

Tourism Geographies

An International Journal of Tourism Space, Place and Environment

ISSN: 1461-6688 (Print) 1470-1340 (Online) Journal homepage: <https://www.tandfonline.com/loi/rtxg20>

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To cite this article: Justin Kadi, Leonhard Plank & Roman Seidl (2019): Airbnb as a tool for inclusive tourism?, *Tourism Geographies*, DOI: [10.1080/14616688.2019.1654541](https://doi.org/10.1080/14616688.2019.1654541)

To link to this article: <https://doi.org/10.1080/14616688.2019.1654541>



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Published online: 22 Aug 2019.



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Airbnb as a tool for inclusive tourism?

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ABSTRACT

Airbnb prominently argues to promote more inclusive forms of tourism through enabling ordinary households to occasionally share their home with tourists. This conventional understanding of 'home-sharing' has been challenged, however, with critics arguing that property owners and landlords use the platform for the commercial provision of permanent holiday homes. This article uses Airbnb provision practices and the dichotomy of 'home-sharing' and commercial provision as an empirical entry point into the debate to what extent Airbnb promotes more inclusive tourism development. While existing studies on Airbnb provision practices in the European context have predominantly focused on the major tourism centres with the biggest tourism numbers, we consider a second-rank European tourist city with a rapidly growing Airbnb supply, Vienna, Austria. Methodologically, we critically review and extend common approaches to identify commercial practices. Based on a new dataset of Airbnb listings, quantitative statistics and GIS, we find that, in Vienna, the notion of 'home-sharing' is insufficient to fully explain the characteristics of the Airbnb supply, with commercial practices playing a considerable part, yet in geographically uneven ways. Our extended methodological framework provides further, more differentiated insights into provision practices than previous studies. We conclude by relating our findings back to debates on inclusive tourism development and discuss questions for further research.

摘要

爱彼迎的突出主张是，通过让普通家庭偶尔与游客分享自己的住房，促进更具包容性的旅游形式。然而，这种对“住宅共享”的传统理解受到了挑战，批评人士认为，业主和房东利用这个平台为永久度假屋提供商业服务。本文以爱彼迎提供服务的实践，以及“住宅共享”与商业住宿的二分法为切入点，实证研究爱彼迎在多大程度上促进了更具包容性的旅游发展。虽然现有的爱彼迎在欧洲范围内提供实践的研究主要集中在旅游人数最多的主要旅游中心，但我们认为在欧洲二线旅游城市（比如奥地利的维也纳）爱彼迎的供应量也是增长迅速。研究方法方面，我们批判性地回顾和扩展了识别商业实践的常用方法。基于爱彼迎的新数据集、定量统计和GIS，我们发现，在维也纳，“住宅共享”的概念不足以完全解释爱

ARTICLE HISTORY

Received 15 April 2019
Accepted 20 July 2019

KEYWORDS

Airbnb; short-term rentals; inclusive tourism; European cities; Vienna; home-sharing; Austria

关键词

爱彼迎；短期租赁；包容性旅游；欧洲城市；维也纳；住宅共享；奥地利

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This article was originally published with textual errors, which have now been corrected in the online version. Please see Correction (<http://dx.doi.org/10.1080/14616688.2019.1668160>)

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彼迎的供应特征,商业活动在其中发挥了相当大的作用,但所起的作用在地理上并不均衡。与以往的研究相比,我们拓展的方法论框架对供应实践提供了更深入、更有区别度的见解。最后,我们将我们的研究结果与有关包容性旅游发展的争论联系起来,并讨论有待进一步研究的问题。

Introduction

How widely the benefits of tourism activities are shared has long been a key scholarly, social and political concern (Gibson, 2009). In a recent special issue in this journal, Scheyvens and Biddulph (2018) propose the concept of *inclusive tourism development* to stimulate constructive thinking about 'ways of approaching tourism (...) so that it can provide a holistic range of benefits and lead to more equitable and sustainable outcomes' (Scheyvens & Biddulph, 2018, p. 590). This article responds to this invitation by examining to what extent the recently emerged phenomenon of Airbnb short-term rentals is fostering more inclusive tourism development.

Airbnb has become a cornerstone of tourism activities in many places in recent years. Founded in 2007, Airbnb currently administers some 5 million listings worldwide, making it bigger than the five largest hotel companies together (Hotel News Now, 2018; Marketline, 2018). In many European cities, the number of Airbnb beds by now equals the number of conventional hotel beds, or has already surpassed it (Adamiak, 2018). Policy-makers in places like Amsterdam, Barcelona or Berlin have implemented strict regulations on Airbnb activities. The company, meanwhile, is forcefully lobbying against these attempts to promote their business model (Cannon & Summers, 2014). Airbnb, then, is rapidly gaining relevance and is beginning to constitute an increasingly urgent *problematique* for research on tourism activities and its social, economic and spatial impacts.

The practice of Airbnb is contested. Airbnb emphasizes that it promotes more inclusive forms of tourism than conventional tourism accommodations through a peer-to-peer platform for vacation rentals (Airbnb, n.d.). This, following the company, provides ordinary people with novel ways to make money from renting out spare space in their home, with Airbnb enabling private 'home-sharing'. Critics, meanwhile, argue that, in practice, rather than private households, it is often property owners and landlords that use Airbnb for the commercial provision of permanent holiday homes, removing regular dwellings from the housing market and feeding the commercialization of housing and local neighbourhoods (Arias Sans & Quaglieri-Domínguez, 2016; Cocola-Gant, 2016; Schäfer & Braun, 2016; Wachsmuth & Weiser, 2018). In order to gauge the impact of Airbnb on host communities, it is thus pivotal to understand provision practices of the platform. This article uses provision practices and the dichotomy of 'home-sharing' and commercial provision as an empirical entry point into the debate to what extent Airbnb promotes more inclusive tourism development.

Several studies have recently explored Airbnb provision practices. While some focus on the US or Australian context (Crommelin, Troy, Martin, & Pettit, 2018; Wachsmuth & Weiser, 2018), for Europe, in-depth case studies are becoming available. What unites

them are two central features. First, they predominantly focus on first-ranked tourist-cities with the biggest tourism numbers such as Berlin, Paris or London (Ferreri & Sanyal, 2018; Schäfer & Braun, 2016; Stors & Kagermeier, 2017). Second, they typically draw on a limited set of indicators to determine provision practices (but see Ioannides, Röslmaier, & van der Zee, 2018).

In order to empirically and methodologically broaden the evidence base, we focus on the case of Vienna. A second-rank European tourist city in Central Europe, Vienna has recently experienced a rapid rise in Airbnb listings. Listings have grown by a factor of 6 between 2014 and 2017. We apply the commonly used indicators to determine commercial provision and extend this analytical framework for a more differentiated assessment. We ask three questions: How to measure the contribution of Airbnb to inclusive tourism through provision practices? What is the level of different provision practices (home-sharing and commercial provision) in Vienna, considered through the commonly used indicators and through an enriched analytical framework? What does the analysis of provision practices in Vienna tell us about the extent to which Airbnb promotes inclusive tourism? The article uses a novel dataset on Airbnb listings in Vienna in August 2017 we gauged via web-scraping [Airbnb.com](https://www.airbnb.com).

We propose the dichotomy of ‘home-sharing’ and commercial provision as analytical entry point to determine whether Airbnb promotes inclusive tourism (home-sharing) or not (commercial provision). Drawing on existing studies, in a first step, we use the following indicators as proxies for ‘home-sharing’: shared room and room listings, single-listing hosts and occasional lettings; and the following for commercial provision: entire unit listings, multi-listing hosts and permanent lettings. In a second step, we enrich this framework by combining the different indicators. We consider the following indicators as proxies for ‘home-sharing’: occasionally rented shared room, room and entire unit listings as well as listings by single-listing and multi-listing hosts that are occasionally rented. In contrast, commercial provision is operationalized as: permanently rented shared room, room and entire unit listings as well as listings by single-listing and multi-listing hosts that are permanently rented.

The article is structured as follows: [Section 1](#) discusses major controversies and debates around Airbnb, links the concept of inclusive tourism to Airbnb provision practices and problematizes this conceptual move. [Section 2](#) presents relevant findings of existing research, before discussing two lacunas – empirical and methodological – in the literature, which serve as the starting point for our study. [Section 3](#) discusses how we address these lacunas and presents the analytical framework, methodological procedure and data sources. In [Section 4](#), we provide relevant contextual details for Vienna and clarify the city’s status as a second-rank European tourist city. Results [Section 5](#) presents the empirical findings. In [Section 6](#), we discuss questions for further research.

Examining inclusive tourism through Airbnb provision practices

Airbnb is the most important among a number of new tourism accommodation platforms that have emerged in recent years as part of the ‘sharing economy’; a contested concept built around digital technology companies, internet platforms, and the (usually occasional and short-time) sharing of unused or underused assets. While one of the

most successful, Airbnb is also one of the most controversial 'sharing economy' companies, and has gained a quasi-monopolistic position in accommodation sharing in many cities (Forbes, 2018). It is a web-based platform that enables people to list accommodations for short-term rentals. Airbnb connects hosts with guests and draws its main revenue from fees charged on both (Marketline, 2018). People can list different types of property, entirely or partially, although the 'home-sharing' notion has particularly developed around partial room lettings. After roughly a decade in existence, Airbnb has already attracted more than 500 million travellers worldwide (Airbnb, 2019). Unlike similar Silicon Valley start-ups, Airbnb has combined rapid expansion with considerable profit-making (reportedly around \$100 million in 2017 (Zaleksi, 2018)).

This spectacular growth has sparked academic attention. Large parts of the literature, mainly from economics and business studies, seem predominantly focused on the overall benefits of Airbnb and the 'efficiency' gains compared to conventional tourism accommodations (cf. Roelofsen & Minca, 2018). Positive effects on tourism accommodation costs and supply, revenues for traditional hotel services or local property values have been in the focus (c.f. Guttentag, 2015; Jefferson-Jones, 2015; Tussyadiah & Pesonen, 2016; Zervas, Proserpio, & Byers, 2017). There is, however, an emerging critical strand of literature. It problematizes, for example, policy challenges related to taxation, the management of local tourism streams, the access to relevant data on sharing activities, regulations to ensure safety for guests and hosts, consumer protection, or rules for fair competition (Ferreri & Sanyal, 2018; Gurran & Phibbs, 2017; Oskam & Boswijk, 2016). Related work is engaging with the impacts of Airbnb on rent levels and housing markets (Arias Sans & Quaglieri-Domínguez, 2016; Cocola-Gant, 2016; Lee, 2016; Schäfer & Braun, 2016; Wachsmuth & Weiser, 2018). Others have noted that short-term rentals are a driver of growing protests and campaigns against urban tourism (Colomb & Novy, 2016). Distributional consequences related to selective participation in Airbnb hosting are also coming into the focus (Schor, 2017). There is growing debate, then, about the economic, social and spatial impacts of the company and its business model.

Here, we aim to consider Airbnb through the lens of inclusive tourism development. Scheyvens and Biddulph (2018) propose the concept to initiate a debate how to spread tourism benefits more widely. Their starting point is the long-standing critique of tourism as an exclusive practice for the middle and upper classes that tends to create profits for large companies while marginalizing poor communities (cf. Scheyvens & Biddulph, 2018, p. 590). In contrast to related concepts such as pro-poor tourism, inclusive tourism is meant to be applied to Global North and Global South settings. Scheyvens and Biddulph (2018, p. 595) propose it as an analytical rather than a marketing concept that aims to 'focus [...] attention on an innovation frontier where new people and new places are incorporated into tourism consumption and production, and use tourism to counter socio-economic exclusions and divisions'. Following them (2018, p. 593), inclusive tourism development is a multi-dimensional concept, which involves, *inter alia*, overcoming barriers to disadvantaged groups to access tourism as producers or consumers, challenging dominant power relations, widening the range of people who contribute to decision-making about tourism development, or providing opportunities for new places to be on the tourism map. Binding these different aspects together, however, is the central concern that the benefits of

tourism are shared more widely. As Scheyvens and Biddulph (2018, p. 592) have it, 'something can only be considered inclusive tourism if (...) marginalized groups share the benefits'.

Scheyvens and Biddulph (2018) are not only proposing an abstract analytical concept, but they are interested in understanding how inclusive tourism development can be promoted. While they discuss examples how this can be achieved, Airbnb, interestingly, does not feature in their analysis. The platform, however, provides a potentially critical case. Airbnb routinely emphasizes how their service ostensibly benefits lower and middle-class communities. As Stokes, Clarence, and Rinne (2014) argue, platforms such as Airbnb provide a tool for wide-spread empowerment and social connectedness and, following Botsman and Rogers (2010), provide novel business practices that promote social and economic benefits. This has been questioned, however, with critics asserting that many activities do not involve true sharing (Belk, 2014) and are an abuse of the sharing rhetoric (Schor, 2014).

Two analytical concepts are central to this debate. Airbnb, on one side, emphasizes that 'home-sharing' hosts can let underused space in their private homes to tourists. In contrast to conventional hotel accommodations, it is claimed to be private residents, rather than hotel companies, that rent out rooms to tourists directly. At the core, the notion of 'home-sharing' is attributed to the *occasional* letting of dwelling space to tourists by a *regular resident* (Arias Sans & Quaglieri-Domínguez, 2016). Initially, 'home-sharing' has been associated with the letting of a shared room that allows tourists to meet their local hosts that is present in the unit. If we take the *occasional* letting by a *regular resident* as the defining criteria, however, it may also include the temporary letting of a room or an entire apartment (e.g. when residents are on vacation) (ibid.). Critics have argued that the Airbnb supply, to a significant degree, resembles ordinary holiday homes. What we may call the 'commercialization thesis' holds that Airbnb listings are permanent holiday homes provided by property owners or landlords, who use Airbnb letting as a more profitable alternative to the ordinary holiday home market or the long-term rental market. At the core, it is attributed to the *permanent* letting of dwelling space that is *exclusively used for tourists and has no regular resident*. Most commonly, it has been associated with the letting of an entire unit. If the defining criteria are *permanent letting* and *exclusive use for tourists*, it may, however, also include rooms (e.g. when a landlord turns a building into a quasi-Airbnb hotel and individually lets the rooms). Rather than an innovative tourism accommodation service based on private space that is occasionally shared with tourists by residents – as the 'home-sharing' thesis suggests – the commercialization thesis sees Airbnb as a new (marketing) channel for holiday homes for profit-driven landlords that let their properties. As Scheyvens and Biddulph (2018, p. 598) argue, one way to promote more inclusive tourism is to promote 'marginalized people as tourism producers' and 'changing the tourism map to involve new people'. With the 'home-sharing' model, Airbnb seems to do just that. The question is, however, to what extent this framing also reflects the actual use of the platform.

We can reasonably question the conceptual move to relate provision practices to inclusive tourism in the simple dichotomy of 'home-sharing' (inclusive) and commercial provision (not inclusive). If we take inclusive development to be essentially about

the participation of marginalized people as tourism producers (see above), this would imply that we equate the providers of 'home-sharing' with marginalized people and providers of commercial provision with wealthy people. In reality, the actors behind both provision models will of course have a variety of socio-economic backgrounds. There may be marginalized people with an extra room to share, but similarly a relatively wealthy upper-class households that occasionally lets extra space on Airbnb. The latter may in fact be more likely to have extra space available. Similarly, with commercial provision, providers may range from a large-scale landlord, at the upper end of the income and wealth distribution, to the lower middle-class homeowner with little further resources beyond their property to let. The point is that the socio-economic background in both cases, 'home-sharing' and commercial provision, will be various, rather than uniform, questioning a dichotomous relationship with inclusive tourism. A related issue are the conditions under which people share their home. It will of course matter a great deal for the question of benefitting socio-economically disadvantaged households whether they have sufficient space available to share, as opposed to a situation where 'home-sharing' essentially leads to scarcity of space and overcrowding. Addressing these issues analytically will require data about the socio-economic background of the providers to more definitely determine *who is included in Airbnb hosting and on what terms* (cf. Scheyvens & Biddulph, 2018, p. 593) and thus ascertain what the specific redistributive effects are. Despite these caveats, we would argue that, *grosso modo*, the occasional sharing of additional space ('home-sharing') requires less socio-economic resources than the acquisition of an additional home to permanently rent out via Airbnb (commercial provision) and we can therefore take the dichotomy of these two provision practices as a first, rough approximation of the link of Airbnb practices and inclusive tourism.

Existing research on Airbnb provision practices in European cities: key relevant findings and open questions

While certainly central to understanding the practice and impacts of Airbnb, provision practices have so far received moderate research attention. Airbnb has been unwilling to share data about its practices with independent analysts. Meanwhile, the company has commissioned impact studies to demonstrate the importance of 'home-sharing', often based on statements about the average Airbnb host (inter alia for San Francisco, Berlin, or Barcelona (Airbnb (n.d.))). A limited body of academic work has conducted more in-depth analyses based on listing data. While some focus on the North-American or Australian context (Crommelin et al., 2018; Wachsmuth & Weiser, 2018), for European cities, more analyses are becoming available, although many of them only peripherally investigate the 'home-sharing' – landlordism conundrum (Arias Sans & Quagliari-Domínguez, 2016; Coyle & Yeung, 2017; Crommelin et al., 2018; Ioannides et al., 2018; Schäfer & Braun, 2016).

These studies find evidence for commercial practices, although the relevance varies considerably between cities and depending on the applied indicator (Arias Sans & Quagliari-Domínguez, 2016; Coyle & Yeung, 2017; Crommelin et al., 2018; Ioannides et al., 2018; Schäfer & Braun, 2016). Adamiak (2018) provides one of the

few comparative studies and finds significant variation in commercial practices. In relatively non-tourist cities, the supply mostly consists of rooms rented by residents in their private homes, while in major tourist destinations, more often second homes and apartments are offered for exclusively touristic purposes. Adamiak does not, however, provide more fine-grained analyses for different cities. Schäfer and Braun (2016), focusing on Berlin, point to the relevance of urban geography. The level of commercial provision varies across neighborhoods and is particularly high in a few, traditional tourism neighborhoods (see also Gutierrez, Garcia-Palomares, Romanillos, & Salas-Olmedo, 2017; Ioannides et al., 2018). Arias Sans and Quaglieri-Domínguez (2016) demonstrate a gap between objective measurement of commercial practices and subjective perception of the hosts. While they find that in Barcelona some 55% of hosts offer more than one unit, only 7% officially declare to run a professional letting business.

Although these studies provide a relevant starting point to further interrogate actual provision practices within the framework of 'home-sharing' and commercial use, they remain limited, in our reading, in two ways. The first, empirical limitation relates to the so far relatively narrow empirical scope. City-based, in-depth case studies have so far been geared primarily towards the main, first-rank European tourist centres with the highest tourist numbers (e.g. Berlin, Paris, London, but see e.g. Mermet (2017) on Reykjavík, Ioannides et al. (2018) on Utrecht or Moreno-Izquierdo, Ramón-Rodríguez, Such-Devesa, and Perles-Ribes (2018) on the Valencia region for exceptions). While a focus on the biggest cases certainly provides relevant insights, questions remain as to how cities with lower tourism numbers are faring in terms of Airbnb supply and provision practices. This is not to argue for a highly localized empiricism. Rather, given that the few available cross-case analyses find considerable differences in the Airbnb supply structure across European cities (Adamiak, 2018), there is a need to broaden the empirical focus and include a wider set of cities into the in-depth, case-based analysis that goes beyond the 'usual suspects' with the highest tourism numbers. As a case in point, in their analysis of the Valencia region, Moreno-Izquierdo et al. (2018), for example, find evidence that the Airbnb supply in smaller locations differs considerably from larger cities. Also, they find that the threats and opportunities for localities stemming from Airbnb greatly differs with local contexts (Moreno-Izquierdo et al., 2018, p. 64).

The second, methodological limitation relates to the common approaches to determine commercial practices. As commercial hosts are not labelled as such in Airbnb listings, different approaches have been developed to identify them. Most typically, three indicators are used: the share of entire units (1), the share of multi-listing hosts (2) and the share of permanently rented entire unit listings (3). While all three indicators have value in specifying provision practices and estimating commercial use, they are also deficient, to some extent, for gaining differentiated and precise insights. Below, we discuss them alongside their limitations.

The first approach, share of entire unit listings, focuses on the indicator listing type (cf. Ferreri & Sanyal, 2018). The underlying rationale is that for commercial use, hosts do not rent out space in the apartment they live in – which could be done with shared room or room lettings, but have a unit that is rented to tourists for exclusive use. 'Home-sharing' is then represented by shared rooms or rooms, while commercial use by entire units. While the indicator seems straightforward, limitations exist. First, although

'home-sharing' has initially been associated most commonly with shared room rentals, if, as discussed, we take it to be essentially about the *occasional* letting of residential space by a *regular resident* to tourists, it may also include the occasional letting of an entire unit. The focus on entire units may thus disguise 'home-sharing' practices. Second, conversely, a landlord may not just rent out entire units – although this may prove to be practical in terms of management – but also run a quasi-Airbnb hotel with separate room rentals (see Wachsmuth & Weiser, 2018). Along the same line, even shared rooms could potentially represent commercial use, for example, as shared dormitories in hotels. Room and shared room listings may thus disguise commercial practices.

The second approach, share of multi-listing hosts, focuses on host size (e.g. Schäfer & Braun, 2016; Wegmann & Jiao, 2017). The rationale is that for 'home-sharing', people have their own home, and perhaps, in case of more affluent hosts, two homes, that they can potentially share. This differs for commercial hosts, who are not confined to the number of homes they live in. Again, this is a straightforward measurement, but it has limitations. Although multiple listings by one host may quite clearly point to commercial practices, the reverse is not necessarily true. Those that have just a single listing do not necessarily constitute home-sharers, but may also be small-scale commercial hosts that merely operate a single holiday home. While most studies consider them as 'home-sharers', single-listing hosts may thus disguise commercial practices.

A third approach, partly developed in response to the weaknesses of the two other approaches, centres on the time a listing is available and rented on Airbnb per year (cf. Wachsmuth & Weiser, 2018). While 'home-sharing' implies occasional touristic use, commercial provision implies permanent use for tourists. This can be assessed most unequivocally when only entire unit listings are considered. The strength of the indicator is that it provides the probably most reliable measure of commercial use, as a permanent letting of an entire unit on Airbnb per definition excludes the use for a regular resident. This is commonly operationalized through a threshold of rented days per year beyond which it is unlikely that a regular resident occupies the apartment. Cox and Slee (2016), for instance, use 60 days, which rules out many cases of occasional short-term letting practices, for example, a resident renting their apartment while being on a one-month holiday. To exclude other practices that can be considered as occasional letting by primary residents, Wachsmuth and Weiser (2018) add a second threshold focusing on the availability of the apartment. Doing so, apartments that are only available for a limited time but are rented out with high success will not be counted as commercial units. For instance, a host that makes its apartment available every weekend of the year and is relatively successful in renting the unit will still be counted as occasional letting, although the occupancy rate will be higher than 60 days. One limitation of the rental duration indicator is that it counts unsuccessful, commercial hosts automatically as 'home-sharing' hosts, i.e. hosts that make their apartment available most of the time of the year (e.g. beyond 120 days), but are not successful in achieving a decent occupancy (stay below the threshold of 60 days of occupancy per year).

All three indicators offer useful approximations of provision practices and enable distinctions of listings between 'home-sharing' and commercial practices. Our point is that the indicators are inaccurate, to varying degree, in capturing what they intend to capture. While the choice of the indicators will to certain extent be driven by research

pragmatism (using a rough proxy) based on the data available, we argue that additional, more differentiated indicators are needed for gaining more accurate insights.

Research approach, analytical framework, methods and data sources

The present study aims to address these two lacunas and deepen existing understanding in empirical and methodological terms. First, we go beyond the focus on first-rank tourism cities and examine Vienna, a second-rank European tourism city with a rapidly growing Airbnb supply. A few studies have analysed Airbnb in Vienna, yet without focusing on provision practices. Gunter and Önder (2018) analyse the determinants of Airbnb demand and different listings types. Hrobath et al. (2017) examine factors influencing Airbnb listing prices in the city. Second, we apply an extended analytical framework for determining commercial practices that addresses some of the limitations of commonly applied approaches. Put simply, we do so through considering the indicators not only separately, but in combination with each other (see Figure 1a and b). First, we combine listing type with rental duration to distinguish shared room/room/entire unit rentals by occasional/permanent letting time. This allows to distinguish occasional lettings from permanent ones in order to clarify how many listings, distinguished by listing type, are just occasional lettings (signalling 'home-sharing') and how many are permanently rented (signalling commercial use). Second, combining host size with rental duration allows to distinguish single and multi-listing hosts by occasional and permanent letting and thus identify how many small-scale landlords are just occasionally letting and how many are running a permanent Airbnb listing. The combined analysis has a twofold advantage: first, it provides a means to determine how accurate the assessment of commercial practices based on separate indicators is. Second, it allows for greater differentiation of provision types. To our knowledge, we are the first to systematically conduct such an analysis. Adamiak

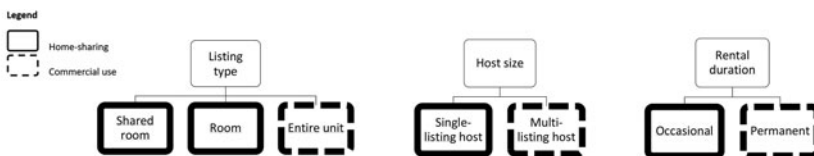


Figure 1b: Indicators of provision practices applied in the study (combined indicators)

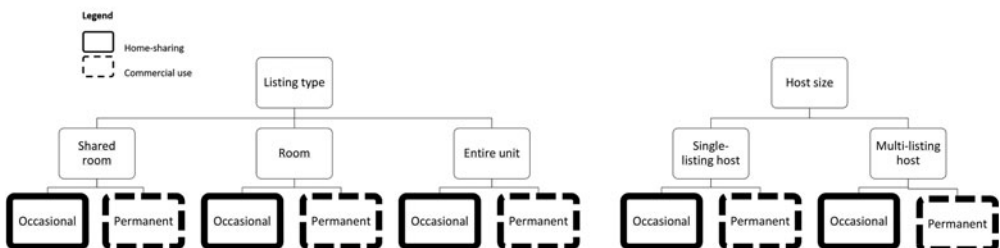


Figure 1. (a) Indicators of provision practices applied in the study (commonly used indicators). (b) Indicators of provision practices applied in the study (combined indicators).

Source: Authors

(2018), in his European cross-city mapping, compares cities according to the three common indicators of commercial use (share of entire units, multi-listing, permanent listings) in a twofold dichotomy (below or above European median). While he integrates the three indicators into one map, he still considers them separately. Ioannides et al. (2018) use a commercialization index that combines entire home listings, multi-listing hosts and rental availability. While they combine the different approaches, their analysis focuses on the spatial spread of Airbnb and does not systematically explore the different provision models and the implications of this methodological choice in greater depth.

We examine the common indicators *share of entire units among all listings*, *share of multi-listing hosts among all hosts* and *share of permanent Airbnb units among all entire unit listings*. We then combine *listing type and rental duration* as well as *host size and rental duration*. The operationalization and measurement is discussed prior to the results of each indicator. In order to account for geographical differences within the city, we distinguished twenty-three city districts of Vienna wherever possible (see Figure 2 below). While large geographical units conceal small-scale differentiation, small units complicate interpretation. We therefore chose a medium-level of geographical abstraction at the district level.

We draw on a novel dataset we put together through web-scraping [Airbnb.com](https://www.airbnb.com) through a programmed scraping tool. We collected consumer-facing information from the website on all users that had listed a property in the city of Vienna in August 2017. In the analysis, we refer to providers as hosts and to properties as listings. The

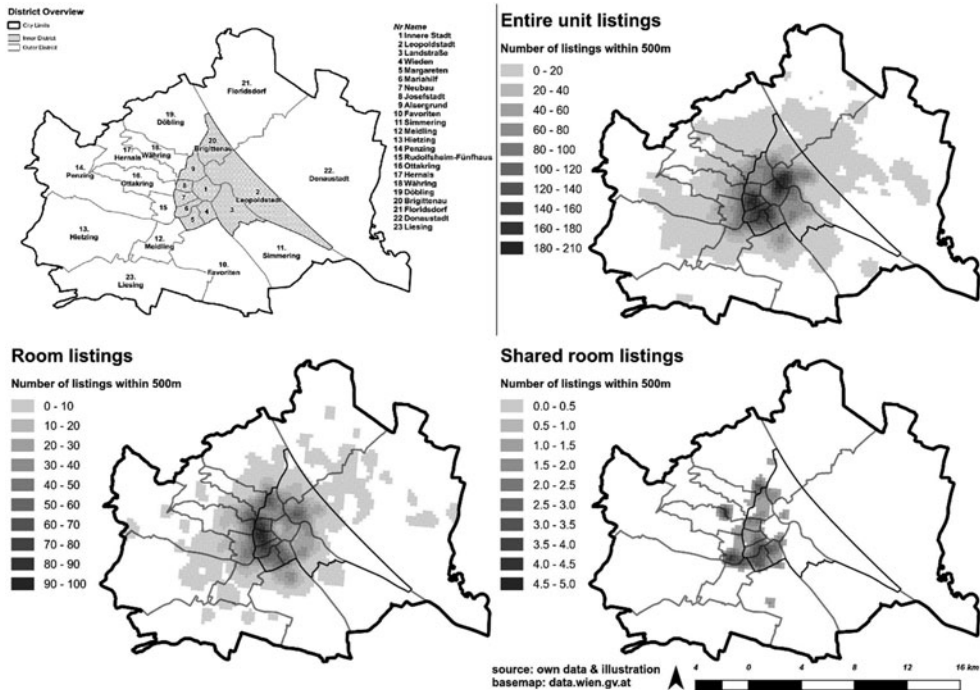


Figure 2. Vienna district overview and spatial location of Airbnb listings by type. Source: Authors, basemap from data.wien.gv.at.

collected data included attributes for each listing related to host name, listing name, offering price, textual description of the host and the listing (if available), listing reviews, guest capacity, number of rooms, number of beds, booking availability, cleaning fees, service fees, security deposits and geographical location. The dataset included 8,594 listings. 8% of the obtained listings were inactive. They neither had a review in the last year, nor were they available for booking in the coming year and were thus eliminated from the dataset. The dataset included all listings within the spatially confined area of the city of Vienna, regardless of their current booking status (booked, available, blocked). The data was cross-checked with data from the statistics department of the city.

Our dataset remains limited in two important ways. First, the data does not allow to analyse changes over time. While we know the development of the overall number of Airbnb listings between 2014 and 2017, a differentiated breakdown of listings and provision practices is only available for 2017 at the point of writing. Second, while we can determine the number, type and location of listing by host, further background information about the hosts and who offers these units is not available (e.g. company or private households, type of company, socio-economic status of the household). Through a more detailed dataset, these potentially insightful questions could be pursued and extend the conducted analysis.

Vienna: a second-rank European tourist city with a rapidly growing Airbnb supply

With a population of around 1.8 million, Vienna, the capital of Austria, is a major tourism centre in Europe. Although comparable numbers are hard to obtain, a recent industry report finds that in 2016 alone, the city had 6.42 million overnight visitors (MasterCard, 2017). Tourist numbers have been on a rapid rise recently and have increased by more than 350 percent since the mid-1970s (see Schmee & Biehl, 2017). Nonetheless, Vienna clearly lags behind the leading European tourist cities. If we take the number of international bednights as an indicator, London and Paris individually had more than 29 million bednights in 2017, while Vienna had some 13.4 million. Also in terms of total bednights, Vienna does not rank among the top destinations, with London, Paris and Berlin individually having more than twice as many bednights, making Vienna an important, yet not top destination in European comparison (ECM, 2018).

National and international tourism has become a major driving force behind the recent reshaping of Vienna. While this is driven, *inter alia*, by Vienna's traditional role as a major place for arts and culture, its location in the centre of Europe, as well as its status as an international conference hub, tourism is also actively promoted by the city government (De Frantz, 2018). Development projects are realized particularly in central urban areas (such as the Karlsplatz) to appeal to an international tourist class, alongside discursive rebranding strategies to position the city as a major visitor destination (Suitner, 2015). Tourism is also a focus in the current municipal development plan, which sets out to make the city more attractive for residents and visitors alike, through, for example, the new university campus, the new main train station and infrastructure projects to improve international accessibility (Stadt Wien, 2014, p. 77).

The urban tourism strategy sets the goal to increase the number of overnight stays of 2013 by 40% until 2020 (Wiener Tourismusverband, 2018 p. 15). Geographically, tourism activities and accommodations are distributed unevenly over the city, with particular concentrations in inner districts.

Vienna has an abundant supply of tourism accommodations, particularly of hotels and hostels, with a limited role for holiday apartments. In 2013, only 158 apartment providers were registered with the city, who, together, provided 196 accommodations. By comparison, hotels and hostels offer some 60,000 beds (Stadt Wien, 2018). In this context, Airbnb has grown rapidly. While in 2014, there were some 1,300 listings available (Stadt Wien, 2015), in 2017, this stood at 8,600, amounting to an increase by 560% in 4 years alone. The company holds a significant position in the city's tourism sector and to date acquires an estimated 10% of the total revenues from overnight stays (own calculation¹). Although Airbnb routinely argues that their service operates outside the traditional tourism neighborhoods (cf. Wieditz, 2017), in Vienna, Airbnb listings are clustered in the inner city districts (Figure 2), reflecting, to considerable degree, the geography of tourism accommodations more broadly. Spatial patterns of Airbnb differ by accommodation type, with entire units located most centrally, and room listings showing concentrations West of the centre.

Results

First, we analysed the indicator listing type. As this information is included in every listing description, no further data manipulation was required. For the spatial location, the listings were assigned to the city districts based on the spatial position of the listing. While precise addresses are not available, the Airbnb website specifies locations within a radius of 500 m. Thus, locations include a certain margin of error.

Entire unit listings play a significant role and clearly dominate the Airbnb supply in Vienna (see Table 1). Overall, 69% of all listings belong to this category, trumping rooms (30%) and shared rooms (1%). In terms of geography, the share of entire unit listings varies between 46% in the peripheral and mostly residential 23rd district, Liesing, and 82% in the city centre (1st district, Innere Stadt). High shares of entire units can be found in inner and outer districts, but in absolute numbers, such listings are clustered in inner city districts, where tourist attractions and historical sites as well as the most attractive housing stock is located. If entire units are taken as an indicator of commercial practices, this suggest that they play an important part, yet in geographically highly uneven ways.

Second, we analyzed host size by listing number. As multiple listing hosts are not restricted by district borders, the data was aggregated at the city level. The data was prepared by summing up listings by host ID. Four listings had no ID and were eliminated from the data set. The data was grouped into host size categories. We then refined the analysis and summed up listings by host size categories in order to reveal the distribution of listings by host type.

Single-listing hosts clearly dominate the Airbnb supply. They make up more than 83% (4,406) of all hosts. Hosts with 2–4 listings make up 14% (725), while those with 5 or more listings represent some 3% (150) of all hosts. Commercial practices, if represented by multi-listing hosts, play a certain, although limited, role. The picture shifts

Table 1. Airbnb listings by listing type.^a

District number	District name	Number of listings	Share of shared rooms	Share of rooms	Share of entire units	Number of permanent entire unit listings	Share of permanent entire unit listings among all entire unit listings
1	Innere Stadt	538	0%	18%	82%	220	50%
2	Leopoldsdstadt	950	0%	25%	75%	279	39%
3	Landstraße	621	0%	25%	75%	188	40%
4	Wieden	367	1%	29%	69%	118	46%
5	Margareten	440	2%	28%	70%	105	34%
6	Mariahilf	404	1%	31%	68%	103	37%
7	Neubau	512	1%	33%	66%	138	41%
8	Josefsstadt	262	1%	39%	60%	69	44%
9	Alsergrund	464	1%	37%	62%	96	33%
10	Favoriten	390	1%	34%	65%	73	29%
11	Simmering	68	1%	18%	81%	16	29%
12	Meidling	226	2%	26%	73%	64	39%
13	Hietzing	104	1%	26%	73%	31	41%
14	Penzing	188	1%	30%	69%	52	40%
15	Rudolfsheim	475	2%	33%	65%	120	39%
16	Ottakring	326	1%	37%	62%	67	33%
17	Hernals	228	1%	45%	54%	35	28%
18	Währing	227	1%	37%	62%	49	35%
19	Döbling	215	4%	29%	67%	46	32%
20	Brigittenau	248	2%	27%	71%	61	34%
21	Floridsdorf	84	2%	25%	73%	20	33%
22	Donaustadt	199	1%	30%	69%	64	46%
23	Liesing	26	0%	54%	46%	1	8%
City-wide		7,562	1%	30%	69%	2,018	38%

Source: Own calculation.

^aTwo active listings could not be assigned to a city district and the number of listings is therefore slightly lower than the number presented in [Figure 5](#).

somewhat towards multi-listing hosts if we consider listings by host size. Some 6 out of 10 (58%) listings are from single-listing hosts. The remaining 4 of 10 are from multi-listing hosts, with one-fifth of all hosts administering more than 5 listings (see outer ring in [Figure 3](#)). Although multi-listing hosts only make up some 17% of all hosts, they provide 42% of all listings.

Third, we measured the rental duration of entire unit rentals, distinguishing between listings that are rented out and available for a booking occasionally ('home-sharing') and listings that are permanently rented and available (commercial provision). We draw on Wachsmuth and Weiser (2018) and Cox (2017) to define a permanent unit as one that is rented out more than 60 days per year and available for a booking more than 120 days per year. Above this threshold it seems unlikely that the unit has a regular resident. Some analysts use different thresholds to define a permanent rental. Crommelin et al. (2018) use 90 days, while Engels et al. (2018) uses 180 days. As shown below, however, the listings data is relatively insensitive to changes in this threshold.

Actual booking information is not available from listing data. We follow Cox (2017) and City and County of Los Angeles (2015) in estimating the occupancy rate of a unit based on user reviews. Brian Chesky, CEO of Airbnb, is quoted that 72% of Airbnb guests leave a review (Quora, 2012). San Francisco found in actual booking data that

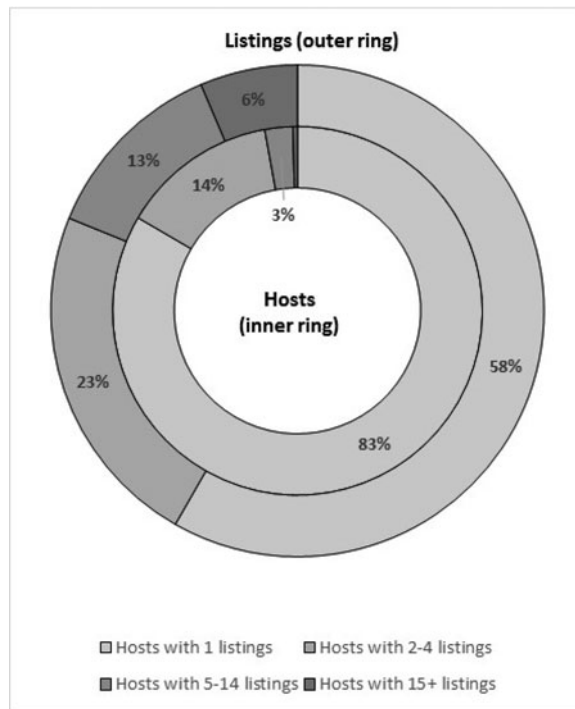


Figure 3. Share of listings and of hosts by host size.

Source: Authors calculation and illustration.

30.5% of the guests do so (City & County of Los Angeles, 2015). Cox (2017) uses a middle-ground of 50%, which we also follow. Based on an assumed average stay per booking and data about the number of bookings per year per listing the occupancy rate is estimated. We capped it at 70% of all days per year, as a higher occupancy rate seems unrealistic (cf. Cox, 2017). The average length per stay is estimated based on Airbnb's (2017) publications about other cities. They range from 3.9 days per stay (Amsterdam) to 6.4 days (New York). We used a more conservative estimate of 4 days based on the average length of stay of tourists in Vienna (Stadt Wien, 2018). Listing availability was calculated based on the number of days a listing was available in the booking calendar of the following year.

Figure 4 shows two things. First, it reveals a highly polarized distribution. A substantial number of listings are rented out a few days per year only. Meanwhile, a substantial number are rented out most of the year. Together, they represent the majority of listings. The booking availability is equally polarized. If low occupancy rate and booking availability suggests 'home-sharing' practices, a considerable part of the listings fall in this category. Meanwhile, if the opposite represents commercial provision, such practices play a significant role, too. Overall, it is in fact the majority of entire unit rentals that fulfil our criteria and have an occupancy rate of 60 days or more (57.8%) and an availability of 120 days or more (68.5%). A second point that Figure 4 shows is that such a conclusion is relatively robust and insensitive to changes in the applied threshold, given the highly polarized distribution. Even if we used a higher/lower threshold than our 60/120 criterion, such as 100/180, the overall results would

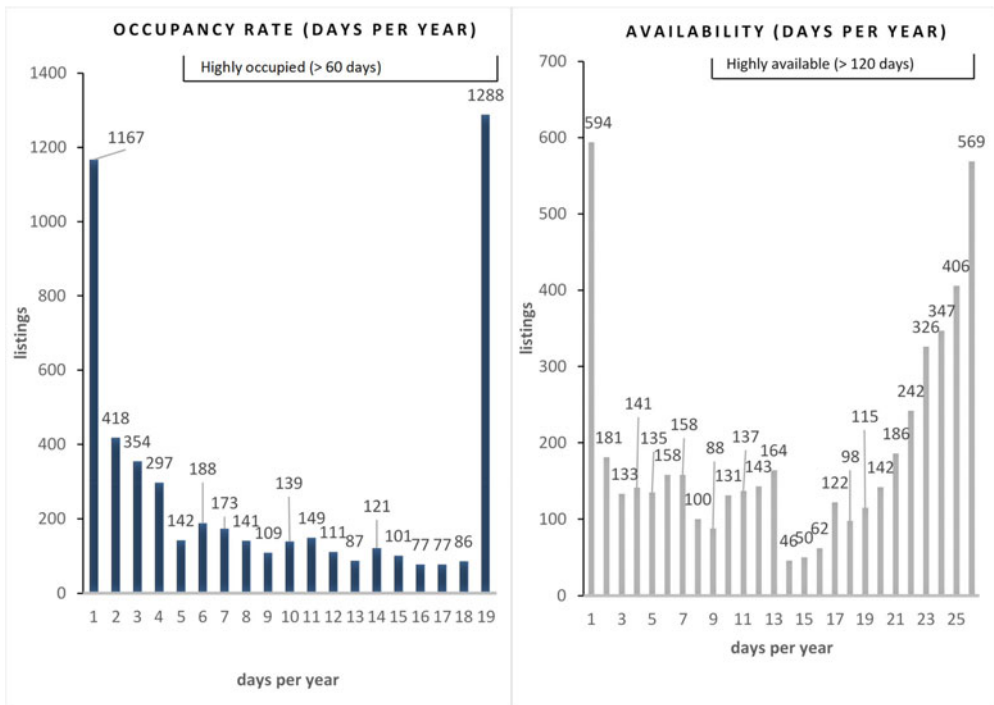


Figure 4. Occupancy rate of entire unit listings and listing availability of entire unit listings.
Source: Authors' calculation and illustration.

change only marginally. The share of highly occupied units would still be at 47.5% and the share of highly available units at 51.9%. Overall, 38.6% of all entire unit listings in Vienna fulfil both our commercial practice criteria of occupancy rate and booking availability. In absolute numbers, this amounts to 2,018 out of 5,226 entire unit listings.

Table 1 provides more detailed insights into the geography of commercial practices. The relevance of permanently rented listings differs considerably among the districts, with a clear clustering in the inner districts (1–9). In absolute numbers, the most affected districts are the 2nd district (Leopoldstadt) with 279 units and the 1st district (Innere Stadt) with 220 units. The peripheral districts are much less affected, with the 11th district (Simmering) of the city having just 16 units and the 21st district (Floridsdorf) with 20 units. In relative terms, the share of permanent units among all entire unit listings varies from 8% in the 23rd district (Liesing) to 50% in the 1st district (Innere Stadt). As for the share of entire unit listings, the city centre is clearly the place of the city where commercial practices are concentrated.

We advanced this analysis through considering our indicators jointly. First, we analysed listing type and rental duration. The results are shown in Figure 5 (bottom line). It reveals two things: First, there is a considerable number of entire unit listings (42.4% of all listings) that are just rented out occasionally. When we simply considered the share of entire units among all listings (69%), we thus strongly overestimated commercial practices.² In reality, 26.7% of all listings are entire unit listings *and* are rented out permanently. Second, the analysis reveals a certain number of permanently rented

listings that are not entire unit listings. Some 6.5% of all listings are permanently rented rooms and 0.3% are permanently rented shared rooms. This suggests that the focus on entire unit listings not only overestimated but also underestimated commercial practices. Permanent room rentals may also represent rooms that are sublet via Airbnb without commercial purposes for the main resident (e.g. shared student apartments) and, thus, cannot unequivocally be counted as commercial listing. This does, however, also not conform to our definition of home-sharing.

Second, we combined the indicator host size with rental duration. Two things are noteworthy. First, there is a sizable number of listings that are rented out by multi-listing hosts, but are rented out occasionally only. While some 41.7% of the listings are from multi-listing hosts, only 17.5% are from multi-listing hosts *and* are permanently rented. Occasionally rented listings by multi-listing hosts may represent commercial Airbnb homes with hosts that are very unsuccessful in achieving a high occupancy rate. Alternatively, they may constitute listings that are rented through more platforms than Airbnb and, thus, only appear to have a low rental duration. They may, however, also be from hosts that list more than one room in their own apartment (or a room and the entire unit) for occasional letting and thus constitute actual ‘home-sharers’. Although our dataset does not allow to verify the relevance of these possible causes, it suggests that the indicator multi-listing hosts – as the indicator entire units – overestimates commercial practices. Second, there is a significant number of single-listing hosts that run a permanent Airbnb listing (16.0% of all listings). By solely focusing on multi-listing hosts to determine commercial practices, these hosts were miscounted as ‘home-sharers’.

One may question the assumption that permanent listings by single listing hosts are commercially run holiday homes, as they may also represent spare rooms that people permanently rent out in their homes. We can verify this by combining all

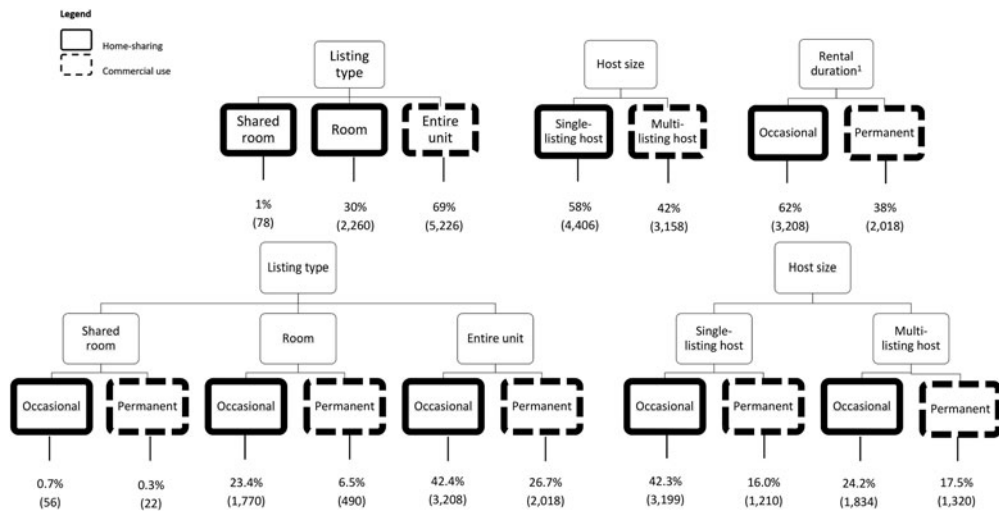


Figure 5. The structure of Vienna’s Airbnb supply.*

Source: Authors.

*Absolute numbers refer to listings, relative numbers show the share of all listings, unless stated differently.

¹ Includes only entire unit listings. Relative numbers for this indicator thus show the share of all entire unit listings that are temporarily or permanently rented.

three indicators (host size, rental duration and listing type). This shows that permanent room rentals by single-listing hosts exist only to a limited degree. Of the 1,210 permanent listings by single-listing hosts, 282 are rooms or shared rooms, while 928 are entire units. There are, thus, a sizable number of permanent entire unit listings that are run by single listing, rather than multi-listing hosts. This becomes even clearer when we consider permanent entire unit listings by host size. While 24% of permanent entire unit listings are from hosts with 5 or more listings, and 29% from hosts with 2–4 listings, a striking 46% – almost half of all commercial units – are from small-scale hosts with a single listing only. This suggests that commercial practices are, to a significant degree, driven by small landlords. Single-listing hosts, thus, in the Vienna case, are only to a certain degree home-sharers. While 83% of all hosts have a single listing only, a sizable number of them seems to be engaged not in ‘home-sharing’, but in the permanent rental of a single Airbnb unit.

Taken together, our extended analytical framework is revealing in two respects. Methodologically, it shows that the indicators to determine commercial practices should be considered jointly rather than separately for more accurate insights. Combining the indicators listing type with rental duration, as well as host size with rental duration, shows the variety in provision practices that is overlooked by considering the indicators separately. Second, theoretically, it shows that there is a need to develop a more differentiated understanding of who runs commercial holiday homes. The dominant tenor in the literature seems to be that single-listing hosts are home-sharers (see also Ioannides et al., 2018 on Utrecht in this journal). Our analysis challenges this. In fact, the data shows that almost half of all permanently rented entire unit listings in Vienna are from single-listing hosts. Commercial provision of Airbnb homes may thus not only be a strategy for large-scale landlords (Aalbers, 2019), but also be pursued by small-scale entrepreneurs or amateur landlords. Taken together, the extended analytical framework does not change our overall finding that ‘home-sharing’ is an insufficient notion to fully explain Airbnb provision practices in Vienna. It adds, however, important nuance to our understanding of the scale and type of commercial provision on the platform.

Discussion and conclusion

Our analysis reveals a complex picture of Vienna’s Airbnb supply. The degree of ‘home-sharing’ and commercial provision differs considerably by indicator as well as geographically by city districts. The analysis clearly shows, however, that ‘home-sharing’ is only part of how Airbnb in Vienna operates in practice. While this indeed plays a significant role, the provision of holiday accommodations through the platform is ‘commercialized’, to use Wieditz (2017) terminology, and a considerable share of the properties are used for the exclusive letting to tourists. If the occasional letting of idle space in someone’s home is the prevalent narrative of Airbnb, as the ‘sharing economy’ literature and the publicity campaigns of the San Francisco based company routinely suggest, our evidence for Vienna calls for a more nuanced perspective that considers commercial practices alongside ‘home-sharing’ to fully understand the city’s

Airbnb supply. A telling number in this respect is the share of permanently rented entire units in all listings, which stands at more than a quarter (26.7%) of all listings in Vienna. The final verdict of our analysis of provision practices in Vienna, then, is that 'home-sharing' is relevant, but commercial provision is a significant element in the way the platform operates in the city.

What does this mean for inclusive tourism development? How does Airbnb in Vienna contribute to inclusive tourism in light of our results of the platform's listing supply? Following the arguments put forward by Airbnb, 'home-sharing' would enable ordinary households to participate in the provision of tourism services and thus benefit from it more directly, as opposed to conventional tourism accommodations offered by companies and wealthy property owners. Our analysis of Vienna shows that indeed, there is a role of Airbnb in promoting private 'home-sharing' and thus, potentially, more inclusive tourism practices. Nonetheless, sharing of underused space by regular residents does not tell the whole story. If 'home-sharing' is thus taken as an indication for more inclusive tourism practices, Airbnb enables it, but not to the extent that is often claimed. In terms of promoting more inclusive tourism, this potentially raises the question for policy-makers how to reduce the relevance of commercial provision, while continuing to enable 'sharing'. Vienna has released a strategy on a fair 'sharing economy' as early as 2015, although without legal obligations. More recently, further guidance is provided by a joint declaration on the principles of the sharing economy endorsed by 31 cities across the globe, including amongst others New York City, Amsterdam, Barcelona, Milano and Vienna (Stadt Wien, 2019).

One may reasonably question the key assumption underlying our analysis that 'home-sharing' promotes more inclusive tourism development while commercial provision does not. Indeed, provision practices, in the rather simple dichotomy applied here, can only serve as a rough proxy. As we have argued, it will matter a great deal by *whom* and *under which terms* the respective practices are pursued. Nonetheless, the claims by the company and the sharing economy literature suggest that the platform provides a more inclusive tourism model specifically due to the ostensibly novel accommodation provision service of home-sharing. Indeed, one may reasonably argue that private 'home-sharing' will provide greater opportunities for ordinary households to participate in the 'production of the tourism product' and they may benefit more directly from tourism compared to conventional hotel accommodations, run by large-scale businesses, or compared to ordinary holiday homes, run by landlords or property owners who can afford to purchase extra property to let. The point is, however, that it is far from clear that Airbnb listings are reflecting 'home-sharing' in practice. While the sharing rhetoric has been successfully mobilized by platform companies (Schor, 2014), it is an empirical question how Airbnb is actually used. It is in that vein that we would argue that examining provision practices of Airbnb provide a useful, and necessary, first step in determining the extent to which the platform may provide a basis for more inclusive tourism development.

Having said that, it is necessary to go further than the present analysis for better understanding the potential role Airbnb can play in this regard. Going back to the question of who is included in the 'production of the tourism product' (Scheyvens & Biddulph, 2018), future research should complement a listing based analysis through further data sources to examine the background of those who participate in hosting on

the platform. What is their class, racial and gender background and under which conditions do they 'share' or permanently rent space? Complementing this with data on Airbnb revenues can provide valuable insights how the benefits of the platform are distributed. A related research route are the effects of the platform on the housing market. It is undoubtedly clear that the permanent letting of regular residential units for touristic purposes will affect the local housing market. Evidence suggests that it drives up rents and promotes residential displacement (Cocola-Gant, 2016; Wachsmuth & Weiser, 2018). Complementing this with explorations about who is affected by relevant changes on the housing market, and how, will provide a relevant step towards more definitely ascertain the impacts of Airbnb and how they are distributed socially. A related concern with Airbnb in many cities concerns the spatial location of listings and whether the platform fuels the further concentration of tourism activities in already touristic neighborhoods, burdening local residents and communities (Gutierrez et al., 2017). In contrast to cities like Barcelona or Venice, in Vienna, the concentration of tourism has so far remained more moderate, although there has been growing public awareness of potential over-tourism in the centre of the city recently (Kettner, 2018). Airbnb activities are unevenly concentrated, too, and commercial provision is located particularly in traditional tourism neighborhoods, which has fuelled public debates. In response, the city has recently implemented new regulations to make the permanent letting of properties in the inner city more difficult. It is too early to determine at this point, however, how effective these regulations are.

In light of the global prevalence of tourism activities in 21st century societies, there is a growing need to consider ways how tourism can become more inclusive. The challenge, thereby, is not only to provide conceptual frameworks to envisage forms of inclusive tourism, but to examine new tourism developments with regard to their potential to promote more widespread benefits. This paper has taken up the invitation by Scheyvens and Biddulph (2018, p. 595) to 'focus (...) attention on an innovation frontier where new people and new places are incorporated into tourism consumption' by examining the rapidly developing phenomenon of Airbnb. The specific contribution of this article, then, has been to link Airbnb to the debate on inclusive tourism, take provision practices as an empirical entry point into this debate and widen the evidence base of studies on Airbnb provision practices in empirical and methodological ways. Airbnb and other, related online platforms such as HomeAway, 9Flats or Housetrip make up an increasingly relevant part of contemporary tourism activities. There is thus an urgent need to consider the platforms vis-à-vis debates about inclusive and socially sustainable tourism. This article aims to make a first step into this direction.

Notes

1. For the turnover calculation, we estimated for each active listing an average occupancy rate per year (based on review rates) and multiplied it with an average unit price (corrected for cleaning and service fees). For the estimation of the occupancy rate see Section "Results".
2. It is possible that occasional entire unit listings are rented through other platforms than Airbnb and are thus in fact, still, commercially used. We cannot account for this with our dataset, however.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This research has been supported by the Hochschuljubiläumsstiftung der Stadt Wien.

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