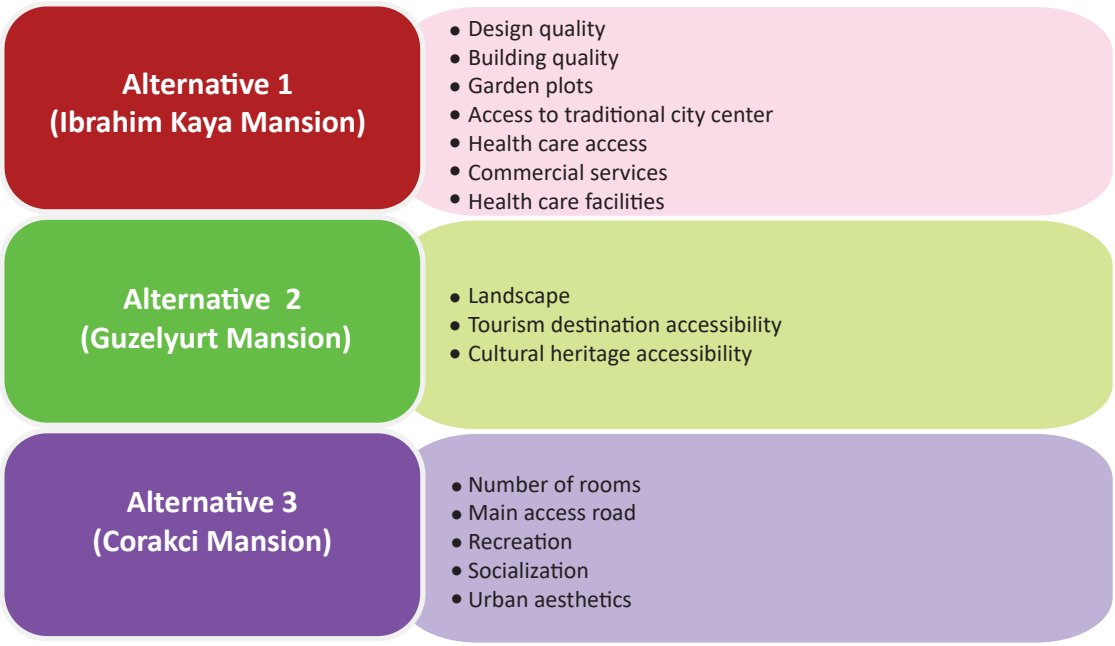

Figure 3. Specifications for the alternatives

4. Conclusion

In the study, AHP model was developed by literature review and the priority order of the alternatives were determined. The decision-making model was used to develop the direction and framework for the reuse of historic buildings. Building features, accessibility, and environmental value were determined as main criteria and these criteria affected the priority order of historical buildings reuse alternatives. Each alternative has been evaluated against functional requirements and building characteristics. The reuse of alternatives is planned to balance conservation and development. As a result, identification of potential function with AHP model weighted evaluation is crucial argument for ensuring sustainability of heritage buildings.

Acknowledgement

The author thanks Rabia Tüfekli (architect) for her contribution to data collection.

References

Ahunbay, Z. (2011). *Tarihi çevre koruma ve restorasyon.* 6.Baskı, YEM Yayınları.

Aksaray Belediyesi (2003). *Aksaray revizyon ve ilave imar planı açıklama raporu.* Selçuk Üniversitesi, Mühendislik Mimarlık Fakültesi, Şehir ve Bölge Planlama Bölümü, Döner Sermaye İşletmesi, 1-49.

Chen, C. S., Chiu, Y. H., & Tsai, L. (2018). Evaluating the adaptive reuse of historic buildings through multicriteria decision-making. *Habitat International, 81*, 12-23.

Ferretti, V., Bottero, M., & Mondini, G. (2014). Decision making and cultural heritage: An application of the Multi-Attribute Value Theory for the reuse of historical buildings. *Journal of Cultural Heritage, 15*(6), 644–655.

Işık, N. (2021). Evaluation of refunctioning/adaptive reuse in terms of cultural tourism in the conservation of architectural heritage: The example of Diyarbakır Ferit Köşk (Mansion). *Geographies, Planning & Tourism Studios, 1*(2), 67-84. https://doi.org/10.5505/gpts.2021.10820

Kurdoğlu B.Ç., Konakoğlu S.S., Usta Z., Çelik K.T., Demirel Ö., & Kalın A. (2016). Amasya kent örneğinde yeşilyol güzergâhlarının AHS ile öncelikli işlevlerinin belirlenmesine yönelik bir çalışma. *Süleyman Demirel Üniversitesi Mimarlık Bilimleri ve Uygulamaları Dergisi, 1*(2):21-30.

Kutut, V., Zavadskas, E. K., & Lazauskas, M. (2014). Assessment of priority alternatives for preservation of historic buildings using model based on ARAS and AHP methods. *Archives of Civil and Mechanical Engineering*, 14, 287–294.

Langston, C., Wong, F. K., Hui, E. C., & Shen, L. Y. (2008). Strategic assessment of building adaptive reuse opportunities in Hong Kong. *Building and Environment, 43*(10), 1709-1718.

Saaty, T. L. (1977). A scaling method for priorities in hierarchical structures. *Journal of Mathematical Psychology, 15*(3), 234-281.

Saaty, T. L., & Vargas, L. G. (2012). The seven pillars of the analytic hierarchy process. In Models, methods, concepts & applications of the analytic hierarchy process, *International Series in Operations Research & Management Science,* vol 175., pp.23-40, Springer. https://doi.org/10.1007/978-1-4614-3597-6_2

Türk, E. (2018). Multi-Criteria Decision-Making for greenways: The case of Trabzon, Turkey. *Planning Practice & Research, 33*(3), 326-343.

Yau, Y. (2009). Multi-Criteria Decision-Making for urban built heritage conservation: Application of the analytic hierarchy process. *Journal of Building Appraisal, 4*(3), 191-205.

Yenice, T. K. (2017). *Tarihi Aksaray evleri* (1. Baskı). Hiperlink Eğitim İletişim Yayıncılık.

Geographies, Planning & Tourism StudioS

2022 Vol.2 Issue:1

International Sustainability Indices[1]

Şirin Gülcen Eren[a], Seema Mehra Parihar [b]

[a] Department of City and Regional Planning, Faculty of Architecture, Süleyman Demirel University, Isparta, Turkey.
ORCID: 0000-0002-2038-3905

[b] Department of Geography Kirori Mal College, Faculty of Social Studies, University of Delhi, India.
ORCID: 0000-0002-3113-754X

Abstract

'Sustainability' and 'Sustainable Development' have been on the urban planning agenda since the Brundtland Report (1987). In order to make cities and regions sustainable, there is a need to assess their current situations and their progress with respect to the Sustainable Development Goals (SDGs). Various indices have been designed which use sustainability indicators to measure and monitor the current situation and the performance of strategies and action plans. This will make it possible to structure future actions and interventions and adjust existing ones. The contents of these indices vary due to the country, the development strategies adopted by different cities and regions, the aims and objectives of policy- and decision-makers, their evaluation criteria, indicators and the ingenuity of the drafters of the indices. Few evaluations, however, have been made of these indices. Consequently, the question arises as to which index constitutes the best basis for the sustainability efforts of urban developers and planners. The present article explores the range of international sustainability indices and the contributions they may make to sustainable urban development. A descriptive analysis method is adopted and supported by a survey of the literature and an internet search. The objective is to create awareness about the indices and to contribute to the effective implementation of decisions and strategies for achieving the SDGs. The study argues that although such indices need to be standardised and reliable, the data collected may in practice be non-standard, the indicators may be invalid for all cities or geographies, and the indices may prove to be short-lived.

Article History

Received: 16.06.2022
Accepted:30.06.2022

Keywords

Sustainability
Indices
Sustainability indices
Urbanization
City planning

Corresponding Author

Ş.G. Eren:
sirineren@sdu.edu.tr

To cite: Eren, Ş.G. & Parihar, M.S. (2022). International sustainability indices. *Geographies, Planning & Tourism Studios, 2*(1): 46-57. https://doi.org/10.5505/gpts.2022.43043

1. Introduction

Urbanization has always been an important issue in history. It refers to the spatial growth of rural or natural land in the periphery into urban area or urban infill as a result of population increase (through migration or births) living in that urban settlement (Eren, 2021, p. 222). The urbanization level is determined directly by the urban population concentration and the quantity and quality of urban services and facilities provided in that area.

Urban population is increasing globally from 36.6% to 46.7% in 1970 and 2000, respectively. Global urban population projection is estimated to reach 58,3% in 2025 and 68,4% in 2050 (United Nations, Department of Economic and Social Affairs [UN DESA], Population Division, 2019). The Organisation for Economic Co-operation and Development (OECD), notes cities to house 55% of the world population in the year 2050 (OECD, 2020, p. 3).

United Nations Agenda 2030 has been created to contribute to 'Sustainability' and 'Sustainable Development'. Sustainability idea was first used in the Brundtland Report (World Commission on Environment and Development [WCED], 1987), "Our Common Future" accepted by the World Commission on Environment and Development (WCED). The UN Department of Economic and Social Affairs (UN DESA) determined 17 Sustainable Development Goals (SDGs) for the 2030 Agenda, to be adopted by the Member States till 2015.

[1] This article is an extended version of "Are sustainability indices comparable? An exploratory study for Turkey and India", Eren, Ş. G., Parıhar, S.M. (2021). International Geographical Union (IGU) IGC 2021, Istanbul 34th International Geographical Congress, 1, 268. Summary of the paper has been published in the conference proceedings.

Sustainability and sustainable development gained priority for the nations and the cities. The above mentioned figures present us how important urbanization and sustainable urban development (European Union (EU), 1998; Wheeler & Beatley, 2004) will be in the near future. However, the meaning of sustainability differs by nation and economic strata of that society (Verma & Raghubanshi, 2018, p. 282). On the other side, there is a general ignorance about meaning and understanding of these two concepts.

Daly (1990, p.25) and Ajiboye (2021, p. 145) note the considerable confusion of concepts related to sustainability. Eren (2021, p. 217) also states that sustainable development, sustainable urban development, sustainable urban growth, sustainable urbanism, and sustainable urbanization concepts have different meanings. Economic, political, and epistemological dimensions of each concept create this differentiation and needs further attention.

For Zhilin et al. (2020, p.1), one of the key scientific issues of sustainability is the development of effective approaches to clarify related concepts and explanation of the status and trends in SDG measures. This is vital to determine the current position of the nations, regions and cities and to present the results achieved to public, decision-makers and related actors. Evaluation of sustainability is also needed for further actions and interventions of decision makers and urban planners to be adopted for achieving sustainability on the basis of the feedback obtained from measurements. Sustainability concept requires a certain number of economic, social and environmental factors (Ahmed, 1998) and indicators for measurement with compatible methods of analysis (Allen, 2009). Studies on sustainable development led the way to the determination of measurement sets (indices) for the evaluation of sustainability (Eren & Parihar-Mehra, 2021, p. 248).

Various factors and indicators are implemented and presented through reports (Wheeler & Beatley, 2004, p.10), indices and GIS and web-based analysis, visualization systems and databases. These have the objective to explore sustainable development (Maclaren, 1996), inclusiveness, and resilience as a concept analysed for a nation or a city and as a proposal for supporting sustainability and livability. These can also be used during policy making and planning processes.

Indices are an important mean to address global urban and national sustainability trends like rapid urbanization, demographic change, social conflict and climate change and response to natural disasters. Indices are the measurements in different levels and are prepared with differing aims and objectives (Resilience, sustainability (meeting SDGs), quality of life, safety, risk, land amount, etc.). Standardized indicators are needed to measure a city's performance, implement trends and achieve developments, and support collaboration of cities (Bhada & Hoornweg, 2009, p.3). The same is valid for the sustainability level of nations.

Development factors and indicators are analysed, searched and determined in the academic and professional fields to meet sustainable development objectives on city or country basis. Sustainability indices can be in international, regional, and national scale. Their sets can be designed and created by supranational, international, national institutions or private bodies or non-governmental organizations (NGOs). Tuğaç (2018) also classifies indices as measurement sets created by international organizations, international institutes and unions, the nations and other institutions.

Classification is made on the basis of the status of the body making the analysis and preparing the index with reference to time, geography, circumstances, scale, objectives, targets, attributes and priorities. This is the reason for the emergence of different sustainability indices with various weighted indicators and time periods. From here onwards, all the related indices will be termed as sustainability indices.

In time, there appeared the problem of reliability of indices, data standardization and their continuity (Mori & Christodoulou, 2012, p.97). In the recent years, the problem shifted from measuring of sustainability to what the indices should be based upon, their indicators and their comparability with standardized data. Comparability of indices can be made vertically or horizontally: Vertical comparison refers to comparison of index data with the data of other indices. Horizontal comparison means comparable data of an index.

There is the need to determine two major problem areas: The initial one is; what are the sustainability indices and which indices can be the basis for comparing cities in different geographies, and for any administrative decision

about urban development, urban space and urban planning that is shaped by urban neoliberalism (Korkmaz, 2021, p.85) and paradigm shift of urban planning (Eren, 2007, p. v, 80; Schubert, 2019, p.12). The second one is; what are their content and data. Based on this problem, this paper aims to analyze the context of available international indices. This research is expected to clarify the contextual difference the indices have.

To consider their applicability, this study addresses international indices. To define priorities and to develop strategies for reaching SDGs, the status of the indices must be pictured. It is important to note that international indices cover figures that can be taken for the comparability of regions, nations and cities. Therefore; international indices are used as the subject of study.

United Nations (UN) Habitat (2012, p.4) declares that the UN Development Agenda should point out the main challenges and opportunities that are structuring today's human settlements, including their impact and contribution to sustainable development efforts of a nation. Sustainable development concept is closely linked and generally parallel to the sustainable urban development concept. Both concepts cover physical build-up, social justice, sustainable economies, environmental sustainability and resilience issues (See; the Charter of ESC&T, Aalborg Charter (2021) and Aalborg+10). These concepts are also defined to achieve a balanced development.

In the Commission of the European Communities COM (l998) 605 Communication, aims of sustainable urban development are mentioned EU (1998):

- To strengthen economic welfare and employment,
- To support equality, social participation and urban renewal,
- To protect and develop urban environment,
- To contribute to urban governance and increase of local capacity.

Sustainable development is the development sustaining the demands of today's society by allowing future generations to meet their own needs (World Commission on Environment and Development [WCED] Brundtland Report, 1987, p.16). This understanding has three principles: Economic welfare, social justice and environmental Compactness. However, sustainable urban development implies a process improvement where progress and positive change can be achieved.

To make cities sustainable, their existing situations must be clear. Development and planning visions and strategies must be set. And, action plans must be established compatible to SDGs. Subsequently, the performance of strategies and action plans should also be measured.

Indicators of the indices should be open, simple and scientific, scalable, measureable and reproducible (Mega & Pedersen, 1998). Indicators define and quantify the rank and score of any development and impact of sustainability interventions. Indicators provide information to the public and decision makers on and monitors the current situation of the nation, the city, the region or the urbanization, growth and development levels. Most of them concentrate on urban indicators or projects. In the recent years, sectoral or subject based indices related to environment, risks and pollution are also developed.

The context of these indices differ relative to country, development strategies of cities and regions, aims and objectives of decision makers and the intelligence level of the index drafters.

2. Material and Method

Urban sustainability indices present a series of challenges for cities seeking ways to improve their performance and to realize a digitally-driven transformation for sustainable, resilient, smart and livable cities. It is important to figure out the ability of the cities to maintain services as they advance and to sustain and to use innovation to meet societal needs and demands. Secondly, the way new resources are located to meet changing citizen requirements by prioritizing initiatives must be set forward. And finally, how cities sustain themselves for the future should be explained. Resources must be preserved and changes in business models and economic circumstances must be responded.

Therefore; the major question emerges as: 'what are the international indices?' This research focuses on international indices that gives us the ground for meeting SDGs and stating the differences of upper level policies. The major contribution of this study will at the point of determination. Even though there is limited academic studies on indices, in contextual terms there is no other study like this carried out before with a holistic approach.

Within the above stated problem area and reasons of study, this research aims to analyze the context of international indices that could be reached out. The objective here is to explain the context of indices and to contribute to the efforts in meeting SDGs. In this context, first the material and method of the research, and then the International indices will be explained. The final section evaluates the ability of indices to contribute and to monitor sustainability.

As the world is evolving into the electronic culture (Bağcı & Aycan, 2021, p. 54), sustainability indices are generally published online. Therefore; the search had to be made via indices published on the internet. In other words, the material of this study is the online published indices. Therefore; the study has been structured by a descriptive analysis. Literature survey and internet search regarding indices on sustainable urbanization and development, green urbanization and smart urbanization or cities have been performed.

It should be stated that there may be other international indices other than those stated here.

3. International Sustainability Indices

International indices are composed of supranational system indices, international organizations' indices and indices of international companies, organizations or NGOs. These indices are different than regional and national indices. Sustainability indices also cover sustainability, smart city and resilience indices.

3.1. Indices of the Supranational System

3.1.1. UN Habitat Urban Indicators Guidelines (2004) and Database

United Nations Habitat has developed the Urban Indicators Guidelines. The guidelines focus on quality of life and sustainability. Indicators have been given to monitor universal development to reach SDGs and UN Habitat Agenda (UN Habitat Urban Indicators Guidelines, 2004, p.3-4). Indicators are clustered based on the data on shelter, social development, eradication of poverty, environmental management, economic development and governance. The data is gathered from international institutions and NGOs (UN Habitat, 2004). The Data and Analytics Section (DAS) has created Global Urban Indicators Database (See: UN Habitat, 2022a) for monitoring and reporting activities on SDG 11 and urban SDG indicators under UN Habitat's custodianship (UN Habitat, 2012; 2021; 2022b).

3.1.2. UNDP Human Development Report (HDR) 2020

The 2020 UNDP Human Development Report (HDR) covers development issues, trends and policies (UN Development Program Human Development Report [UNDP HDR], 2022). This research is not mainly in the form of an index, but covers statistics from various countries on inequalities exercised today in human development. It explains failures to mark systemic challenges which define inequalities and strengthen the power and political hegemony of a certain group (UN Development Program Human Development Report [UNDP HDR], 2019, p.4; UNDP HDR, 2022).

3.2. Indices of International Organizations

3.2.1. World Bank (WB) Working Paper On Sustainability

World Bank (WB) working paper on sustainability "What Makes a Sustainable City?" is formed by several case studies. This booklet covers cities in developing countries that try to achieve environmental, economic and social sustainability. Case studies also presented that many cities have achieved certain satisfactory outcomes (Santos et al., 2015, p.4).

3.2.2. World Bank (WB) the Global City Indicators Program (GCIP)

The Global City Indicators Program (GCIP) of the World Bank is a city-led initiative, which favors decentralization. This Program contributes selected cities' capacity of measuring, reporting, and improving performance and life quality, easing capacity building, and presenting best practices through a web portal (Bhada & Hoornweg, 2009, p.1). It is a program rather than an index, but must be mentioned due to its content. City Services (12 Themes, 22 core and 27 supporting indicators), Indices (10 Themes), Quality of Life Themes (6 Themes, 5 core and 9 supporting indicators) are defined within the program. 27 core and 36 supporting Global City Indicators are determined within the program. Standardized definitions and detailed methodologies have been developed for 63 indicators (World Bank [WB], n.d.a) Indicators are mainly on human well-being, energy use, water quality, governance, urban accessibility etc.

3.2.3. World Bank (WB) Eco2 Cities Initiative 2009

The World Bank started the Eco2 Cities Initiative (World Bank [WB], n.d.b, p. 1). The Initiative supported by the Cities Alliance, contributes with an analytical and operational framework. Local conditions and needs of each city are taken into account in order to develop environmental and economical sustainability. This research based also on best practices enables cities to gain access to financial resources for their strategic infrastructure investments. There are several principles of the initiative: A city-based approach, an expanded platform for collaborative design and decision-making, a one-system approach and an investment framework that values sustainability and resiliency (World Bank [WB], n.d.b, p. 1; Tuğaç, 2019, p. 718). The Bank has also prepared the Eco2 Cities Guide.

3.2.4. Economic Development and Cooperation (OECD) Better Life Index (BLI)

OECD Better Life Initiative has two major elements: Better Life Index (BLI) and How's Life? Publication. The BLI was developed by the OECD in May 2011. BLI of the OECD countries is calculated and ranked annually. BLI covers 11 topics of well-being: Housing, income, jobs, community, education, environment, governance, health, life satisfaction, safety and work–life balance (OECD, n.d.). How's Life? 2020 charts present the life conditions in 316 regions, 37 OECD countries and 4 partner countries. Over 80 indicators are declared. There indicators cover well-being outcomes, inequalities, and resources for future well-being (OECD, 2012).

3.2.5. Economic Development and Cooperation (OECD) Compact City Policies

According to OECD, compact city policies can enable urban sustainability in many ways such as economic, social and environmental benefits. Between 2009 and 2011, compact city policies of OECD countries are evaluated comparatively and the results of this project were published in 2014. Compact City Policies Index covers the policy practices of 30 countries. The Report mentions 18 compact city indicators for governments to measure their outcomes and advance their policy actions (OECD, 2012).

3.3. Indices of International Companies, Organizations or NGOs

3.3.1. The Rockefeller Foundation 100 Resilient Cities (100RC) Program

100 Resilient Cities (100RC) Program is activated in 2013. The program aims to achieve resilience through activities. These activities include the assignment of a City Resilience Officer (CRO) and creation of a Resilience Strategy. Share of knowledge and best practice via a global network of cities and service providers is another ingredient. This Program has the objective to help cities to become more resilient in terms of physical, social and economic challenges. The 100 Resilient Cities organization is closed on July 31, 2019.

3.3.2. ARUP ID The City Resilience Index (CRI)

The Rockefeller Foundation and ARUP International Development (ARUP ID) have jointly prepared the City Resilience Index (CRI). The Index aims to help cities to understand and to measure their capacity to react, implement and transform. The CRI is based on three years of research contributions (150 references), 14 case studies, data of 6 cities, consultations with experts and pilot schemes conducted in many cities. This index covers 22 search cities and 5 test cities (ARUP, 2014, p.5; 2022, p.16).

According to this Index, city resilience has four dimensions: Health and well-being; economy and society; infrastructure and environment and strategy (ARUP, 2022, p.9). It is noted that 12 goals must be met in order the city to maintain resilience. The CRI describes characteristics (and indicators) of resilience and presents the information analysis gathered from the fieldwork of this Index.

Only selected cities are evaluated. City Briefings during fieldwork have provided the contextual data. City strategy, asset management, social enablers, and survival and well-being are the themes discussed. As a result of these efforts, CRI Exploring Resilience Toolkit is designed and, Cities Qualitative Resilience Profile is prepared. This profile is based on responses from city stakeholders to 156 questions (metrics) that comprehensively cover urban systems in a city. This profile helps reveal the strengths and weaknesses of a city analysed through 4 dimensions, 12 goals, and 52 indicators (ARUP, 2022, p.9).

3.3.3. The Economist Intelligence Unit - The Safe Cities Index (SCI) 2021

The Economist Intelligence Unit prepares and publishes the Safe Cities Index (SCI) 2021 as a report. The NEC Corporation is the sponsor of this activity. The SCI reflects the various dimensions of urban safety. The report ranks 60 cities based on 76 indicators in terms of digital, health, infrastructure and personal security (Economist Intelligence Unit, 2022). New indicators specifically related to resilience are included in the SCI 2021. Resilience categories are noted as damage and multipliers, relevant assets and preparedness.

3.3.4. Kearney 2020 Global Cities Index and Outlook

2020 Global Cities Index and Outlook prepared by Kearney analyzes 151 cities (Kearney, 2020). As a result of this analysis 2020 Global Cities Report is prepared upon three key issues (Urban value creation, global city connectedness and the transformation of urban space) (Kearney, 2020; Nasr et. al., 2020) Global Cities Index 2020 measures 29 metrics upon five dimensions in 24 cities. Dimensions set by the Index are business activity, human capital, information exchange, cultural experience, political engagement (Kearney, 2020, p.7). The index is on the future potential of cities and has 13 indicators having 4 dimensions: Personal wellbeing, economics, innovation and governance. Metrics use data from the past five years. This data is projected out to 2030. Kearney has also published 2021 Global Cities Report (Kearney, 2021).

3.3.5. Circles of Sustainability

Circles of Sustainability is a method (a part of Circles of Social Life approach). This method is developed by Metropolis, the UN Global Compact Cities Program, the Senate Chancellery for the governing Mayor of Berlin and other organizations (the International Real Estate Federation (FIABCI), the Cultural Development Network, and the World Vision) (Circles of Sustainability, 2022). Circles of Sustainability supports cities, communities and organizations to help them contribute to sustain a better social life. The social life approach presents a social life supported by a holistic perspective. This is achieved by an intersecting four-domain model: Economics, ecology, politics, and culture.

Qualitative and quantitative indicators are used (Circles of Sustainability, 2022). The cities evaluated are Johannesburg, Liverpool, Melbourne, New Delhi, Port Moresby and Valetta. Global organizations (the UN Global Compact Cities Programme, the World Association of Major Metropolises and World Vision) use this method to support their collaboration with cities. Studies on this method were completed in 2019. No website or reference is available at the moment.

3.3.6. Numbeo Index

The system provides data on cost of living, property prices, quality of life. It also provides data on housing indicators, perceived crime rates, healthcare quality, transport quality, and other statistics. It is the global internet user contributed database. Data is collected at the city or country level. Numbeo Cost of Living Index, Quality of Life Index and Safety Index by City 2020 are the major indices. Safety Index by City 2020 is the safety index of 374 city data entries (Numbeo, 2020). Not much information is provided. Ranking of these cities are available online (Numbeo, 2022a, 2022b, 2022c).

3.3.7. Savills Prime Index: World Cities Index 2021

The Savills Prime Index: World Cities 2021 presents the sustainability level of 30 world cities. This index explains the impact of COVID-19 on capital values, residential values and rent values in the first half of 2021 (Savills, 2021a).

3.3.8. Savills Tech Cities Index 2019

Savills Tech Cities Index is prepared for 30 cities with 100 individual metrics. Metrics on housing and rent ranges in a wide spectrum. This Index provides a ranking of different metrics like hottest tech locations, capital investments, houses for tech and start-up companies worldwide. Savills launched Tech Cities Programme 2021 by December 2020. Twelve world cities were announced as top 'Tech Lifestyle Cities' (Savills, 2020).

3.3.9. Savills Global Farmland Index 2021

Savills Global Farmland Index 2021 is a demonstration on long-term growth and stability of farmlands in the World. It has also been published in 2020. This Index presents capital value performance for crop/arable land types. It is on content basis and all comments are not covered. Data has been gathered and recorded for the past 18 years (2002-2020) (Savills, 2021b).

3.3.10. The Sustainable Development Solutions Network (SDSN) and bertelsmann-stiftung The Sustainable Development Report, 2021

The Sustainable Development Report 2021 (formerly the SDG Index & Dashboards) is the first study to assess the performance of the UN members in achieving the SDGs. The Index defines standards for emerging, developing and industrialized countries. The Report sets forward the priorities for action in order to achieve the SDGs by 2030 (Sachs, et al., 2020, 2021). The SDG Index and Dashboards results are on country basis and are not directly comparable from one year to another as slight adjustments are made. Three Scandinavian countries (Denmark, Sweden and Finland) have the highest scores. In the year 2020, top 20 countries are OECD members (Sachs, et al., 2021, p.9).

This report frames the progress in implementing the SDGs across six major transformations: Education, gender, and inequality; health, well-being, and demography; energy decarbonization and sustainable industry; sustainable food, land, water and oceans; sustainable cities and communities; digital revolution for sustainable development. It also draws specific attention to the impacts of the recent pandemic on achieving the SDGs, particularly for low-income countries and vulnerable populations, and how to approach recovery from COVID-19 (Sachs et al., 2019; 2020).

3.3.11. ARCADIS Citizen Centric Cities - The Sustainable Cities Index 2022

Arcadis Sustainable Cities Index (SCI) analyses the sustainability level from the citizen's view. How cities allow their citizens to encounter their particular needs is questioned. The Index evaluates and ranks 100 global cities on three pillars of sustainability: People, planet and profit. The Arcadis Index uses 51 metrics and 26 indicators. The index searches progress of commitments in meeting SDG. The top 20 sustainable cities are the metropolises in Europe (Arcadis, n.d., p.19).

3.3.12. IMD-SUTD Smart Cities Index 2021

The Smart City Index 2021 is the third edition presenting how inhabitants perceive the level of help of technology to address urban challenges and its the impact on digital transformation. In other words, the Index ranks cities on the basis of economic and technological data and present the level of being "smart" for their citizens. The Institute for Management Development (IMD) World Competitiveness Center's Smart City Observatory, Switzerland and Singapore University for Technology and Design (SUTD), has published the 2020 Smart City Index online (Institute for Management Development [IMD], 2020; 2022).

Index has key findings on the role of technology in human society. Data also shows that urban populations started to give importance to health and environmental-related issues such as better air quality and access to health

services since the emergence of the pandemic. Citizens from 118 cities were surveyed in the year 2020 and were asked several questions about technological provisions based on five areas: Health and safety, mobility, activities, opportunities and governance. Economic and social data is taken from the UN Human Development Index (HDI). The Index explains how citizens perceive the efforts to make a city 'smart' (Institute for Management Development [IMD], 2019).

Ratings for each city are calculated on their performance relative to other cities. Around 15,000 inhabitants were surveyed globally in July 2021 (Quantumesco, n.d.). Survey respondents (120 people) from each city are asked to select 5 the most urgent issue for the city from a list of 15 indicators. Smart city rating, factor rating and groups are defined. Singapore, Zurich and Oslo are the first three advanced group of cities. The Index presented that richer cities have higher environmental concerns.

3.3.13. Cities in motion (smart cities) Index 2020

Statista is a private company based in Germany. Statista Research Department has been preparing the Smart Cities index. Nine dimensions are evaluated: Governance, urban planning, technology, the environment, international projection, social cohesion, human capital, mobility and transportation, and the economy (Thormundsson, 2022a). Detailed data on provision of smart parking and mobility, recycling rates, and block chain ecosystem are also included. The data collected should be improving the living standards. Statista has also published Global Smart City Index Score 2019 (Thormundsson, 2022b). The company is ranking global cities using an index score (top score is 10). According to this Index, Zurich, Switzerland was ranked first, achieving an overall index score of 7.75 (Thormundsson, 2022b).

3.3.14. Smart Cities Index Report 2022

Yonsei University, DTTM (Center of Digital Transformation Technology Management), ISI (Information Systems Intelligence), University of Cambridge Department of Engineering, IfMIengage are the partners taking part in the preparation of the index. The Index analyses 31 cities. The performance dimensions evaluated are service innovation, urban intelligence, urban sustainability, urban openness, infra integration, urban innovation, collaborative partnership and smart city governance.

3.3.15. The Digital Cities Index (DCI) 2022

The Digital Cities Index (DCI) is created by the Economist Impact. NEC supports the database. DCI considers four key pillars which are digital connectivity, services, culture and sustainability. The Index evaluates the extent and impact of digitization in 30 cities. A white paper is published. The index is constructed upon 48 qualitative and quantitative indicators (Economist Impact, 2022).

3.3.16. IESE Cities in Motion Index 2020

IESE Business School University of Navarra Center for Globalization and Strategy has Cities in Motion Index 2020 (IESE, 2022). This Index covers 174 cities across 80 countries (IESE, 2022).

4. Conclusion

Critical factors of urbanization define the new global agenda at the Age of Turbulence (Greenspan, 2006). These cover the arising uncontrolled urban growth and sprawl; emergence of mega cities and ecumenopolis (Doxiadis, 1967), increasing metropolitanization (Dumont, 2015), rise of technological corridors and regions, shrinking cities. All cities have varying degrees of demands and needs, institutional capacity and migration. New factors like Pandemics stress the importance of SDGs. The status of each country and city to reach these goals are evaluated, measured and monitored through different tools and methods. Sustainability indices are one of these.

Countries and their cities are very different in size and have differing levels of economic development. Indices emphasize their critical needs with a priority. Strengthening the capacity of societies and enabling decision-makers and urban planners to manage sustainable development could only be possible by determining the current situation. How cities prioritize own needs, demands and themes and how they do it so vary in time.

Indices can be prepared on international, regional and national scales by different institutions, authorities and organizations over the last few decades. SDGs are implemented by different countries or cities with non-identical processes. The related processes have been defined by top-down commitments, plans, methods and tools. A vertical and horizontal comparison of international indices is impossible as each has a different content and data structure.

Each index has a different hypothesis or various indicators, indicator descriptions, data sets, main source(s), weighting and rationale of preparation. They even are based on various indicators some of which are indirectly related to the sustainability issue. The approach and method of international sustainability indices also differ. Some indicators measure the existence of policies while their quality may remain untested.

Standards, indicators and factors differ vertically between international indices and horizontally within international indices. None of the international indices analyze the same cities or have the same objectives. Many are introduced to be linked to sustainability, but a few are directly related to define the status in reaching SDGs on urban level.

Different actors and decision makers prioritize different themes. According to ARUP (2014), "A large amount of factors (39%) are identified by consultees as absent from their city. This is surprising given that the research was designed to collect evidence of what had worked (what was existing, or present), rather than what could work (what was missing, or absent)."

Indices can be unique or may not be sustainable or not standardized. Some are prepared annually and some can be realized in the previous years with a different content. This is why, indices taking into account the same indicators for a relative periodical comparison is hard to make. And if, the indices have the same data on countries or cities than the indices are comparable. Even in that case, as the basis of data collection or indicators differ, the comparison of indices may also be unreliable.

In the globalizing and competing world, technological and digital developments emerge together with social and cultural transformations. Countries are experiencing this process of change with differing levels and consequences and have different levels of development capacity to meet SDGs. Several index figures present that nations or their cities are close to each other. But, several indices do cover the same countries.

If geographies are incomparable, measuring the sustainability of cities or countries loses meaning. This research argues that the robust data collected across geographies should support interoperable indices, well adhered to and accepted by those countries and cities that prioritize sustainability. For this reason, from the past, the current or the future, to achieve sustainability; reliable and horizontally and vertically comparable indices must be created based on the same or similar factors and sectors and standardized data in a way to cover more cities or countries and must be prepared by the same consensus and indicators aiming to achieve sustainability. This will allow the responsible actions to put objectives, targets and to design strategies. New designs of indices must be made for achieving comparable grounds. Otherwise it will be nothing more than reports or lists mainly prepared by the consultancy companies to create a market for their own profit and interest.

Acknowledgements

We would like to thank the Editorial Board of Geographies Planning Tourism Studios Journal and especially Assoc. Prof. Dr. Emine Cihangir, Prof. Dr. Kübra Cihangir Çamur and Assoc. Prof. Dr. Mehmet Şeremet for their kind efforts. The article complies with national and international research and publication ethics. Ethics Committee approval was not required for the study. All authors contributed equally to the article.

References

Aalborg Charter (2021, January 2). *The charter of European sustainable sities and towns (ESC&T).* https://www.eea.europa.eu/help/glossary/eea-glossary/charter-of-european-cities-and

Ahmed, B. (1998). Role of the environment in the sustainable development of the Caribbean. *Social and Economic Studies, 47*(4). December, 83-97.

Ajiboye, J. O. (2021). *Kentsel büyüme kontrol ve yönetim mekanizmalarının morfolojik analizi: Abuja, Amsterdam ve Ankara örnekleri.* [Basılmamış Yüksek Lisans Tezi, Süleyman Demirel Üniversitesi. Fen Bilimleri Ensitütüsü]

Allen, A. (2009). Sustainable cities or sustainable urbanisation. *Palette UCL's journal of sustainable cities, 1*(2).

ARCADIS (n.d.). *The arcadies sustainable cities index 2022.* Retrieved June 30, 2022, from https://www.arcadis.com/en/knowledge-hub/perspectives/global/sustainable-cities-index

ARUP (2014). *City resilience index: Research report volume II: Fieldwork and primary data analysis.* CRI C 14. *2*(6). April. https://www.cityresilienceindex.org/#/https://www.arup.com/-/media/arup/files/pdf-downloads/cri_research_report_vol2_comp.pdf

ARUP (2022, June 21). *City resilience index: Understanding and measuring city resilience.* https://www.arup.com/perspectives/publications/research/section/city-resilience-index

Bağcı, E., & Aycan, M. (2021). Global distribution systems and airline companies. *Geographies, Planning & Tourism Studios, 1*(1): 54-62. DOI: 10.5505/gpts.2021.76486

Bhada, P., & Hoornweg, D. (2009). *The Global City Indicators Program: A more credible voice for cities. Directions in urban development.* The World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/10244/491660BRI0City10Box338943B01PUBLIC1.pdf?sequence=1&isAllowed=y

Circles of Sustainability. Retrieved June 06, 2022, from https://www.circlesofsustainability.com/

Daly, H.E. (1990). Sustainable development: From concept and theory to operational principles. *Population and Development Review*, 16, 25-43. DOI:10.2307/2808061

Dumont, G.F. (2015). An ideology of metropolitanization? Sylvie Vanston (Trans.). *Population & Avenir*, Marc-April. *722*(2),3.

Doxiadis, C. A. (1967). On linear cities. *The Town Planning Review, 38*(1), 35-42.

Economist Intelligence Unit (2021) Safe cities index (SCI) 2021, *New expectations demand a new coherence*. https://safecities.economist.com/safe-cities-2021-whitepaper/

Economist Impact (2022). *Digital Cities Index 2022*. https://impact.economist.com/projects/digital-cities/2022-executive-summary/

Eren, Ş.G. (2007). *Impacts of privatization on urban planning: Turkish case (Ankara)*. [Unpublished Doctorate Thesis, METU]

Eren, Ş.G. (2021). Sürdürülebilirlik bağlamında şehircilik ve kentsel büyüme kavramları üzerine bir analiz. Ş. E. Beşir, M.B. Bingül Bulut ve İ. Bekar (Ed.), Architectural Sciences-Volume 2. *Mimarlık Bilimleri ve Sürdürülebilirlik içinde* (ss. 197-264). İKSAD Publishing House.

Eren, Ş.G., & Parihar-Mehra, S. (2021). Are sustainable indices comparable an explanatory study for Turkey and India. International Geographical Union (IGU) IGC 2021, İstanbul, *34th International Geographical Congress, Abstract Book*, p.248. https://igc2021.org/ParticipantPanel/default.asp#content

European Union (EU) (1998). *Sustainable urban development in the European Union: A framework for action, Brussels,* 28.10.1998. COM (1998) 605 final. Commission of the European Communities.

Greenspan, A. (2006). *The age of turbulence: Adventures in a new world.* Allen Lane Publisher.

IESE (2020). *Cities in motion index 202*0. https://blog.iese.edu/cities-challenges-and-management/2020/10/27/iese-cities-in-motion-index-2020/

Institute for Management Development (IMD) (2019, June 06). *IMD smart city index 2019*. https://www.imd.org/research-knowledge/reports/imd-smart-city-index-2019/

Institute for Management Development (IMD) (2020). *Smart City Index 2020*. https://www.imd.org/globalassets/wcc/docs/smart_city/2columns-rankings-2020.pdf

Institute for Management Development (IMD) (2022, May 09). *Smart city index 2021*. https://www.imd.org/smart-city-observatory/home/

Kearney (2021). *Global Cities: Divergent prospects and new imperatives in the global recovery*. https://www.kearney.com/global-cities/2021?utm_source=PRNewswire&utm_ medium=pr&utm_term=STLT&utm_campaign=2021GlobalCitiesPR&utm_content=

Kearney (2020). *2020 Glocal cities index: New priorities for a new world*. https://www.kearney.com/global-cities/2020

Korkmaz, C. (2021). Neoliberal urbanism and commodification of urban history as a marketing tool in public recreation. *Geographies, Planning & Tourism Studios, 1*(2), 85-96. https://doi.org /10.5505/gpts.2021.58066

Maclaren, V. W. (1996). Urban sustainability reporting. *Journal of the American Planning Association*, Spring 96, *62*(2), 184.

Mega, V., & Pedersen, J. (1998). *Urban sustainability indicators*. European Foundation for the improvement of living and working conditions.

Mori, K., & Christodoulou, A. (2012). Review of sustainability indices and indicators: Towards a new city sustainability index (CSI). *Environmental impact assessment review, 32*(1), 94–106.

Nasr, A., Lehmeyer, R., Pena, A.M., Hales, M., Habr, A.A., & Buckstaff, B. (2020). *Global cities: New priorities for a new world Glocal Cities Report*. Kearney.

Numbeo. (2020). *Safety index 2020*. Retrieved October 12, 2020, from https://www.numbeo.com/crime/rankings.jsp?title =2020&displayColumn=1

Numbeo. (2022a). Cost of Living. Retrieved October 12, 2020, from https://www.numbeo.com/cost-of-living/

Numbeo. (2022b). *Safety index by city 2020*. Retrieved June 17, 2020, from https://www.numbeo.com/crime/rankings.jsp?title=2020 &displayColumn=1

Numbeo (2022c) Retrieved June 17, 2020, from https://www.numbeo.com/common/

OECD (2020), *Cities in the world: A new perspective on urbanisation*. OECD Urban Studies, OECD Publishing, Paris, https://doi.org/10.1787/d0efcbda-en.

OECD (n.d.) Better Life Index. Retrieved October 12, 2021, from https://www.oecdbetterlifeindex.org/

OECD (2012), *Compact city policies: A comparative assessment*. OECD Green Growth Studies, OECD Publishing, Paris, https://www.oecd.org/greengrowth/compact-city-policies-9789264167865-en.htm https://doi.org/10.1787/9789264167865-en.

Quantumesco (n.d.) *2021 Global smart city index*. Retrieved May 21, 2021, from https://www.quantumesco.it/en/2021-global-smart-city-index/

Sachs, J., Schmidt-Traub, G., Kroll, C., & Lafortune, G., (2019). *Sustainable development report 2019*. Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN). https://www.sdgindex.org/reports/sustainable-development-report-2019/

Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G. & Woelm, F. (2020). *The sustainable development goals and COVID-19*. Sustainable development report 2020. Cambridge University Press. https://www.sdgindex.org/reports/sustainable-development-report-2020/

Sachs J.D., Kroll C., Lafortune, G., Fuller, G., & Woelm F. (2021). *Sustainable development report 2021*. Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN). https://www.sdgindex.org/reports/sustainable-development-report-2021/

Santos, V., Gashi, D. & Armendaris, F. (2015). *What makes a sustainable city? Sampling of global case studies highlighting innovative approaches to sustainability in urban areas*. World Bank, Washington, DC. https://openknowledge.worldbank.org/handle/10986/23580.

Savills (2020). *Savills launches Tech Cities programme 2021*. https://www.savills.com/insight-and-opinion/savills-news/308824/savills-launches-tech-cities-programme-2021

Savills (2021a). *Savills prime index: World cities*. https://www.savills.com/research_articles/255800/316759-0

Savills (2021b). Global Farm Land Index. https://pdf.euro.savills.co.uk/uk/rural---other/spotlight-global-farmland-index---2021.pdf

Schubert, D. (2019). Cities and plans – the past defines the future. *Planning Perspectives, 34*(1), 3-23, Doi: 10.1080/02665433.2018.1541758

Thormundsson, B. (2022a). *Leading smart cities worldwide 2020*. Statista. https://www.statista.com /statistics/1233581/smart-cities-ranking-worldwide/

Thormundsson, B. (2022b). *Global smart city index score 2019*. Statista. https://www.statista.com/statistics/826003/global-smart-city-index/

Tuğaç, Ç. (2018). Uluslararası sürdürülebilir kent ölçütleri bağlamında Türkiye için bir değerlendirme. *Kent Akademisi*. Kış. *11*(4), 703-740.

Tuğaç, Ç. (2019). Kentsel dirençlilik perspektifinden yerel yönetimlerin görevleri ve sorumlulukları. *İdealkent. 10*(28), 984 – 1019.

United Nations Development Programme (UNDP) (2019). *Human development report (HDR) 2019*. Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century. ISBN: 978-92-1-126439-5.

United Nations Development Programme (UNDP) (2022, June 15). *Human development report (HDR) 2020*. https://hdr.undp.org/content/human-development-report-2020

UN Habitat (2012). *Sustainable urbanization thematic think piece UN Habitat*. UN System Task Team.

UN Habitat (August, 2004). UN Habitat Urban indicators guidelines. https://unhabitat.org /sites /default /files/download-manager-files/Urban%20Indicators.pdf

UN Habitat (2022a). *Global Urban Indicators Database*. Retrieved June 12, 2022, from https://data.unhabitat.org/

UN Habitat (2022b) *Global Urban Indicators Database*, *About*. Retrieved June 12, 2022, from https://data.unhabitat.org/pages/about

United Nations, Department of Economic and Social Affairs(UN-ESA), Population Division (2019). *World Urbanization Prospects: The 2018 Revision (ST/ESA/SER.A/420*). https://population.un.org/wup/publications/Files/WUP2018-Report.pdf

Wheeler, S. M., & Beatley, T. (2004). (Eds.) *The sustainable urban development*. Routledge.

World Bank (WB). (n.d.a) *Urban development unit global city indicators program (Global city indicators facility)*. https://openknowledge.worldbank.org/handle/10986/10244

World Bank (WB), (n.d.b) *Eco2 cities : a model for sustainable urban development (English)*. http://documents.worldbank.org/curated/en/651381468323090427/Eco2-cities-a-model-for-sustainable-urban-development

World Commission on Environment and Development (WCED) (1987) *Brundtland Report. Our Common Future.*

Verma, P., & Raghubanshi, A. S. (2018). *Urban sustainability indicators: Challenges and opportunities. Ecological Indicators, 93*, 282-291. ISSN 1470-160X, https://doi.org/10.1016/j.ecolind. 2018.05.007.

Zhilin, L., Gong, X., Chen, J., Mills, J., Songnian, L., Zhu, X., Peng, T., & Hao, W. (2020). Functional requirements of systems for visualization of Sustainable Development Goal (SDG) indicators. *Journal of Geovisualization and Spatial Analysis. 4*, 5.