

City tourism and the sharing economy – potential effects of online peer-to-peer marketplaces on urban property markets

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Abstract

Purpose – *The purpose of this paper is to investigate the potential effects of the so-called sharing economy on growing city tourism as well as on urban property markets.*

Design/methodology/approach – *Official statistical data and a geo-information system (GIS) are used on a small scale in order to identify concentration processes among overnight visitors and the potential concomitant conflicts with other interest groups.*

Findings – *Currently, the effects of the sharing economy on housing markets and city tourism are barely measurable and are limited to a few central locations. However, a growing demand can be discerned in housing-like accommodation concepts which can be operated via booking platforms. As there is likely to be strong future growth in this area, continuous market observation (monitoring) is urgently advised.*

Research limitations/implications – *Official statistics only allow an analysis of overnight guests staying with larger accommodation providers. Booking platforms for holiday homes and other temporary accommodation options have such little interest in data transparency that the overall phenomenon of city tourism can be addressed only in part.*

Practical implications – *Associating various data within the GIS enables municipal administrators and urban planners to identify potential sources of conflict within the property markets in good time and effectively counteract these where possible.*

Social implications – *Increases in property prices directly attributable to growing city tourism may lead to the displacement of less financially secure members of the established population as well as businesses.*

Originality/value – *The sharing economy is a relatively new research topic which will become increasingly important in future. The identification of potential sources of conflict due to tourist accommodation has therefore not yet been comprehensively carried out on a small scale.*

Keywords *Sharing economy, Hospitality industry, Airbnb, Properties, City tourism, Residential areas*

Paper type *Research paper*

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Introduction

Two major developments can currently be observed that are highly likely to have lasting effects on the tourism sector. The first of these is the increasing appeal of cities and city tourism; the second is the new, internet-based booking platforms that facilitate the spread of alternative accommodation offerings.

Whereas urban development and the conventional hospitality industry have produced robust, empirically-based analyses and statistical data, the topics of online marketplaces and the so-called sharing economy are still so new that there is considerable uncertainty regarding their further development as well as their social and economic impact. In terms of urban planning and the property sector, too, the question arises as to what the consequences might be as regards urban property markets if urbanisation and city tourism continue to boom while the so-called

sharing economy simultaneously creates accommodation formats that cannot be neatly categorised as being either permanent residences or part of the hospitality industry in accordance with the established criteria and regulatory frameworks.

Urbanisation is an ongoing process. Meanwhile, according to United Nations (2015), 54 per cent of the global population live in cities of more than 300,000 inhabitants. By 2050, it is predicted to be 66 per cent of the population. As long as there is a secure supply of food, living space and public infrastructure, cities can develop into centres of culture, commerce and science. The more concentrated the offering, the greater the demand among people purposefully moving to such places.

What applies to a resident population can also be related to people's travel habits. Owing to their dependence on station-based transport infrastructure such as airports, major railway stations and ferry ports, many travellers are reliant on cities that feature the requisite infrastructure. In addition to this, there are sights and institutions, such as museums, theatres, trade fair and conference centres, shopping and nightlife opportunities, specialist clinics, universities and research institutes, etc., which are generally found only in larger cities. Given various technological innovations, further concentration processes are possible, meaning that such institutions are preferably further developed within the growing major cities. In the remaining regions, we can already observe a trend of reduction and regression in terms of the offers available. Against this backdrop, it seems plausible that the interest in city tourism – whether for day visits or overnight stays – will continue to grow. City tourism in particular is therefore likely to become increasingly important to the future of the tourism industry. It is likely that established urban destinations will gain further market share in a market environment that is growing overall, whereas those regions which are neither urban centres nor peripheral areas of unspoilt nature will experience an absolute decline in tourism intensity.

On an European scale, one can see the disparate development by the NUTS 2 regions. City regions like Berlin, Bucharest, Hamburg, Bratislava, Vienna, Stockholm or Madrid were able to increase the overnight stays more than 50 per cent between 2004 and 2015. On the other hand, a lot of rural areas had negative rates meanwhile (Eurostat, 2017). This development can already be discerned in the example of the figures for overnight stays in Germany. In 1995, about 284 million overnight stays were recorded in the hospitality sector. Of these, 11.4 per cent were in cities with more than 500,000 inhabitants. In 2014, this value had already increased to a total of 417 million overnight stays in Germany and 21 per cent in the greater cities.

The increasing appeal of cities both as places to live and as destinations for business trips and vacations necessarily leads to increased spatial pressures. These can, in turn, create usage conflicts between various interest groups; for example, between inhabitants, cultural milieus, nature conservation, the hospitality sector and other sectors. The general change in household composition and preferences in living arrangements, as well as new internet-based tourist information and booking options result in a whole series of questions affecting the future of city tourism in conjunction with urban property markets. Here, the so-called sharing economy, whose development presumably is currently only in its infancy and which will continue to gain in importance, must form a particular focus. As with many innovations, the sharing economy is seen uncritically by some stakeholders, while others fear it will bring about negative changes.

By analysing current trends in city tourism, with a particular focus on potential spatial effects, the following key questions are to be addressed:

- What relevance will the sharing economy assume for city tourism/commercial overnight accommodation?
- Which property markets in which local city districts will be influenced in what ways by the changed and emerging forms of tourism?
- How will the conventional hospitality industry react to the new offers and changed demand?

To deal with these questions, official statistical data as well as market data from online market portals are used combined with an analysis based on a geo-information system (GIS). As a result, it should be possible to identify concentration processes among overnight visitors and the

potential of concomitant conflicts with other interest groups on a small scale. For this purpose, a so-called “fishnet-grid” is used to scale all data on a similar raster. This makes the difference between point cluster or conventional heat maps that were used in other spatial analyses about Airbnb and similar online portals.

City tourism and touristification

Tourism in its various facets is an economic sector experiencing virtually global growth. As a result of a variety of factors, tourism intensity is growing particularly in international economic centres. Owing to its many potential forms, and for the sake of simplification, “tourism” here is to be reduced to the formula of “travel combined with at least one paid overnight stay”. The term “city” is generally synonymous with European economic centres with at least 500,000 inhabitants.

According to this definition, city tourism is therefore shaped not only by leisure travellers. Business travellers, conference visitors, people undergoing specialist medical treatment or visiting family members, house hunters and others all pose a relevant demand on the commercial overnight accommodation market. Aside from obvious tourism-based offers such as souvenir shops and city tours, the “guests”/tourists temporarily residing in this space use the same infrastructure, which, due to the local resident population, is largely running at commercially viable capacity. Offers such as local public transport, cultural institutes, shops and restaurants can therefore be distributed in substantially greater quantities whilst catering to a wide range of individual requirements. Added to this is the fact that many city attractions are not dependent on the weather or season, meaning that visitor numbers can be distributed more evenly and thus more economically advantageously throughout the year than in many “nature-based” destinations.

Thus, in Germany, the average bed occupancy rate in the years 2011-2015 was at 31.9 per cent; in the major cities with up to 500,000 inhabitants, it was 42.6 per cent, and in the even larger cities, 52.6 per cent. In total, the occupancy rate in the very large cities increased from an average of 42.8 per cent in 1995 to 55.3 per cent in 2015, even though bed capacity was massively expanded. In Germany as a whole, it increased by an average 61.6 per cent, in the major cities with up to 500,000 inhabitants by 45.6 per cent, and by 119.5 per cent in the even larger cities (Statistischen Ämter des Bundes und der Länder, 2016a, b).

The main driving forces behind the expansion of offers are above all international hotel chains and investors, as well as new hotel concepts such as budget hotels, apartment hotels and hostels, which must exhibit a minimum commercial size. The number of beds, combined with computer-aided capacity administration (“revenue management”) and internet-based marketing, draws even more customers to the cities. The city’s transport links by road, rail, air and water are crucial in this respect. These links are not only important in the face of growing mobility within Europe and internationally, but also represent a location-specific advantage for certain growth segments within the domestic tourism industry, such as group travel, for example.

In terms of both leisure and business travel, the city centre forms the main focus in the majority of instances, whether that is because this is where most of the popular historical sites are located or because inner cities have established themselves as centres of commerce and service-provision. It is important to engage with the historic transformation processes undergone by inner cities in order to understand the current challenges in terms of city tourism and property markets. The primary focus here is the so-called “city formation” (Schmidt, 1909) employed by European cities in the late nineteenth and early twentieth century, with London serving as the prime example owing to its early and considerable development in this regard. The transformation of inner cities into centres of commerce and service-provision was accompanied by a consistent separation of functions within the city, right down to the level of the buildings themselves. If a townhouse was generally used for production, storage, administration, trade and living, a period of careful planning would be followed by the construction of a property whose design was adapted to the respective function. Once the city walls and its gates fell, dwellings were generally erected outside the city centre. Transport innovations such as the bicycle, local rail-bound public transport (trams, underground and suburban railways) and later the automobile were the prerequisites for the suburbanisation of living. Owing to these processes of migration, many inner cities today have a predominantly

monofunctional, commercial character. Outside of the conventional working and opening hours, some areas feel “lifeless” and thus feature no distinct welcoming qualities. In such locales, hotel guests can contribute to what urban planners might deem a desirable vitalisation process. However, one must here take into account that increased demand for inner-city spaces leads to greater competitive pressure and thus an increase in prices. At the same time, one can assume that in growing cities, the city centre is also expanding. As a result, apartment buildings and the requisite real estate – which, during the early city-formation stage, were created in mixed-use districts built in the style of the “Gründerzeit” (literally “Founders’ Era”, a period of great industrialisation in the mid- to late nineteenth century in Germany) and international comparable quarters – become increasingly appealing in terms of commercial (tourism-based) usage. As long as higher prices can be imposed for commercial properties than for other usage types at a balanced risk-to-reward ratio for investors, and as long as takings from business taxes simultaneously remain as appealing to municipalities as personal taxation, even a sustainable trend of re-urbanisation will be unable to reverse this ongoing trend. On the contrary, it can be assumed that the demand pressure for the few available spaces which can actually be subjected to new usage and planning will increase.

This example allows us to identify potential usage conflicts which might be intensified by the fact that in the course of so-called re-urbanisation, districts close to the inner city are becoming more attractive to more affluent sections of the population as places to live. Such districts, e.g. Berlin-Kreuzberg or Harlem in New York city (see Huning and Novy, 2008), are generally what are being referred to when the topic of current or apparent structural change is addressed. These areas are characterised by great structural density and their original blend of residential, trade and (productive) commercial usage, whereby old factories and smaller stores are frequently used for purposes of culture and service-provision.

Increasing prices for residential and commercial properties, accompanied by structural changes in the population and forms of commerce, is described in the tourist context as “touristification”, which can be seen as part of gentrification (see Friedrichs and Glatter, 2017). In this context, monostructural tourist economies with a growing number of hotels, hostels and holiday apartments are establishing themselves in areas that have hitherto held little appeal for tourists. According to Wöhler (2011), this process is comparable to that of “colonisation” of the “local people’s everyday spaces”, something whereby “places are being made into something different”, namely “touristified third spaces”. Judd goes even further by describing these city districts as “tourist bubbles” (Judd, 1999) and “tourist enclaves” (Judd, 2003). This implies a space in which the local populace spends time only as workers, but where the rest of the time – as in an amusement park – urban life is only imagined and shaped by the behaviour of the tourists. The French Quarter in New Orleans (USA) is used as an example of this development.

However, here the question arises as to whether the focus on tourism as purely an economic sector is too narrow, failing to take account of travelling and freely deciding where to spend time as the universal human rights[1] of every individual. Thus, the discourse surrounding touristification easily runs the danger of devolving into a defensive debate that takes a pessimistic view of the future and of culture – a debate in which the stereotyped “tourist/traveller/foreigner” becomes the “scapegoat” for individual or merely feared negative changes (see Blickhan *et al.*, 2014, p. 169).

Similar to the French Quarter, tourist interest within other districts in the city centre or close to the centre is likely to be limited to individual buildings, streets or places, as Stors and Kagermeier (2013) are able to demonstrate using the example of Norrebro and Vesterbro, two districts in Denmark’s capital city of Copenhagen. Here, one must also consider that municipal taxation tools and general persistent forces within the property markets mean that a rapid and comprehensive change to entire city districts is rather unlikely. In what follows, touristification is therefore to be considered outside of debates held along ideological lines as an ongoing change process accompanied by a transforming cityscape, local economy and population structure. In this context, the “tourist bubbles” as described by Judd (1999) must be viewed more as theoretically embedded interpretive patterns. If such “bubble formations” as outlined above occur, these must above all be seen as small-scale phenomena and the pending “final stage” of this change process.

The sharing economy and P2P platforms

The debate surrounding so-called touristification shows how difficult it is to incorporate various interests within a rational planning process. While it is certainly possible to record visitor frequency, the number of accommodation providers and catering establishments as well as other offerings used exclusively by tourists, this does not resolve the issue of when a level deemed “too much” has been reached or when change and displacement processes are so strong that regulatory intervention is necessary. This complex initial situation is rendered even more complicated by new types of offering and business models, which are made possible by virtually ubiquitous digitalisation.

For many people, the internet and its virtually ubiquitous availability thanks to smartphones has brought lasting changes to the ways in which they travel and the travel options that are available to them. Along with the dissemination of information, the focus is particularly on booking platforms, without which today’s price calculations and fee quotations of many travel operators, hotels and transport companies would be unthinkable (see Oskam and Zandberg, 2016). It is likely that further market penetration of internet and smartphone technology will make user-friendly booking platforms increasingly important. Alongside conventional so-called “B2C” (business to customer) booking platforms which, for example, enable users to book flights or hotel rooms directly with the provider, recent years have seen the emergence of platforms that can be regarded as part of the sharing economy. Their distribution form is described as P2P, based on the trade between equals (“peers”).

Whether the uniformly positive characterisations of this new and growing market segment can be matched with reality is questionable. Thus, the term “sharing” is exclusively associated with altruistic motives, whereby “economy” – from the perspective of conventional capitalist theories and those theories critical of capitalism, at least – represents actions taken for one’s own advantage. According to this approach, the necessity to act – in the sense of developing activity – only arises from the imbalance between offer and demand. A balance between these two poles – meaning an equal status for market participants (peer status) – would, for example, exist if the provider felt no compulsion to sell their service in order to make a living, and if those on the demand side felt no necessity to use the service in order to fulfil a fundamental need. This would indeed be a completely new economic system.

Yet the term in fact stems from an approach that is rather critical of capitalism as an introduction to an exclusively growth-based economic system (see Meadows *et al.*, 1972). In the property sector, this form of sharing economy can be observed in apartment shares, which, though often formed for financial reasons, also represent the desire for communal living. Such apartment shares, which have been popular in such places as Germany since the 1960s (Bundesministerium für Bildung und Forschung 2013), differ from the even older living arrangement of room sublets, or so-called co-living concepts (Pelzer and Burgard, 2014). Whereas in an apartment share the group rents an apartment and divides the costs, in other instances, it is merely single rooms that are let directly to individual people, which limits the representation of tenants’ interests *vis-à-vis* the landlord. The term “co-living” is in turn related to “co-working”, which describes the division of office spaces and the attendant infrastructure and facilities, which can sometimes be rented for very short periods as required.

In the context of city tourism, the focus is particularly on online marketplaces, which enable private individuals to rent for the short-term accommodation that is actually intended for permanent occupation. In terms of brokerage, it does not matter whether the advertiser owns the apartment or is only renting it. The most well-known provider in this relatively young segment is the company Airbnb, which was founded 2008 in San Francisco and is currently traded at an estimated value of 30 billion US dollar (Sheppard/Udell, 2016). Though there is a whole series of competitors in this segment, such as Wimdu and 9flats, none of these have enough market penetration to threaten Airbnb’s market leadership. For this reason, the name Airbnb is frequently synonymous with this type of booking platform and/or type of overnight accommodation.

These companies’ marketing strategies involve giving prominence to idealised images, which obscure their commercial objectives in terms of “hyperconnected network capitalism” (Oskam and Boswijk, 2016). Airbnb’s current commercials emphasise, among other things,

the interaction between guest and host, highlighting the advantage of experiencing the city like a “local” (www.airbnb.com). Yet behind the business model of Airbnb and its competitors lies the explicit intent to generate profit. The platform providers present themselves as mere brokers, so that their risk is limited solely to the provision of infrastructure and marketing. Unlike travel operators or property providers or owners, brokers do not have to assume any responsibility for the adherence to safety and hygiene standards and other regulations. The advertisers alone bear the entire responsibility and, from an economic perspective, must establish sufficient reserve funds to cover, for example, maintenance, insurance policies and taxes. Yet it is questionable whether the majority of advertisers take sufficient account of the concomitant risks and all the associated costs. This would mean that turnover or takings are wrongly interpreted as profit by many stakeholders, as jubilant announcements under the banner of “hosts in New York City earned \$5,474 on average [...] from June 2015 to June 2016” (Farber, 2016) suggest. Thus, if costs and risks are not sufficiently factored in by a majority of providers, one can justifiably assume that prices quoted are below a price level geared towards the long term and shaped by economic factors. This can even apply to more professional advertisers, some of whom earn their living from a variety of sources and can be grouped under the heading of “urban precariat” (Auyero, 2015).

For this reason alone, the offers on these booking platforms are usually cheaper than in the conventional hospitality industry, whereby a greater margin of individual lettings can be accepted with the Airbnb apartments if one takes into account that the average rates are in part above those of the market for low-cost hotel rooms (Guttentag, 2015). Added to this is the fact that certain taxes and fees are not levied in the case of private lettings or micro-enterprises. An additional cost factor is the conditions and regulations which an accommodation provider must fulfil regarding, e.g. staff, fire protection and hygiene, in terms of both insurance and construction. If accommodation originally intended for residential purposes is let via these platforms, then it is often larger, more distinctive and also more intimate than most hotels. The opportunity to self-cater also allows guests to further save costs, and represents an advantage for people who wish to spend several days there, for group travellers and for families. Precisely those target groups are thereby appealed to who can fundamentally contribute to further growth in city tourism. The great advantage of the business model used by Airbnb and others, however, is to be found in the considerably greater flexibility offered by the fragmented structure of the providers. If one provider should become unavailable, this barely affects the overall range of offers. Furthermore, to the platform operator, this fragmentation means that neither the providers nor the customers as individual stakeholders have sufficient negotiating potential to fundamentally influence the corporate policy of the platform operator. As long as no serious events occur which could lead to a coalition between several individual stakeholders and an effective boycott, there is a state of dependency among market participants with regard to the platform operators, a dependency which is only increased by current concentration processes. It is unlikely that any accommodation provider will be in a position to conduct the same amount of marketing or establish similar sales structures in order to achieve direct sales that are similarly successful.

It is therefore only through companies such as Airbnb that many smaller providers receive the opportunity to operate their (sub)letting business. The fiduciary function of the platform during transactions and the opportunity for providers and guests to rate one another mean that the platforms imply the kind of security that is necessary for business confidence. Following their self-imposed growth targets, it is essential for the platform operators to have both significant demand as well as a large range of offers. Owing to increased expectations on the part of investors, the target groups must therefore be expanded and supplied with offers adjusted to their respective requirements. Thus, Airbnb has long since moved away from the air bed that inspired its business name as a temporary place to sleep, for instance in someone’s living room, and developed into a platform offering fully furnished apartments in the majority of instances, which can be used without the presence of the “host”. Some of these apartments are now furnished and let for the sole purpose of providing temporary tourist accommodation. These services are in part provided by people who purchase, rent out or manage on someone else’s behalf several units for this exclusive purpose, and make these available to the market via these platforms. This increases the level of professionalism found among many providers, although one must consider that, even here, one rarely finds a business sizeable enough to justify a full-time venture or noteworthy

staffing levels. Unlike with conventional accommodation providers, where the number of rooms and beds hardly varies and lease agreements must be made with the owner for extended periods of time, the rental agreements governing conventional apartments can be cancelled by the tenant within three months, at least under German law. Thus, if the business model of some providers is based on renting a residential property rather than a commercial property, and on temporarily subletting it in combination with a service package, the offering can be more rapidly adapted to fluctuating demands with less associated financial risk. It is precisely these providers who come in for criticism, first because they are seen as unfair competition to the established hospitality industry (see O'Neill and Ouyang, 2016), and second because they are accused of misusing apartments (see Delgado-Medrano and Lyon, 2016). This situation has led to demands on policy makers and public administrators to draw up appropriate regulations in order to protect the "established" hospitality industry and the resident population against these new forms of city tourism.

For platform operators, however, there are no incentives to block the more professional providers. The latter provide a relatively reliable product that is regularly adapted in terms of its facilities and price level to suit economically promising target groups. Acting on behalf of their own economic interests, the platforms are principally reliant on such providers in order to further expand transaction frequency. This is particularly the case when it comes to adequately supplying, and generating loyalty amongst the growing segment of business travellers working for major companies that place the bookings for their employees.

The dilemma of a platform operator such as Airbnb thereby becomes apparent. Travellers must be presented with a wide range of available options, meaning that, on the basis of seasonal fluctuations in demand alone, there must be requisite excess capacity. However, the providers must have the prospect of lucratively renting out their accommodation. Here, the platform operators' own economic interests should at least not be foregrounded in the operators' marketing activities aimed at advertisers and those booking accommodation; yet, the operators must present a diametrically opposing vision to their investors. In addition to this, there are the demands made by policy makers and public administrators with regard to regulation and taxation, which must be fought as early as possible to the benefit of business operations. For this reason, the official statements made by the platform operators are in part contradictory and difficult to verify. Initiatives such as Inside Airbnb (www.insideairbnb.com) and BerlinvsAirbnb (www.berlinvsairbnb.de), as well as companies such as Airdna (www.airdna.co), have specialised in using automated routines to continuously record and publish the platform operators' offers in order to create greater market transparency. The mere fact that various attempts are being made to systematically record these data is a sign of the great interest and lack of certainty surrounding this new and booming market segment.

Potential effects on property markets

From a planning perspective, various questions arise as to the potential effects of the sharing economy specifically with regard to property markets. Does the offered accommodation really involve the sharing of living space? That is to say, is spatial usage optimised because no additional space needs to be created for the growing number of overnight guests? And do the number of apartments and the resident population simultaneously stay the same, or is residential space completely given over to a new form of use, thereby producing substantial seasonal vacancies and thus a greater demand for space? Because only a limited number of properties can be given over to a new form of use in cities in general, and their urban centres in particular, the key issue of how the demand for residential accommodation and city tourism, and the concomitant demand for space will pan out is fundamental (see Gurran and Phibbs, 2017).

Regarding the future of city tourism, two trends seem plausible: first, that the number of overnight stays will increase further, and second, that overnight stays will increasingly occur in accommodation that is more similar to a residential property as offered for bookings on the requisite portals. A decline in city tourism can be expected only if there is a dramatic downturn in the economic and/or security situation on a global scale. The current growth in the sharing economy can probably only be halted by means of very strict legislation and monitoring, which

could in part affect the freedom of the internet and possible other civil liberties as well. Given that the growing demand can in part also be traced back to social change, the question remains as to whether such measures could effectively and sustainably reduce the number of overnight stays outside of conventional hospitality offers.

Therefore, if one assumes a continued stable development, the question arises as to what effects this growth could have on the various property markets. Here, one must consider that depending on the selected method, statistically supported forecasts must be founded on various assumptions that are frequently based on development patterns that have had a past influence on the present. A reliable data set as well as initial empirical values which can stand up to critical scrutiny are therefore essential. Both of these conditions are only insufficiently met when it comes to analysing the accommodation brokered by the respective portals, so that instead of a sound quantitative forecast, one can only present various suppositions and possibilities of processes in future. This highlights the need to conduct continuous monitoring in order to record future developments effectively from as early a stage as possible. Such a small-scale, multivariate analysis is to be presented using the case study of Hamburg, a city with a population of over a million inhabitants. This case study can be used as a description of the situation and as the basis for forecasts. The aim should be to further optimise the modelling of urban development processes (see Daneke, 2013) and to take adequate account of tourism-related aspects as an additional key factor. The question arises here as to what kind of developments are likely in which city districts, and where overlaps might occur in the demand for residential accommodation and the tourism sector.

In order to identify locations that feature current or future potential for conflict amongst the various interests and stakeholders within the property market, a spatial analysis was conducted using a GIS. For this purpose, an evaluation method was used which is, for example, used in the property sector in the context of site analyses in order e.g. to find potential new-build sites in a target-group-specific manner and simultaneously estimate the price level. The aim was to select the most straightforward possible observation model that could also be transferred to other cities with similar indicators.

To conduct the analysis, a random sample of offers was recorded from various property markets. All existing and planned hotels were recorded, together with the number of rooms they offered, as were various residential properties offered for longer-term lets. Within the so-called sharing economy, sublets of entire apartments on Airbnb were recorded, as were the searches for, and offers from, apartment shares. Unlike the short-term lets frequently advertised for purely commercial purposes, most offers for rooms in apartment shares are more geared towards long-term (social) connections. The analysis of the apartment-share market simultaneously reveals a very price-sensitive, younger, internationally orientated, educated and urban target group, of the kind that is said to play a major role in new urban tourism – at least in the marketing speak of Airbnb (Stors and Kagermeier, 2017).

Alongside these point data, a series of spatial data, available, for instance, at the district level, was also entered into the model. These included, for example, official statistical data on the population, spatial usage and structures. Small-scale data on the average rental price for the accommodation offered on Immobilienscout24, one of Germany's largest online marketplaces for residential properties, were also available. Depending on the effort required and the specific question being addressed, one can of course incorporate additional data sources into the model in order to achieve a greater level of detailed accuracy.

In order to allow all the data to be analysed at the same map level, an even grid (fishnet) was placed over the city with the aid of the GIS. Each of the 750 grid squares has a circumference of one square kilometre. In this way, point data can be correspondingly scaled up to the larger spatial unit; however, the spatial data were accordingly scaled down by linking them to the centroids of the grid squares. Though this process has a strong generalising effect, it does have the advantage of simplifying and therefore accelerating the analytical process. Compared to other so-called hotspot analysis procedures such as that of Getis Ord G_i^* (Getis and Ord, 1995), the fishnet method has the advantage that the grid squares always remain of an equal size. This makes it possible to scale the various point data to a reliably equal map level. However, the

drawback to this approach lies in the arbitrary boundary drawing, which can, for example, divide structurally caused accumulations in offerings. The same is true if the geometric centre point of a grid square is situated in an area that is only partially located within the entire grid square.

Once the key offers of the individual sub-segments had been identified, a simplified points-based evaluation was to be used to identify those locations subject to increased demand both on the property market and the overnight accommodation market. To this end, points from one to three were allocated within each of the individual segments. One point was given to grid squares that had fewer offers than should have been the case in a hypothetical equal distribution across all grid squares. For the top-most category, it was initially established how many grid squares featured at least one offer, in order to then establish the average value in an equal allocation of this reduced population mean. Grid squares that exceeded this value were therefore allocated the highest point score.

The cartographical evaluation (see Figure 1) shows that the districts with full points are above all situated in central locations. This particularly applies to districts such as Hamburg Neustadt, St Georg, St Pauli, Sternschanze and Altona/Ottensen, which are characterised as “alternative” and “multicultural” or shaped by a broad range of largely non-commercialised “district culture” (Huning and Novy, 2008). Districts such as Hamm, Harburg, Stellingen and Veddel, which have a different image, feature a significantly narrower range of overnight accommodation as marketed on portals such as Airbnb, despite the urban population density and relatively high density of beds in the conventional hospitality market in these districts. The district of Wilhelmsburg, too, which in the 2010-2015 marketing plan of the Hamburg tourist office (Hamburg Tourismus GmbH, 2009, p. 120) is described as a future “original trendy district”, is still little sought-after among overnight guests, despite its proximity to the city centre.

The status quo established via the spatial analysis matches the predictions and observations previously made in other cities (e.g. Barcelona Gutiérrez *et al.*, 2017; Budapest Dudás and Boros, 2017; Sydney Gurrán and Phibbs, 2017). It is interesting to draw on this while following future developments. For example, in terms of the new-build hotels, it becomes apparent that these are being erected either on larger brownfield sites close to the city centre, or continue to be built in predominantly commercial districts. No existing living space is thereby being lost, but merely the space available for alternative usage. However, this affects above all other segments of the commercial property sector. In the case of manufacturing, warehousing and logistics, one can here also discern the influence of urban planners and their preference for situating such industries on the city’s periphery.

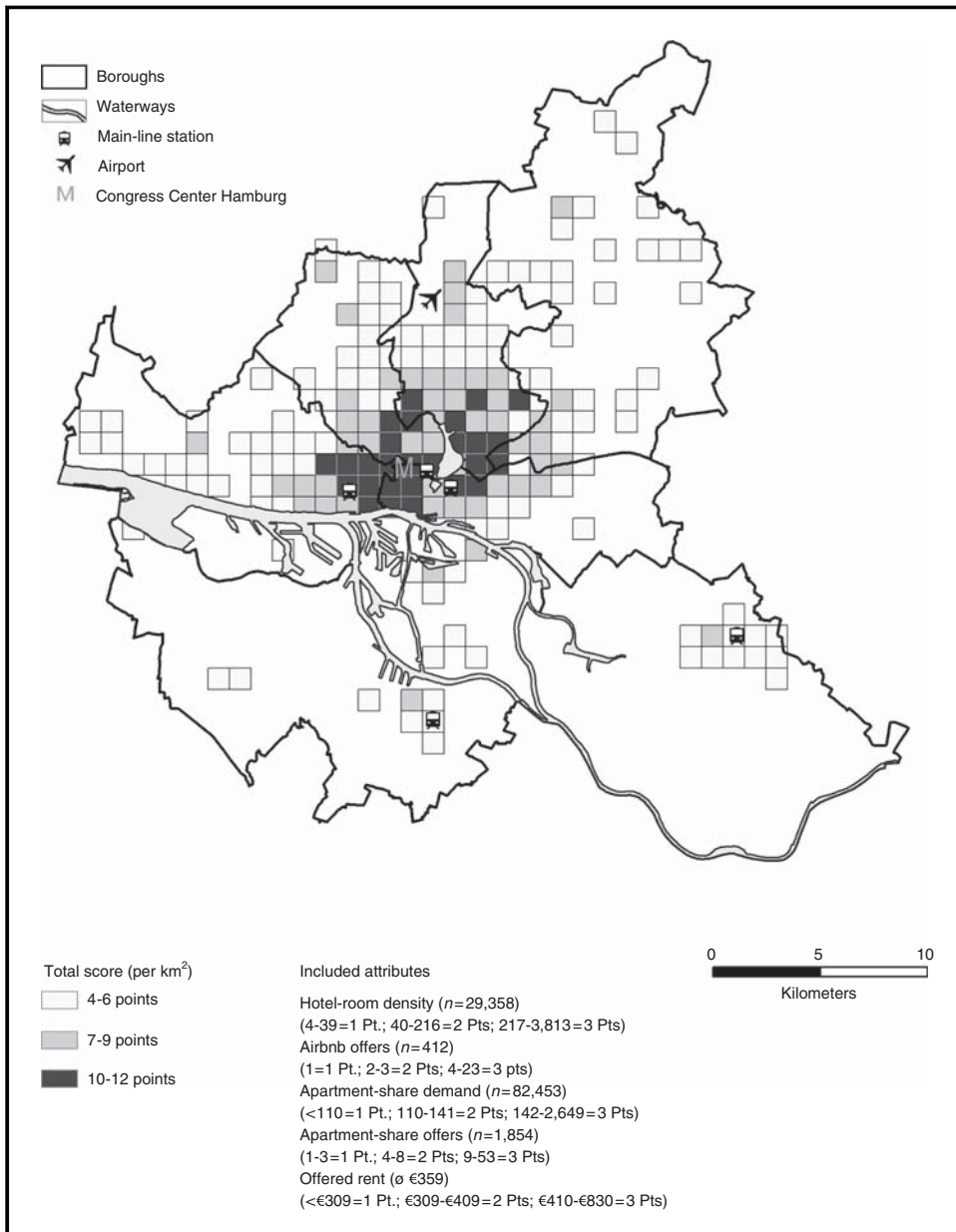
With regard to residential property, a reduction in the number of apartments available for long-term tenancies as a result of short-term lets to tourists can only be speculated at, given the currently available data. It can be discerned that offers of entire apartments in Hamburg via Airbnb are mainly found in districts that are also popular among people searching for apartments (as tenants) in multi-storey apartment buildings in an urban, mixed-use environment. This includes individuals such as young trainees and students, people who mostly do not have a large budget for living costs, and who therefore live communally in an apartment share.

If one assumes that the demand for residential property in such locations is more likely to rise than decrease, with a simultaneous increase in the desire to find temporary accommodation close to the city centre, one can expect an increase in the areas popular with both long-term and short-term tenants. Potential usage conflicts might therefore also increase.

Conclusion

Unless the global economic and security situation fundamentally changes, it is expected that city tourism will continue to grow as an economic factor. It remains unclear how many guests will stay overnight, since the market for commercial overnight accommodation in private residences offered through internet-based platforms such as Airbnb has developed a reach hitherto unseen. Because it is still in its relative infancy, the so-called sharing economy is leading to some uncertainty in terms of its effects on conventional markets. In relation to urban planning and the property sector, the question arises as to how urban property markets and the hotel industry will change in the face of these new offers. Some fear a state of “touristification” with the concomitant

Figure 1 Tourism density and potential areas of conflict between the interests of housing, hotel business and sharing economy



displacement effects on the local population if apartments are used exclusively for tourism-based purposes and if residential areas become increasingly interesting to the accommodation industry. What has become apparent is that the boundaries between short-term stays with an accommodation provider and more long-term lettings of residential properties are becoming increasingly blurred.

It is currently impossible to predict how the offers on portals such as Airbnb will develop. In the past, providers of private accommodation and operators of conventional hotels could both benefit from a market environment experiencing overall growth. Alongside the growth in tourism, however, there has also been a noticeable increase in the population and the number of households within major cities. This poses questions not only in terms of how these additional overnight guests are to be accommodated, but also with regard to adequate residential space.

In view of the lack of available space, particularly in central locations, permanent monitoring of available spaces seems sensible in order to identify potential conflicts of interest in good time. With the aid of various data from official statistics and the appropriate brokerage platforms, a small-scale, GIS-supported analysis was conducted. The results of the general observations and data analysis allow for the following statements, at least in relation to the case study of Hamburg:

- Tourism-based demand is predominantly concentrated within a few inner-city locations, and the city centre in particular. In many cases, it affects only individual streets, which are also subject to increased demand for residential properties. In this case, the demand is measured according to the searches for, and offers of, rooms in apartment shares, which are especially sought-after by a price-sensitive clientele.
- Whereas new hotels are being built predominantly in purely commercial locations on the edge of the inner city or on brownfield sites, the offers proposed by Airbnb and other portals are above all to be found in locations popular as alternative residential areas close to the city centre. This creates a competitive situation, which could lead to further increases in property prices and rent.
- The platforms included in the study are based on profit-orientated business models that transfer many of the commercial risks onto the individual providers, making the achievable profit margins seem even bigger. Many of the apartments offered for the sole use of guests seem to be let exclusively to tourists, so that the original sharing concept is not being implemented here. This tends to lead to a growth in demand for space.
- However, the reasons for tension in the property markets are manifold and cannot be unilaterally blamed on city tourism. Instead, it is important to consider more intensive use of spaces in order to meet the needs of competing interest groups. Particular attention should be paid to not displacing financially weak members of the established population, as well as businesses.

In terms of the future, it can be assumed that there will be continued growth both in the conventional hospitality market and the portals of the sharing economy within the major, economically strong cities. This will give portals such as Airbnb a relevance that is currently not measurable, at least not with the help of official statistics, and which, in terms of spatial monitoring, can be discerned only on a small scale. Individual hotel operators are trying to use new offers to react to the changed demand for accommodation that is more individualised, cheaper or suitable for longer-term stays. Hostels, budget hotels and serviced apartments/aparthotels, some of which are operated by international chains, represent one solution. On the other end of the spectrum, smaller inns and guesthouses are also beginning to advertise their offers on portals such as Airbnb, thereby increasingly opening themselves to the purely commercial segment. Whereas we can thus observe a change that will likely have few consequences for the commercial property markets, the question must remain open as to how one can counter the anticipated changes to the urban property markets. This will require a paradigm shift in planning to create sufficient space for both long-term and short-term accommodation interests. Overall, it is apparent that we are currently at the beginning of what is set to become a lasting trend, so that many aspects must remain speculative for now. It is therefore all the more important that current change processes are also monitored at the spatial level, in order to be able to take regulatory measures to provide relief to specific stakeholder groups.

Note

1. Universal Declaration of Human Rights Article 13.1 "Everyone has the right to freedom of movement and residence within the borders of each state" – www.un.org/en/universal-declaration-human-rights

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