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**THE IMPACT OF HEALTH TOURISM ON THE SUBJECTIVE  
QUALITY OF LIFE AND THE ECONOMY OF DOMESTIC  
SETTLEMENTS THAT HAVE CERTIFIED HEALTH RESORTS**

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## 1. Introduction

Health tourism is a prominent type of tourism in the 21st century. Its demand, economic and social importance are expected to grow in the future due to the needs of ageing developed societies and changing lifestyles that value health (Rieger, 2013; Koskinen, 2019; Lee et al. 2020; Gholami et al., 2020). Health tourism is a dominant element of Hungary's tourism offer (MTÜ).

Hungary has a favourable potential for health tourism, in particular because a large part of its territory is rich in thermal and mineral waters. These areas have a long tradition of providing health treatments for tourists. Hungary's favourable position in the health tourism sector is reinforced not only by its excellent natural resources, but also by the value for money of the services offered. Health tourism is one of the most dynamically developing areas of tourism in Hungary (VITUKI, 2005; Szűcs, 2012; Bender et al., 2013; MTÜ, 2017; Bakucz, 2020).

The spatial delimitation of the research is given by the 37 Hungarian settlements, which have certified health resorts as the main elements of Hungary's tourism offer, according to the register published by the Government Office of Budapest on 15 January 2020 (Budapest Capital Government Office).

In many cases, health tourism services are the flagship of the tourism offer of the municipalities with health resorts. The certification of the health resort itself does not predetermine the tourism performance of a city (e.g. number of guests and overnight stays, tax revenues, visibility, image, etc.), as it requires a complex approach and a well thought-out strategy at the level of the municipality. The results of tourism researches and the practical experience of experts agree that the quality of life and satisfaction of local residents are important factors in the success of destinations in tourism at the municipal level. The interaction of tourism on the local economy and the quality of life of tourists and host communities is a frequently studied area (e.g. Moscardo, 2009; Michalkó, 2010; Kim et al., 2013; Comerio - Strozzi, 2018; Suess et al., 2018; Eslami et al., 2019; Campón-Cerro et al., 2020; Ignjatijević - Tankosić, 2020; Kiss et al., 2020).

### **1.1. Significance and objectives of the research**

The dissertation deals with the economic and social characteristics of domestic municipalities that have a health resort certification, with a special focus on the processes that can be linked to the economic and subjective quality of life effects of health tourism.

The scientific analysis of the importance of health resorts is particularly topical, as a few years ago priority tourism development areas were created (Government Decree 429/2016 (XII.15.)). Health tourism can be a cornerstone for developing new tourism areas due to its low seasonality, nature-based tourism products, special clientele, long average length of stay and the outstanding income level. This form of tourism can also have a not inconsiderable impact on the positive economic trends (e.g. tax revenue, jobs, etc.) of municipalities (and regions). Additionally, health tourism can also have a positive impact on the health sector (e.g. improvements, better quality of services, alternative treatments, etc.), due to the strong link between the products.

In the dissertation, the domestic settlements, which have certified health resorts are grouped according to their economic and tourism indicators (cluster analysis), the most important grouping variables are mapped, and a comparative analysis is made of the clusters formed along the different economic and social differences.

The results of the dissertation fit well with the strategic orientation of the sections of the Tourism 2.0 document on health resorts, which states that the future goal is the conscious thematic profiling of health resorts and the settlements connected to them. That means the specialisation and profiling of the offer of certified health resorts. The document also sets the goal of categorising health resorts from a "destination market perspective", which in fact means the diversification of health resort settlements according to their attractiveness. The results of this study may strengthen the above-mentioned efforts of the Hungarian Tourism Agency and may help in the further development of the categories and the classification of new settlements.

I explored the characteristics of the settlements in a complex way. At the beginning of the work, a cluster analysis, including hierarchical and K-means clustering, was performed with the help of data retrieved from the databases of the Central Statistical Office (KSH) and the Land Information System (TeIR). The analysis aims to determine which settlements with certified health resorts have similar characteristics and can thus be classified into homogeneous groups.

The research work continued based on the results of the cluster analysis. During further investigations, I treated the settlements grouped by clusters. Accordingly, a questionnaire survey was conducted among the local residents and local governments of the settlements that have certified health resorts. The aim of the questionnaire for residents was to assess the quality of life of the population and their attitudes, opinions and experiences towards health tourism. The result is representative based on the number of permanent residents of the clusters. The research performed among local governments was aimed at examining the general situation of settlements and assessing the effects related to health tourism. The questionnaire sent to the local governments of the examined settlements was filled in by the local governments of all Hungarian settlements that have certified health resorts, so the data collection was complete.

After the questionnaire surveys, expert interviews were conducted with the heads of tourism destination management organisations (DMOs) (13 people), one of the leaders of the Hungarian Tourism Agency (MTÜ) and the head of the Health Insurance Inspection Department of the National Health Insurance Fund of Hungary (NEAK). The interviews focused on the general characteristics of certified health resorts, the economic and social impacts of health tourism on health resorts, potential development opportunities, the success factors of health resorts, and the consequences of the SARS-COV-2 coronavirus pandemic.

The main research questions are the following:

1. What is the impact of health tourism on the subjective quality of life (happiness, health, financial situation) of people living in settlements that have certified health resorts?
2. What is the impact of health tourism on the visibility and local economy (quality of jobs, development) of settlements that have certified health resort?
3. How do subsidies from local authorities, tourist destination management organisations (DMO) and the National Health Insurance Fund of Hungary (NEAK) affect health tourism in settlements that have a certified health resort?
4. Which success factors can be identified from the perspective of tourism stakeholders (MTÜ, DMO organisations, NEAK) in relation to settlements that have certified health resorts?

## 1.2. Structure of the dissertation

In the first part of the thesis, I reviewed the literature on the topic. I moved purposefully and systematically towards the system of health tourism. In relation to health tourism, I have dealt in detail with the concept of health tourism itself, its growing demand and popularity, and the main consumer motivations. After that, I presented the two main subtypes of health tourism (wellness and medical tourism) in a detailed form. Then I continued with the supply and demand characteristics of health tourism and the trends and challenges associated with health tourism. Following the chapters on the theory of health tourism, I continued with the links to quality of life and the economy, showing both positive and negative impacts.

The next big unit of the literature review is the presentation of the health tourism offer of Hungary. In this section, I focused on the role of settlements, the characteristics of health resorts and the most important regulations related to them. I covered the unavoidable types of service providers (medical hotels, spas) that provide the backbone of the health tourism offer of certified health resorts in Hungary.

The research part of the dissertation draws on data from both secondary and primary sources. In the first step, based on the results of the cluster analysis that was made with the help of secondary data from 2018 (KSH and TeIR) on the basis of per capita values at the municipal level are presented, and the clusters were formed from the settlements studied. After presenting the results of the cluster analysis, the results of online questionnaires and structured interviews with experts used in the primary data collection are presented. A total of 11,287 inhabitants of the surveyed municipalities completed the questionnaire that was available between November 2019 and March 2020. The proportion of local residents completing the questionnaire in relation to the total population (954,206) was 1.18%. The response rate for the questionnaire for the municipalities of the surveyed municipalities was 100%. On the basis of the results obtained during the primary data collection, I conducted relationship analyses (Cramer indicator, Spearman and Kendall rank correlation). In total, 15 structured expert interviews were conducted with one of the leaders of the Hungarian Tourism Agency, the heads of the DMO organisations linked to the settlements and a head of department of the National Health Insurance Fund of Hungary. After presenting the results, I evaluated the findings, tested the hypotheses and developed the theses. The summary of the thesis

includes the main findings and limitations of the research and outlines potential future research directions.

## **2. Theoretical background of the research**

Tourism is one of the largest and most dynamically growing economic sectors in the world. One of the most important sources of socio-economic development, as it contributes greatly to the creation of jobs and businesses, the growth of export revenues and the development of infrastructure (UNWTO, 2018; Zekavati – Naami, 2019).

Its impact on technological development is unquestionable. The job-creating capacity of the industry with its incentive effect on investment and the generating effect of exchange rate revenue are well known (Molnár et al., 2009; Divisekara, 2013; Joukes et al., 2013; Drăghici et al., 2016).

Travel for health reasons is not a new phenomenon. Throughout history, we find many examples and references to travellers with such motivation (Puczkó - Bachvarov, 2006; Lunt et al., 2011; Costa et al., 2014; Jancsik et al., 2019; Bagga et al., 2020). Increased European integration in the 20<sup>th</sup> century, the introduction of the single currency, the abolition of travel restrictions, and increased mobility due to cheaper travel have transformed the continent's health geography. Due to political and logistical changes, health tourism has become an everyday phenomenon (Issenberg, 2016). In recent years, the concept of health has become broad, as it now includes mental and psychological health in addition to its original meaning, interpreted only for physical health (Smith - Puczkó, 2017).

The range of services related to health tourism is colourful, but there is no agreement on their exact scope and classification within health tourism. One of the reasons for this is that health tourism cannot be considered a classic tourism product, as it is also close to health care. According to the National Tourism Development Strategy 2030, all health-related travel is included in health tourism (Boros et al., 2012, p. 8; MTÜ, 2017; Faisal - Dhusia, 2020).

There are two main subtypes of health tourism. One of them is medical tourism, which is disease-oriented. Its main goal is to provide and develop health care and rehabilitation services through special institutions and tourism service providers. The other is wellness tourism, in which the main motivation is to maintain an optimal state of health, prevention

with the help of physical and mental balance. The foundations of wellness tourism are mainly provided by spa and wellness hotels and spas (Smith - Kelly, 2006; Kardos, 2011, p. 58; Dryglas - Rózycki, 2017; Quintela et al., 2020).

In terms of health tourism in Hungary, certified health resorts have an extremely important role, as they are the “main arenas” of Hungarian health tourism (MTÜ, 2017 p. 50). These sites connected to the settlements can be considered the most important centres of Hungarian health tourism (MTÜ, 2017). All in all, health resorts are special areas that have both the natural and built elements needed for healing and relaxing.

One of the most significant positive economic effects of health tourism is the increase in direct foreign exchange earnings as well as the large contribution to government revenues. Besides, health tourism provides direct or indirect employment and business opportunities for residents:

- *direct employment* includes jobs that are directly related to tourism, such as hotel jobs, taxi services, restaurant jobs, and so on.
- *Indirect employment* is defined as jobs that are not connected directly to the tourism but necessary for the successful operation, such as services that are used by residents daily, but also suitable to satisfy the daily needs of tourists (Jagyasi, 2014; Baker McArthur, 2015).

In addition to tourists, health tourism has an impact on the quality of life of the local population in the host areas. Among other things, it can contribute to the improvement of the intellectual and material values and health of the locals. (Kopp – Kovács, 2006; Fehérvölgyi et al., 2019). The issue of quality of life is closely linked to tourism, and within that to health tourism. Tourism (including health tourism) primarily affects the local population’s quality of life and the satisfaction of tourists with life (Kovács – Horkay – Michalkó, 2006). In the case of tourism, objective indicators can be collected from the database of the Central Statistical Office, but subjective ones should be collected through primary research.

### 3. Research questions, hypotheses and presumptions

Research questions	Hypotheses/Presumptions	Information used for testing
<p><b>1.</b> What is the impact of health tourism on the subjective quality of life (happiness, health, financial situation) of people living in settlements that have certified health resorts?</p>	<p><b>H1.</b> There is a relationship between the clustering of settlements that have certified health resorts on the basis of the economic and tourism indicators and the subjective quality of life (happiness, health, financial situation) of local residents.</p>	<ul style="list-style-type: none"> <li>• Questionnaire for residents of the settlements that have a health resort (questions C5, C6 and C7)</li> <li>• Result of the cluster analysis (clusters)</li> </ul>
<p><b>2.</b> What is the impact of health tourism on the visibility and local economy (quality of jobs, development) of settlements that have certified health resort?</p>	<p><b>H2./a.</b> According to local residents, health tourism, regardless of cluster membership, has a positive impact on the visibility of settlements that have certified health resorts.</p> <p><b>H2./b.</b> Settlements where both the local council and the local population consider the role of health tourism important in the life of the settlement, are performing better in terms of the tourism indicators included in the analysis.</p> <p><b>H2./c.</b> There is a positive relationship between the assessment of the importance of the health resort certification and the assessment of the development of the settlement and the quality of the jobs.</p>	<ul style="list-style-type: none"> <li>• Questionnaire for residents of the settlements that have a health resort (question B2 and B5)</li> <li>• Results of the cluster analysis</li> <li>• Questionnaire for residents of the settlements that have a health resort (question B2)</li> <li>• Questionnaire for the local councils of the settlements that have a health resort (question B3)</li> <li>• Questionnaire for the local councils of the settlements that have a health resort (question B1 and B5)</li> </ul>

<p><b>3.</b> How do subsidies from local authorities, tourist destination management organisations (DMO) and the National Health Insurance Fund of Hungary (NEAK) affect health tourism in settlements that have a certified health resort?</p>	<p><b>P1.</b> In the case of settlements that have a certified health resort, the decisions at the local/settlement level are most able to influence the performance available in connection with health tourism (awareness, image, development of tourism infrastructure, specific, settlement investments).</p>	<ul style="list-style-type: none"> <li>Structured interviews (DMO organisations, NEAK, MTÜ)</li> <li>Questionnaire for the local councils of the settlements that have a certified health resort (question B4)</li> </ul>
<p><b>4.</b> Which success factors can be identified from the perspective of tourism stakeholders (MTÜ, DMO organisations, NEAK) in relation to settlements that have certified health resorts?</p>	<p><b>P2.</b> The success factors related to health tourism in the settlements that have a certified health resort can be clearly defined.</p>	<ul style="list-style-type: none"> <li>Literature</li> <li>Structured interviews (DMO organisations, NEAK, MTÜ)</li> <li>Questionnaire for the residents of the settlements that have a certified health resort (questions B4 and B5)</li> </ul>

## **4. Material and method**

The research includes both secondary and primary data collection. Qualitative (structured interview) and quantitative (questionnaires, cluster analysis, correlation studies) methods were also used in the research.

### **4.1. Cluster analysis**

At the beginning of the research, I performed a cluster analysis of the settlements that have a certified health resort. The analysis was based on indicators connected to the economic environment and tourism of the settlements from 2018. The indicators used in the analysis were collected from the database of the Central Statistical Office and the Land Information System (TeIR). It was a difficulty that in the case of Mátraderecske for reasons of data protection, the Central Statistical Office does not publish data on accommodation. Therefore, before the cluster analysis, I used an imputation-based method. I have replaced the missing data with the median calculated from the data of the settlements belonging to the same size group as Mátraderecske based on the grouping of settlements by size (Oravecz, 2008).

### **4.2. Questionnaire for the residents**

I conducted a questionnaire survey among the population of the settlements, which have a certified health resort. The total permanent population (total population) of these settlements according to data from 2018 is 954,206 people. To improve the transparency of the data collection, I arranged the examined settlements into four groups based on their population. The groups were defined on the basis of the settlement classification criteria of the Land Information System (TeIR) operated by the Lechner Knowledge Centre (TÉRPORT).

The questionnaires were completed in an online way, according to the groups based on the population, focusing on each settlement. The online, self-administered questionnaires were created using the Limesurvey software. The survey was conducted between November 1, 2019, and March 30, 2020. I reached the residents of the settlements with the help of Facebook groups belonging to each settlement (local people). The questionnaire was shared in more than 140 groups, more than 300 times. The questionnaire was opened a total of 21,362 times and the number of completed replies was 11,287.

- The proportion of respondents in relation to the total population varies between 1.12% and 1.41% for the population-based groups of municipalities for the questionnaire survey. The proportion of respondents to the total population is 1.18%.
- When the number of respondents is related to the population of the clustered groups of municipalities, the response rate varies between 1.1% and 1.6%.

#### **4.3. Questionnaire for the local councils**

A questionnaire survey was conducted among the local authorities of settlements with certified health resorts. The online questionnaire was created using the Limesurvey software, and the survey was performed between autumn 2019 and spring 2020, and in autumn 2020. The questionnaires were sent individually to the local councils by e-mail, with a covering letter. The response rate was 100% and the questionnaires were completed by all the municipalities surveyed (37 pieces), thus providing a complete coverage of the population.

#### **4.4. Structured interviews**

Among the qualitative research methods, the structured interview was used. In connection with my research, I conducted a total of 15 structured interviews with the leaders of tourism destination management organisations (DMOs) selected according to the settlement groups formed during the cluster analysis (13 interviews). Further interviews were conducted with one of the leaders of the Hungarian Tourism Agency (MTÜ) and the head of the Health Insurance Inspection Department of the National Health Insurance Fund of Hungary.

The main topics of the interviews with DMO organisations and the MTÜ were the following:

- the general characteristics, evaluation and general economic significance of certified health resorts,
- the characteristics, evaluation and specific economic significance of the certified health resort(s) belonging to the DMO organisation of the given area,
- the possibilities of DMO organisations in connection with the development and operation of certified health resorts,
- success factors related to certified health resorts,
- marketing communications related to certified health resorts,

- the impact of the new coronavirus pandemic on certified Hungarian health resorts.

#### **4.5. Relationship analyses**

To analyse the results obtained with the help of consumer and local council questionnaires, I used the Cramer association coefficient and the Spearman and Kendall rank correlation.

Cramer's association coefficient is a symmetric indicator that can be used for any crosstab in the case of nominal scales. It gives a very reliable result. The value of the indicator ranges from 0 to 1, where the former means no relationship and the latter shows a strong relationship between the variables (Sajtos – Mitev, 2007).

With the help of correlation analysis, the closeness and direction of the relationship between the examined variables can be detected. When measuring the closeness of a relationship between non-metric, specifically ordinal variables, Spearman's  $\rho_s$  and Kendall's  $\tau$  can be used. These metrics do not use the absolute values of the variables, but the rankings. The use of Spearman's  $\rho_s$  is preferable for a large number of categories, while Kendall's  $\tau$  should be preferred when the majority of cases fall into a relatively small number of categories (Kerékgyártó et al., 2017; Veres et al., 2017; Malhotra, 2017).

## 5. Examination of hypotheses

**Hypothesis 1:** There is a relationship between the clustering of settlements that have certified health resorts on the basis of the economic and tourism indicators and the subjective quality of life (happiness, health, financial situation) of local residents.

To examine the relationship assumed in the hypothesis (indicators of cluster membership and subjective quality of life), I used Cramer's association coefficient since I examined the relationship between the values of variables measured on a nominal and on an ordinal scale. The results show that there is no significant relationship either in terms of happiness ( $\text{Sig.}=0.265$ ), in terms of health ( $\text{Sig.}=0.066$ ), or in terms of material conditions ( $\text{Sig.}=0.803$ ). This means that there is no relationship between the clusters of Hungarian settlements that have certified health resorts (cluster membership) and the subjective quality of life (happiness, health, financial situation) of the local inhabitants of the settlements. *I do not consider the hypothesis to be justified.*

**Hypothesis 2/a:** According to local residents, health tourism, regardless of cluster membership, has a positive impact on the visibility of settlements that have certified health resorts.

To test the hypothesis, I performed a Spearman rank correlation calculation for each cluster. Based on the questionnaires filled in by the residents of the settlements that have health resorts, I considered the extent to which the residents consider health tourism in their settlement to be decisive, measured on a four-point Likert scale (where 1="not true at all", 4="completely true"), furthermore how true they think it is that health tourism increases the popularity of their settlement among tourists.

In the case of "Stars" there is a significant relationship between the examined variables. The value of Spearman's rank correlation coefficient is 0.442, which shows a moderately strong positive relationship between the variables. Based on the tourism indicators included in the cluster analysis, there is also a significant relationship between the examined variables in terms of "Sleeping giants", which summarizes poorly performing settlements. The value of Spearman's rank correlation coefficient is 0.349, which shows a moderately strong positive relationship between the variables. The study conducted for "Comets" yielded similar results to the previous clusters. The relationship between the variables is significant here as well. In this case, the value of Spearman's rank correlation

coefficient is 0.365, which also means a moderately strong positive relationship between the studied variables. In the case of the cluster of “Giant dwarfs”, which compiles excellent performing settlements based on the tourism indicators included in the cluster analysis, there is also a significant relationship between the examined variables. The value of Spearman's rank correlation coefficient is 0.334, which means a moderately strong positive relationship between the variables.

The value of the rank correlation coefficient, regardless of cluster membership, shows that the more important the role of health tourism in the life of the settlement is, the more they believe that the awareness of the settlement increases among tourists. Based on the results, *I consider the hypothesis to be justified.*

**Hypothesis 2/b:** Settlements where both the local council and the local population consider the role of health tourism important in the life of the settlement, are performing better in terms of the tourism indicators included in the analysis.

Based on the results of the cluster analysis performed on the basis of the economic environment and tourism indicators, it can be stated that “Stars”, “Comets” and “Giant dwarfs” clusters compress the settlements that perform well and excellently. Both the local governments and the residents of the examined settlements were able to evaluate the significance of health tourism in the life of the settlement with the help of four-point Likert scales (1=not decisive, 4=very decisive).

Based on the mode values obtained after summarizing the opinions of the local governments by clusters, in the case of the poorly performing “Sleeping giants” settlements health tourism is less decisive in the life of the settlements. Based on the tourism indicators included in the cluster analysis, the local councils of the “Stars” and “Comets” consider health tourism to be decisive, while the settlements of the “Giant dwarfs” cluster consider the role of health tourism to be very decisive.

Based on the questionnaires filled in by the locals, the result is slightly different from what was seen in the case of local councils. Based on the tourist data, the majority of the residents of “Stars and “Giant dwarfs” consider health tourism to be very decisive. Based on the tourism indicators included in the analysis, the situation is balanced between the dominant and very dominant categories in the case of “Sleeping giants”, while the majority of the inhabitants of the settlements compressed by “Comets” consider health tourism to be less dominant in their own settlement. In the case of “Giant dwarfs” the

opinions of local government and local residents are in agreement. In the case of “Stars” and “Comets”, which perform well on the basis of tourism indicators, the evaluations of local governments and local residents are focused on adjacent categories, while in the case of “Sleeping giants”, which performs poorly, there is a marked difference between local and municipal residents.

*I consider the hypothesis to be justified* since among the clusters formed from certified health resorts, both local governments and residents of the settlements of “Giant dwarfs” consider health tourism in the settlement to be very decisive. This cluster performs better than the other three clusters in terms of the tourism indicators analysed. In the case of the clusters that performed well in terms of the tourism indicators included in the analysis (“Stars” and “Comets”), there is a greater agreement between the municipality and the residents on the determining role of health tourism than in the case of “Sleeping giants”.

**Hypothesis 2/c:** There is a positive relationship between the assessment of the importance of the health resort certification and the assessment of the development of the settlement and the quality of the jobs.

In the case of hypothesis 2/c, I used the questionnaires filled in by the local councils of the examined settlements. To test the hypothesis, I used Kendall's rank correlation due to the small number of items.

Based on the performed studies, *the hypothesis can only be considered partially confirmed*. In the case of “Sleeping giants”, which summarizes poorly performing settlements based on the tourism indicators included in the analysis, and “Giant dwarfs”, which summarizes excellent performances based on the same data, there is no significant relationship between the importance of health resort status and the development and jobs of the settlement.

In the case of “Stars” and “Comets”, which summarize well-performing settlements based on the used tourism data, there is a connection between the importance of the certification of a health resort and the assessment of the development and jobs of the settlement. In the case of “Stars”, there is a moderately strong, positive connection ( $\tau_B = 0.471$ ) between the evaluations of job quality and the revenue-increasing effect of the health resort certification in the case of local enterprises. In this case, this means that the better the municipality evaluation on the quality of the jobs, the more important the consideration on the certification of the health resort due to the increase in revenue of local businesses.

The situation is different for “Comets” because although there is a moderately strong relationship between the revenue-increasing effect of the rating on local enterprises and the assessment of the development of the settlement, the relationship is negative ( $\tau_B = -0.587$ ). This means that according to the local governments of the settlements of “Comets” cluster, the more developed the settlement, the less the increase in the income of enterprises gives the importance of the health resort certification.

Based on the results, the examined hypothesis can only be considered partially justified, as only two of the three examined factors have a significant positive relationship (in the case of “Stars”).

**Presumption 1:** In the case of settlements that have a certified health resort, the decisions at the local/settlement level are most able to influence the performance available in connection with health tourism (awareness, image, development of tourism infrastructure, specific, settlement investments).

The third hypothesis can be examined with the help of local councils’ questionnaires, structured interviews and the literature.

Based on the literature, it can be stated that starting the process of certification of the health resort itself is a decision at the local government level. It is not enough if a settlement has a natural healing factor and related infrastructure, to obtain the qualification, municipal decisions, preparatory work and investment are required.

- According to the unanimous opinion of the experts interviewed during the structured interviews, the certification of the health resorts is important, as it provides a kind of prestige for the settlement and also serves as a quality assurance for tourists.
- Based on a structured interview with the Hungarian Tourism Agency, it can be seen that most of the agency's measures only indirectly affect the health tourism of the spa settlements. The MTÜ regularly announces tenders at the settlement level, but participation in them depends on the decision of the municipalities, just as the development of specific health tourism development plans related to the settlement is a municipal task.
- Although the role of tourist destination management organisations is greater, these organisations also contribute to the operation of local, settlement-level health tourism operationally. Their primary responsibilities include marketing activities,

writing applications, developing tourism strategies, organising programmes, and developing tourism experience chains. The establishment and operation of DMOs requires cooperation and, in many cases, the supportive initiative of the local government. Just as it may be necessary to support the local government in determining what activities DMOs should carry out during their operation, what kind of tenders they should deal with and which development directions they should give priority to.

- The National Health Insurance Fund of Hungary, as an important financier of health tourism services, does not have an impact on the developments and investments of its contracted partners, including health tourism at the settlement level.

On the other hand, based on the representative questionnaire filled in by local councils, it can be stated that local governments (municipal level) can make specific investments, develop the basic and tourism infrastructure of the settlement, make decisions about the marketing activities of the settlement and organise attractive community events for tourists. *I consider the hypothesis to be justified.*

**Presumption 2:** The success factors related to health tourism in the settlements that have a certified health resort can be clearly defined.

*I consider the hypothesis to be justified*, as it is possible to determine the success factors based on the structured interviews with the Hungarian Tourism Agency, the destination management organisations related to Hungarian health resorts, the National Health Insurance Fund of Hungary, and the questionnaire filled in by residents.

The success factors of settlements with health resorts that can be interpreted from the point of view of health tourism are the following:

- complex product range,
- a value proposition appropriate to the target group,
- staff expertise,
- uniqueness.

## 6. Presentation of theses

**Thesis 1:** There is no significant relationship between the subjective quality of life of the local population and the clustering of the Hungarian settlements that have the certification of a health resort in terms of the economic and tourism indicators.

According to the literature, in the study of the relationship between tourism and quality of life, it is essential to examine the subjective quality of life. Based on the clusters created as a result of the cluster analysis and the questionnaires filled in by the residents of the examined settlements, the study using Cramer's association coefficient clearly showed that there is no significant relationship between the clustering of Hungarian settlements that have certified health resorts and the subjective quality of life. This means that the indicators of the economic environment and tourism included in the cluster analysis of the examined settlements do not affect the subjective quality of life (happiness, health, financial situation) of the local residents.

**Thesis 2:** Based on the experiences of the residents of the settlements, which have a certified health resort, health tourism has a positive effect on the awareness of the settlements among tourists, regardless of the cluster membership.

Based on the values of the Spearman rank correlation coefficient calculated per cluster, it can be said that for each cluster there is a moderately strong, positive relationship between the evaluation of the residents of the settlements regarding the determinants of health tourism and the increase of the settlement's awareness among tourists. This means that the settlements whose inhabitants consider the role of health tourism in the life of their place of residence to be more decisive have higher notoriety among tourists.

**Thesis 3:** Settlements where both the local council and the local population consider the role of health tourism in the life of the municipality to be decisive, perform better in terms of the tourism indicators included in the analysis.

Based on the performed researches, it can be seen that those settlements whose local councils and residents agree that health tourism plays a decisive role in the life of their settlement, are located in the well-performing ("Stars" and "Comets") and perfectly performing ("Giant dwarfs") clusters according to the cluster analysis.

**Thesis 4:** In the case of settlements that have a certified health resort, the decisions made by the local council have the strongest impact on the development, awareness, image and investments of the settlements related to health tourism.

Based on the structured interviews and the representative questionnaire for local councils, it can be stated that only local governments can make concrete investments, make decisions in connection with settlement-related marketing communication activities, develop the basic and tourism infrastructure of the settlement and organise community events to attract tourists.

**Thesis 5:** Based on the opinions of experts (tourism stakeholders), the success factors related to health tourism in the case of settlements that have a certified health resort are: complex product range, the value proposition corresponding to the target group, the expertise of the staff and uniqueness.

After summarizing the results of structured expert interviews with the Hungarian Tourism Agency, destination management organisations (DMO) related to Hungarian health resorts and the National Health Insurance Fund of Hungary, the common points mentioned in terms of success factors are well represented based on the opinions and experiences.

## 7. Summary

I examined those settlements in Hungary that have a health resort certification based on the register published by the Government Office of the Capital City Budapest on the 15<sup>th</sup> of January 2020 (37 pieces). In connection with the settlements, I collected indicators related to the economic environment and tourism, and then I arranged them into homogeneous groups with the help of cluster analysis. As a result of the cluster analysis performed using hierarchical and K-means method, four clusters emerged from the examined settlements. The main features of the clusters were identified. Further analyses and investigations were performed according to the groups of settlements formed during the cluster analysis, comparing the clusters of settlements with similar characteristics.

However, it is not possible to examine the complex processes of tourism with the help of statistical data alone, it is also necessary to involve stakeholders (host community/local population, local councils, national and destination decision-making organisations). Focusing mainly on the economic and social impact of health tourism in the settlements, and paying attention to the subjective quality of life of the host communities, I conducted questionnaire surveys among the residents and local councils of the settlements that have a certified health resort.

In the case of tourism, a deep understanding of the problem under study is very important, which is not always possible with quantitative methods. To supplement the analyses of secondary data and questionnaires, I conducted a total of 15 structured interviews with one of the leaders of the Hungarian Tourism Agency (MTÜ), the heads of tourism destination management organisations (DMO) and with head of the Health Insurance Inspection Department of the National Health Insurance Fund of Hungary.

As can be seen from the various literature, health tourism and related services can greatly contribute to the increase in the quality of life of the permanent residents of each settlement. The increase in the quality of life is caused on one hand by the beneficial economic effects of health tourism and on the other hand by the fact that health tourism provides services for the restoration and preservation of physical and mental health and related developments for local people.

Based on the results of the research, it was confirmed that there is no significant relationship between the subjective quality of life of residents and the ranking of

Hungarian settlements that have certified health resorts in terms of the economic environment and tourism indicators.

As a result of the positive effects of health tourism, the awareness of Hungarian settlements that have certified health resorts may increase, as well as the tourism indicators of the settlement may improve. The role of local governments is unavoidable, as measures at the local government level have the greatest impact on the development, awareness, image and investments of settlements related to health tourism. During the research, based on expert opinions and experiences, the success factors of Hungarian settlements that have a health resort certification were determined, which are: complex product range, the value proposition corresponding to the target group, the expertise of the staff and uniqueness.

Of course, there research has limitations. The size and tourist offer of the settlements that have health resorts are different. For the settlements with a health resort, it can be assumed that health tourism is one of the most important pillars of tourism, but this is not always clear. In some municipalities surveyed, health tourism is clearly a priority, while in others other types of tourism (e.g. cultural tourism, active tourism) are also given priority. In the latter case, it can be difficult for local residents, local councils and TDM managers to manage health tourism separately from the others. The indicators used for the analysis, which was retrieved from the Central Statistical Office's database, are similar in that they represent not only the health tourism performance of the settlement but also the tourism performance of the municipality as a whole.

A further limiting factor is the gender distribution of the respondents within the questionnaire sent to local residents. Most of them were women. This is not surprising, as the gender of the consumer is also a determinant of interest when consuming tourism-oriented services. Men are less interested in health tourism than women (Katona, 2011).

In terms of the practical usefulness of this research, the results of complex research methods will help decision-makers in the settlements studied (local councils and DMO organisations) to gain a clear picture of where they stand in terms of economy and quality of life. It is important in the case of a comparison with municipalities that are considered the main competitors in the field of health tourism (municipalities with health resorts), concerning the achievements and the development directions they should set to be even more successful in the health tourism market.

As regards future research opportunities, I plan to group together the services available in certified domestic health resorts on the basis of natural therapeutic factors and to compare them from an economic and social perspective. I also plan to investigate the impact of other types of tourism on quality of life and economic indicators, and to explore the potential for deeper integration of health insurance schemes in health tourism, especially in certified health resorts. In addition to the statistical data sources used in this dissertation (KSH, TeIR), there is great potential for data-driven tourism research at the municipal level, based on mobile cell data, credit card payment information and traffic statistics from the National Tourism Data Centre (NTAK).

In the wake of the travel restrictions following the outbreak of the SARS-COV-2 pandemic in 2020, it has become clear that tourism is likely to undergo a transformation in the future. Tourist attractions should build on modern, online facilities. In my future researches I intend to investigate how health tourism, especially wellness can incorporate modern technologies into the experience and the service process itself.

The methods used in this dissertation can be applied not only to health resorts but also to settlements interested in other aspects of tourism. My aim is to move out of the framework of health tourism and group Hungarian municipalities interested in tourism according to a different thematic than the one used in this research, to conduct comparative analyses in terms of tourism, other sectors of the economy and quality of life.

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## **Research and publication activities**

### **Scientific journal articles**

1. Strack Flórián (2021): Minősített gyógyhellyel rendelkező, ötezernél kisebb lélekszámú települések egészségturizmusának lokális hatásai. Turisztikai és Vidékfejlesztési Tanulmányok 6:3 pp. 59-75., DOI: 10.1517/TVT.2021.06.03.04
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#### **Abstracts published in abstract volumes**

1. Strack Flórián (2021): Az egészségturizmussal összefüggő életminőségi sajátosságok a gyógyhellyel rendelkező hazai középvárosokban. In: Szabó, Zoltán; Hojcska, Ágnes Erzsébet (szerk.): III. Fürdővárosok Nemzetközi Tudományos Konferencia Kivonat-kötet. Magyar Fürdővárosok Szövetsége, p. 30., Gyomaendrőd
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## **Conference presentations**

1. Strack Flórián – Szabó Zoltán (2021): Hazai gyógyhelyek - mire elég az egészségturizmus?. II. Leisure Konferencia, Miskolci Egyetem Egészségtudományi Kar
2. Strack Flórián (2021): Az egészségturizmussal összefüggő életminőségi sajátosságok a gyógyhellyel rendelkező hazai középvárosokban. III. Fürdővárosok Nemzetközi Konferencia, Hajdúszoboszló
3. Strack Flórián (2021): A minősített gyógyhellyel rendelkező kistelepülések egészségturizmusának lokális hatásai. Nemzetközi Vidéki Örökség Konferencia, Orfű
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9. Strack Flórián (2019): Balaton Uplands - The Relationship Between Tourism and Nature. 9th International Scientific Conference “Tourism, Innovations and Entrepreneurship – TIE 2019”, Pula, Horvátország
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## **Research projects and research fellowships**

1. Insula Magna – Komplex Vízgazdálkodási és Fenntartható Fejlesztési Program (Kőszeg, Felsőbbfokú Tanulmányok Intézete) – tudományos kutatómunka
2. NKFIH-834-2/2021, Társadalmi Innovációs Nemzeti Laboratórium – kutatásfejlesztési feladatok
3. NKFIH-872-2/2020 „*Éghajlatváltozás Multidisciplináris Nemzeti Laboratórium létrehozása*”, „*Helyi gazdaságfejlesztési és fenntarthatósági*” alprojekt – kutatásfejlesztési feladatok
4. Új Nemzeti Kiválóság Program (ÚNKP) ösztöndíj (2020/2021. tanév – 1. félév) – a kutatás címe: *Egészségturizmus a járványhelyzet után – a COVID-19 hatása a hazai gyógyhelyeken*
5. EFOP-3.6.2-16-2017-00017 (II.2. *A Balaton, mint élettér életminőségi aspektusainak vizsgálata* (2018. szeptember 1. - 2018. december 31.; 2019. február 1. - 2019. december 31.; 2020. február 1. - 2020. október 31.) – kutatási feladatok
6. Új Nemzeti Kiválóság Program (ÚNKP) ösztöndíj (2019/2020. tanév) – a kutatás címe: *Gyógyító levegő – Hazai klimatikus gyógyhelyek és gyógybarlangok hasznosítási lehetőségei a turizmusban*
7. Új Nemzeti Kiválóság Program (ÚNKP) ösztöndíj (2018/2019. tanév) - a kutatás címe: *Fürdünk, vagy befürdünk? – A hazai gyógyfürdők keresletorientált elemzése*
8. „*Ökoturizmus stratégia*” elkészítését megalapozó kutatásban való részvétel (2018)
9. EFOP-3.6.2-16-2017-00017 (II. 1. *A Balatont, mint desztinációt turisztikai céllal felkeresők vizsgálata*) (2017. október 15. - 2018. július 15.) – kutatási fealadatok
10. Új Nemzeti Kiválóság Program (ÚNKP) ösztöndíj (2017/2018. tanév) - a kutatás címe: *Fogyasztjuk, vagy elfogyasztjuk? – A fenntartható fejlődés és a hazai gyógyszállodák kapcsolatrendszere*