

PhD dissertation theses

**ANALYSIS OF SOME SEGMENTS OF RECREATION TOURISM IN
HUNGARY CONSIDERING CONSUMER SATISFACTION**

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1. RESEARCH BACKGROUND, AIMS AND HYPOTHESES OF DISSERTATION

During my research I was focusing on the analysis of satisfaction of consumers with the resorted health tourism services. The analysis of consumer demands may be important for various reasons. Knowing the requirements of potential guests may help the permanent subsistence of health-tourism service providers in the recent sharp market competition. On the other hand the exact know of consumer demands may contribute to the successful formation of provided services and touristic products. In Hungary in recent years health-tourism come to the centre again as an economic booster, job creator and competence improver sector. It is hard to fulfil the continuously changing requirements of consumers of health-tourism because of the increasing focus on healthy lifestyle and international trends; and because of the increased number of touristic service providers.

The aim of my research was to evaluate consumer satisfaction, to describe relevant conclusions and new results based on this and to select innovative areas of the research field to provide help for the service providers.

My research goals are the following:

1. The review of relevant publications had multiple goals:
 - On one hand, the differences of definition use highlighted that a common definition-system is needed that can help to find the common language between the potential guests who use health-tourism services and the experts.
 - With the historical survey I try to give an overview of the formation of wellness and fitness trends and spa-culture.
 - With the analysis of the definition system of health-tourism and its economical and social-cultural effects I would like to introduce the complexity and importance of this sector in the national economy.
 - The aim of international survey is to figure out the presence of health-tourism in other cultures.
 - With the analysis of the connection between quality and satisfaction I would like to examine with which quality services may contribute to the long-lasting

subsistence, efficiency and production increase of providers; may result the improvement of mindset of human resources and may increase the reputation of the service provider (SCHMIDT, 1992; ALONSO-ALMEIDA et al., 2012).

2. During my research one of my goals was to examine wellness tourism as well. I was focusing on the three various segments of prevention and recreation tourism (wellness, fitness, customs during using aqua parks) by the analysis of collected data from national service providers.
3. By filling questionnaires my aim was to explore that the questioned consumers (further their personal public data) which services use; the regularity of the usage with recreation goals; what is the motivation to use these services and how satisfied they are with the selected services.
4. Further the assessment of questionnaires (the main goal was the evaluate the wellness, fitness and aqua park usage) my research also focused on the exploration of the connection between the factors that influence the usage of wellness services.
5. My further aim was to provide practical results and information for health-tourism service providers to help their permanent subsistence and profitability and to explore those areas where there is lack of information.

I was focusing on the analysis of satisfaction with the recreation services (wellness, fitness, aqua park) and the health-tourism services formed by the National Health-tourism Development Strategy.

Research queries

During the research I was looking for answers for the following questions and phrased the following hypotheses.

Recent years deterministically increased the number of aqua parks in Hungary and the number of investments are increasing as well. Many hotel reformed their services to the direction of recreation. The service portfolio of aqua parks, by synthesising national needs and international trends, contains next to the traditional spa services wellness and fitness programs in most cases. Based on the data of the Central Statistical Office the annual number of guest-nights in wellness hotels is increasing, the number of reservation on holiday weekends has increased and in most cases these hotels are full before months of the requisition.

However, the analysis of the financial state of households and the economical state of the country show the increasing gap between the lower and higher class and the decrease of the middle class. The Hungarian society is "bottom-heavy", which means it indicates to the lower class and it is difficult to step above from the lower levels (MTA TK, 2014). Based on a report of TÁRKI from 2015, the situation of the population is improving but in spite of this the overall society is still deprived (TÁRKI, 2015). In my dissertation I examine it is a privilege of the elite (2%) and high-middle class (10,5%)¹ to have resort to the recreation services or the youth and the rural intelligentsia can afford to use these services at least once or twice a year. The first questions of my research was related to this.

1. Do people with higher income use the preventive, health-promoting wellness, fitness and aqua park services preferably?

H1: Guests with higher income use services with larger costs.

The research extends to review how the know of these services and their health-promoting effect are prevalent in population and how they satisfied with these services. How the qualification of the person appears during the conscious selection among these possibilities of health-promotion. Does the income of the household determine the use of these services? The next questions are related to the use of recreation services considering qualification.

2. Does the qualification affect the use of preventive services?

H2: The qualification of the visitors affects the selection of services.

During my research I analysed how the frequency of visiting the given hotel (2-3 times annually, every month, every week, daily, first visiting, visiting only during discount, visiting only in the case of holiday) affects the selection of services.

3. Does the frequency of visit affect the selection of used services?

H3: Frequency of visiting the health-tourism providers affects the resorted services.

For the service providers it would be a useful information if it is worth to provide discount services and if yes with what conditions and prices.

¹http://www.gfk.com/hu/news-and-events/press-room/press-releases/lapok/osztalyletszam-2014-magyar_orszagon-nincs-igazi-kozeposztaly.aspx

4. Do the guests prefer discount services?

H4: The discount services are preferred.

It is also worth to consider for the provides that which target groups are targeted (genre, age, qualification, family size, income, number of spent days at the destination).

5. The socio-demographic characteristics influence the selection of used services.

H5: The genre, age, qualification, family size of the visitors who use the health-promoting services influence the used services.

I examined the satisfaction of the guest with the used services which is a useful practical information for the providers.

6. How that segment who uses recreation services are satisfied with the quality of the used services?

H6: Guests that are using health-tourism services are satisfied with the quality of the services.

2. INTRODUCTION OF THE USED METHODS AND THE DATABASE

During my primary research I used the method of questionnaires. The questionnaires were recorded with random sampling with personal contact. The conception of the sampling was to interview every visitor but due to the answer withheld of some guests the representative criteria did not fulfil. The questionnaire can be divided into two main parts. The first part contains the socio-demographic questions. The second part was looking for answers to which services are selected, how frequently for recreation purpose; what is the motivation of service users and how satisfied they are with the services. 1207 questionnaires were filled in overall. From this number 445 evaluate wellness, 232 fitness and 530 aqua park customs. During the development of the questionnaire I used closed questions but it was possible to describe own opinions through open questions. During the evaluation of the questionnaires those questions were analysed that give information related to the research goals and the questionnaire was processed step by step. The given data was processed with SPSS 20.0 statistical software and with Microsoft Excel.

Three key areas were questioned. The preventive, recreation tourism areas the wellness, the fitness and aqua park use customs and attitudes were examined. The questionnaires were filled in Hungarian wellness hotels and aqua parks after using the services.

One of the key points of my dissertation is analysis of used health-tourism services and their utilization. An applicable tool to do this is the **variance analysis** (ANOVA tables) because the questioned guests selected 0 or 1 values in the questionnaire in the case of the questions connected to used services. These values are the dependent and accounted variables in the ANOVA models.

The Khí square probe which is connected to the **cross-table statistical analysis** and used to observed values and in the case of dependence to expected values. While, during the variance analysis F-probe values of standard deviation and the connected significance levels are used, during cross-table analysis the p values connected to Khí square probe and significance are used (BARNA and SZÉKELYI, 2008). Both methods can be used effectively on the approx. 1200 sample.

In market research and financial risk analysis a frequently used method is the **decision tree**, which next to its easy interpretability produces visible outputs of the results of

multidimensional analyses. Advantageously applicable the CHAID decision tree during the examination of used services (IBM, 2012).

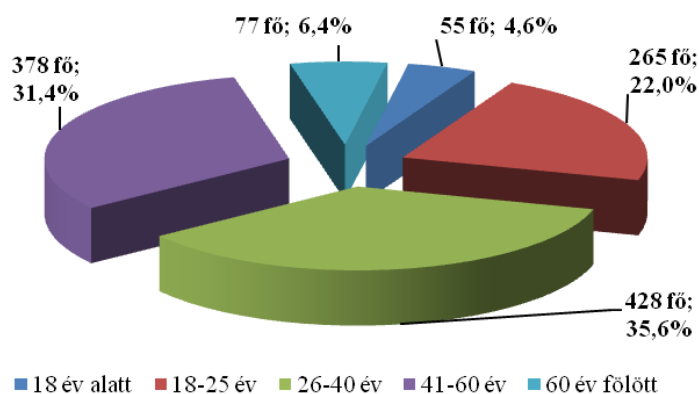
During the last phase of my empiric research the use of important services (massage, restaurant) were examined with **logistic regression**, which is a very common tool in market research.

3. MAIN OBSERVATIONS OF DISSERTATION

In my dissertation the general description of the sample is divided into three parts. In the first chapter the socio-demographic characteristics of the visitors is described. In the second chapter the travel planning customs of guests are described, including the information collection behaviour and the frequency of visiting health-tourism services. In the third chapter wellness hotels and aqua parks were examined and their specific characteristics were introduced. During data process it was enhanced to put the results into the context of international researches. Those results were described that can be adapted to the methodology of this research.

3.1. Socio-demographic characteristics

Considering the age distribution of the sample (*Figure 1.*) we can conclude that the preventive services are resorted by guests with age between 26 and 40(35,6%). The rate of the age group between 41 and 60 is high as well considering health-promoting services (31,4%). Under 18 (4,6%) and above 60 (6,4%) the thoughtfulness to prevention is not deterministic.



(under 18; between 18-25; between 26-40; between 41-60; above 60)

Figure 1. The age of questionned guests

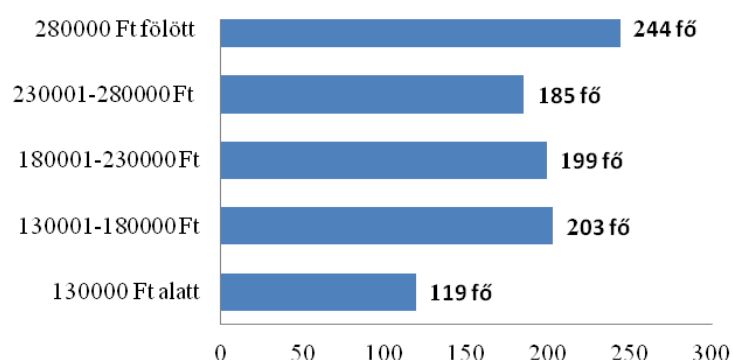
Source: Own editing

We can summarize that the examined services are less used by the youth and retired age groups, while the other groups between these two forming 90% of the sample.

To the question considering qualification 99,2% of the questioned people gave answer. Based on the research the age group between 30 and 49 years who travel to wellness have rate of 45% who have a diploma.

The results given by the distribution of qualification we can confirm that hypothesis that the health-promoting service providers are visited by highly qualified people.

Due to the foreign citizens the categories related to the income were showed in forint and euro as well. From the 1207 sample 950 answered to the questions of their income which is the 78.7%. Mainly those guests resort recreation services whose family's net income is over than 280 000 forint (25.7%). In the examined sample 203 guest were whose family's net income is between 130 001 and 180 000 forint which is 21,4% of the total. 199 people has net income between 180 001 and 230 000 forint. Only 119 people has a net monthly income which is lower than 130 000 forint. Considering the income categories we can conclude that the **people with higher monthly net income select the wellness hotels and aqua parks to spend their spare time** (*Figure 2.*).



(above 280 000; between 230 001-280 000; between 180 001-230 000; between 130 001-180 000; lower than 130 000)

Figure 2. The monthly family net income of the questioned people

Source: Own editing

We can summarize that at those households where there are two children prefer the preventive, leisure services.

3.2. Results of data process connected to travel organizing

To the question, "From which settlement did you arrive?" 20 people from 1207 (1.7%) denied to answer. Approximately half of the guests using these services arrived from cities² (43.8%) and 38.6% from county-town. 102 people (8.6%) arrived from the capital and almost the same number, 107 people (9%) arrived from a village.

We can sum up that collecting information from Internet, as primary information source is increasing and the experience collected from earlier visits of health-tourism and other service providers influences the travel decision. This conclusion is confirmed with the answer given to the question, "Have you ever visited earlier the given health-tourism provider?" where the 50.4% of the respondents answered with yes.

In my research, half of the respondents said that it was not their first visit in the destination. According to given data deterministic amount of the service using guests (37.1%) did not have enough information about the provider and the 15.4% of the questioned handles the provider as too expensive.

Based on the given answers **we can conclude that close to half of the sample earlier have not visited and health-tourism provider**, which indicates that people may do not give importance to these health-preventive services. This is supported with the low rate of respondents who answered frequent use of health-tourism services.

Most people like to spend their leisure activities and travel with company - with family or friends. My research entirely confirms this as only 6.1% of the questioned arrives alone to use health-tourism services.

The highest rate of respondents (35.9%) arrive with his couple, 33.5% with his family and 21% with friends to use health-tourism services. Only 73 guests arrived alone (6.1%) and 3.5% arrived with his colleague to the hotel or aqua park.

94.8% of the respondents organize personally their travel and 5.2% is the rate of those who use the services of travel agencies.

To the question, "How much money did you spend during your residence above the ticket costs?" approx. third part of the respondents (34.2%) selected "above 5000 forint", which

² KSH besorolás alapján

indicates that plus services are not used by the larger part of the respondents. 25.2% spent between 5000 and 10 000 forint, 17.5% spent between 10 000 and 20 000 forint for other services. 23.2% who spend money for other services above using the provided basic ones (*Table 1.*)

Table 1. Answers given to the question - "How much money did you spend during your residence above the ticket costs?"

		Frequency	Percentage	Real percentage	Cumulative percentage
Valid answers	Lower than 5000 Ft	403	33,4	34,2	34,2
	5000-10000 Ft	297	24,6	25,2	59,3
	10001-20000 Ft	206	17,1	17,5	76,8
	Above 20000 Ft	274	22,7	23,2	100,0
	Total	1180	97,8	100,0	
Missing answers	0	27	2,2		
Total		1207	100,0		

Source: Own editing

3.3. Results related to the use of services and satisfaction

People involved in the research was asked in three sectors (wellness, fitness, customs of aqua park use). Filling the questionnaires were after the use of services. 43.9% of the respondents used aqua park services, 36.9% wellness services and 19.2% fitness services. The following services are involved in all three sectors.

Most of wellness hotel guest, 329 people used restaurant services due to the given half-pension offer. 335 people used theme pools in the wellness section but Finnish sauna (238 people), Jacuzzi (205) and massage (209) were preferred as well. 161 people used steam-cabin and 116 people used punch pools.

Among consumers of fitness services I examined what other services provided by the hotel were used. The respondents could select the used services from more possibilities.

To the question, "Were you satisfied with the used services", 92.3% of wellness users selected "satisfied" (135 people) and "very satisfied" (276 people) categories. For 6.3% this question was "neutral" and only 0.7% was not satisfied with the used services (*Table 2.*).

Table 1. Distribution of satisfaction with the services (among respondents using wellness)

		Frequency	Percentage	Real percentage	Cumulative percentage
Valid answers	was not satisfied	3	,7	,7	,7
	neutral	28	6,3	6,3	7,0
	satisfied	135	30,3	30,5	37,6
	very satisfied	276	62,0	62,4	100,0
	Total	442	99,3	100,0	
Missing answers	0	3	,7		
Total		445	100,0		

Source: own editing

Examining users of fitness services we can conclude that 86.5% of the respondents were satisfied with the used services and 1.3% was unsatisfied. For 12.2% the quality of the used services was not relevant

3.4. Results of other services

45.1% of the guests like to spend the whole day in the aqua park and 35.5% prefers to spend there the afternoon. Only 7.5% selected that they spend the evening in the aqua park, but this low number is resulted by there is no evening bath program in the portfolio of every service provider.

3.5. Examination of service use through statistical analyses (two- and multiple-dimension analyses)

Relationship between net income, qualification and frequency of using services

42% of those guests who arrive for 4-7 days and qualification level is high school or lower spent more than 20 000 forint during his residence which indicates that recreation/leisure/resting motion of people whose residence is longer next to many other dimensions differs from people who stay for shorter time period. Thus, people who arrive for 4-7 days preparing financially differently to the leisure. Basically, it would be a reasonable assumption that those guest who arrive for 1-3 days spend more money during their short residence, but the results disproved this. On the same level of decision tree, people who stay for 4-7 days and have a qualification higher than high school has a surpassingly high possibility (~60%) to spend more than 20 000 forint. We may assume

that visitors during their planned 1-3 and 3-7 day residence equally take much money to the given destination, **but according to the results we can conclude that guests who arrive 4-7 days always spend a bit more at a given aqua park or service provider.**

For service providers it would be a useful information that which parameters influence the number of days of residence, so what are the characteristics of guests spending 1-3 days and 4-7 days.

During my research I experienced that the number of spent days as dependent variable is independent from the demographic characteristics of respondents, there is no significant relationship between them. Thus, **guests who have larger net monthly income can organize their family trip and holiday more frequently and for longer residence, but further conclusions can be taken from the cross-table of these two variables (Table 3.).**

We can observe the trend in the category of 4-7 day long visitors that visitors with higher monthly net income than 180 000 forint arrived in larger rate in each category than those who have lower monthly net income than 180 000 forint.

Table 2. Cross table of days of residence and monthly net income of guests

Hány napra érkezett a városba?		Az Ön családjának nettó havi jövedelme?					Total
		130000 Ft alatt/ 450 EUR alatt	130001-180000 Ft/451-620 EUR	180001-230000 / 621-793 EUR	230001-280000 Ft / 794-965 EUR	280000 Ft fölött / 966 EUR fölött	
1-3 napra	Count	92	127	117	99	129	564
	% Az Ön családjának nettó havi jövedelme?	78,0%	66,1%	62,9%	56,3%	57,8%	63,0%
4-7 napra	Count	14	42	58	57	65	236
	% Az Ön családjának nettó havi jövedelme?	11,9%	21,9%	31,2%	32,4%	29,1%	26,4%
3 7-nél több	Count	12	23	11	20	29	95
	% Az Ön családjának nettó havi jövedelme?	10,2%	12,0%	5,9%	11,4%	13,0%	10,6%
Total	Count	118	192	186	176	223	895
	% Hány napra érkezett a városba?	13,2%	21,5%	20,8%	19,7%	24,9%	100,0%
	% Az Ön családjának nettó havi jövedelme?	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Source: Own editing

Based on the decision trees and the Table 3. we can generally **determine the target groups of service providers** the following way, if the aim is to maximize the spending above the cost of the ticket:

- **targeting the participants of 4-7 day city programs and events**
- **orientating to the preferences of age groups lower than 25 years and above 60 years**
- **during forming advertising materials the genre of the visitors is not significant,**
 - **but the qualification if yes: targeting guests with OKJ or higher qualification,**
 - **the size of the family affects the use some of services.**
- **the sufficient outtake of publicities of the plus services.**

Analysis of the relationship between visitors' motivation, frequency of visiting and used services (with cross-tables)

During the analysis of the relationship between the visiting frequency and the use of services at the given aqua park or hotel we can conclude useful information for the service providers. 81 % of those respondents who visited the first time the given aqua park or hotel used the theme pool service. This rate is almost the same as the rate of non-first timers who used the theme pool service (81.3%). According to this, there is no significant difference³ between the two groups but the theme pool, as a basic service is popular among those who visited the aqua park/hotel the first time and the returners as well and keeps its popularity during further visits too.

There is no significant difference⁴ in the case of using the Finnish sauna comparing the resort of first timers and returners. 48% of the first timers used this service, meanwhile this rate in the case of returning guests was 44.1%. We can say that every second guest who visits the aqua park or hotel for the first time uses the Finnish sauna service but frequent visit does not change the intensity of the service. There is a significant difference⁵ in the use of restaurant services comparing the first time visitors and returning guests. Approximately 70% of the first time visitors decided to try the restaurant services while this rate was 53.5% among the returning ones which indicates a 16.5 difference between the two groups. **This decrease may have several reasons - not sufficient quality, not enough assortment, expensive meals, not effectively promoted services, etc.**

There is significant difference⁶ in the case of massage service comparing the first time visitors and returning guests. Approximately 35% of the first timers used this service and 27.3% of the returning ones. **The decrease of the use of the service may be a result of a few factors appearance - not employing well-qualified experts; slight assortment, inflexible disposition of guests, expensive services, etc.**

61% percent of the whole sample used restaurant service during data collection and approximately 75% of the respondents answered that he was in the restaurant of aqua park/hotel.

³ $p=0,478$ connected to Khí square probe.

⁴ $p=0,10$ connected to Khí square probe.

⁵ $p=0,00$ connected to Khí square probe.

⁶ $p=0,03$ connected to Khí square probe.

We can conclude that the restaurant and aqua park services are less used with approximately 30% by the guests who visit the given hotel weekly than the other guests.

Those guests who can be defined as regulars do not have different service orientations than the non regular ones. The restaurant service is the only exception which is less used among daily visitors significantly⁷. Those respondents who visit the given aqua park or hotel only during public holidays can be significantly separated according to the use of sport services⁸. This segment primary goes to have rest in the aqua park/hotel, only 2.4% of them used sport services during their residence. 11.4% of first timers and public holiday visitors used sport services.

Analysis of the use of discount services

The data collection and my research involves the exploration of the differences between the preferences of various services among discount-oriented respondents (*I only come if the aqua park provides discount*).

There is no significant difference between the discount-oriented visitors and other guests in the case of the following examined services: theme pool, Finnish sauna, vapour cabin, restaurant, children's playground, Jacuzzi.

Use of services based on the demographic characteristics of respondents

In spite of the fact that the results of variance analysis are averages in each case, but in case when the average value of the binomial dependent variables is 1-2 value (1 - answer is yes, 2 - answer is no), the values can be transformed to percentage for easier interpretation. During the analysis of the results of data collected I experienced that **the use of sport services was the only situation when it was preferred by men.**

During data collection that respondents were categorised to various income categories and I examined the relationship between these groups and the selected services during the given stay. It resulted that the use of vapour cabin, restaurant services, children's playground and massage services significantly differs among the various categories (*Figure 3.*).

⁷ p=0,028 connected to Khí square probe.

⁸ p=0,000 connected to Khí square probe.

Meanwhile the use of vapour cabin, the restaurant services and the children's playground is staggered, it shows increasing trend by the increase of net monthly income, the use of massage services was most preferred in the case of 130 0001-180 000 and 230 001-280 000 income categories.

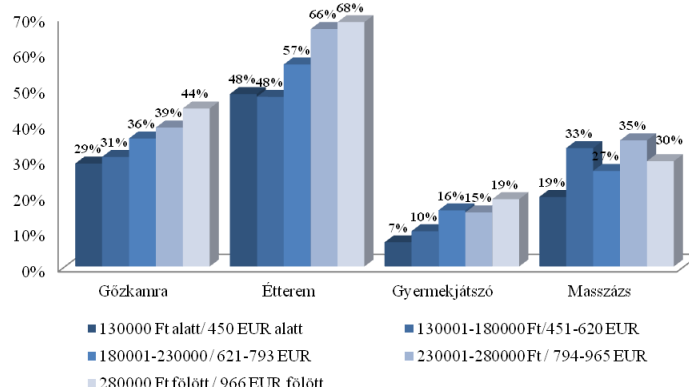


Figure 1. Use of services depending on the net monthly income category of the respondents (results of ANOVA)⁹

Source: Own editing

Similarly to the method mentioned above I examined that how the age of respondents influence the trend of used services. The age of responders were categorised as well. The results are shown on the following figure (*Figure 4.*)

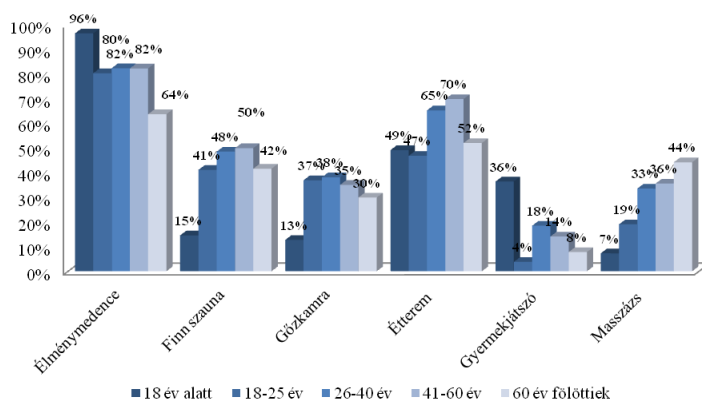


Figure 2. ábra: Use of services depending on the age category of the respondents (results of ANOVA)¹⁰

Source: Own editing

⁹ Just in the case of the four mentioned services we can find significant relationship between the income category and the services. The significance values connected to F-probes are the following: 0,012; 0,000; 0,010; 0,030.

¹⁰ In the case of the four mentioned services we can find significant relationship between the income category and the services. The significance values connected to F-probes are the following: 0,000; 0,000; 0,005; 0,000; 0,000.

The qualification of the questioned guests showed significant relationship with most of the used services. According to the qualification the following services showed significant differences based on the sample: theme pool¹¹, Finnish sauna¹², vapour cabin¹³, restaurant¹⁴, children's playground¹⁵, massage¹⁶.

Analysis of use of services with CHAID decision trees - multidimensional relationship

Analysis of the use of Finnish sauna with decision tree

By using the Answer Tree option of SPSS the following CHAID model can be built up to explore the deterministic factors of the use of Finnish sauna service which is shown on the following figure (*Figure 5.*).

The root of the decision tree shows the whole distribution of the sample related to the use of Finnish sauna service. We experience that 45.5% of the total guests did not use this service meanwhile 55.5% visited the Finnish sauna during his residence. Base on this information we may assume that if someone visits the service provider the chance to use the Finnish sauna is 55.5% which indicates that the chance of error is less than half, 44.5%. At the same time, the use of this by its own is difficult, it is not a stochastic result and we would like to improve the success of our estimation of the use of Finnish sauna service with the knowledge of explaining variables.

In the next level of the tree model we can see that from the explaining variables the CHAID model chose the qualification as the most influent variable of recourse. This means this variable shows the strongest significant relationship with the use of the service. Through qualification three groups can be separated.

1. The first is the group of primary school students who used this service in the smallest rate, only 13.5% chose this service during his residence.
2. We can separate the skilled workers; only 27.9% of them used the Finnish sauna service.

¹¹ Significance value of F-probe is = 0,027.

¹² Significance value of F-probe is = 0,000.

¹³ Significance value of F-probe is = 0,010.

¹⁴ Significance value of F-probe is = 0,000.

¹⁵ Significance value of F-probe is = 0,003.

¹⁶ Significance value of F-probe is = 0,003.

3. Visitors with high school, grammar school, college, university or OKJ level qualification used the most of this service (48.5%)

In the next branch of the tree model we can see that those visitors who mostly used the service (visitors with high school, grammar school, college, university or OKJ level qualification) can be segmented further based on the size of their family. We can say that families of two used the service in a much higher rate (57%) than those whose family is larger than two (45.55% of them used the Finnish sauna service).

The next separating variable is the number of spent days in the destination. Those families that are larger than two and has a qualification level as high school/grammar school/college/university/OKJ degree arrived to the destination for 1-3 days used the service with 40.7% possibility while who spent there 4-7 days or more with 56.3% possibility.

We can say based on the classification decision tree that by knowing the deterministic explaining variables we can estimate with 60.3% possibility that a visitor will use the Finnish sauna service or not, which is an increased efficiency comparing with the 55.5% value at the start.

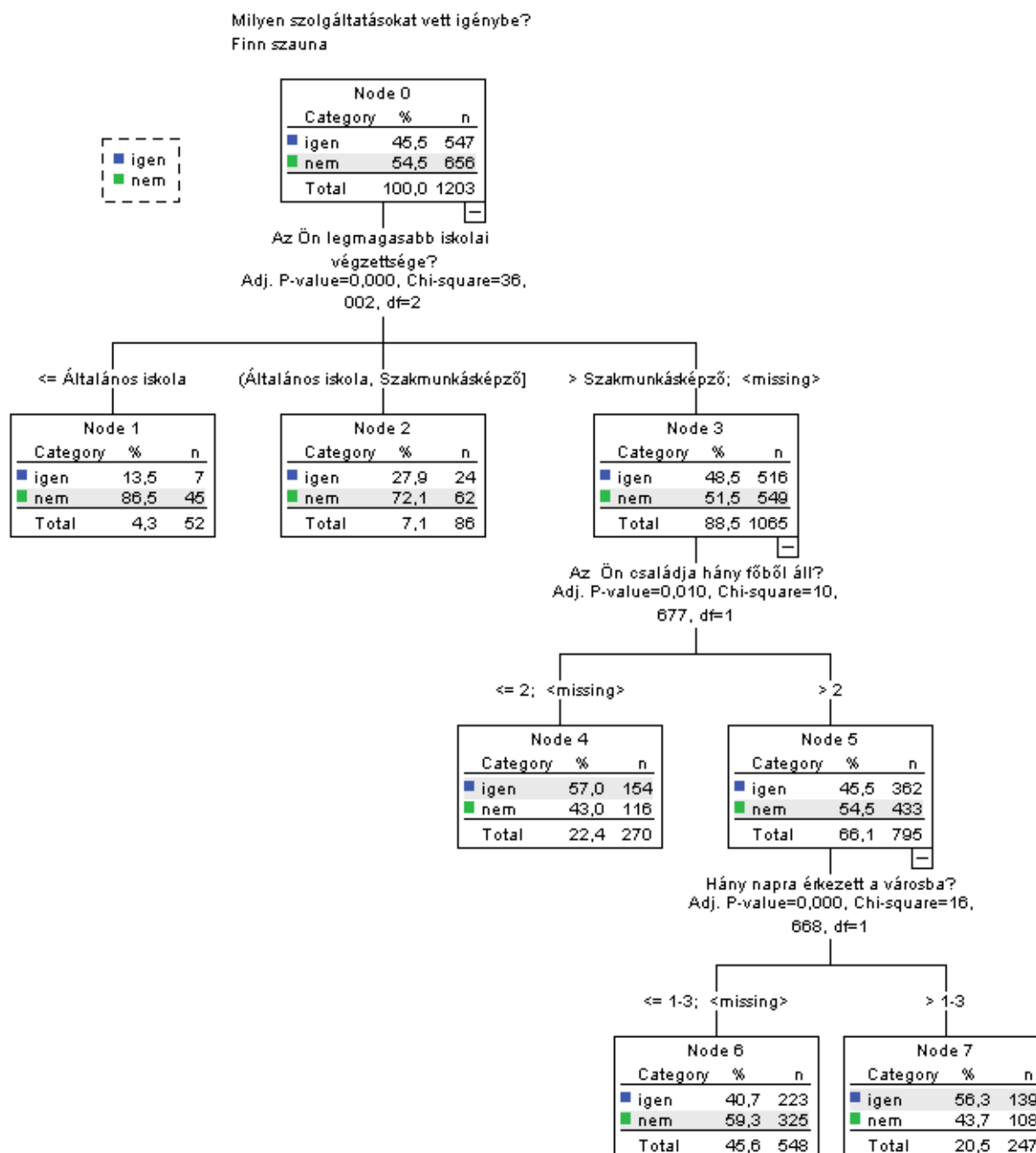


Figure 3. Decision tree to analyse the use of Finnish sauna service

Source: Own editing

Use of massage service

During the analysis of the use of massage service, the number of spent days in the destination also appeared as deterministic categorising variable (*Figure 6.*). Based on the planned number of spent days 3 sub-groups can be separated in the decision tree. Those visitors who spent 1-3 days at the destination used less the massage service, only ~26% of

them. The chance of using massage service among those guests who spent more than 3 days is 44.5% which is much higher comparing with original participation rate (30.5%)

On the next level of the decision tree the sub-sample of the previous level could be divided based on the age of visitors. The decision tree demonstrates that the use of massage service selected by visitors spending 1-3 days at the destination can be divided into two categories based on the 5 category explaining variable - the age - respondents older than 18-25 years and younger. The experience in both cases was that the use of massage service is very low, the possibility at the younger than 18-25 category was 88% that they would not use it if they arrive to spend 1-3 days, while this rate in the case of age group above 18-25 year was 69.5%.

In spite of the facts mentioned above, those ones who spend more than 1-3 days at the service provider the possibility of using the massage service is higher. The possibility of use among guests in the age category 18-25 is quite equal with the those guest who arrive 1-3 days and older than 18-25, so the possibility of use is around 30% but most possibly the guests who are older than 18-25 and spend more than 1-3 days at the destination use the massage service (~50%).

In the last step of the decision tree model the visitors spending 1-3 days and older than 18-25 can be divided to 2 categories based on the size of the family; families that larger than 2 use the service less (27,3%) than the family with 2 (40.1%).

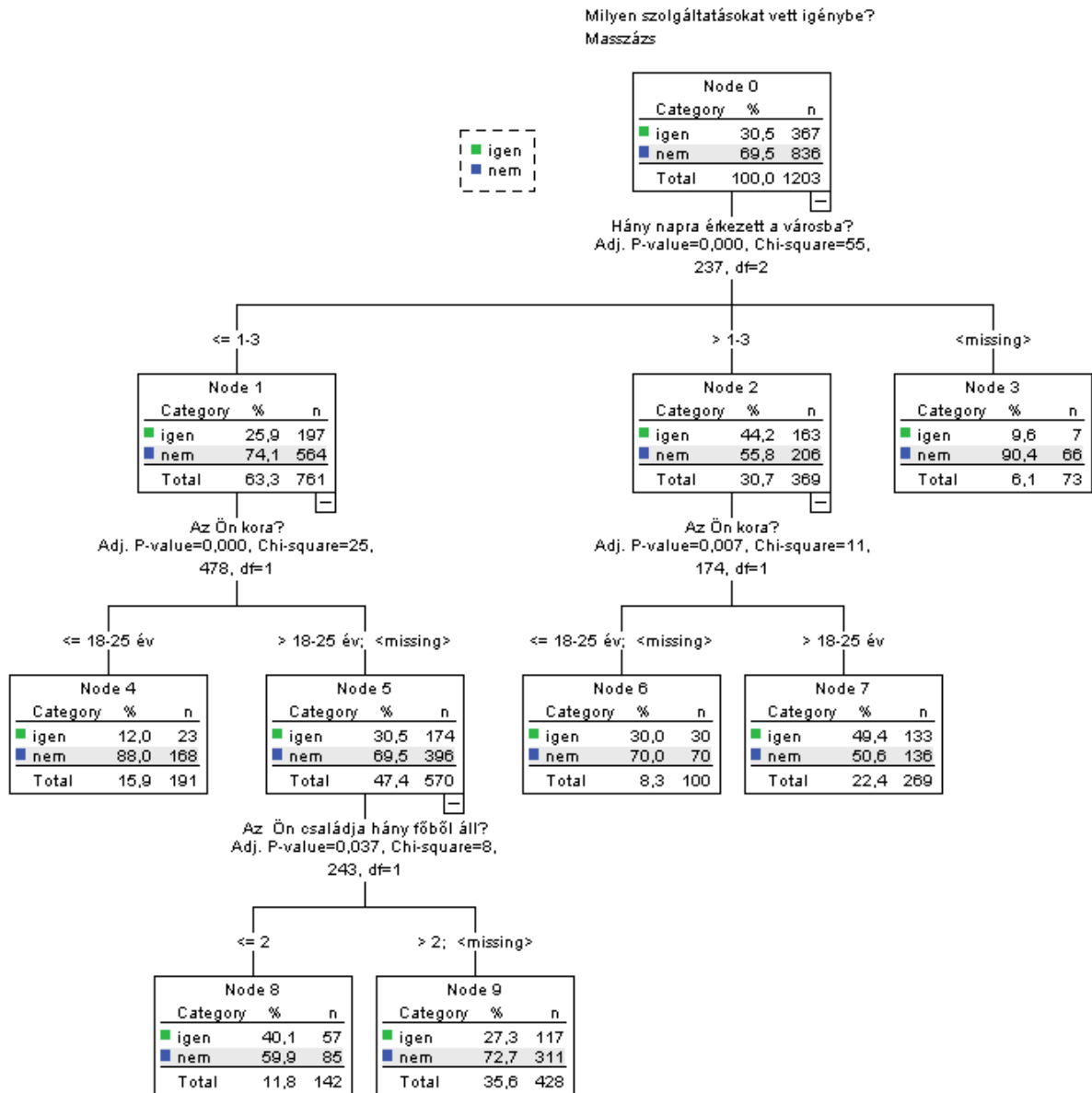


Figure 4. Decision tree examining the use of massage service döntési fa

Source: Own editing

Analysis of the use of restaurant services with decision tree

By using decision tree classification to examine the use of restaurant services the effective categorizing of visitors can be slightly improved so by using the easily collectible information the possibility of using restaurant services can be estimated with 62.5% accuracy.

The most deterministic indicator among the explaining variables of the use of restaurant services is the age of the respondents. (During my earlier analyses I highlighted the use of restaurant services is significantly higher at higher qualification level but in this decision tree the qualification affects after the age but with taking it under control.

Based on the age categories in the first level of the decision tree three branches appear:

1. younger visitors than 18-25,
2. age groups between 26-40 and 41-60,
3. older visitors than 60.

Meanwhile, in the case of the first and last group we can see that the possibility of using restaurant services is approximately 50-50% but in the sub-sample of 26-40 and 41-60 age groups this rate is ~67%. This sub-sample in the next level of the decision tree has more branches based on the qualification level of the respondents. The earlier results of two dimensional ANOVA tests showed that the restaurants services were used mostly by the guests with college qualification (it was 73% in the table that describes the results of ANOVA tests). This result is confirmed with the use of decision tree model and described more complex.

The analysis of user satisfaction considering the use of services and the type of service providers with the variance analysis

Because during the questionnaire the respondents were separated based on types the possibility is given to analyse the user satisfaction at each type (wellness, fitness, aqua park) as well. I realized that **the average satisfaction considering the whole sample is very high but there is significant difference among the main averages connected to types. Th wellness group was significantly more satisfied**, these respondents gave 4.55 rating (on a 1-5 scale) to the whole service experience. At the fitness group this average was 4.33. The aqua park group averagely evaluated this experience as 4.47 which is the

same as the rating of the whole sample. After this, with variance analysis I examined that what is the relationship and effect of user satisfaction on the rating of provider experience (*On the whole, were you satisfied with the services?*). The **direct importance of this that we can make conclusions related to the relationship between the mostly deterministic individual service experience and the complex rating of provider experience**. One of these conclusions is that the use of theme pools as a service - in spite of one of the most frequently use service - does not affect the average value of the answer of the respondents to the question - "*On the whole, were you satisfied with the services?*". This means that the use of theme pools does not affect the whole provider experience (there is no significant relationship¹⁷ but we can make useful conclusions).

The binary regression model of the use of restaurant services can be described as the followings:

The hypothesis of the binary logistic regression is the following: How the explaining variable affects the possibility that someone belongs to one of the two categories of the depending variable, so resorts the service or not?

The outputs of the first binary model of SPSS software pack are the following (*Table 4.*):

Table 3. Classification table related to the use of restaurant services (preparation to the logistic regression model)

Klasszifikációs tábla			
Megfigyelt	Predikció		
	Éttermi szolgáltatások igénybevétele		Helyes predikciók százalékos aránya
	,00 Nem	1,00 Igen	
Éttermi szolgáltatások igénybevétele	0	409	,0
	0	661	100,0
Teljes százalék			61,8

Source: Own editing

The 61.8% value belonging to the classification table describes that what percentage of the whole sample selected the restaurant services.¹⁸ Thus, based on a simple distribution the model categorises each entity as "yes" which results the best prediction from the information related to distribution.

¹⁷ Significance value of F-probe is = 0,966.

¹⁸ $661/(661+409) = 61,77 \% \approx 61,8\%$

At logistic regression possibility quotients generated from beta factors, , "Beta exponents/Exp(B)"s are read.

The following *Table 5.* contains the parameters of the constant of the regression equation. The constant of the logistic regression is the intersection of the reference categories, a value that connected to a visitor who belongs to the reference category at every explaining variable.

The Beta exponent is a value which gives the possibility quotient of the use and "not use" of the given service¹⁹. At the regression equation the Wald statistics is used to parameter estimation which is significant.

Table 4. The parameters of the intersection and the constant of the logistic regression equation (use of restaurant services)

Logisztikus modell egyenletére vonatkozó paraméterek						
	Együttható érték/koeficiens (Béta értékek)	Sztenderd hiba	Wald statisztika értéke	Szabadságfok (df)	p-érték	Együttható érték exponense [Exp(B)]
Konstans	,480	,063	58,223	1	,000	1,616

Source: Own editing

Table 6. shows the individual effects of the independent variables on the dependent ones. The experience was that above 0.05 p values belong to the genre and family size of the respondents which indicates the rerun of the regression model with the exclusion of the variables that do not have an influence.

Considering the age and qualification as independent variables we can experience that the significance value of some categories is above 0.05 p, due there is no significant relationship between the given category and the use of restaurant services. In the same time, the categories globally affect, significantly determine the openness of the visitors to the use of restaurant services which indicates that these variable still should be included in these models.

¹⁹ $661/409 = 1,616$

Table 5. The individual influence of the explaining variables on the use of restaurant services

A magyarázó változók hatásai a függő változóra (logisztikus modellbe való bevonás előtt)

Magyarázó változók	Próba értéke	szabadságfok	p-érték
nem	,063	1	,802
kor	42,603	4	,000
kor(1)	1,514	1	,219
kor(2)	30,216	1	,000
kor(3)	3,895	1	,048
kor(4)	18,167	1	,000
vegzettség	38,133	6	,000
vegzettség(1)	1,232	1	,267
vegzettség(2)	8,197	1	,004
vegzettség(3)	2,232	1	,135
vegzettség(4)	9,616	1	,002
vegzettség(5)	,423	1	,516
vegzettség(6)	23,330	1	,000
fo	5,521	4	,238
fo(1)	1,537	1	,215
fo(2)	,206	1	,650
fo(3)	,289	1	,591
fo(4)	,363	1	,547
tartozkodas	17,958	2	,000
tartozkodas(1)	9,335	1	,002
tartozkodas(2)	17,675	1	,000
Teljes statisztika	83,037	17	,000

Source: Own editing

After excluding the no-significant independent variables *Table 7.* is resulted. *Table 8.* shows the final model to the resort of restaurant services with the possibility quotients connected to the explaining variables (with beta exponent values), which constitutes an important part of my research.

If the age of the guest is between 41-60 the possibility to use the restaurant services increased with 1.935 times²⁰ comparing with the guests belonging to the age group above 60 - all other explaining variables are controlled (all other conditions are the same).

A guest who has a qualification as skill worker will use the restaurant service with 0.461 times possibility²¹ comparing with a guest with university qualification if the other explaining variables are controlled. So the chance of using the service is 0.461 - 1 = - 53.3%.

²⁰ Beta exponent connected to age group 41-60 (age category 4) = 1,935

²¹ Beta exponent connected to skill workers (qualification category 2) = 0,461

That guest who arrives to spend 4-7 days at the given destination will use the restaurant services with 1.736 times possibility²² comparing with those ones who spend more than 7 days - the other explaining variables are controlled.

Table 6. The individual inflence of significant explaining variables to the use of restaurant services

A magyarázó változók hatásai a függő változóra (logisztikus modellbe való bevonás előtt)

Magyarázó változók	Próba értéke	szabadságfok	p-érték
kor	41,917	4	,000
kor(1)	1,243	1	,265
kor(2)	31,190	1	,000
kor(3)	4,331	1	,037
kor(4)	16,671	1	,000
vezettség	40,205	6	,000
vezettség(1)	1,291	1	,256
vezettség(2)	8,392	1	,004
vezettség(3)	1,896	1	,168
vezettség(4)	10,241	1	,001
vezettség(5)	1,136	1	,286
vezettség(6)	23,963	1	,000
tartozkodás	18,392	2	,000
tartozkodás(1)	8,895	1	,003
tartozkodás(2)	17,895	1	,000
Teljes statisztika	79,960	12	,000

Source: Own editing

²² Beta exponent connected to 4-7 spent days (spent days category 2) = 1,736

Table 7. The parameter estimations of the binary logistic regression model related to the use of restaurant services

A logisztikus regresszió modelljének paraméterbecslései								
Éttermi szolgáltatás igénybevétele		Együttható értékek (Béta értékek)	Sztemderd hiba	Wald statisztika	p-érték	Együttható értékek exponensei Exp(B)	95%-os konfidenciaintervallum az együtthatók exponenseire [Exp(B)]	
							Alsó határ	Felső határ
Step 1 ^a	kor			25,969	,000			
	kor(1)	,114	,533	,046	,831	1,121	,394	3,188
	kor(2)	-,234	,279	,701	,402	,791	,458	1,369
	kor(3)	,451	,269	2,806	,094	1,570	,926	2,663
	kor(4)	,660	,273	5,864	,015	1,935	1,134	3,301
	vezettség			23,449	,001			
	vezettség(1)	-,211	,485	,189	,664	,810	,313	2,097
	vezettség(2)	-,774	,264	8,614	,003	,461	,275	,773
	vezettség(3)	-,382	,229	2,784	,095	,683	,436	1,069
	vezettség(4)	-,346	,213	2,623	,105	,708	,466	1,075
	vezettség(5)	-,296	,239	1,533	,216	,744	,466	1,188
	vezettség(6)	,305	,190	2,582	,108	1,357	,935	1,969
	tartozkodás			13,007	,001			
	tartozkodás(1)	-,001	,227	,000	,997	,999	,640	1,560
	tartozkodás(2)	,580	,258	5,075	,024	1,787	1,078	2,961
	Konstans	,175	,336	,271	,603	1,191		

a. Az egyenletben szereplő változók: kor, vezettség, látogatási napok száma. (Minden magyarázó változó esetében az utolsó kategória értéke a referenciakategória.)

Source: Own editing

Analysis of the use of restaurant services with binary logistic regression (based on the type of questionnaire)

During the previous analysis among the explaining variables the type of destination was excluded (type of service provider hotels that can be wellness/fitness/aqua park) ²³. The previously determined hypothesis says that this variable cannot be missed out from the model and significant relationship is assumed with the use of the services as dependent variables.

The first output is the table of the individual effect of explaining variables with the integration of the type of the questionnaire (*Table 9.*). The results show that the type of the provider as explaining variable globally and at each category significantly affects the use of restaurant services.

According to the parameter estimation results of the logistic regression model I experienced that the after including the type of the provider the number of spend day which was significantly deterministic in the previous model does not influence the dependent variable which indicates that the during the complex effect of the explaining variables the type of provider knocks the number of spent days out. The reason of this that

²³ Aqua park set as reference category.

the type of the hotel and the number of spent days are strongly correlated. This was checked with cross-table analysis as well. The 1-3 spent days and the spent days more than 7 categories are connected to aqua parks while the 4-7 days duration is typical in wellness hotels ($p \leq 0,000$). Based on *Table 10*, we can say that the use of restaurant services is significantly influenced by three explaining variables: the age of visitors, the qualification and the aim of the visit which strongly determines the number of spent days. Due to this, the number of spent days as explaining variable does not give plus information related to the use of restaurant services. The decision gave the conclusion that this information is remarkable by its own, but in the decision models the type of provider was not included.

From the final binary logistic model more conclusions can be made. If the age of the visitor is in the category of 41-60 or 26-50, the possibility of using the restaurant services is doubled ($\exp(b) = 2.125$ and 2.036) comparing with if the age of the visitor is above 60 - all the other explaining variables are controlled.

A skill worker who visits the given destination will use the restaurant service with 0.486 possibility (-51.4% times chance) comparing with a visitor who has a university diploma, if the other explaining variable are controlled.

From the categories of the provider type the aqua park was set as reference category, and both wellness and fitness significantly cooperated to the estimation of the model. The visitor who goes to fitness hotel will use restaurant services with 2.32 times larger possibility than the one who visits and aqua park. In the case of wellness hotels this possibility quotient is 3.047. As a summary, we can conclude that the use of restaurant services is very varied among the sectors and however the type of the destination is very deterministic the age and qualification of visitors have a strong influence as well (*Table 10*).

Table 8. The individual effects of explaining variables on the use of restaurant services (expanded model)

A magyarázó változók hatásai a függő változóra (logisztikus modellbe való bevonás előtt)

Magyarázó változók	Próba értéke	szabadságfok	p-érték
kor	41,917	4	,000
kor(1)	1,243	1	,265
kor(2)	31,190	1	,000
kor(3)	4,331	1	,037
kor(4)	16,671	1	,000
vegzttség	40,205	6	,000
vegzttség(1)	1,291	1	,256
vegzttség(2)	8,392	1	,004
vegzttség(3)	1,896	1	,168
vegzttség(4)	10,241	1	,001
vegzttség(5)	1,136	1	,286
vegzttség(6)	23,963	1	,000
tartozkodas	18,392	2	,000
tartozkodas(1)	8,895	1	,003
tartozkodas(2)	17,895	1	,000
k_tipus	84,950	2	,000
k_tipus(1)	46,397	1	,000
k_tipus(2)	8,526	1	,004
Teljes statisztika	132,423	14	,000

Source: Own editing

Table 9. The parameter estimations of binary logistic regression model related to the use of restaurant services (expanded model)

A logisztikus regresszió modelljének paraméterbecslései

Éttermi szolgáltatás igénybevétele	Együththató értékek (Béta értékek)	Sztenderd hiba	Wald statisztika	p-érték	Együththató értékek exponensei Exp(B)	95%-os konfidenciaintervallum az együththatók exponenseire [Exp(B)]	
						Alsó határ	Felső határ
Step 1 ^a							
kor			17,630	,001			
kor(1)	,549	,547	1,004	,316	1,731	,592	5,061
kor(2)	,125	,291	,186	,666	1,133	,641	2,003
kor(3)	,711	,278	6,536	,011	2,036	1,180	3,512
kor(4)	,754	,279	7,318	,007	2,125	1,231	3,670
vegzttség			19,348	,004			
vegzttség(1)	-,146	,498	,086	,769	,864	,326	2,292
vegzttség(2)	-,721	,273	6,959	,008	,486	,285	,831
vegzttség(3)	-,210	,236	,790	,374	,811	,510	1,288
vegzttség(4)	-,397	,219	3,275	,070	,672	,437	1,034
vegzttség(5)	-,293	,248	1,397	,237	,746	,459	1,213
vegzttség(6)	,286	,195	2,149	,143	1,331	,908	1,950
tartozkodas			3,819	,148			
tartozkodas(1)	,007	,235	,001	,976	1,007	,635	1,597
tartozkodas(2)	,334	,267	1,564	,211	1,397	,827	2,358
k_tipus			53,536	,000			
k_tipus(1)	1,114	,158	49,925	,000	3,047	2,237	4,150
k_tipus(2)	,843	,186	20,633	,000	2,324	1,615	3,344
Konstans	-,584	,360	2,629	,105	,558		

a. Az egyenletben szereplő változók: kor, végzettség, látogatási napok száma, kérdőív típusa. (Minden magyarázó változó esetében az utolsó kategória értéke a referenciakategória.)

Source: Own editing

Analysis of the use of massage services with binary logistic regression according to the examined sectors (based on the type of questionnaire)

In the last model, similarly to the method described above, I examine what kind of relationship can be explored with the explaining variables and I analysed that what is the role of the type of provider among the explaining variables. The individual effects of significant explaining variables of the binary logistic regression model is summarized in *Table 11*.

During the examination of the controlled effects of the explaining variables in the models I experienced that the in the case of individual influences the significant qualification and the size of the family lost their explaining power, in the same time the number of spent days, that was non-significant during the analysis of the use of restaurant services, still must be handled as relevant factor. Further significant variables are the age and the type of provider variables (*Table 12*).

Based on the possibility quotients we can conclude that a visitor belonging to the age group 18-25 will use the massage service with 0.443 possibility comparing with a visitor above 60 - the other values are controlled. (Though, $0.443 - 1 = - 55.7\%$ is the possibility of using the service.

A visitor who spends 1-3 days at the destination also will use the massage service with less possibility comparing the one who stays more than 7 days. The value of beta exponent is 0.467. According to the beta quotients belonging to the destination types we can say that deterministic differences can be experienced between the use of the service and the type of the provider. A guest visiting a fitness hotel will use the massage service with 4.161 times higher possibility than a visitor who goes to and aqua park. This possibility is 5.11 in the case of a guest who visits a wellness hotel.

Table 10. The individual effects of significant explaining variables on the use of massage services

A magyarázó változók hatásai a függő változóra (logisztikus modellbe való bevonás előtt)

Magyarázó változók	Próba értéke	szabadságfok	p-érték
kor	34,951	4	,000
kor(1)	9,025	1	,003
kor(2)	20,789	1	,000
kor(3)	4,179	1	,041
kor(4)	3,907	1	,048
vezettség	20,503	6	,002
vezettség(1)	6,788	1	,009
vezettség(2)	1,979	1	,160
vezettség(3)	2,061	1	,151
vezettség(4)	2,150	1	,143
vezettség(5)	3,973	1	,046
vezettség(6)	,303	1	,582
fo	15,326	4	,004
fo(1)	11,919	1	,001
fo(2)	,291	1	,590
fo(3)	3,322	1	,068
fo(4)	3,312	1	,069
tartozkodás	40,633	2	,000
tartozkodás(1)	38,172	1	,000
tartozkodás(2)	34,729	1	,000
k_típus	126,297	2	,000
k_típus(1)	64,636	1	,000
k_típus(2)	15,428	1	,000
Teljes statisztika	175,091	18	,000

Source: Own edition

Table 11. The parameter estimations of binary logistic regression model related to the use of massage services

A logisztikus regresszió modelljének paraméterbecslései								
Masszázsszolgáltatások igénybevétele	Együththató értékek (Béta értékek)	Sztenderd hiba	Wald statisztika	p-érték	Együththató értékek exponensei Exp(B)	95%-os konfidenciaintervallum az együththatók exponenseire [Exp(B)]		
						Alsó határ	Felső határ	
Step 1 ^a	kor			12,032	,017			
	kor(1)	-,041	,725	2,062	,151	,353	,085	1,462
	kor(2)	-,815	,325	6,294	,012	,443	,234	,837
	kor(3)	-,130	,297	,194	,660	,878	,491	1,569
	kor(4)	-,303	,300	1,016	,313	,739	,410	1,331
	vegzettseg			11,269	,080			
	vegzettseg(1)	-,581	,597	,948	,330	,559	,174	1,802
	vegzettseg(2)	-,492	,315	2,436	,119	,611	,329	1,134
	vegzettseg(3)	-,401	,268	2,246	,134	,669	,396	1,131
	vegzettseg(4)	-,342	,246	1,932	,165	,710	,438	1,151
	vegzettseg(5)	,251	,266	,894	,344	1,286	,764	2,165
	vegzettseg(6)	-,422	,198	4,553	,033	,656	,445	,966
	fo			7,302	,121			
	fo(1)	,621	,402	2,380	,123	1,860	,845	4,092
	fo(2)	,385	,406	,897	,344	1,469	,663	3,255
	fo(3)	,259	,397	,427	,514	1,296	,595	2,820
	fo(4)	-,007	,437	,000	,988	,993	,422	2,340
	tartozkodas			22,336	,000			
	tartozkodas(1)	-,762	,258	8,692	,003	,467	,281	,775
	tartozkodas(2)	-,065	,278	,055	,815	,937	,543	1,616
	k_tipus			79,976	,000			
	k_tipus(1)	1,631	,186	76,636	,000	5,110	3,547	7,363
	k_tipus(2)	1,426	,210	45,915	,000	4,161	2,755	6,285
	Konstans	-1,078	,505	4,546	,033	,340		

a. Az egyenletben szereplő változók: kor, végzettség, család létszáma, látogatási napok száma, kérdőív típusa. (Minden magyarázó változó esetében az utolsó kategória értéke a referenciakategória.)

Source: Own edition

4. NEW SCIENTIFIC RESULTS OF DISSERTATION

I selected the analysis of the satisfaction with the supply of the national recreation tourism as the topic of my dissertation. During my research and thanks to the process of my results I made the following conclusion. The new scientific results of my dissertation are summarized in the following sections:

1. There are continuous changes in the definition system of health-tourism thanks to the changing consumer needs. I consider as a novel result that I formed a common definition system that can help the orientation of experts guests who would potentially use the health-tourism services among the definitions.
2. I consider as an important result that based on the given data I defined a target group - to reach maximum profit (spending above ticket costs). The potential guests belonging to this segment arrive to spend 4-7 days in the destination as participants of city events and older than 25 years but younger than 60. Important criteria that during forming publicity materials the genre of the guests are not but the qualification is definitely deterministic (at least guests with OKJ degree or higher should be targeted) and the fact that the size of the family influences the selection of the service should be taken into consideration. It is worth to consider more effectively the use of special services, such as the exact promotion of restaurant or massage services.
3. A deterministic result of my dissertation is, the discount services partly influence the use of the service. Base on my analyses it van be concluded that the discount generates returning guests in some cases, it is worth to use other marketing tools and emphasise the configuration of quality service.
4. Novel result of my dissertation is that statement was not confirmed which says that those guests who are staying longer at the destination spending more money. I analysed more categories and based on the results we can conclude that guest spending 4-7 days at the destination are preparing financially differently to their stay comparing with the guests of other categories. Basically, it would be a reasonable assumption that those guest who arrive for 1-3 days spend more money during their short residence, but the results disproved this. On the same level of decision tree, people who stay for 4-7 days and have a qualification higher than high

school has a surpassingly high possibility (~60%) to spend more than 20 000 forint. We may assume that visitors during their planned 1-3 and 3-7 day residence equally take much money to the given destination, but according to the results we can conclude that guests who arrive 4-7 days always spend a bit more at a given aqua park or service provider.

5. PRACTICAL UTILISATION OF RESULTS

Profit maximization and increasing income are important issues for the service providers. Due to this I described the spending behaviour of guest through the process of primary collected data. During my research, I tried to find out which parameters describe the most precisely those guest who spend the most. The given results can be implemented to the marketing strategy of the service providers and can help their marketing activity. Based on my research we can conclude that families with higher monthly income more frequently go on holiday and recreation, and spending more time at the destination. Furthermore, more precise conclusions can be phrased during the examination of two variables (net monthly income of the family and number of spent days) through cross-table analysis. Base on this we can conclude that the rate of those guests, who have more net monthly family income than 180 000 forint and spending 4-7 days at the destination comparing with the ones whose monthly net income is lower than 180 000 forint.

I analysed the relationships between the monthly income and the used services as well. The conclusion was that the use of vapour cabin, restaurant services, children's playground and massage services is significantly different based on the various income categories. The use of vapour cabin, restaurant services and children's playground is staggered - shows an increasing trend with the increase of monthly net income. The use of massage service was preferred mostly among the guests belonging to the 130 001-180 000 forint or 230 001-280 000 forint income categories (*Figure 2.*)

The qualification of the respondents showed significant relationship with the use of most services. Based on the qualification the use of the following services is varied: theme pools, Finnish sauna, vapour cabin, restaurant services, children's playground, massage. The results of further research showed that restaurant services are mostly used by the guest with college qualification level (73%). This result was confirmed by the decision tree as well. From the binary logistic model we can conclude that a guest who is qualified as skill worker uses the restaurant services at 0.486 possibility (-51.4% times chance) comparing with the guest with university qualification - the other explaining variables are controlled. There was significant difference in the case of restaurant services.

During the analyses it was confirmed that the frequency of visits influences the use of health-tourism services, but not in the case of every type of service provider. Those guests

were separated who firstly visit the given provider and the returning ones. The conclusion is that the theme pool as basic service is popular among the first timers and returners too and still popular in the case of further visits. It should be handled as top service, 8 guests from 10 used it (81.3%). Those respondents who visit weekly the given aqua park or hotel can be significantly categorised from other guests based on the use of two services, the theme pool and the restaurant. My further conclusion is that the regulars and weekly returners forming similar groups according to the preference of services, especially in the case of restaurant services. Those respondents who visit the given service provider only during public holidays can significantly separated based on the use of sport services.

The analyses gave the conclusion that the discount orientated guests use most of the services similarly than those who visit the aqua park or hotel without considering the discounts. However, there is significant difference between the two groups according to the use of massage services. The discount orientated guests use the massage services in higher rate (37.7%). This rate is only 29.6% among the non-discount orientated guests.

The research explored that the explaining variables of the hypothesis influenced the use of services. My conclusions are the followings. Use of sport services was the only service that was used mostly by men. The reasons of this may be the followings. The availability of fitness rooms in hotels is only a marketing trick, the equipments of the rooms are old and not maintained. If we examine age groups and the use of services we can conclude the followings. If the guest is between 41 and 60, the possibility of using restaurant services is 1.935 times higher comparing with the guest above 60. If the explaining variable is the number of spent days at the destination, those guest who arrive to spend 4-7 days will use the restaurant services with 1.736 times higher possibility comparing with those ones who spend more than 7 days - all other explaining variables are controlled. Young visitors (age between 18-25) will use massage service with 0.443 possibility comparing with the old guests (age above 60) - all other explaining variables are controlled. A visitor who spend 1-3 days at the destination will use massage services with less chance than those ones who spend more than 7 days. The beta exponent value is 0.467. As it is shown above that not all of the services affected by the independent parameters.

The average satisfaction is high considering the whole sample, but there are significant differences between the main averages of the groups. The wellness group was significantly

more satisfied, these responders gave 4.55 average rate (1-5 scale) to the whole provider experience. At the fitness group this average was 4.33. The aqua park group averagely rate this experience with 4.47 which equals with the average of the whole sample.

6. PUBLICATIONS RELATED TO THE DISSERTATION

Publications in foreign language in reviewed journals (1)

CSIRMAZ É. - PETŐ K. (2015): International Trends in Recreational and Wellness Tourism. *PROCEDIA ECONOMICS AND FINANCE* 32: pp. 755-762.

Publications in foreign language in national reviewed journals (2)

CSIRMAZ É. - PETŐ K. (2014): The analysis of costumer satisfaction in recreational tourism. *APSTRACT - APPLIED STUDIES IN AGRIBUSINESS AND COMMERCE* 8:(4) pp. 57-62.

KOZMÁNÉ CSIRMAZ É. (2012): Wellness Habits of Hungarian Youth. *APSTRACT - APPLIED STUDIES IN AGRIBUSINESS AND COMMERCE* 6:(5) pp. 137-141.

Publications in Hungarian in national reviewed journals with a summary in foreign language (3)

CSIRMAZ É. (2013): Az egészségturisztikai ágazat problémáinak elemzése. *AGRÁRTUDOMÁNYI KÖZLEMÉNYEK = ACTA AGRARIA DEBRECENIENSIS* (54) pp. 27-33.

CSIRMAZ É. (2013): Prevenció, rekreációs turizmus iránt mutató fogyasztói igények felmérése. *A VIRTUÁLIS INTÉZET KÖZÉP-EURÓPA KUTATÁSÁRA KÖZLEMÉNYEI* 12-13: pp. 239-243.

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CSIRMAZ É. (2010): The present state and significance of health tourism based on medical services in Hungary. In: Nábrádi A. (szerk.): International Conference on Tourism and Sports Management: (inTSMconf). Konferencia helye, ideje: Debrecen, Magyarország, 2010.05.27-2010.05.28. Debrecen: Debreceni Egyetem Agrár- és Gazdálkodástudományok Centruma, 2010. Paper 579. ISBN:978-963-473378-2

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CSIRMAZ É. (2013): Egyetemisták sportolási szokásai. In: Perényi Sz. (szerk.): Ifjúsági sport és tehetséggondozás - a 21. század kihívásai: II. Nemzetközi Turizmus és Sportmenedzsment Konferencia: Youth sport and talent management: challenges of the 21th century: II. International Conference on Tourism and Sportmanagement. 68 p. Konferencia helye, ideje: Debrecen, Magyarország, 2012.09.05-2012.09.06. Debrecen: Debreceni Egyetem Gazdálkodási és Vidékfejlesztési Kar, p. 1. ISBN:978-615-5183-81-2

CSIRMAZ É. (2010): Új trendek az egészségturizmusban - a "medical tourism" jelene és jövője. In: Kóródi M. (szerk.): Tudomány határok nélkül: Válságjelenségek összefüggései a társadalomban és a gazdaságban. Konferencia helye, ideje: Szolnok, Magyarország, 2010.11.11-2010. Szolnok: Szolnoki Főiskola, pp. 259-265.



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PhD Publikációs Lista

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List of publications related to the dissertation

Articles, studies (8)

1. **Kozmáné Csirmaz, É.**, Pető, K.: International Trends in Recreational and Wellness Tourism.
Procedia Economics and Finance. 32, 755-762, 2015. ISSN: 2212-5671.
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2. **Kozmáné Csirmaz, É.**, Pető, K.: The analysis of costumer satisfaction in recreational tourism.
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4. **Kozmáné Csirmaz, É.**: Prevenció, rekreáció, turizmus iránt mutatkozó fogyasztói igények felmérése: fiatalok sport és wellness szokásai.
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5. **Kozmáné Csirmaz, É.**: Wellness Habits of Hungarian Youth.
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6. **Kozmáné Csirmaz, É.**: The present state and significance of health tourism based on medical services in Hungary.
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7. **Kozmáné Csirmaz, É.**: Új trendek az egészségturizmusban: a "medical tourism" jelene és jövője.
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8. **Kozmáné Csirmaz, É.**: A fiatalok utazási szokásai az egészségturizmus tükrében.
Economica. 3, 41-50, 2009. ISSN: 1585-6216.



Conference presentations (1)

9. **Kozmáné Csirmaz, É.**: Egyetemisták sportolási szokásai.

In: Ifjúsági sport és tehetséggondozás - a 21. század kihívásai : II. Nemzetközi Turizmus és Sportmenedzsment Konferencia : Debrecen, 2012. szeptember 5-6.. Szerk.: Perényi Szilvia, Debreceni Egyetem GVK, Debrecen, 43, 2013. ISBN: 9786155183812

The Candidate's publication data submitted to the iDEa Tudóstér have been validated by DEENK on the basis of Web of Science, Scopus and Journal Citation Report (Impact Factor) databases.

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