The Innovative Methodology of Recognition the Most Appropriate Places with a Great Potential for Tourist Satisfaction

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***Abstract*--Many countries and regions have appropriate and necessary conditions for the development of tourism. For infrequently visited places, it is essential to seek for new opportunities in social innovation. The focus of our research is an evaluation methodology for determining the social characteristics of urban environment to reveal appropriate places with a great potential for tourist satisfaction and to identify the important areas that should be included in an urban tourist offer. A method was designed for use it in the comparative analysis of concrete locations. An instrument (questionnaire) was developed to support the evaluation methodology. The applicability of the methodology was demonstrated in several tourist attractions, once during the daytime and once during the night. A response from 200 persons (long-term tourists) was analyzed. Obtained research results provide useful information of the current spatial situation needed for a successful development strategy in tourism. Presented methodology is only one segment of the entire technological management used in tourism. In our case the technology management is selection process of suitable locations involved in sightseeing tours.**

I. INTRODUCTION

Nowadays tourism is one of the fastest growing industries. In the late 2000s we were faced with economic slowdown and tourism started to suffer. In a period 2008-2009 the suffering became stronger because H1N1influece virus appeared [1]. However, after 2010 it started to recover very quickly. In the last few years it grows constantly with 3.8 % [2]. Urban tourism is a consistent theme in the expansion of tourism research since the 1980s [3]. Tourists visit cities for many reasons. The cities that accommodate most tourists are large multifunctional entities into which tourists can be effortlessly absorbed. "Tourism can contribute substantial economic benefits to cities but the cities whose economies are the most dependent upon tourism are likely to benefit the least. It is the cities with a large and varied economic base that gain the most from tourism but are the least dependent upon it." [3]. But what about less known cities with a weak economic base and low level of tourist infrastructure? How to seek for opportunities in such cities? How to define which places are appropriate to be developed?

According to Goeldner and Ritchie [4] tourism is a complex phenomenon - one that is extremely difficult to describe succinctly. Any "model" of tourism must "capture" the components of the tourism system, as well as the key processes and outcomes that occur within tourism. Goeldner and Ritchie emphasize natural resources and environment component as the most fundamental basis of much tourism model. Any given destination is primarily and unchangeably characterized by its *physiography* (the nature and appearance of its landscape) and its *climate***.** The third component of the natural environment is *people***.** In the case of people, we must distinguish between two very important categories of individuals: (1) those that "belong" to the destination (its residents or long stay tourists) and (2) those who are current or potential visitors to the destination (short stay tourists) [4].

Another, also important, dimension of the tourism phenomenon is the built environment that reflects the *culture* of the specific region. In the article, we focus to the "cultural tourism [5]", as one of adjectival tourism forms. Cultural tourism [6] is a niche, concerned with a country or region's culture, specifically the lifestyle of the people in those geographical areas, the history of those people, their art, architecture, religion(s), and other elements that helped shape their way of life. Cultural tourism also includes tourism in historic urban areas. This type of tourism quality depends a lot on the criteria, such as: *Attraction*, *Pleasantness, Relaxation and Sense of safety* of sightseeing tours consisted of the plenty sightseeing points. Further, these criteria are named *aspects* according to the classification scheme given by the literature [7].

The presented research concentrates on scientific approach based on the model. The basic principle is to ensure the well-being of tourists. Ad hoc spatial interventions are not acceptable. Technology use should be managed for human advantage. Basically, the technology management is set of management disciplines that allow organizations to manage their technological fundamentals to create competitive advantage [8]. It integrates planning, design, optimization and control of technological processes and services. In our case, the technology management is selection process of suitable locations involved in sightseeing tours. Presented methodology is only one segment of the entire technological management used in tourism.

II. METHODOLOGY FOR DETERMINING THE PSYCHOLOGICAL CHARACTERISTICS OF URBAN PLACES IN A FUNCTION OF SELECTION THE TOURIST SIGHTSEEING POINTS

Places should be designed for people. Create sense of place, connect people to nature, be authentic and offer diversity [9]. Knox [10] argues that 'a good urban design fosters positive sense of place which is usually socially

constructed, as in ordinary places, which do not have physical settings with important landmarks, the social construction of place is especially important'. A good walking infrastructure and people using it for their daily and tourist activities may contribute to increased attractiveness of a place and development of its image, this directly influence the quality of life and foster urban tourism development as a whole [11].

In his book *Life between Buildings*, Gehl [12] (pp. 11–14) presented a probabilistic approach to understand how design influences behavior. He argued that through design it is possible to influence how many people use open spaces, how long individual activities last, and which activity types can develop. Carmona *et al.* [13] (p. 107) believe that the crux of Gehl's argument is that, in poor-quality public spaces, only strictly necessary activities occur. Such places are not suitable for tourists offer. In higher-quality public spaces, necessary activities take place with approximately the same frequency—although people choose to spend longer doing them—but, more importantly, a wide range of optional (social) activities also tend to occur [13] (p. 107). Diversity of activities attract tourist.

Urban surfaces are always used by many users at the same time, by drivers, cyclists, pedestrians, etc. Each group has their own spatial needs. The environment should go along with it and create a good personal feeling. Environmental perception should be adjusted. The question is how to achieve it.

In the literature [7] three dimensions evaluation model (SEC model) for evaluation the state of open space was developed. The model got its name from the first letters of its three dimensions named: SUITABILITY TO EVERYONE, ENVIRONMENTAL ACCEPTANCE AND COST EFFECTIVENESS.

All three dimensions have associated factors, such as: psychological, sociological, aesthetic, ecological, functional and economic (table 1). Each factor has appropriate indicators listed below in order to evaluate the importance of specific factor. Together there were three dimensions basis, six factors and seventeen indicators, which evaluate the visual relevance and visual potential of urban open space. SEC methodology helps us to recognize situations specificity of and allows a response to users' demands. It enables us to give an answer how to increase the visual potential of the city with minimum impact on nature and economic costs.

In the cited article, an evaluation instrument (questionnaire) was developed to support SEC methodology. Appropriate questions and five level evaluation scales were used to evaluate a specific location. Because of examining individual indicator impact, SEC model new category called aspects was introduced. Each indicator was subdivided using the relevant aspects. For example, Individual feeling is studied based on space attraction, space pleasantness and relaxed atmosphere, detected by respondents. All used aspects and associated indicators are presented in table 1.

Originally, in the article [7], questionnaire consists of four questions. For our purpose to evaluate the quality level (appropriateness) of touristic attractions, not all aspects from the original model have the same importance. The most important are aspects are *Attraction*, *Pleasantness, Relaxation and Sense of safety*. These aspects mostly influence the human feelings. This is complied with our general goal to achieve the best tourists' feeling at locations on sightseeing tour.

Therefore, there are only four lines of question 1 important for our purpose (the first three lines and line seven) [7]. The first three lines describe the feeling on the place of interests. Here, respondents evaluated the scene on five level evaluation scale between two extremes like not attractive and attractive, unpleasant and pleasant, tense and released. The last used line of the first question gives us the information on how safely the respondents feel at a particular location. Here, we have also used the five-level evaluation scale between two extremes: dangerous – safe. It also makes sense to make assessment in different time sequences; like daytime and nighttime for each aspect.

TABLE 1.THREE DIMENSIONS EVALUATION ASSESSMENT (MODEL SEC) OF URBAN OPEN SPACE ENVIRONMENTAL PERCEPTION AND CORRESPONDING QUESTIONNAIRE TERM POSSIBILITIES WITHIN TWO EXTREMES (FROM [5]).

FACTORS	INDICATORS	ASPECTS	QUESTIONNAIRE TERM POSSIBILITIES WITHIN TWO EXTREMES
1.1 Psychological	***1.1.1 Individual feeling***	• *Attraction* • *Pleasantness* • *Relaxation*	not attractive - attractive unpleasant - pleasant tense - relaxed
	1.1.2 Attracting attention	• *Composition* • *Arouse interest* • *Stimulation*	simple - complex boring - interesting not arousing - arousing
	1.1.3 Orientation ability	• *Overview*	not visible - visible
	1.1.4 Sense of safety	• *Safety*	dangerous - safe
1.2 Sociological	***1.2.1 Land use***	• *Land use intensity*	walking, stopping, sitting, socializing, playing, cycling, rollerblading, skating, sightseeing tour
1.3 Aesthetic	***1.3.1 Location aesthetic***	• *Space arrangement*	disordered - ordered
	1.3.2 Ability to recognize space order	• *Dominance*	object line, single object, open space, paved surface, greenery
	1.3.3 Light effect	• *Interesting* • *Pleasant* • *Compliance*	uninteresting - interesting unpleasant glow - pleasant glow incompatible - compatible

III. THE EXPERIMENT

In order to show the usefulness and appropriateness of SEC model as a base model for determining the attractiveness of touristic sightseeing, empirical research was conducted based on the descriptive and causal experimental method of empirical research. The experiment was conducted during the time interval from May 2013 until June 2014. The experiment based on a sample of 200 respondents, 100 men and 100 women, aged between 18 and 34 years old. All participants were foreign students at the University of Maribor in Slovenia. They were treated as a pilot group who can be equated to long-term tourists. Respondents were anonymous. Interviewing was carried out in small groups of up to ten people. It lasted about half an hour. Interview location was the classroom. Respondents have been shown large-scale images of locations (see figure 1-3), projected on the wall to help in recalling and reliving a specific location. The interviewer was always the same person who performed passive conduct of questionnaire handling and running the image presentation. Each participant filled in the questionnaire only once.

The research focus was on space perception difference during day and nighttime because they evaluated each location twice; first during daytime and second during night-time. The daytime and night-time images were presented through the same point of view.

For research location, city of Maribor has been chosen. Maribor is the second largest Slovenian city with an important central regional role. It is also the important touristic destination with an important historical value. Three specific locations in the city center were selected: "Gosposka" Street (LOC-1), "Lent" and old city (LOC-2) and "Leon Štukelj" Square (LOC-3). All three chosen locations were well known to the respondents. High recognizability and good accessibility allowed for the most representative answers.

Location 1: "Gosposka" Street (LOC-1)

"Gosposka" Street is located in a closed pedestrian zone of the historical city center. It is the most important market street. Buildings' ground floors are occupied mostly by shops while upper floors contain living units. This street is also an important path accessible from four directions. It is one of the oldest streets formed in the 17th century. Buildings are architecturally very recognizable.

Night situation changes environmental perception of the street. Buildings' verticals are not visible. The illuminated shop windows enter directly into the observer's focus. The place also has very uneven brightness.

Location 2: "Lent" and old city (LOC-2)

It is situated on the edge of the medieval city. It is also a secondary transit street. A pedestrian zone is located in the area between the riverbank and the road. In some places, the parking zone makes the pedestrian area very narrow. The opposite side of the street is the zone with bars (ground floor) and hosing (upper floors).

Illumination is not sufficient; some parts of this area are completely dark. The lights are situated only in the pedestrian zone. This fact causes the minimal lightening of the traffic area. The lack of light disturbs free walking during the night. There are several lights mounted on the building walls on other side of the street. They only weakly illuminate the facade of a building, but not the pedestrian zone.

Figure1. "Gosposka" Street during daytime

Figure2: "Gosposka" Street during nighttime

Figure3. "Lent" and old city during the daytime

Figure 4. "Lent" and old city during the nighttime

Location 3: "Leon Štukelj" Square (LOC-3)

The square is located in a closed pedestrian zone and it is an important path noodle. It is a recently re-designed city square, transformed and opened 2011. It is a closed square, all surrounded by public buildings, mostly in the banking sector. The central part of the square is devoted to public events and is therefore only occasionally occupied. Distant edges of the square are slowly appropriated by the cafés. Trees, benches and bins are lined on the edges. Hanging lamps are stretched across the entire square width. At certain points, there are also freestanding and floor lamps installed.

Night situation creates a pleasant atmosphere. Changing light color creates different lighting ambiences. Hanging lamps light is focused on paved area. Ground floor level, except one building, is not illuminated.

Figure 5. "Leon Štukelj" Square during daytime.

Figure 6. "Leon Štukelj" Square during nighttime.

IV. RESULTS

Data obtained on the basis of a questionnaire, were statistically processed and analyzed using SPSS Windows, Version 21. Methods of descriptive statistics (frequency and numerical analysis, the arithmetic mean of the difference between the mean and standard deviation) and inferential statistics (χ2-test, t-test for dependent samples and Pearson's correlation coefficient – r were used).

Table 2 depicts the results of four aspects: Attraction, Pleasantness, Relaxation and Sense of safety. These aspects have the high influence to the tourists' feeling when they visits a touristic location. As seen in Table 2, a statistical analysis is done for two time periods, i.e. day-time and night-time. The chosen locations are very important tourist attractions in Maribor. They are very often a part of guided tour through the city center. All presented locations have the historical value.

The results of LOC-1 depicts that the mean values $\overline{\boldsymbol{x}}$ for of all four treated aspects are relatively low, when we compare them with the same values for another two locations: LOC-2 and LOC-3 for a daytime and for a nighttime. For a daytime we have the highest result at the LOC-2, what means that this location is the most acceptable location for sightseeing at a day- time. However, it gives not so good results for the nighttime. In a nighttime we observe the best results at the LOC-3. At this location, we have quite high results in all categories. Difference $\bar{x}$ results show the conformity of each location for a daytime and a nighttime sightseeing tours. In this category, LOC-3 has the best result (the smallest values). The results of t-test show that there is a large deference between results of LOC-1, LOC-2 and the results at LOC-3. Only at the LOC-3 we observe no statistically significant differences between mean values in all four categories ($2p > 0.05$; 2p means that the confidence level is bidirectional; it is related to the absolute mean values of differences).

TABLE 2. DESCRIPTIVE MEASUREMENTS OF THE ASPECTS: ATTRACTION, PLEASANTNESS, RELAXATION AND SENSE OF SAFETY, THE RESULTS OF T-TEST AND THE CORRELATION FOR THE DEPENDENT SAMPLE PAIR DAY – NIGHT.

	DAY		NIGHT					
ASPECT	$\bar{x}$	**σ**	$\bar{x}$	**σ**	**Difference** $\bar{x}$	**t**	**2p**	**r**
LOC-1								
Attraction	3,10	0,857	3,06	1,043	0.045	0,510	0.610	0,151
Pleasantness	3,25	1,025	2,89	0,966	0,355	3,776	0,000	0,109
Relaxation	3,18	0,843	2,89	0,822	0,295	3,954	0,000	0,195
Sense of safety	3,81	1,72	3,13	0,963	0,680	8,057	0,000	0,316
LOC- 2								
Attraction	4,42	0,804	3,08	1,127	1,335	14,348	0,000	0,102
Pleasantness	4,37	0,858	2,95	1,138	1,415	15,077	0,000	0,137
Relaxation	4,22	0,966	3,06	1,117	1,160	12,250	0,000	0,180
Sense of safety	3,74	1,024	2,65	1,111	1,095	12,151	0,000	0,290
LOC-3								
Attraction	4,23	0,889	4,18	0,910	0,055	0,783	0,435	0,391
Pleasantness	4,16	0,833	4,25	0,747	-0,090	-1,445	0,150	0,383
Relaxation	3,91	0,894	4,03	0,921	-0,120	-1,799	0,074	0,460
Sense of safety	4,19	0,829	4,13	0,814	0,065	1,012	0,313	0,389

$\bar{x}$ – Arithmetic mean, σ – standard deviation, t – value difference arithmetic test, 2p – bidirectional level of statistical significance, r – Pearson product-moment correlation coefficient

In another two cases, at the LOC-1 and the LOC-2, we observe the differences between mean values for a daytime and a nighttime at the statistical relevant level ($2p \leq 0.05$). The t-test results are exception only for the aspect Attraction for the LOC-1. All obtained t-test results are also confirmed by the correlation coefficient – r, which has much higher values at the LOC-3 than at the LOC-1 and the LOC-2 (higher level of correlation between the daytime and nighttime assessments).

Generally, we can conclude, the LOC-1 is the least attractive location for the tourist sightseeing; as well as for a daytime and a night-time tours. Despite of the fact that this location belongs to the 'iron' repertoire of the most existing sightseeing tours; it should be replaced by another one. In the city center, they are a plenty changing possibilities. The LOC-2 is positively evaluated at a daytime (in some categories it gives the highest mean values). This location seems to be a very appropriate for a daytime tour. In the nighttime, we have quite different situation on the same location. The evaluation results are quite low. This location is not appropriate for organizing the nighttime sightseeing tours. The third location LOC-3 has good results for a daytime and for a nighttime. On this location, tourists perceive a good feeling during a day and during a nighttime. Therefore, this location is very appropriate to be included in the daytime and also in the night tours.

V. CONCLUSION

In the tourism sector, new opportunities must be sought for and social innovation needs to be constantly in place in order to keep (or make) the destination attractive. This is even more important for infrequently visited places. Careful planning and technology management is essential. Environment contact and adaptation to progress are very important in order to increase the open space quality and to take an advantage of technological development.

The focus of our research is an evaluation methodology for determining the social characteristics of urban open space to reveal technology management opportunities for managing tourist products in the open space. A method was designed for use in the comparative analysis of environmental perception evaluation. The SEC model is a base model for tracking sustainability development of the urban open space. From the literature [7] it is evident that this model is holistic and very complex. It exceeds the requirements for appraising the appropriateness of touristic locations for the sightseeing tours. However, the subset of this model is helpful to use it for this purpose, too. For this usage, it is enough to use only two indicators: *Individual feeling* and *Sense of safety* with the corresponding aspects: *Attraction*, *Pleasantness*, *Relaxation* and *Safety*.

The method was tested and evaluated through an experiment where respondents were asked to evaluate a selected tourist point during the daytime and the nighttime by means of the listed aspects. The overall perception of the location was evaluated for each time point and location. The difference between aspects was measured and checked for the relevance.

The results show that some locations, although considered "important" for local tourist destination, are not appropriate for inclusion into the sightseeing tours and the difference in the daytime and nighttime should be taken into the account.

The destination management companies and organizations should incorporate the social management and technology management into their operations. Specifically, it is very important to plan the best possible sightseeing tours with the best sightseeing points. They should be attractive, pleasant, safe, and at the same time, they should relax tourists. All these means that in the modern tourism industry it is not enough just to plan sightseeing tours and sightseeing points

by using the intuitive approach, only. We need social innovations and technology management. Proposed scientific approach can't help the tourist organization to make location more attractive. It should become a good practice to find out the best sightseeing point that satisfied tourists. Considering all aspects help to increase the quality of sightseeing tours.

REFERENCES

[1] "UNWTO World Tourism Barometer Interim Update" (PDF). UNWTO World Tourism Barometer (World Tourism Organization). August 2010. (accessed on 17 November 2011)

[2] "International tourism receipts surpass US$ 1 trillion in 2011" (Press release). UNWTO. 7 May 2012. (accessed on 15 June 2012)

[3] Ashworth, G.; Page, S. J. Urban tourism research: Recent progress and current paradoxes. *Tourism Management* **2011**, 32 (1), 1–15.

[4] Goeldner, C. R.; Ritchie, J. R. B. *Tourism: Principles, practices, philosophies*; John Wiley & Sons: Hoboken, New Jersey, USA, 2006.

[5] List of adjectival tourisms, 2016. Available at: https://en.wikipedia.org/wiki/List_of_adjectival_tourisms (accessed on 21 March 2016)

[6] The Impact of Culture on Tourism. OECD: Paris, 2009.

[7] Rozman Cafuta, M. Open Space Evaluation Methodology and Three Dimensions Evaluation Model as a Base for Sustainable Development Tracking. *Sustainability* **2015**, *7*(10), 13690–13712.

[8] Technology management, 2016. Available at: https://en.wikipedia.org/wiki/Technology_management (accessed on 21 March 2016)

[9] Burden, D. *Streets and Sidewalks, People and Cars: The Citizen's Guide to Traffic Calming*: Local Govt. Commission Ctr for Livable Communities: Sacramento CA, 2000.

[10] Knox, L. P. Creating Ordinary Places: Slow Cities in a Fast World. *Journal of Urban Design* **2005***,* 10 (1), 1–11

[11] Farkić, J.; Perić, D.; Lesjak, M.; Petelin, M. Urban walking: perspectives of locals and tourists. *Geographica Pannonica* **2015** , 19 (4), 212–222

[12] Gehl, J. *Life between Buildings: Using Public Space*, 5th ed.; The Danisch Architectural Press: Copenhagen, Denmark, 2001.

[13] Carmona, M.; Heath, T.; Oc, T.; Tiesdell, S. *Public Places—Urban Spaces: The Dimension of Urban Design*; Architectural Press: Oxford, UK, 2003.