Problems caused by tourism in Budapest

Remenyik Bulcsú ¹
Horváth Dániel ²
Vasa László³

Email:

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ABSTRACT: The survey of relevant professional literature reveals the increasing scholarly attention paid to the phenomenon of overtourism while singling out Budapest as one of the most affected urban areas. One potential explanation is that such situation developed due to the decreasing ability of central districts to absorb the growing visitor load along with the decline of seasonal distribution of tourism. The current situation could have also emerged because the respective negative consequences were not counteracted by the inclusion of local residents. The residential segments and inhabitants were not provided a share of the tourism-related income and despite the steady growth of visitor numbers they were not consulted either. With the overtourism phenomenon on the destination life-cycle (Butler 2008) the consolidation phase is in an over developed state, but not stepping into stagnation. The increase in the number of tourists causes the irritation of locals (Doxy 1975), it gives the connotation of a city that is crowded, and unable to be lived in, in the case of Budapest though, it doesn’t turn into a phase of antagonism. According to previous tourism researches, an indecipherable situation has arisen in the Capital City. In their opinion the only way to overcome the problem is the completely of the traffic system and introducing the congestion charge.

KEYWORDS: overtourism, sustainable tourism, transport transformation, shared transport

1. INTRODUCTION

The development of excessive tourism has caused numerous problems in the inner districts of Budapest, tourism, from the point of view of transport, plays a role in air pollution and the increase of congestion. In the capital, the problems shown in Figure 1 are not only caused by over-tourism, but with clever planning, the tourism industry is likely to be the biggest winner of the transformations presented in the article.
The issue of transport reform was decided as early as 2003, when the capital undertook to introduce a congestion charge during the 4th metro investment in exchange for EU support (Figure 2). The date for the introduction of the congestion charge in 2013 has been postponed to 2022, with the new mayor linking its introduction to the renovation of Metro 3 and the construction of P + R car parks. The introduction of a collection fee in the capital would immediately reduce the level of air pollution by 65%, creating a livable city from crowded inner districts. In our opinion, the spread of the use of shared transport would create more favorable opportunities for visiting the scattered attractions of Budapest. Tourists could reuse the Danube shore and water transport.
On May 17, 2018, a lawsuit was filed against the Hungarian Government in the European Court of Justice for serious air pollution. Greenpeace has once again demanded that the capital comply with the commitments made in the contract and introduce a pollution-based congestion charge in Budapest to improve urban air quality.

In 2019, the European Public Health Association ranked Budapest 22nd (with HUF 680,000 per year) among the 432 European cities surveyed in regards to the spending of the residents for the damage caused by smog (EPHA 2020).

Table 1. Air pollution data in downtown

<table>
<thead>
<tr>
<th></th>
<th>PM101</th>
<th>Nox2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferenciek Square</td>
<td>63.3</td>
<td>77.1</td>
</tr>
<tr>
<td>Erzsébet Square</td>
<td>25.5</td>
<td>51.7</td>
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Source: own compilation

In the course of our research, on 24 June 2019, we measured air pollution in two areas of the capital visited by tourists. We examined the two categories indicated by the European Public Health Association.

Based on the data in Table 1, the dust content measured in Ferenciek Square is 63.3 μg / m3, the data measured at the same time in Erzsébet Square is 25.5μg / m3. Erzsébet Square, as we know, is one of the protected areas, so the traffic is much lower than in Ferenciek Square. From this it is immediately stated that the content of dust and nitrogen oxides in the air is directly proportional to the volume of traffic and its increase. The nitrogen oxides content of the air in the case of Ferenciek Square is 77.1 μg / m3, this content is again much lower than in Erzsébet Square, but both are below the health limit. Unfortunately, we can no longer draw the same conclusion for hosted porn, as the number measured in Ferenciek Square far exceeds 50 μg / m3. These indicators of pollution are perceived by us humans as an unpleasant odor, or we may cough or drown from them.

That is, we can state that the current volume of traffic is closely related to the level of air pollution, and in terms of the principles of a „green“ urban logistics system, it in no way makes the city more livable, so it is recommended to reduce traffic in this area.

The increase in air pollution is mainly due to the radial transport network, the orographic conditions of the Buda Hills, the old car park in Budapest and those coming from the agglomeration. In Hungary, the radial transport network could be rebuilt into a lattice-textured texture, and the ring road around the settlement would have to be completely built. The wind gates of the Buda Hills should not be closed with constructions, it is necessary to reduce the number of diesel vehicles in the car park. The number of people coming from the agglomeration could be regulated by introducing a congestion charge and building P + R car parks.

In the area of changes, the previous vehicle-centric approach was replaced in 2014 by the approach based on individual trips (Balázs Mór Plan), in 2019 by the approach based on Activities and quality of life (Smart Budapest Smart City Framework Strategy).

Literature review

According to a definition formed by the UNWTO in 2018, overtourism refers to such impact of tourism at a given destination, which „negatively influences the local quality of life and/or the respective visitor experience.” The overtourism phenomenon is defined by the Responsible Tourism Partnership as a destination where ”the catering and entertainment sphere and their clientele along with the locals and visitors believe that the quality of life decreased to an unacceptable level.” The phenomenon thus represents the opposite of responsible tourism.

1 PM10: a levegő szállópor tartalma
2 Nox: a levegő nitrogén-oxid tartalma
striving for a higher quality of life by taking advantage of the options provided by tourism (Pechlaner – Innerhofer – Erschbarner 2019).

Overtourism is expected to have a negative impact on the reputation of a given city (Milano – Cheer – Novelli 2019).

In 2018 the HOTREC identified five potential causes of overtourism, especially singling out the Airbnb type of accommodation and must-see tourism. Although in the same year at the Seoul conference the UNWTO issued 7 strategic guidelines to cope with overtourism, the respective measures did not prove to be successful.

The most stereotypical examples of overtourism include such mass tourism destinations with impeded growth potential as famous monuments (The Colosseum of Rome, the Pyramids of Egypt, etc.) and natural attractions experiencing fast urbanization (Benidorm coast in Spain). While currently the term overtourism primarily refers to the negative impact of tourism on urban areas, numerous framework systems not related to tourism contribute to the phenomenon. As Dodds-Butler (2019) assert the unsustainable aspect is based on the ruling economic and social narratives. Thus the easy access to tourism and travel, the reduced international migration restrictions, the liberalization of air traffic and the increasing popularity of reduced air fares contributed to continuously increasing visitor numbers. A similar growth can be observed in water transport especially in case of city trips keeping in mind that most city visits are for the short term ranging from one to three days (Iwanicki - Dłużewska - Smith 2016). Another determining factor is the increased popularity of on-line booking services enabling tourists to find accommodation without difficulty while leading to an unprecedented form of tourist behaviour and high pressure on the local real estate market (Sziva et al. 2019). A further cause is the transformation of the urban context emphasizing experience and creative activities as components of life quality. Finally technological development contributed to the instant access to high quality information leading to unrestricted tourism. Hall and Rath (2007) posit that the manipulation of destination image and the projection of an excessively high level of life quality contributed to the re-evaluation of the local urban environment in the context of globalisation. Since locals and visitors coexist side by side in an urban environment, the given roles can become blurred. One positive outcome is the ability of locals to enjoy the benefits of multiculturalism and the renewed monuments due to tourism thereby increasing their pride over belonging to or living in a desirable location. (Bouchon, F. - Rauscher, M. 2019)

Intensified urban tourism, however carries negative social and environmental impact. Young visitors do not assign priority to traditional social values and community traditions, while unskilled local workers mostly illegally employed in tourism and catering on a seasonal or campaign basis can ruin the reputation of the given destination. In prioritised tourism destinations the prices have strongly risen, while the country experiences unbalanced economic development. Furthermore, the infrastructure, especially transport networks become overloaded along with the growth of dust, particle, noise, and light pollution (Bárkányi 2019; Tóth et al. 2013, 2014).

Overtourism can be also occurred as well as when at a given destination the locals, the visitors, the tourists, and the actors in the catering and hospitality industry consider the number of visitors so high that both the quality of life for local residents and the visitor experience are negatively influenced. Such a description is more specific, than the term "mass tourism.” (UNWTO 2018)

Overtourism, is not a completely negative phenomenon as it has certain advantages, as for example Budapest Airport and the Party Quarter contributed 300 billion and 6, 6 billion HUF to the national budget respectively. Underlining the paradoxical aspect of overtourism, the residents of Pestszentlőrinc where the Airport is located only experienced the setbacks and negative aspects while Erzsébetváros had realized an income of only 752 million HUF from the above mentioned figure (Smith-Puczkó 2019).

Conversely, the Party Quarter provides employment to 12 thousand people especially in entertainment venues and other tourism-related services. The Party Quarter has more attractions than the uninterrupted rows of pubs in dilapidated houses as in addition to the night-time business the development of the day-time economy including cafés, breakfast places, sophisticated hotels, restaurants, designer shops and galleries is spectacular (Dodds – Butler 2019).

The Liveable Erzsébetváros Facebook group, however, continues its protest, organises demonstrations and campaign for an overall midnight closure of businesses along with that of the party tourism. According to a 2017
research on night-time economy administered to 929 tourists, local residents and visitors the biggest problems are caused by the homelesss, the filthy streets, the trash, and the street crime. While the locals and domestic visitors are not bothered by the bachelor parties and bridal showers, tourists list them among the disturbance factors.

The Liveable Erzsébetváros Association formed by the local catering entrepreneurs aims to find a compromise solution accommodating the demands of the locals. Eighty percent of the income of restaurants and other catering facilities is realised between 11 PM and 3 AM mostly from a the foreign visitor clientele.

A clear and accurate identification of the overtourism phenomenon is not an easy task as the capability of an area to carry a given environmental burden can only be assessed via complex methodology. As Figure 4 indicates the physical load capacity of a specific destination is the first to change and in Budapest the number of tourists continuously increases. The high irritation level (Doxy 1975) is caused by the continuous presence of overtourism as the private (Airbnb) and commercial accommodations are fully booked not seasonally but throughout the year. Figure 5 shows that the private accommodation booking rate (Airbnb) was continuous through the year. While the booking rate in January and February appears to be low, from the end of March until December the booking or occupancy rate is at the maximum, almost 90%. The other issue is that the locals cannot enjoy the benefits of tourism as they are only exposed to the negative effects including noise, dirt, trash, crowded streets, higher prices, crime, drug trade, lack of parking and alcohol consumption on streets.

**Methodology**

The methodology partly explores the problems caused by tourism in Budapest. The effect of overtourism is mostly measured in the vicinity of Party Quarter (Bulinegyed) in Inner Erzsébetváros District (Figure 3). The people living here have reached Doxy's (1975) stage of irritation, blaming tourism for almost everything.

![Noise map of the Party Quarter (2018)](image)

Our traffic count took place on June 28-29, 2019, the observation took place on Károly körút near Party District on two different days in one direction. The calculations took place on two separate days, at different times, on Fridays and Saturdays, the weekend turnover is also much lower than on the working day, and the supply of goods is also more focused on this. The number of measurements taken on Friday afternoon is twice as high as that of Saturday morning. Larger trucks (i.e., 3.5 Tons) occur in small quantities, while smaller trucks are
all the more so. They account for 19% of total turnover in the afternoon and 3% even in the morning. For nighttime measurements, car and pedestrian traffic show rates on Friday afternoons.

According to the survey created by the United Nations World Health Organization in the year of 2009, Budapest is the third noisiest city in Europe, with millions of people at risk of noise pollution. Noise pollution is taking on increasing proportions, with more and more illness due to the harmful effects of noise and not just in the workplace. The results measured in the Party Quarter are shown in Figure 4. The vertical axis shows noise exposure data between 64 and 76 decibels, and the horizontal axis shows the number of motorized traffic present in the noise level measurement at 20-minute intervals.

![Noise level graph](image)

Figure 4. Noise level impact in the Party District in Budapest. (own compilation)

The first three measurements were made on Kazinczy Street and the noise measurement data became high. The other three measurements were in Holló Street, the noise load did not increase, the noise impact at the entrance of the Party District remained at a uniformly significant level, well exceeding the healthy limits. The noise exposure limit is 65 decibels, above that we are already talking about noise pollution. A value of around 74 dB is already harmful to the human body and not only makes the city unlivable, but makes most people avoid it.

The nearby big city, Vienna, is a good example of solving air and noise pollution and creating a livable city (Figure 5).
Figure 5. City liveability score 2019.

In the transport system of Vienna, car traffic has been curtailed and replaced by public transport. With the congestion charge to be introduced in Budapest, this objective would become available in Hungary as well (Figure 6).
In connection with the assessment of public transport in Budapest, we also prepared a questionnaire survey between 24 and 29 June 2019. As 94% of the capital's tourist traffic is determined by tourists from abroad, we asked them what they thought about public transport in Budapest. The gender distribution of the respondents was equal, with almost the same number of women and men filling in the questionnaires. In terms of age, the majority (57%) are 18-25 years old, and the 25-40 age group was represented in 37%, with about 6% of respondents coming out of the 40+ age group. 44% of the trips are with friends, a third are alone, 10% are family trips, and 3% are usually group trips. The purpose of visiting the capital was leisure activities for a third of the respondents, while studying for 60%, and the remaining approximately 10% came to Budapest for family or business purposes. The vast majority of visitors arrived by plane. And 46% of them marked public transport as a means of getting into the city.

80% of the information was collected via the Internet. Achieving the individual goals and orientation was found to be quite easy by 90% of the respondents.

When asked if they used to buy tickets in Hungary, the answer was clearly ‘yes’, with a rate of almost 100%. Of these, the plain line ticket and the monthly pass stand out, and 10% admitted that they bought a Budapest Card. The monthly pass was popular among students studying here.

A set of questions was designed to assess which means of transport a particular traveler uses and why. Respondents had several options to choose from. Summarizing the data, most people used the subway. The reason for commissioning was its speed. The second most popular vehicle became the tram, mainly also because of its speed. Practicality has been highlighted by a relatively large number of people for both vehicles. These show similarities for the subway, bus, and tram, albeit with different proportions. Several also marked the taxi, but its use was largely relegated to the background compared to other vehicles. Here, the motivating factors were the lack of speed, comfort, and other options. Among the vehicles directly related to tourist use, the funicular, the boat, and the cogwheel were mentioned. Among the users of the boat, curiosity appeared as a motivating factor. In the case of funiculars and cogwheels, the lack of other options was noted.

The following questions were assessed by the respondents on a five-level scale, they were related to their stay in Budapest, public transport, the condition of the equipment, the attitude of the employees, their language skills, and the quality of the information sources.
The general opinion of the respondents about their stay in the Hungarian capital can be considered positive, 80% of them were satisfied with the time spent here. Opinions on public transport are no longer so positive, but overall, grades 3 and 4 were also dominant here.

A further examination of the above-mentioned elements of public transport revealed a more nuanced picture. The helpfulness, preparedness and language skills of the inspectors were mostly rated as medium or lower by the respondents. Feedback on devices / vehicles was also more negative. The capital and the operators are lagging behind in terms of cleanliness, reliability or general condition. For foreign guests, one of the most important parts of the orientation could be foreign language information sources, which could be achieved either by visual technology or by setting up separate desks, or in the simplest way by expanding and developing the current information systems. Examining these, the capital is also lagging behind.

Another survey was conducted in October 2020 in regards to the sustainable transport system in Budapest. The survey examined the question of the congestion charge among those citizens who live and/or work in Budapest. 43,2% of the respondents would agree with the introduction of the charge while 24,7% still have some doubts in regards to the congestion charge. 32,1% said that they are against the charge. If we consider only those group who drive their own car frequently, on the scale from 1 (fully disagree) to 5 (fully agree) the average score is 2,97 which result reflects that this segment would refuse the congestion charge. If we observe the opinion of the citizens, only 17,3% think that the congestion charge would strongly contribute to the decrease in the car traffic. 23,5% marked that its impact would be too weak, so the traffic would not decrease after the introduction and further 12,3% said that there would not be any impact.

Another interesting question is, if those residents who drive their car, would resign of their vehicle and change to the public transport, once the congestion charge would be introduced. 50% would plan to change to the public transport however a significant push factor should incite them to do so. 38% said that despite of the charge they would drive their own car and only the remaining 12% would change their daily habit and would take the public transport instead of the car.

Of course, the congestion charge could be a fix price but also can be segmented according various variables. 54,3% of the respondents think that the congestion charge should be differentiated (for example higher prices of buses) but 46,7% said that price-differentiation is not necessary. From those, who would make a segmentation in the congestion charge, 66% marked that segmentation would be useful according to the type of the vehicle which means that bigger cars (such as tourist buses) should pay more. 63,8% think that the height of the charge should be in accordance with the pollutant emission of the vehicles, so as high the emission is, the congestion charge would be also higher. 57,4% think that the height of the charge should be higher in frequented areas and districts the congestion charge should be higher. 46,8% said that congestion charge should be different in the time zones: in peak hours the charge should be higher.

Conclusion

The result shows that citizens would not resign of their car, if the protection of the environment would come into the picture. If the improvement of the public transport is planned, the speed and frequency should be taken into consideration, furthermore punctuality and less crowded vehicles should be in the focus as well. Few years ago the introduction of the congestion charge was planned to reduce the traffic in Budapest and main group of the respondents agreed with this measurement, however those who mainly drive car are against of it. The amount of the congestion charge should be settled so that it would incite the car owners to take the public transport instead as the result shows that drivers would not change also when the charge would be introduced. It would be useful the segment the congestion charge, where several points could be taken into consideration, but the type of the vehicle or the pollutant emission could be the base of the segmentation. The most disturbing vehicles are the car and motorcycles, including the noise and air pollution as well. These are also the most pollutant vehicles as well in the opinion of the respondents. The main measurement which could contribute to the improvement of the air quality is the renewing of the vehicles of the public transport as the pollution of the older vehicles are higher. Also due to the fast improvement of the technology vehicles with alternative fuels or with
electricity are already available. These may cost higher of course, but the amount paid for the environment protection could be saved in long term. Some electric buses can be seen in Budapest and the average age of the transport vehicles are decreasing due to the purchase of the new ones. Regulation or banning the car traffic would also contribute to the better air quality. If measurements should be supported, respondents would agree with the improving of the public transport vehicles or regulation of the car traffic in certain areas. Park and Ride parking lots would be supported as well, however as we have seen, drivers would not resign of their own car. Smart parking should be taken into consideration, where again the technical improvements but also the mobile technology could be used. As mentioned, tourism is a growing industry and tourists are using the same transport infrastructure like the local residents. The growing number of the tourists disturb the residents during the transport habit which should be taken into consideration as well, as socially this issue cannot be considered as sustainable.

In summary still the sustainable points of view should be taken into consideration, on residents but on the municipality and operation basis. Some steps may be seen but in long term the change of mind of the residents would be necessary as well, as everybody should contribute to the sustainable transport.

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