Drivers and Frequency of Forest Visits: Results of a National Survey in the Czech Republic

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Abstract: The general objective of the study was to assess the main drivers for visiting the forest and the frequency of the visits in the Czech Republic. A nationwide collection of data of the sociological research as part of The Market & Media & Lifestyle Research Project was carried out every year in the Czech Republic under the licensed cooperation with Kantar Media. The project is unique by the large scope of the questions in the questionnaires and by the high number of respondents. A total of 8794 Czech inhabitants aged 12 years and above from all the regions were involved in the survey in 2018. Information about the socioeconomic and demographic characteristics of all the respondents were obtained. In the closed questions, the respondents reported the frequency of the forest visits and its drivers. The main driver for visiting the forest was just to go for a walk or just to enjoy the outdoors, especially during their holidays or weekends, amounting to 79% of the inhabitants. Meditation and relaxation as well as sport in the forest, were also considered as important motives for forest recreation. On the contrary, 95% of the visitors did not practice game hunting, although game has a long tradition in the Czech Republic. Improvement on managing the forest for recreation should focus on participatory forest management to find a consensus between the public and forest stakeholders. Common decisions may help set up forest recreational goals with positive impacts on forest ecosystem services.

Keywords: forest visitors; forest ecosystem services; forest recreation; forest policy

1. Introduction

More recently, there is increasing interest on the societal demands on forests that not only focus on timber production but also place more emphasis on non-wood forest products and ecosystem services. Recreation demand in forests is increasing globally. The World Tourism Organization [1] reported that recreation demand rose by up to 5% overall in Europe in 2018 overall, with forest tourism having a considerable economic value, while the overall tourism sector accounts for 10.4% of the global GDP in 2018. It follows that forest tourism has also a considerable economic value [2,3]. Current knowledge about forest recreation has been analysed by many studies mainly from the northern and western European countries. They have brought many interesting findings but only a few of them treat the visitors’ motivation in detail [4]. Especially in the central European countries, including the Czech Republic, research dealing with the motivation is lacking. The national Czech Forest report published by the Ministry of Agriculture is available, but it contains only general information about the visits and rather focuses more on collecting forest non-wood products in detail [5]. Continual recreation monitoring helps to allocate, plan, and manage of recreation resources and increases the provision of recreation services. Moreover, recreation demand links many other sectors of society (e.g., social, health, sport, culture, forest, and nature policy) and is linked to other social and economic goods and services [6,7]. The public demand for
attractive, quiet, safe, and natural-looking spaces for tourist recreation is rising, notably from urban populations [3,8,9]. Thus, access to the territory, landscape protection, environmental quality, and forest management are increasingly at stake and call for adequate planning and funding. When lacking information about the tourists' preferences and motivations, problems like the lack of hygiene facilities, the lack of trails and educational boards, steep slopes, or inaccessible terrains for visitors with physical disadvantages, etc., can start to occur.

The current perception of forests has resulted from the rising awareness on the environmental responsibility that has adopted the idea that the forest has a multiple-use nature value. Furthermore, constant economic growth and the development of civilisation have created the need for a work–recreation balance. Recreation takes up a large part of people's everyday lives, which leads to the increased demand for this ecosystem service [10]. In each forest, the forest management and stakeholder groups deal with multiple demands in order to meet different objectives. As Šišák and Sloup [11] mentioned, forest owners should perceive that the forest is not only for delivering an economic value but also for providing a place for recreation, sport, and relaxation for people.

In recent years, the recreational function of the forest has often been investigated in many studies, and as such, the function has been presented as a very important nonmarket service provided by the forest ecosystems [12]. The recreational value of the forest is valued by the public by many factors which have a significant impact on the public utility of the forest area. The structural characteristics, e.g., the tree species; open spaces; scenic views; or the presence of recreational facilities, e.g., kiosks, picnic spaces, or parking places, are important determinants for the visitors' choice in the location for their leisure time [13–15]. However, recreation in the forest should be viewed from the other side and should perceive that intensive tourism and recreational activities, especially in places with nature attractions, can also have a negative impact on the forests and animals [16]. Therefore, Sievänen et al. [17] emphasised that the gained recreation data are essentials for the development of suitable marketing strategies to specific user groups.

According to reference [18], the Czech Republic is the country in which the highest proportion of the population (55%) saw nature as the main reason to go on holiday. As a country with forests covering 34% of the country's total area, the Czech Republic has placed attention on the promotion of forest ecosystem services and non-wood forest products. Moreover, the results of this unique study are significant for the Czech Republic as 54.9% of the forests are managed by the state, 17.2% of the forest are managed by municipalities, and 4.4% of the forest are managed by the church. Thus, the recreational function is an important all-society function and helps to map the social demand in the country. The state has a significant public forest responsibility [5]. In the Czech Republic, forests are often used by the public for walks, recreational sports, hunting, fishing, or picking forest fruits. In the Czech Republic, the access and recreational disposition to the forest has traditionally been free for all the people. The freedom to roam in the forest is codified in the national law. This law is similar to the “everyman's right” in the Nordic countries and gives people the right to use the land owned by others to roam there by foot, bicycle, or other manners, which does not cause any damage, and also gives the right to pick forest berries, mushrooms, and firewood [19].

The objectives of this paper are to investigate the characteristics of the forest visitors, the important drivers, and the frequency of the forest visits in the Czech Republic. Unlike existing research, our study has shown detailed information about the forest visitors’ motives. Based on this information, a recommendation on the country’s forest management in order to harmonise the economic and forest non-production goals is expected to be optimised.

2. Materials and Methods

2.1. Study Area

The Czech Republic is situated in central Europe. The total forest area in the Czech Republic is 2.67 mil ha. The current population is 10,649,800 inhabitants with a population density of 134 people per km². The almost entire forest area in the country is open and accessible for public recreational purposes. Coniferous
and deciduous trees cover 71.9% and 27% of the total area, respectively. Originally, the natural composition of the forest in the Czech Republic consisted mainly of deciduous trees; however, the Norway spruce (Picea Abies) is currently predominant among the trees as a result of forestry management development and human intervention [5,20]. Almost 56% of the forest is under state ownership; the rest of the forests are private forests. Important areas for forest recreation are “specially protected areas”. Large-scale specially protected areas in the Czech Republic include four national parks and 26 protected landscape areas spread over 15.93% of the territory. Tourism is popular in these protected areas; therefore, it is necessary to control the excessive load on nature in the valuable areas and to monitor the tourist preferences.

2.2. Sample Selection

In order to analyse the information on the visitors to the forest sites in the Czech Republic, data on the sociological research mapping the frequency and reasons for the visits to the forest by the general public has been ongoing as part of the Market & Media & Lifestyle (MML-TGI) Research Project, which has been carried out in licensed cooperation with Kantar Media UK Ltd., Prague. The MML-TGI research project has been carried out in the Czech Republic since 1997. Of the 8,793,714 inhabitants of the Czech Republic aged 12–79 years old, the respondents were selected by using the quota selection method including the following criteria: gender, age, level of education, monthly income, and size of residence. In total, the number of recruited respondents in the research project was 8794 and is representative of the whole. The questioning was conducted by the method of face-to-face interviews with an interviewer in combination with using the proven computer-assisted web interviewing (CAWI) method. The MML-TGI project contains four main spheres of questions: A personal data part (face-to-face or online method); including sociodemographic data; a media part (face-to-face or online method); a consumer behaviour part (prevailing undertaken by an independent fill-out form), and a lifestyle part (prevailing undertaken by an independent fill-out form) including 620 entries on the respondent’s lifestyle. The data used come from an investigation in 2018.

2.3. Data Analyses

The descriptive data in the general characteristics of the respondents were used for the single traits. The frequencies were presented by absolute numbers and their proportions. The traits that influence the frequency of the forest visit were compared via a Chi-squared test for the categorical data. To designate the statistical significance in all the analyses, a p-value of less than 0.05 was used. The statistical analysis was performed using Microsoft Excel 2016 (corp. Microsoft, Redmond, Washington, USA).

3. Results and Discussion

The data were collected by the method of face-to-face interviews with an interviewer in combination with using the proven computer-assisted web interviewing (CAWI) method. The respondents responded separately to an online web questionnaire. The idea was to capture the widest spectrum of the population (12–79 years old). Thus, the age range became the entry criteria for the age of respondents. Interviews under the age of 15 were conducted by personal interviews in the presence of the interviewer, the respondent, and their legal representative. Generally, all the age of 12 years, people have already been developed their personal attitudes, actively affecting the consumer markets, and are able to express their preferences on how to spend their leisure time.

This method allows one to display images, graphics, packaging, and packshots as well as to play TV or radio advertising spots. The questionnaire allows various objects to be dragged across the pages, and it has other interactions. This interactive form of a questionnaire survey is fun and comfortable for the respondents. Besides, the CAWI method combines the advantages of both qualitative and quantitative research and, thus, represents a new dimension in research methods. The responses were recorded electronically. The respondents were asked by e-mail. The sample of the respondents corresponds to the sample of the active population. The users received an email with a link to the questionnaire website. The
survey was terminated after reaching the minimum calculated sample size, and all the returned questionnaires (100%) were included in the analysis.

3.1. Socioeconomic Features of the Respondents

The general characteristics of the demographic and socioeconomic features of the respondents are summarised in Table 1 and include the gender, age, education level, monthly income, and size of their place of residence.

A similar proportion of males (49.6%) and females (50.3%) participated in the study. 41% of the respondents are in the age group of 12–39 years old, approximately one-third (33.8%) of the respondents were in age group of 40–59 years old, whereas 25% of the respondents were over 59 years old. Regarding the education, the smallest proportion of the respondents was in the group with a basic education (15.6%), more than half (66%) of them had a secondary education, and the rest of the respondents (18.4%) had reached higher education.

A total of 5.9% respondents are categorised in the group with a minimum monthly wage of 8000–15000 CZK/month followed by 14.1% of the respondents who earned 15,000–25,000 CZK/month, 40.9% of the respondents earned 25,000–40,000 CZK/month, and approximately one-third of the respondents (30.4%) had an income of 50,000–100,000 CZK/month. Furthermore, only 0.9% of the respondents earned more than 100,000 CZK/month. About 34.8% of the respondents had at least one child in their households. The respondents are equally spread throughout all the regions of the Czech Republic. All city sizes are represented also, so the results are not influenced by the majority of the inhabitants from cities or from villages. The motivations and drivers that affect the forest visits may vary depending on the location where they live. Nowadays, more than 50% of the world’s population lives in urban areas. In 2045, this figure is expected to increase 1.5 times to a total of 6 billion people worldwide. In the Czech Republic, in 2017, 73.68% of the population lived in cities [21]. According to a study carried out by Van Den Berg et al. [22], the benefits of forest recreation can be assessed as the product between the frequency of the forest visits and the associated motives. The forest brings many health benefits not only for physical health but also for mental health. This is mainly significant for people from cities [22,23].

Table 1. The socioeconomic data features of the respondents.

| Variable          | Category      | Number of Respondents |
|-------------------|---------------|------------------------|
| Gender            | Male          | 49.61                  |
|                   | Female        | 50.39                  |
| Age               | 12–19 years   | 8.10                   |
|                   | 20–39 years   | 32.10                  |
|                   | 40–59 years   | 33.85                  |
|                   | 60–79 years   | 25.08                  |
| Level of education| Elementary    | 15.57                  |
|                   | Secondary     | 66.07                  |
|                   | Higher        | 18.36                  |
| Monthly Income (CZK) | 8000–15000  | 5.93                   |
|                   | 15000–25000   | 14.16                  |
|                   | 25000–50000   | 25.24                  |
|                   | 50000–100000  | 30.49                  |
|                   | >100000       | 0.95                   |
| Size of the city (number of inhabitants) | <1000 | 15.90 |
|                   | 1000–4999     | 21.94                  |
|                   | 5000–19999    | 18.59                  |
|                   | 20000–99999   | 21.37                  |
|                   | >100000       | 22.20                  |
3.2. Drivers of the Forest Visits

Table 2 presents the drivers of the forest visit based on the general characteristics of the respondents. The reasons that drives the respondent to visit the forest were divided into seven categories, namely (1) just for a walk/enjoying outdoor activities, (2) doing sports in the forest, (3) relaxation/meditation, (4) only passing by, (5) collecting firewood, (6) observing and taking pictures of nature, and (7) hunting.

Table 2. The frequency of the forest visits according to the drivers.

|                              | Several Times a Week | During Leisure Time | Several Times a Month | Less Often | Not at All |
|------------------------------|----------------------|---------------------|------------------------|------------|------------|
| Just for a walk/for enjoying the outdoor environment | 10%                  | 21%                 | 25%                    | 33%        | 11%        |
| Doing sports in the forest (running/cycling, etc.) | 3%                   | 8%                  | 11%                    | 24%        | 54%        |
| Relaxation/meditation/merging with nature | 4%                   | 11%                 | 17%                    | 30%        | 38%        |
| Passes the forest on the way to school/work | 3%                   | 4%                  | 8%                     | 17%        | 68%        |
| Collection of firewood | 1%                   | 4%                  | 5%                     | 18%        | 73%        |
| Observe and take pictures of animals/birds/flowers/etc. | 2%                   | 5%                  | 6%                     | 24%        | 64%        |
| Hunting | 0.3%                 | 1%                  | 1%                     | 3%         | 95%        |

3.3. Frequency of the Forest Visits According to the Drivers

Just for a walk/enjoying outdoor activities: This driver is the strongest motivation to encourage people to visit the forest. Walking or hiking were the top recreational activities in other recent European studies also [24–31]. The detailed statistical analysis is described in the appendices (Table A1). Women reported visiting the forest for walking during their leisure time (about 24%) more than men (about 19%). Although both men and women had a similar proportion in each frequency of forest visits that indicated the same interest in visiting the forest for a walk by gender, the category of visiting the forest less often showed high percentages for both men and women (34.51% and 31.19%, respectively) followed by several times a month (27.00% and 23.33%, respectively). It is similar to the Swedish population where more than 30% of the population visits forests for walks [30].

The trend of visiting the forest for a walk by age group had the lowest proportion in the youngest age group and gradually increased and had the highest proportion of forest visitors in the age group between 40–49 years, which visited the forest several times a month just for enjoying outdoor activities. The results correlate to the study from Barcelona, where largely older people favour medium-intensity activities such as walking [26], as well as from Germany, where hikers are an average age of 47 years old [31]. Then, the frequency of the forest visits for a walk gradually decreased after 49 years old. The results indicated the importance of introducing the habit of visiting the forest starting at a younger age [32–35]. Oppliger et al. [34] found that 42% of the respondents were forbidden by their parents to visit forests in their childhood. Moreover, the children who joined a youth group interested in the forest (scouts) had a higher frequency of forest visits in their teenage years. A study from Sweden showed that children visiting nature recreational areas dropped by about one-third in the last 20 years [36]. Nevertheless, our study presented that higher education level respondents visited the forest more often than less educated ones. Askerlund and Almers [37] reported the results of a forest garden, where urban children have opportunities to understand and develop relationships with other organisms. People with a secondary education (about 22%) and higher education (27%) visit the forest in their free time more than people with a lower education level. The inhabitants of villages (about 17%) go to the forest several times a week. A quarter of the people regardless of the size of the place of their residence, go into the forest for walks less often.

Walking and enjoying nature are an important parts of the forest recreation as well as the outdoor recreation market. The attractiveness of outdoor activities is in the limelight; many European countries are aware of this [38,39]; and hence, special walking activities such as hut hiking trails, for instance, in
Germany, Austria, Sweden, Finland, Canada, or New Zealand have been developed [40]. People can use the cottages for a stay overnight and, the next day, to continue on the trail. This is also an interesting opportunity for how to use some forestry buildings which are not in use every season [41].

This kind of active relaxation is advantageous on both sides because of the added value to tourists in the form of recreation and health benefits and, on the other hand, to create employment and to strategically promote the nature locality internationally [40]. These aspects can positively influence regional profitability not only in the forestry sector but also in gastronomy or accommodation services.

**Doing sport in the forest:** In recent years, we can observe the trend of sportification of nature-based recreation; these desires turned to the organisation of adventures, physical challenges, and competitive sports events [42]. Men (50%) are more likely than women (44%) to exercise or to play a sport (p < 0.001). The detailed statistical analysis is described in the appendices (Table A2).

However, both genders are characterised by the fact that half of them were not participating in a sport in the forest at all. Young people (12–29) do sports more often in the forest than older age groups, while older people aged 40–49 (31%) do sports less frequently in the forest. Nevertheless, similar studies carried-out in nature areas, but not exactly in the forest, reported that younger people exercise more [26,43]. The results in the motives for the forest visits are generally very similar to those in parks or nature conservation areas [44]. The forest is a popular place for sports activities for urban inhabitants rather than for people from smaller towns and villages. The popularity of physical exercise in an urban forest park was also reported by Ma et al. [45]. The results showed that people from the countryside sought relaxation and calmness in the forest more often than people from the big cities. According to Abildtrup et al., [15] forest visitors can use urban parks as a substitute for the forest for their outdoor activities, but visiting the forest is a unique activity. Urban parks (depending on their size and the number of trees) are able to simulate a visit to a real forest only to a certain extent [46,47]. According to a study conducted in the United States [48], up to 90% of the population are inside buildings (schools, public buildings, offices, and factories) during a normal working day. This seems to be a signal for employers to try to bring the company culture closer to nature. People should spend more time in nature during their free time. From the recreational point of view, an urban forest, a spa forest, and a forest up to 50 m from a bicycle path and tourist trails are more attractive. These forests have the highest attendance. The average attendance of these locations is 170 attendees/ha more than other forests. The long-term average of forest attendance in the Czech Republic is 20.7 attendances/person and 87.3 attendances/ha. This data has been gained from long-term observations which were started in early 1994 [20,49]. According to the sports drivers, a study held in the Czech Republic and Poland by Janeczko et al. [50] found that Czech people run in the forest several times a month and that the reason for running in the forests was the advantage associated with the culture and regulation of the ecosystem services, such as to be in nature, the clean air, and the landscape. This slight deviation may be due to the fact that the study by Janeczko et al. [50] was focused primarily on runners, while we asked the public about sports in general.

In recent years, the popularity of cycling tourism has grown, not only mountain biking but also e-biking, which has started to become popular [39,51–53]. A recent study from Austria reported that bike tourism will be a significant part of rural economics. Two main motive of mountain bikers are the nature and physical activity [39]. In the event that the demand will increase in the Czech Republic, the future challenge for cyclists and stakeholders is to find common solutions in trail planning with regard to the sustainability and protection of the forest ecosystems.

Nearly half of the Czech population go to the forest to do some sport activity. The European Commission [54] reported that, in total, 41% of Czech people never exercised or played sport. The most common reasons for engaging in a sport or physical activity were to improve one’s health (54%). The findings from a Swiss study [34] which was directed at teenagers suggested that the support and establishment of formal and informal recreational facilities for the support for not only the physical, but also for the mental health of young people was necessary.

**Relaxation/meditation:** Relaxing, meditating, and recharging one’s energy for one’s mental well-being is the second most common reason for visiting the forest. Similar results were reported in a study in China [45]. Research in the Netherlands [24] found that relaxation was also a highly preferred
purpose of visits; however, meditation was unpopular. It showed that, in the defined categories, there are slight borders. The results reported that interest in meditation activities did not depend on gender. Relaxing activities were more interesting for people aged 30–39 (20%). This group visited the forest for these purposes several times a month. People from smaller towns and villages sought relaxation and meditation in the forest environment more often than people from the big city. Only 38% of the respondent sample did not visit the forest because of relaxation. People perceive the connection between their health and recreational activities [55]. This can also be strongly related to the motivation to go out on outings to the forest. The most dominant motives and, thus, the most dominant benefit of forest recreation is to give rest to the mind, to escape from society, and to think about substantial issues there [38].

**Walk through the woods on my way to school/work/friends, etc.:** Most people do not cross the forest on their way to work or school (68%). If so, people from a small town or village (1000–4000 inhabitants) were the most likely to go through this place. Therefore, this reason for visiting the forest was not significant for them due to their habits.

**Collecting wood for heating:** Several times a month or less, men (6%) were more likely to go to collect firewood from the forest than women (3%). Even so, the percentage of firewood collectors was very small. Most people who collect wood less often are in the category aged 40–59 (about 12%) with a higher education level (26%). In prehistory, collecting firewood was important for survival during winter [56]. The collection of firewood is no longer popular as it was in the last century. However, thanks to urbanisation and rising incomes, people start looking for another more efficient and convenient alternative for heating their houses, such as gas fuel, charcoal, or electricity [57]. The decline in this trend can be explained by the fact that people do not need wood for cooking and that they are rather buying it because it is much more convenient. In total, more than one million households in the Czech Republic use firewood (about 23.3%). Nevertheless, the most common way to procure firewood is to buy it from a forest enterprise or gamekeeper or on the wider market (about 38%). Furthermore, wood is a key fuel especially for cottages and recreational facilities. According to a national survey which was held in 2015, only 16% of the people take firewood from the forest by themselves [58]. This result is in agreement with the findings in this paper. The majority of the people who collect firewood live in villages where anyone can easily access the forest.

**Observing and taking pictures of animals/birds/flowers/nature:** Observation of nature was more popular among university educated people (about 31%). The results correlated with a study of green areas in the Netherlands, where older and highly educated people valued wildlife and flora more [59], and equally in a recent Finnish study [60] performed in urban green areas. A survey of the Swiss general public also reported a higher desire to learn something about nature in older generations [61]. This reason of visiting the forest was significantly less common. Other socioeconomic features are not significant.

The lack of professional ecologists and their limited geographical options can encourage people to do citizen science. This method can motivate the people to be a nonprofessional researcher and to go to the forest and to observe nature. In addition, the data collected could contribute to forest protection [62,63]. These methods are not well developed in the Czech Republic, but by increasing the awareness about forest benefits and by building a bridge between science and the public, they can be. In promoting these types of forest visits, we must not forget to emphasise the importance of carefully observing animals and to take certain limitations in invading the forests into account and in finding a balance for the number of visitors and economic value in the extent that nature is not overloaded and that the animals are not disturbed in their natural environment [64].

Although picking berries and mushrooms are considered one of the favourable activities in the Czech forest. The Czech Republic has quite a high rate (67%) of picking mushrooms compared to other western European countries, e.g., in Denmark, the picking rate is only 4% [13,20,65]; however, the information was not collected in this study. Nevertheless, the study confirmed that forestry plays a less vital role in the food availability of the respondents unlike in Asian or African countries [66–68].

**Hunting:** The results show that most people did not go to the forest for hunting game (up to 95%). Of the minority who said they went hunting, they were mostly men aged 40–49 with a high school education level. The age range of the hunters is slightly lower than in a study conducted in Sweden [69], where the hunter was 52 years old on average. However, the results correlate with the finding that hunters were
predominantly from rural areas [70,71]. The education level of hunters in other countries was at a lower level [69]. This motive was the lowest of the eight drivers. Although hunting is deeply anchored in the history of the Czech Republic, the practices are decreasing due to the increasing trend of animal protection as well the increasing urbanisation caused by living in a city environment and empowering negative attitudes towards hunting compared to other recreational activities [72]. Moreover, nowadays, hunting is carried out for the purpose of recreation, unlike in the past when it was a necessary source of livelihood. [73]. Hunting as a recreation activity is at a very low level in this study (5%). Overall, this motive to visit the forest among other recreational activities is very low; only around 1% of Europeans mentioned visiting the forest for hunting [74]. In the Czech Republic, there are restrictions that limit game hunting. Only people with a gun license and a hunter’s license can hunt. Game hunting is also greatly influenced by the season; in each season, hunters are only allowed to hunt specific game species.

Further research would be useful to find out the attitude of the Czech public for recreational hunting, for instance, Sweden, Switzerland, and Denmark have a majority of nonhunter positive attitudes [73,75].

4. Conclusions

The strongest driver for visiting the forest was mainly the public’s demand for spending time outdoors in the forest in the form of a walk. Another powerful driver was to relax in the forest and to regain new energy. These most powerful drivers are highly related to the peoples’ health and well-being. Although hunting is historically anchored in culture, our study showed that it was not a powerful driver for visiting the forest. The power of each driver is strongly related to the demand for recreation subject to the trends; therefore, it is necessary to constantly monitor it.

We recommend promoting environmental education and supporting its sustainable development from the bottom of the educational system because urbanisation and the increase in technology has caused young people to become increasingly distant from the natural environment. In this respect, it would be interesting to investigate the background education of the respondents or whether they had attended any environmental education, such as scouts or a forest school or if they had visited any environmental programmes or even a forest garden. Policy makers should promote forest bathing among seniors and retired people for reducing disease. Designing a communication strategy that would bring them closer to the benefits of forest bathing is a prerequisite.

Consequently, the growing demand for outdoor recreation creates challenges for both public and private lands. Understanding what vacationers really want and expect from their experiences is important for planners of the forests. The demand for ecosystem services in the Czech Republic is closely related to the frequency of the forest visits. In order to gain a deeper understanding of the forest motives, it is necessary to map the demand for ecosystem services as these studies have not yet been conducted.

Those motives can be very efficiently used in territorial marketing which is a tool that has been successfully used in forest products and services [76]. This marketing approach to a particular region has become a common reference framework for creating a consistent portfolio of products and services and the basis for marketing efforts to coordinate their enforcement [77]. Recreational services to forest ecosystems, formerly often perceived as “additional benefits” to the forest landscape, can be developed, for example, with the use of recreational and sports facilities, restaurants, or the organisation of guided walks, etc. At the choice of the target group, various events or accommodation can be successfully changed into exclusive luxury products with an exceptional atmosphere. The provision of these services often requires larger areas, creating benefits for large forest enterprises [76]. Again, this circumstance is in favour of territorial marketing, which makes it possible to work with larger territories. Slee [78] describes the trend that some rural regions are increasingly switching from production to consumption in the regions where the value and consumption of land-bound services such as recreation or housing takes precedence over the production of agricultural and forestry commodities.

The limitation of this research occurred in the setup of the driver categories, for instance, in the results of the relaxation/meditation category in the most similar studies, relaxation is one of the top activities, but meditation is less unfavourable. We recommend separating the categories more precisely one by one.
large proportion of respondents are Internet users, which may seem limiting. However, we noticed that, nowadays, the use of mobile phone and the Internet are very profound in the Czech Republic; 86% of all households have internet access [79].

It is highly recommended to have discussions between the public and the stakeholders. The opinions on forest management may be different between the stakeholders and the public. A participatory way of discussion is a suitable method for identifying the views of both parties and for finding common solutions. The solutions chosen should be in harmony with nature and should save the balance in the provision of the forest ecosystem services. The change in demand for spending leisure time in the forest is recommended to be continuously monitored. Further research should focus more on both the quantitative and qualitative investigations of forest visitors’ preferences in detail because this knowledge is necessary for recreational planning and because establishing various recreation zones can help satisfy the specific needs of various visitors [80]. Stakeholders should be financially supported in this respect. Even the construction of these places in the regions will also prevent certain places from being unnecessarily burdened with tourism. In order to gain a comprehensive view of the forest attendance in the Czech Republic, it is highly recommended to carry out a study among the stakeholders.

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## Appendix A

Table A1. Going on walks as a driver of the frequency of the forest visit in a year in the Czech Republic.

|                                      | Several Times a Week | During My Leisure Time | Several Times a Month | Less Often | Not at all | Total | P Value |
|--------------------------------------|----------------------|------------------------|-----------------------|------------|------------|-------|---------|
| Just for a walk/for enjoying the outdoors | n (×10^6) | % | n (×10^6) | % | n (×10^6) | % | n (×10^6) | % | n (×10^6) | % | n (×10^6) | % |
| **Gender**                           |                      |                        |                       |            |            |       |         |
| Man                                  | 366.47               | 8.40                   | 825.93                | 18.93      | 1178.01    | 27.00 | 1505.48  | 34.51  | 486.75    | 11.16 | 4362.64  | 100.00 |
| Woman                                | 518.84               | 11.71                  | 1056.47               | 23.84      | 1033.57    | 23.33 | 1381.84  | 31.19  | 440.35    | 9.94  | 4451.07  | 100.00 |
| **Age group**                        |                      |                        |                       |            |            |       |         |
| 12-19 years                          | 63.25                | 8.69                   | 151.35                | 20.78      | 140.59     | 19.31 | 274.34   | 37.67  | 98.70     | 13.55 | 728.23   | 100.00 |
| 20-29 years                          | 185.42               | 14.52                  | 266.14                | 20.84      | 246.87     | 19.33 | 463.97   | 36.33  | 114.74    | 8.98  | 1277.15  | 100.00 |
| 30-39 years                          | 114.64               | 7.17                   | 428.41                | 26.78      | 415.22     | 25.95 | 518.62   | 32.41  | 123.04    | 7.69  | 1599.93  | 100.00 |
| 40-49 years                          | 177.20               | 10.69                  | 382.36                | 23.06      | 537.07     | 32.39 | 440.21   | 26.55  | 121.20    | 7.31  | 1658.03  | 100.00 |
| 50-59 years                          | 78.48                | 5.96                   | 262.28                | 19.93      | 410.27     | 31.18 | 399.61   | 30.37  | 165.25    | 12.56 | 1315.89  | 100.00 |
| 60-69 years                          | 166.75               | 12.24                  | 251.19                | 18.43      | 319.93     | 23.48 | 486.74   | 35.72  | 138.07    | 10.13 | 1362.69  | 100.00 |
| 70-79 years                          | 99.57                | 11.69                  | 140.66                | 16.51      | 141.62     | 16.63 | 303.83   | 35.67  | 166.11    | 19.50 | 851.80   | 100.00 |
| **Education level**                  |                      |                        |                       |            |            |       |         |
| Primary                              | 108.43               | 7.94                   | 248.61                | 18.21      | 311.94     | 22.85 | 489.38   | 35.85  | 206.84    | 15.15 | 1365.2    | 100.00 |
| Vocational training/High school       | 259.33               | 9.09                   | 537.42                | 18.85      | 759.94     | 26.65 | 927.10   | 32.51  | 367.72    | 12.90 | 2851.5    | 100.00 |
| Vocational training or graduated from High school | 351.33 | 11.89 | 658.80 | 22.29 | 759.45 | 25.70 | 925.79 | 31.33 | 259.73 | 8.79 | 2955.1 | 100.00 |
| Higher education                     | 166.22               | 10.25                  | 437.56                | 26.98      | 380.25     | 23.44 | 545.06   | 33.61  | 92.81     | 5.72  | 1621.9    | 100.00 |
| **Place of residential**             |                      |                        |                       |            |            |       |         |
| Prague                               | 85.88                | 8.02                   | 192.05                | 17.94      | 293.50     | 27.42 | 397.81   | 37.16  | 101.32    | 9.46  | 1070.5    | 100.00 |
| Outside of Prague                    | 1684.75              | 10.20                  | 3572.73               | 21.63      | 4129.66    | 25.00 | 5376.84  | 32.55  | 1752.89   | 10.61 | 16516.8   | 100.00 |
| **Size of the city (inhabitants)**   |                      |                        |                       |            |            |       |         |
| <1000                                | 247.10               | 17.53                  | 376.39                | 26.70      | 335.35     | 23.79 | 416.21   | 29.52  | 34.74     | 2.46  | 1409.7    | 100.00 |
| 1000-4999                            | 168.16               | 8.67                   | 451.01                | 23.26      | 462.81     | 23.87 | 731.46   | 37.72  | 125.72    | 6.48  | 1939.1    | 100.00 |
| 5000-19,999                          | 160.03               | 9.78                   | 311.94                | 19.07      | 487.02     | 29.77 | 514.43   | 31.44  | 162.55    | 9.94  | 1635.9    | 100.00 |
| 20,000–99,999                        | 166.01               | 8.87                   | 414.72                | 22.15      | 382.81     | 20.44 | 557.13   | 29.75  | 351.98    | 18.80 | 1872.6    | 100.00 |
| <100,000                             | 144.02               | 7.44                   | 328.33                | 16.96      | 543.59     | 28.08 | 668.08   | 34.51  | 252.12    | 13.02 | 1936.1    | 100.00 |

Note: P Value is calculated using the chi-square test.
Table A2. Doing sports in the forest as a driver of the frequency of the forest visit in a year in the Czech Republic.

| Doing sports in the forest (running/cycling, etc.) | Most of the Year (Several Times a Week) | During My Leisure | Several Times a Month | Less Often | Not at All | Total | p Value* |
|--------------------------------------------------|----------------------------------------|------------------|-----------------------|-----------|-----------|-------|----------|
|                                                  | n (×10⁴) | % | n (×10⁴) | % | n (×10⁴) | % | n (×10⁴) | % | n (×10⁴) | % |
| Gender                                           |          |   |          |   |          |   |          |   |          |   |
| Male                                             | 122.29   | 2.77 | 348.84   | 7.99 | 574.34   | 13.13 | 1.101.4 | 8 | 25.11 | 2215.69 | 50.22 | 4411.65 | 100.00 | 1.77 × 10^-6 |
| Woman                                            | 137.00   | 3.06 | 357.15   | 8.05 | 435.49   | 9.80 | 999.43   | 22.45 | 2502.00 | 55.92 | 4474.44 | 100.00 |
| Age group                                        |          |   |          |   |          |   |          |   |          |   |          |   | 0.000    |
| 12–19 years                                      | 28.13    | 3.86 | 84.21    | 11.56 | 161.23   | 22.14 | 195.54   | 26.85 | 259.12   | 35.58 | 728.23   | 100.00 |
| 20–29 years                                      | 85.53    | 6.70 | 193.73   | 15.17 | 145.79   | 11.42 | 342.07   | 26.78 | 510.02   | 39.93 | 1277.15  | 100.00 |
| 30–39 years                                      | 49.32    | 3.08 | 156.61   | 9.79 | 251.53   | 15.72 | 431.72   | 26.98 | 710.76   | 44.42 | 1599.93  | 100.00 |
| 40–49 years                                      | 66.57    | 4.01 | 156.07   | 9.41 | 205.48   | 12.39 | 513.13   | 30.95 | 716.79   | 43.23 | 1658.03  | 100.00 |
| 50–59 years                                      | 2.70     | 0.21 | 67.83    | 5.15 | 131.15   | 9.97 | 297.29   | 22.59 | 816.91   | 62.08 | 1315.89  | 100.00 |
| 60–69 years                                      | 24.03    | 1.76 | 30.51    | 2.24 | 75.15    | 5.81 | 240.43   | 17.64 | 988.57   | 72.55 | 1362.69  | 100.00 |
| 70–79 years                                      | 3.02     | 0.35 | 17.04    | 2.00 | 35.51    | 4.17 | 80.73    | 9.48 | 715.50   | 84.00 | 851.80   | 100.00 |
| Education level                                  |          |   |          |   |          |   |          |   |          |   |          |   | 0.000    |
| Primary                                          | 29.06    | 2.13 | 95.79    | 7.02 | 209.16   | 15.32 | 273.64   | 20.04 | 757.55   | 55.49 | 1365.20  | 100.00 |
| Vocational training/High school*                 | 58.99    | 2.07 | 162.73   | 5.71 | 265.15   | 9.30 | 633.39   | 22.21 | 1731.25  | 60.71 | 2851.51  | 100.00 |
| Vocational training/High school with graduation* | 94.35    | 3.19 | 310.26   | 10.50 | 356.13   | 12.05 | 666.18   | 22.44 | 1531.18  | 51.82 | 2855.10  | 100.00 |
| Higher education                                 | 76.89    | 4.74 | 137.21   | 8.46 | 179.40   | 11.06 | 530.70   | 32.72 | 697.70   | 43.02 | 1621.91  | 100.00 |
| Place of residential                             |          |   |          |   |          |   |          |   |          |   |          |   | 4.00 × 10^-1 |
| Prague                                           | 15.88    | 1.48 | 104.83   | 9.79 | 76.48    | 7.14 | 333.70   | 31.17 | 539.67   | 50.41 | 1070.56  | 100.00 |
| Outside of Prague                                | 502.70   | 3.04 | 1307.1   | 6 | 7.91 | 1943.19 | 11.76 | 3868.1 | 2 | 23.42 | 8985.69 | 53.86 | 16516.8 | 100.00 | 4.00 × 10^-4 |
| Size of the city (inhabitants)                   |          |   |          |   |          |   |          |   |          |   |          |   |          |   |          |
| <1000                                            | 72.87    | 5.17 | 162.91   | 11.56 | 133.59   | 9.48 | 369.99   | 26.24 | 670.42   | 47.55 | 1449.79  | 100.00 |
| 1000–4999                                        | 67.88    | 3.50 | 153.96   | 7.94 | 265.12   | 13.67 | 476.99   | 24.60 | 975.21   | 50.29 | 1939.16  | 100.00 |
| 5000–19,999                                      | 34.26    | 2.09 | 87.17    | 5.33 | 240.46   | 14.70 | 406.92   | 24.87 | 867.16   | 53.01 | 1635.98  | 100.00 |
| 20,000–99,999                                    | 51.14    | 2.73 | 159.19   | 8.50 | 192.87   | 10.30 | 284.31   | 15.18 | 1185.14  | 63.29 | 1872.65  | 100.00 |
| <100,000                                         | 33.13    | 1.71 | 142.76   | 7.37 | 177.79   | 9.18 | 562.70   | 29.06 | 1019.76  | 52.67 | 1956.14  | 100.00 |

* p values for the chi-square test for independence.
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