

The impact of overtourism on residential well-being – The case of Budapest (Hungary) District VII

Az overtourism lakhatási jóllétre gyakorolt hatása Budapest VII. kerületében

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KEYWORDS: overtourism; well-being; residents; residential well-being; neuro-linguistic programming (NLP)

ABSTRACT: Overtourism has a number of negative impacts on both the attractiveness of tourist destinations and the life of local residents. The period of tourism that converged to almost nothing due to the outbreak and global spread of the COVID-19 pandemic is a suitable time for examining residents' perceptions of (over)tourism. In this study, the research question focuses on the impact of overtourism on the residential well-being of local communities. Answering the questions that arise from the theoretical positioning, involving developing knowledge of the related impacts, is important because such new patterns of behavior may become commonplace. Sentiment analysis was chosen to answer the research questions and proved to be a good tool for exploring the impacts of overtourism perceived by local residents in an unconventional way. Through sentiment analysis based on neuro-linguistic programming (NLP) methodology, three key aspects of human experience – neurology, language, and programming – became the focus of investigation.

The results, based on 13,145 comments show which sensory perceptions transmitted by representational systems – such as sight, hearing, touch, taste, and smell – were more significant in the case of the examined keywords. For all keywords, regardless of the annual distribution, employment of the visual representation system (which represents visual modalities) was prominent, followed by the olfactory representation system representing olfactory modalities. The use of auditory-related acoustic, perceptual kinesthetic, and taste-like gustatory representation systems appears to have been less important and nearly equal in terms of the records that were examined. By understanding the correlation between overtourism and residential well-being, non-governmental-organizations and local municipal governments – which provides housing for residents – can more effectively shape the factors that influence residential well-being, while local residents who are exposed to the environmental impacts of tourism can also play an important role in shaping their own residential well-being.

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KULCSSZAVAK: overtourism; jóllét; helyi lakosság; lakhatási jóllét; neuro-lingvisztikus programozás (NLP)

ABSZTRAKT: Az overtourism mind a turizmusnak színteret adó desztinációk vonzerejére, mind a helyi lakosság életére számos negatív hatást gyakorol. A COVID-19 járvány kitörése és globális elterjedése fémjelzte időszakban időről időre megjelenő, szinte a semmihez konvergáló turizmus időszaka alkalmas arra, hogy a (nemkívánatos mértékű) turizmusból fakadó lakossági észleléseket vizsgáljuk. Jelen tanulmány kutatási kérdése arra irányul, hogy milyen hatással van az overtourism a helyi lakóközösségek lakhatási jóllétére. Az elméleti pozicionálásból adódó kérdés megválaszolása azért lényeges, mert a hatások ismeretének fényében új viselkedésminták válhatnak mindennappossá. A kutatási kérdés megválaszolásához a szentimentelemzés alkalmazására esett a választás, mely jó eszköznek bizonyult az overtourism helyi lakosok által érzékelt hatásainak nem-konvencionális módon történő feltárásához. A neuro-lingvisztikus programozás (NLP) módszeren alapuló szentimentelemzés révén az emberi tapasztalás három kulcsfontosságú aspektusa – neurológia, nyelv, programozás – került a vizsgálat középpontjába.

13 145 hozzászólás feldolgozásán alapuló eredmények megmutatják, hogy a vizsgált kulcsszavak esetében az érzékszervi észlelést lehetővé tévő reprezentációs rendszerek – úgymint látás, hallás, tapintás, ízlelés, szaglás – közül melyik bír meghatározóbb jelentőséggel. Minden kulcsszó esetében – az éves megoszlástól függetlenül – a látással kapcsolatos modalitásokat jelentő vizuális reprezentációs rendszer rendelkezik jelentős fölényrel, melyet a szagláshoz kötődő modalitásokat képviselő olfaktórikus reprezentációs rendszer követ. A halláshoz kapcsolódó akusztikus, az érzékelést megtestesítő kinesztetikus és az ízlelésre vonatkozó gusztatórikus reprezentációs rendszerek használata a vizsgált bejegyzések tekintetében kisebb és közel azonos arányban jelenik meg. Az overtourism és a lakhatási jóllét összefüggéseinek ismeretében a helyieknek otthont biztosító település önkormányzata és civil szervezetei a lakhatási jóllét tényezőit hatékonyan formálhatják, de emellett a turizmus környezeti hatásainak kiszolgáltatott helyi lakosság is fontos szerepet tölthet be saját lakhatási jólléte alakításában.

Introduction

Several international studies have been published on the phenomenon of ‘overtourism’ (Seraphin, Sheeran, Pilato 2018) and its negative impact on the attractiveness of destinations and the quality of life of local residents (Bouchon, Rauscher 2019; Hospers 2019; Atzori 2020; Park, Kovacs 2020; Hidalgo-Giralt et al. 2021; Sibrijns, Vanneste 2021). With the onset of the COVID-19 pandemic, the tourism sector was given the opportunity to redesign itself (Kirca, Özer 2021). The rethinking of processes also involves dealing more effectively with negative externalities associated with tourism, such as overtourism (Remenyik et al. 2021).

In addition to identifying the impacts of overtourism on the residential well-being of local residents, as well as exploring the passive components that underpin the affective experience of residents, the aim of this study is to identify those components related to residential well-being regarding which local governments – whose task is to improve the quality of life of local residents (Michalkó, Kiss,

Kovács 2009) –, non-governmental-organizations, and residents can play an active role. The motivation for choosing the topic is the idea that tourism-related affective experiences of the quality of life – i.e. feelings and impressions about external influences – are subjective, thus subjective well-being is a passive component of the former, while housing satisfaction and its quality may be interpreted as an active component. Based on this, the research question helps explore the impacts that – due to the temporary changes in the environment related to tourism – have a perceptible (and measurable) impact on housing satisfaction.

Many of the thoughts rooted in the ethical writings of the Greek philosopher Aristotle about happiness (Veenhoven 1991; Diener, Suh 1997; Helliwell 2003; Kopp, Skrabski 2009; Crisp 2014) are aimed at answering the question ‘what is a good life like?’ Why is it advisable to start exploring the issue of well-being based on this question? In seeking to come closer to a conceptual definition, explaining the nature of a ‘good life’ may be a good direction because the main focus of well-being as a phenomenon is improving the current and future quality of life of consumers and improving individual and collective well-being (Anderson et al. 2013). In connection with the definition of the good life research related to leisure services and tourism may also come to the fore, while ‘well-being-specific research related to leisure services’ may help to predict the ‘tangible future’ (Kiss 2016, 25.).

The theoretical positioning of well-being and residential well-being

Well-being, a key concept in both public policy and social research, involves the subjective assessment of quality of life, while welfare is an objective aspect that can be measured in terms of money (Michalkó 2010). Its connection with tourism is established in the emphasis on leisure service research. To experience a high level of well-being, each related factor must be in balance on its own, being that each factor affects all others, and each of the well-being factors individually affect our lives (Deutsch et al. 2015). This phenomenon is described and supported by Dolan, Peasgood, White (2008), who have synthesized research involving the results of large-sample studies. The study by Dolan and co-authors also proves that the factors that can be associated with the sub-domains of well-being have a significant environmental impact which is clearly related to the natural and residential environment which is also the basis of our residential well-being. The residential environment can be described using specific (objective) parameters, but it can also be interpreted at the level of conceptual (subjective) parameters (Földi 2004). Describing an area using objective parameters, such as extent or boundaries, is more tangible than characterizing it according to subjective parameters. To define people's relationship to a given space, and to refine subjective parameters, answering the question ‘where do I feel at home?’ can help (Allen 2003).

Our existence is also closely linked to a vital component of the subjective aspect of quality of life – residential well-being (Mridha 2020). Residential well-being, beyond the combination of housing-related characteristics associated with the housing component of well-being, includes factors associated with the physical environment such as commuting, the surroundings of properties, and the people living there, which factors, in addition to determining living conditions, have a significant impact on people's quality of life (Balestra, Sultan 2013). Alongside residential well-being, terms often used in the literature include ‘residential satisfaction’ (Balestra, Sultan 2013, 7.), ‘neighborhood satisfaction’ (Ciorici, Dantzler 2019, 1703), and ‘subjective well-being’ (Mouratidis 2020, 265.).

Previous research results about residential well-being

In recent years, a number of studies have examined the relationship between well-being and housing conditions.

The Balestra and Sultan (2013) study, based on two household surveys – an EU-SILC ad hoc module and the Gallup World Poll – explored the relationship between household residential satisfaction and many related variables – such as ‘the households to which they belong, and the characteristics of the dwelling and neighborhood where they live’ – at the individual level (Balestra, Sultan 2013, 7.). While the EU-SILC ad hoc module is limited to European countries and employs a wide range of explanatory variable, the Gallup World Poll analysis covers a wider range of countries, albeit based on fewer explanatory variables. For the EU-SILC ad hoc module, respondents were asked to rate their satisfaction with their dwelling place on a Likert-scale ranging from ‘0’ (very dissatisfied) to ‘3’ (very satisfied). The Gallup World Poll answers to the question that surveyed residential satisfaction (‘Are you satisfied or dissatisfied with your current housing, dwelling, or place you live?’) were limited to ‘no’ (0) or ‘yes’ (1) (Balestra, Sultan 2013, 19.). The analysis, based on two household surveys, shows the complex relationship between residential satisfaction and housing characteristics which are related to a neighborhood’s features. When controlling for residence and neighborhood characteristics, sociodemographic characteristics such as age, gender, and education were found to play a secondary role.

An empirical study by Wang and Wang (2016) examined the determinants of residential satisfaction based on data from a household questionnaire survey conducted in 12 downtown and suburban districts of Beijing, China that was collected from November 2011 to June 2012. Data collection was carried out related to the two components of subjective well-being – residential affective experience, and residential satisfaction. Despite the overrepresentation of the middle-aged, married people, and women, the sample reasonably represented the socioeconomic profile of the general population of Beijing. Based on the

survey, researchers found that engagement with everyday home- and neighborhood-related activities results in greater residential satisfaction.

Kshetrimayum, Bardhan and Kubota (2020) used a model to examine the correlation between residential satisfaction and its determinants to help process the moderating effects of sociodemographic characteristics. For the moderation impact assessment, data were collected from 981 households in three different slum rehabilitation residential areas in Mumbai. The causal model shows a significant relationship between residential satisfaction and the internal conditions of a given dwelling, such as access to facilities, design, and community environment. However, this correlation is moderated by education, presence of children, and senior citizens in the family, as well as gender, age, and mother tongue.

Mouratidis's (2020) analysis, which draws on the tools of structural equation modeling, is based on data collected from residents of 45 districts in the Norwegian capital, Oslo. The data collection in May-June 2016 focused on answering the question 'how do commute satisfaction, neighborhood satisfaction, and housing satisfaction relate to subjective well-being?' (Mouratidis 2020, 266.). The results call attention to the significant interdependence between commute satisfaction, neighborhood satisfaction, and housing satisfaction in relation to subjective well-being. While commute satisfaction is indirectly, housing satisfaction is directly related to subjective well-being. Neighborhood satisfaction may be directly related to subjective well-being despite being indirectly related to housing, leisure, and personal relationship satisfaction.

Mridha (2020) also examined residential satisfaction from a sociodemographic perspective, but did so by including marital status in the study beside gender and age, with the aim of uncovering the components of residential satisfaction through empirical research in Dhaka, the capital of Bangladesh. The primary results shed light on the significant association between gender, age, and marital status with residential satisfaction. The study also shows that senior people are generally more satisfied with their place of residence than younger people, married people are more satisfied compared to singles/never married, and females are more satisfied than males. The empirical study was carried out by means of factor analysis in which the variables that were assumed to determine residential satisfaction were examined. Thanks to the factor analysis, six components of general residential satisfaction – one critical and five moderate – were identified. While 'management and maintenance' can be considered critical components, 'architectural features,' 'neighborhood,' 'neighbors,' 'recreation facilities' and 'ambient environment' can be classified as moderate components (Mridha 2020, 546.).

Table 1 shows the results and methodological characteristics of the articles presented above.

Nowadays, in addition to the interpretation of the interaction between the environment and human, the emphasis is on the claim that 'the issue of transformation and the resulting authentic way of life is inseparable from

Table 1: Results and methodological characteristics of research related to residential well-being
 A lakhatási jólléttel összefüggő kutatások eredményei és módszertani jellemzői

Author's name (year of publication)	Title of article and main results	Methodological features
Balestra, C., Sultan, J. (2013)	<p><i>Home Sweet Home: The Determinants of Residential Satisfaction and its Relation with Well-being:</i></p> <p>The main result of the analysis based on the EU-SILC and Gallup World Poll surveys is an exploration of the correlation between home-related characteristics and neighborhood features that contribute to residential satisfaction, which can serve as a good starting point for development-related policy efforts.</p>	<p>Multivariate analysis based on both surveys designed to test residential satisfaction models using a set of the following variables:</p> <ul style="list-style-type: none"> - individual and household socio-demographic characteristics - objective characteristics and subjective perceptions of the dwelling - objective features of and subjective attitudes towards the neighbourhood
Wang, D., Wang, F. (2016)	<p><i>Contributions of the Usage and Affective Experience of the Residential Environment to Residential Satisfaction:</i></p> <p>Home and neighborhood activities contribute to greater residential satisfaction.</p>	<p>Application of a subjective well-being framework, taking into account residential satisfaction and residential affective experience related to the residential domain of subjective well-being.</p> <p>Four models developed to support the hypothesis</p> <p>Model 1: the base model, which includes socio-demographic variables as well as variables related to housing conditions and neighbourhood characteristics based on available literature</p> <p>Model 2: adds variables to the base model related to residential affective experience</p> <p>Model 3.1: includes the residential environment variables in Model 2</p> <p>Model 3.2: includes the residential affective experience variables in Model 1</p>

Author's name (year of publication)	Title of article and main results	Methodological features
Kshetrimayum, B., Bardhan, R., Kubota, T. (2020)	<p><i>Factors Affecting Residential Satisfaction in Slum Rehabilitation Housing in Mumbai:</i></p> <p>Residential satisfaction stems from the following: access to facilities, community environment, internal conditions of dwelling resulting from design.</p>	<p>Development of sociodemographic characteristics based on a causal model</p> <p>The following exogenous variables (the main components of the residential environment) were included in the model:</p> <ul style="list-style-type: none"> Dwelling internal (DI): the internal environment of the dwelling Dwelling external (DE): external environment of the dwelling Community environment (CE): the social environment of the neighborhood (such as liveliness) Access to facility (AF): easy and affordable access to public institutions in relation to the neighborhood and the locational quality of the housing
Mouratidis, K. (2020)	<p><i>Commute satisfaction, neighborhood satisfaction, and housing satisfaction as predictors of subjective well-being and indicators of urban livability:</i></p> <p>Subjective well-being is correlated with the following: housing satisfaction, neighborhood satisfaction, commute satisfaction.</p>	<p>Development of a theoretical model using structural equation modeling. During the analysis, the following structural equation models and endogenous variables (related to the measures of subjective well-being) were tested:</p> <ul style="list-style-type: none"> -life satisfaction -happiness -anxiety -eudaimonia
Mirchha, M. (2020)	<p><i>The effect of age, gender and marital status on residential satisfaction:</i></p> <p>Based on the primary results there is a significant correlation between residential satisfaction and age, gender, and marital status.</p>	<p>Empirical analysis of residential satisfaction using factor analysis, which led to the exploration of the following components:</p> <ul style="list-style-type: none"> -major component: 'management and maintenance' -moderate components: 'architectural features,' 'neighbourhood,' 'neighbours,' 'recreation facilities,' 'ambient environment' -multiple regression analyses were also performed to determine the extent to which the identified components contribute to residential satisfaction.

Source: authors' construction

human-to-human moral and human-to-environment environmental ethical aspects' (Lengyel 2019, 15.), which have a *raison d'être* for spiritual well-being (Berejnoi, Messer, Cloutier 2020). Based on what has been said so far, it is clear how diverse the topic of significant environmental impacts (Kiss 2015) is in relation to the formation of well-being, and how many associated concepts can be brought into line with it.

In relation to the above-described analysis, there are a number of pieces of primary research that have examined the relationship between well-being and the environment, but none of them have examined how well-being is affected when tourism or its 'overcrowded' version, a phenomenon referred to as overtourism in the literature, appears in the daily lives of residents. The literature on residential well-being does not cover how tourism affects the well-being of residents. The aim of our study is to identify the impacts of overtourism on the residential well-being of residents in the case of Budapest (Hungary) District VII.

Material and Method

Based on the theoretical overview, the close relationship between the concepts of well-being and housing conditions and the importance of previous research findings and methods relevant to residential well-being in the light of environmental impacts become apparent.

The sample area of the research is Erzsébetváros, Budapest (Hungary), District VII, which is a key area in terms of research because the overtourism that defined the period before the COVID-19 pandemic generated problems on a daily basis for those living there, as well as for city management. The authentic milieu created by period buildings that encourages visitors also plays a significant role in the development of overtourism in the district. However, this was not always the case. Michalkó (1996) started his study of District VII based on socio-geographic survey methods with the question 'is Erzsébetváros really doomed to silent condemnation?' (Michalkó 1996, 119.). This quiet condemnation failed to occur, and thanks to the rise of ruin-bar culture the timeworn tenements experienced a renaissance over the past decade. Kelemen-Erdős and Mitev (2017), Smith et al. (2018), and Pinke-Sziva et al. (2019) examined many aspects of 'party tourism' – a newly developed tourism product that goes in parallel with changes in consumer demand, and is closely related to ruin-bar culture.

To conduct the research, sentiment analysis based on neuro-linguistic programming (NLP) was applied to a group that is publicly available online and accessible by anyone. The NLP-based analysis of the residential impressions obtained in this contributes to examining the three most influential components – neurology, language, programming – of the human experience. 'The nervous system regulates our bodily functions, language determines how we interact,

how we communicate with people, and programming means the models of the world we create. Neuro-linguistic programming describes the basic dynamics between mind (neuro) and language (linguistic) and how their interactions affect our body and behavior (programming)' (S. Tóth 2016, 2.).

The research question also aims to help explore the representations of the sensory perception of the impacts on the well-being of residents caused by temporary changes in the environment resulting from tourism, primarily through the sensory representation systems that are triggered in each individual. Our three main systems of representation are visual, auditory-related acoustic, and perceptual kinesthetic perception, complemented by gustatory and olfactory representation systems. These systems of representation are modalities that allow ways of experiencing the world and are made up of submodalities that represent the 'building blocks of the senses' (O'Connor, Seymour 2020, 59.). Submodality is equivalent to the qualitative characteristics of representation systems. The literature underpinning this unconventional methodology also shows that the quality of the senses, in addition to the quality of the good life mentioned in the introductory section, was already a subject of study of ancient Greek thinkers – Aristotle dealt with submodalities in detail without naming them such. All this proves that a relationship can be assumed between the quality of an individual's sensory experience and the perception and quality of the personal state of well-being (O'Connor, Seymour 2020).

The 'field' of data collection was a public group called 'Klauzália' (<https://www.facebook.com/groups/281195558585433>), which has been present on the Facebook social networking platform for ten years, and which at the time of the research had more than 1,800 members, most of whom were residents, and to a lesser extent persons involved with District VII. The duration of the examination covered the period from 01.01.2017 to 01.12.2021, and the starting point of the study was one English-language keyword that is also often used in the Hungarian vernacular (overtourism), and four Hungarian-language ones – party tourism (in Hungarian: *buliturizmus*), welfare (*jólét*), housing (*lakhatás*), and tourism (*turizmus*) – keywords closely related to the research topic. The first year of the study coincided with a period of interest in ruin bar culture, which is an extensive medium for overtourism. The years 2018-2019 were specified as the time of 'redesign opportunity' caused by overtourism, while the inclusion of the years 2020-2021 that involved the COVID-19 pandemic created the significant contrast between overtourism and the disappearance of tourists from one moment to the next – which led to the relief of the residents of overtourism-affected areas – and were of major significance.

The research used the methodology of sentiment analysis to explore emotional responses to digital content in order to explore the perceived impacts of overtourism on local residents and the factors that may play a role in district repositioning that affected the residential well-being of residential communities.

Results

The starting point for the analysis of the past five years was the screening of 13,145 contributions that were relevant to one of the target keywords (Table 2).

Table 2: Distribution of comments related to the keywords examined by year in the 'Klauzália' group
A vizsgált kulcsszavakhoz kapcsolódó hozzászólások számának évek szerinti megoszlása a „Klauzália” csoportban

<i>Year</i>	<i>Overtourism</i>	<i>Party tourism</i>	<i>Welfare</i>	<i>Housing</i>	<i>Tourism</i>
2017	0	55	0	0	173
2018	14	88	0	37	636
2019	303	693	15	451	1,561
2020	3	773	0	725	4,374
2021	126	260	145	240	2,473
In total	446	1,869	160	1,453	9,217
All total	13,145				

Source: authors' construction

In order to explore the emotional responses evoked by posts and comments, the research focused only on the seven kinds of pictograms – positive; negative; neutral: – which the Facebook social platform offers as default options for group members. The word 'unidentifiable' appears in the table when no digital content was generated for the given keyword for the current year, or no emoticon was associated with posts or comments that appear. The data also show that comments connected to the word 'overtourism' were made in large numbers in the year before the pandemic (in 2019), and the words 'party tourism,' 'housing' and 'tourism' appeared most in 2020. However, the number of comments related to the word 'welfare' skyrocketed in 2021. It is also clear that the sentiment analysis at the level of comments was relevant for all five keywords under analysis (Table 3).

It is necessary to point out here that the emoticons 'wow' and 'like' were considered to represent emotional reactions in the neutral range in the context of the research. This was because an examination of the examined posts and comments showed that they expressed symbolic agreement with what was written in the posts and were not typically intended to indicate any positive or negative mood evoked by a particular post or comment.

Based on the emoticons associated with both the posts and the comments within the posts, it can be concluded that pictograms displaying neutral emotional responses were represented in the largest number, suggesting a reactive attitude towards external stimuli. The number of emoticons embodying negative responses shows the proportion of respondents who fall victims to reflex-like reactions, i.e., conditions. Based on the ratio¹ of the total number of

Table 3: Distribution of the number of sentiments related to posts and comments by keyword, emoticon, and year
 A bejegyzésekhez és hozzászólásokhoz kapcsolódó szentimentek számának kulcsszavak, hangulatjelek és évek szerinti megoszlása

Year	All posts without comments & post-related comments for that year	Posts	Post-related comments	Sentiments I. (based on post-related emoticons)			Sentiments II. (based on comment-related emoticons within posts)		
				Positive	Negative	Neutral	Positive	Negative	Neutral
OVERTOURISM									
2017	0	0	0	0	0	7	1	1	17
2018	14	1	12	0	0	4	1	1	17
2019	303	6	0	0	0	45	74	48	361
2020	3	1	0	0	0	1	1	1	2
2021	126	2	126	2	0	12	13	10	109
In total	446	-	-	2	4	-	89	60	-
PARTY TOURISM									
2017	55	2	55	0	5	44	0	0	64
2018	88	3	87	0	6	14	22	21	128
2019	693	10	693	7	13	52	154	58	651
2020	773	12	773	37	6	91	236	29	813
2021	260	5	260	13	8	28	65	37	422
In total	1,869	-	-	57	38	-	477	145	-

Year	All posts without comments & post-related comments for that year	Posts	Post-related comments	Sentiments I. (based on post-related emoticons)			Sentiments II. (based on comment-related emoticons within posts)		
				Positive	Negative	Neutral	Positive	Negative	Neutral
WELFARE									
2017	0	0	0		unidentifiable			unidentifiable	
2018	0	0	0		unidentifiable			unidentifiable	
2019	15	1	15	1	0	7	4	0	5
2020	0	0	0		unidentifiable			unidentifiable	
2021	145	2	145	0	36	46	27	13	228
In total	160	-	-	1	36	-	31	13	-
HOUSING									
2017	0	0	0		unidentifiable			unidentifiable	
2018	37	1	37	0	6	1	4	3	32
2019	451	9	448	7	3	37	66	29	351
2020	725	11	725	0	1	10	89	37	532
2021	240	6	239	12	5	141	71	10	215
In total	1,453	-	-	43	39	-	230	79	-

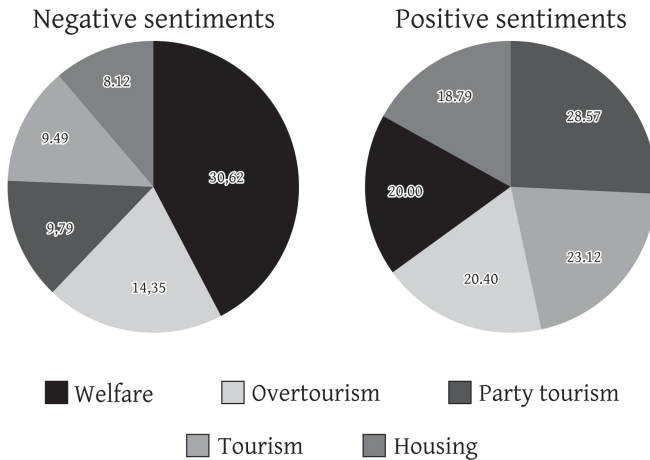
Year	All posts without comments & post-related comments for that year	Posts	Post-related comments	Sentiments I. (based on post-related emoticons)			Sentiments II. (based on comment-related emoticons within posts)		
				Positive	Negative	Neutral	Positive	Negative	Neutral
TOURISM									
2017	173	11	171	3	3	103	4	4	105
2018	636	2	0	0	0	9	74	unidentifiable	550
2019	1,561	11	635	7	14	88	11	11	550
2020	4,374	1	0	0	0	3	290	94	1,504
2021	2,473	40	1,555	34	68	263	1,063	237	4,737
In total	9,217	6	0	0	0	3	504	202	3,394
		79	4,370	96	118	623	1,935	548	-
		4	0	2	0	18			
		41	2,466	54	123	345			
		7	0	0	1	3			
		-	-	196	327	-			

Source: authors' construction

negative pictograms associated with keywords to the total number of posts without comments and post-related comments, most negative reactions were connected to the word ‘welfare’ (30.62%), followed by the word ‘overtourism’ (14.35%). The quantity of negative responses connected with the words ‘party tourism’ (9.79%), ‘housing’ (8.12%), and ‘tourism’ (9.49%) was approximately the same (Figure 1). The number of positive emoticons provides an approximate picture of the extent of the presence of emotional responses that are more likely to be associated with those with a positive outlook on life, representing a good base for proactivity. Regarding the keywords that were examined, the number of all positive emoticons compared² to the total number of posts without comments and post-related comments shows that pictograms suggesting positivity were found in the highest proportions for the words ‘party tourism’ (28.57%), followed by the word ‘tourism’ (23.12%) in descending order. Regarding negative sentiments, we get almost the same results for the three keywords ‘overtourism’ (20.40%), ‘welfare’ (20.00%), and ‘housing’ (18.79%) (Figure 1).

Figure 1: Ratio of negative and positive sentiments to total posts and total post-related comments by keyword

A negatív és pozitív szentimenteknek a bejegyzések és bejegyzésekhez kapcsolódó hozzászólások összességéhez viszonyított aránya kulcsszavak szerint



Source: authors' construction

Sensory perception can be seen as the starting point of the communication cycle, as our senses, the ‘doors of perception,’ are our means of contact with the world (Huxley 1932). When exploring the modalities of perception, the non-suffixed version of the verb or noun most closely related to the given system of representation – visual = see; acoustic = hear; kinesthetic = feel; olfactory = smell; gustatory = taste – were used and the results of the content analysis according to the keywords were illustrated on an annual basis (Table 4).

Table 4: Distribution of number of posts in relation to the modalities by keyword, representation system, and year
 A modalitásokban érintett bejegyzések számának kulcsszavak, reprezentációs rendszerek és évek szerinti megoszlása

Year	Post	Distribution of number of posts in relation to the modalities according to representation system				
		Visual	Acoustic	Kinesthetic	Olfactory	Gustatory
<i>OVERTOURISM</i>						
2017	0			unidentifiable		
2018	3	2	2	2	2	2
2019	7	1	0	0	0	0
2020	1	3	1	1	2	1
2021	2	1	0	0	0	0
In total	13			20		
<i>PARTY TOURISM</i>						
2017	2	0	0	0	1	0
2018	4	1	1	1	1	1
2019	10	1	1	2	1	1
2020	12	5	2	2	3	2
2021	5	2	1	1	1	1
In total	33			32		
<i>WELFARE</i>						
2017	0			unidentifiable		
2018	0			unidentifiable		
2019	1	0	1	0	1	0
2020	0			unidentifiable		
2021	2	1	2	1	2	1
In total	3			1		
<i>HOUSING</i>						
2017	0			unidentifiable		
2018	1	0	1	0	1	0
2019	12	2	12	2	12	2
2020	11	6	11	6	11	6
2021	7	1	7	1	7	1
In total	31			18		
<i>TOURISM</i>						
2017	13	1	1	1	1	1
2018	12	3	1	1	1	1
2019	46	6	6	6	6	5
2020	83	18	9	9	10	9
2021	48	6	5	4	4	4
In total	202			119		

Source: authors' construction

Based on the ratio³ of the number of posts associated with the modalities to the total number of posts for a given keyword, it can be said that in the last five years information was most often found to be associated with the keywords 'overtourism' (153.85%) and 'party tourism' (96.97%), which shows which topics the digital content authors favor in relation to posts. The interpretation of this ratio is of little relevance due to the modality associated with a single post in the keyword ('welfare'), but the results for the keywords 'housing' and 'tourism' – 58.06% and 58.91% – are more cogent. Based on the data table on which the percentage information is based (Table 4), for all keywords, regardless of the annual distribution, the visual representation system representing visual modalities was significantly favored (60 posts), followed by the olfactory (36 posts) representation system representing olfactory modalities. The use of auditory-related acoustic (32 posts), perceptual kinesthetic (32 posts), and taste-like gustatory (30 posts) representation systems appears to be nearly equal in terms of the records that were examined.

In relation to the examined sample, the largest proportion of 'vision' is realized through a complex series of active perceptual filters in which the perceived world is not equivalent to the real world but to a map made by our nervous system. What we observe on this map depends on the filters created by our beliefs, interests, and prejudices. The ability to notice more of the world and make more subtle distinctions is an innate one that can significantly improve quality of life, dependent on awareness and skill level (O'Connor, Seymour 2020).

Conclusions

According to Wang and Wang (2016), the two components of residential subjective well-being are the affective experience of residents, and housing satisfaction. Based on our results it becomes clear that tourism is present as an independent (passive) factor that strengthens the reactivity of residents in terms of the residential affective experience. This is also indicated by the exceptionally high number of neutral posts and comments related to the keywords under examination, which could be increased by generating a shift from a reactive state to a proactive state – i.e., 'Why? (problem orientation) instead of How? (targeting)' based on the NLP principle (O'Connor, Seymour 2020, 21.) by increasing the number of positive-minded and solution-seeking comments. This change of direction can be supported by a highly dependent (active) role that may also be related to the development of attitudes and greater responsibility for taking part in creating one's own housing-related satisfaction. Thus, in the light of the knowledge of the passive components related to the affective experience of the residents and the active components related to housing satisfaction, it appears that local residents vulnerable to the environmental impacts of tourism can indeed play a decisive role in shaping their own housing well-being.

Considering the changing norms of human contact caused by the pandemic, as well as the protracted impacts of the epidemiological restrictions, the approach of using public impressions and incorporating sentiment analysis into the research proved to be a good solution. The NLP-based text analyzer is the one most commonly used by sentiment-analysis software servers. The disadvantage of this text-analysis software is that it can only examine posts and comments from specific online platforms (e.g. Facebook). The NLP-based sentiment analysis of public posts shared within the public group of local residents provided an opportunity to specifically interpret public opinions and to examine the impact of overtourism on the residential well-being of local communities. Instead of using software solutions, it became necessary to apply sentiment analysis manually too, which may have introduced potential errors into this study considering the assessment was done manually, yet this approach helped with understanding the contribution of tourism to the residential well-being of local communities, and had a perceptible impact on the level of modalities in terms of both affective experience and housing satisfaction. Additional limitations of the research include the challenges of mapping the 'excessive' activity of keyword-related opinion leaders, and filtering out reactive attitudes generated by members who play a key role in shaping community opinion.

The results created by this unconventional approach call attention to the need for different approaches to those used so far. The ability to shift from a needs-based to an abundance-based approach – i.e., the ability to focus on managing difficulties effectively rather than solving them efficiently (resilience) – can become a skill if residents are educated. When a perspective of abundance becomes a skill, its impact may exceed the individual level and tourists and residents can contribute to the well-being of those around them. A change of attitude is also desirable because only in this state can more attention be paid to things outside ourselves such as our environment and what exists in it.

Future research directions include addressing both the quantitative and qualitative aspects of content analysis, as well as the level of submodalities, and may contribute to a deeper understanding of the results of sentiment analysis. The exploratory nature of the present results can provide a good basis for Budapest's District VII to identify the potential role of *genius loci* (Christou et al. 2019) in terms of repositioning the district based on the grouping of factors reported by Kiss, Molnár-Csomós, and Kincses (2021). The findings may also contribute to future research on destination branding aimed at the horizontal outlining of 'geniuses'⁴ based on regions, as well as the characterization of the objective psychological archetypes of inhabitants of a given region.

Jegyzetek

- 1 welfare = $((36+13)/160)*100$; overtourism = $((4+60)/446)*100$, party tourism = $((38+145)/1,869)*100$, housing = $((39+79)/1,453)*100$, tourism = $((327+548)/9,217)*100$
- 2 welfare = $((1+31)/160)*100$, overtourism = $((2+89)/446)*100$, party tourism = $((57+477)/1,869)*100$, housing = $((43+230)/1,453)*100$, tourism = $((196+1,935)/9,217)*100$
- 3 overtourism = $(20/13)*100$, party tourism = $(32/33)*100$, housing = $(18/31)*100$, tourism = $(119/202)*100$
- 4 'It means the creative power and inner spirit inherent in the landscape, created together by natural and human factors' (Fogarasi 2019, 1.).

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