Sharing hospitality: The relationship between Airbnb, the accommodation industry and new touristic flows

Assessing the relationship between Airbnb, the professional accommodation industry and the activation of new tourist flows
- The case of Bologna metropolitan area (Italy) -

In the moment in which this paper is submitted to ERSA, an update of the analysis is undergoing using a new fully revised data-set

Abstract

The aim of this paper is to assess the relationship between tourist accommodations managed through sharing-economy portals and the tourist facilities professionally managed (typically hotels) in terms of direct and indirect competition. Moreover, the analysis of the turnover associated with different kinds of facilities bookable on Airbnb, the most widely used sharing-economy portal for tourism, allow to assess the ratio of "core sharing" (the sharing-economy in its proper meaning) in Airbnb business and to estimate new tourist flows brought about by the portal. The analysis has been carried out for the metropolitan area of Bologna in Italy.

This work shows that only 20% (8% in the "during CoVid-19 times") of the turnover recorded by Airbnb in Bologna metro area can be associated to "pure" sharing-economy, meanwhile the remaining 80% (in the "during Covid-19 times", this percentage has reached the record of 92%) have various levels of professional management that, in many cases (through not all), undermine the peer-to-peer nature of the relationship established between the parties involved (peer-to-peer is a must of proper sharing-economy). Of this 80% of turnover, while 45% (54% in the "during CoVid-19 times") is associated with facilities that can be considered in direct competition with hotels, 35% (38% in the "during CoVid-19 times") is made by tourist accommodations that, to a various degree, play indirect competition with hotels, thus activating new tourist flows towards Bologna metro area.

1. The sharing-economy

The sharing-economy is a model of organization for the production and exchange of goods and services that is based on the *access to the good/service* rather than upon property itself. As an example, in the case of car industry, the focus of attention is not on the ownership of a car but on the possibility of using it when it is needed.

From this first feature comes another one, the *peer-to-peer collaboration*. In essence, it means that individuals, in an *equal relationship*, exchange goods and services so they can be used by those who need them when they are not used by the owner.

People linked by emotional ties, such as friends and family members, have always exchanged goods and services with limited, or absent, monetary counterpart due to the spirit of liberality in force in small groups that, as such, are able to guarantee reciprocity of behaviour. The development of *ICT portals* has allowed the extension of this type of transactions (albeit with some noteworthy distinctions that, however, go beyond the aim of this work) outside these restricted groups mainly thanks to the systems of feedbacks that allow portals to keep track of the behaviour of the parties involved in transactions. These systems are a powerful deterrent to un-wanted free-riding behaviours. Furthermore, platforms strictly monitor compliance with the rules established (mostly by themselves) for transactions. From all this, the parties involved are granted some level of guarantee that the service will be provided according to expectations.

This is the genesis of the *"sharing phenomenon" in its most proper meaning* but it should be noted that, while these features are reflected in many cases in day-by-day portals operations, there are other situations in which, behind the facade of the sharing-economy, goals, and methods typical of the traditional economy are applied. *Investigating when one case or the other occurs and what proportion exists between the "name-and-factual-sharing" and the "only-in-name sharing", is part of the target of this paper.*

The elaborations reported in this paper have been carried out on the basis of dataset provided by AirDNA, a business specialized in the retrieval (through data-scraping algorithms) and marketing of data related to Airbnb platform[1].

2. Airbnb in the Metropolitan area of Bologna: it's overall size and the relationship with the "traditional" accommodation industry

The first target of this paper is to assess the overall size of Airbnb in the Metropolitan area of Bologna. In this paragraph, unless otherwise specified, data are related to the bookable facilities, i.e. those facilities that have been bookable for at least one night during the year specified.

Figure 1. Data about facilities on the Airbnb portal located in the Metropolitan area of Bologna. These are the facility booked for at least one night during the year specified.

	Booked facilities	Var%	Averege booked nights per year	Average rate per night	Number of facility nights booked	Total turover per year	Average turnover per booked facility	Number of rooms booked (esteem)	Number of room-nights booked (esteem)
2015	2.234		42	€ 63,96	94.912	€ 6.070.304	€ 2.717	2.887	119.136
2016	4.339	94,2%	61	€ 69,93	264.527	€ 18.498.384	€ 4.263	5.545	333.414
2017	5.611	29,3%	76	€ 73,20	427.295	€ 31.279.145	€ 5.575	7.278	549.160
2018	6.484	15,6%	87	€ 74,99	561.283	€ 42.091.540	€ 6.492	8.457	729.543
2019	7.420	14,4%	100	€ 75,61	739.625	€ 55.922.899	€ 7.537	9.757	955.838
2020	4.996	-32,7%	59	€ 78,36	295.599	€ 23.163.183	€ 4.636	6.396	376.610

Source: Economic Study Centre of Unioncamere Emilia-Romagna on data provided by AirDNA.

The number of booked facilities has more than tripled during the examined range of time (2015-2019) and this, combined with the strong increase in the number of average

[1] For more information about AirDNA, please see paragraph 15.

booked nights for each facility as well as increase in the average rate quoted, have made the total turnover of Airbnb facilities in Bologna to grow 6 fold, from 6 million euros to almost 56 million euros. More in specific, the growth of average booked nights have supported the (almost) 3 fold increase of the average annual turnover for each rentable facility.

Of course, the first year of CoVid-19, 2020, deserves to be considered on its side. Since the behaviour of tourists have changed dramatically, even during the almost CoVid-free summer, urban destinations have been out-marketed by less dense destinations halving the turnover generated in the Bologna metro area. The same can be said for the average turnover per facility booked and the number of booked facilities.

Since the micro-data provided by AirDNA were clustered by (the class of) number of rooms for each accommodation facility, assessing the total number of rooms involved in Airbnb has been possible. This number grew from 2.878 to 9.757 in the given period of time, underlying the spread of the phenomenon in the metro area. A direct comparison of this figure to the number of hotel rooms (13.146) officially surveyed by Istat (the Italian Institute for Statistics) for Bologna metro area would be misleading since the booking availability of hotel rooms and Airbnb facility during the year are very different (while hotel rooms in cities are generally always available, facilities bookable through Airbnb are available for rent only when they are not needed by usual inhabitants).

To cope with this difference, the estimated overall number of booked room-nights[2] for Airbnb facilities has been compared to the estimated number of booked hotel room-nights[3]. As a result, in 2016 there was *one room-night booked via Airbnb every 5.5 nights booked at hotels* in Bologna metropolitan area. The result of the same calculation made for the year 2017 was *one Airbnb room-night every 3.8 room-nights booked at hotels*. This figure has decreased year-by-year reaching 2.2 in 2019 and 2.0 in the pandemic year (2020)[4] meaning that the weight of the "sharing phenomenon" have continued to increase even during the pandemic times.

These figures show that the extent of *Airbnb is already comparable with the "traditional" (and professional) accommodation industry* (i.e. hotel-like facilities), even if the different availability of rooms for booking during the year is taken into account.

The accommodation facilities bookable on Airbnb platform, besides being distinguished by their number of rooms, also differ in other aspects. In particular, it is possible to distinguish between *entire place or homes* (homes rentable in their entirety), *private rooms* (rentable rooms inside apartments inhabited by owners or usual tenants) and *shared rooms* (rentable beds in rooms inhabited by the owner or usual tenants).

Given the available dataset, to analyse the different kinds of accommodation facilities monthly data will be used from now on – so that the number of bookable facilities will be

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[2] Estimated by multiplying the overall number of booked facility-nights for the number of rooms of each facility..

[3] This figure derives from the official number of hotel rooms available for Bologna metro area provided by Istat (the Italian National Statistical institute) and the occupancy rate also calculated by Istat.

[4] To get more information about the procedure followed for the calculation, please see the Methodical Appendix (paragraph 15) at the end of this paper.

the number of facilities rentable for at least one night during a given month. Therefore, the available facilities for every year will be the annual average of monthly values[5].

3. The "hotel comparable" facilities

One type of facilities listed on Airbnb is more easily comparable with hotel-kind rooms. These facilities consist of *fully equipped dwellings* that are *studios* or have *one bedroom*. By their very nature, when renting these facilities it is very difficult to share space and time with the owners (or regular tenants) of these accommodations, therefore these facilities can be rented for uses very similar to those of hotel rooms. Thus, this kind of facilities are referred to as "*hotel comparable*".

The "hotel-comparable" facilities *weigh about one-third of the total available facilities*. However, they develop a considerable number of facility-nights available (over 539 thousand in 2019) and facility-nights booked (over 341 thousand in 2019) mainly due to the fact that these accommodation facilities are available for booking, on average, for 23 nights a month (the year before CoVid-19) generating more than 16 booked-nights a month. It makes *about 194,4 nights a year booked* (compared to the general average of around 100, as seen before). The fact that this value differs so greatly from the general average opens scenarios of potential direct competition between these facilities and hotels.

Figure 2: Data about the "hotel comparable" facilities on Airbnb portal located in the Bologna metropolitan area.

Year	Bookable Facility (av. Monthly data)	Booked Facility (av. Monthly data)	Weight %	Bookable facility-nights	Booked facility-night	Net utilization rate	Bookable facility-nights per month
2016	844	621	73,5%	191.748	105.695	55,1%	18,8
2017	1.214	963	79,3%	297.860	172.196	57,8%	20,4
2018	1.593	1.319	82,8%	408.440	246.748	60,4%	21,3
2019	1.945	1.735	89,2%	539.299	341.093	63,2%	23,0
2020	1.744	1.245	71,4%	372.856	171.903	46,1%	17,6
19/16	**130,4%**	**179,6%**	**21,4%**	**181,3%**	**222,7%**	**14,7%**	**22,5%**
20/16	**106,6%**	**100,5%**	**-2,9%**	**94,5%**	**62,6%**	**-16,4%**	**-6,3%**

Year	Booked facility-nights per month	Weight %	Turnover EUR	Weight % on total	Daily rate	Turnover per booked facility	Turnover per bookable facility
2016	14,1	75,1%	7.813.676 €	42,2%	73,9 €	12.589 €	9.256 €
2017	14,8	72,7%	13.022.186 €	41,6%	75,6 €	13.523 €	10.724 €
2018	15,5	72,7%	18.575.890 €	44,1%	75,3 €	14.082 €	11.664 €
2019	16,2	70,5%	25.436.016 €	45,5%	74,6 €	14.659 €	13.080 €
2020	11,2	63,6%	12.469.711 €	53,8%	72,5 €	10.019 €	7.149 €
19/16	**15,0%**	**-6,1%**	**225,5%**	**7,7%**	**0,9%**	**16,4%**	**41,3%**
20/16	**-20,6%**	**-15,2%**	**59,6%**	**27,4%**	**-1,9%**	**-20,4%**	**-22,8%**

Source: Economic Study Centre of Unioncamere Emilia-Romagna on data provided by AirDNA.

[5] Please, take this into account while comparing numbers between different paragraphs of the paper. The turnover instead is always directly comparable.

In fact, this kind of facilities not only provides a privacy level equal to hotels but are – in many cases – *available almost all year long*. This means it is not rare the case of facilities of this kind that are permanently available for rent on the platform. So, there is no sharing space and time with (non) regular inhabitants (the owners live elsewhere permanently) meaning that these facilities, permanently dedicated to short term rent, are *managed professionally* and not in a peer-to-peer way (and peer-to-peer relationship is at the very base of proper sharing-economy, as seen before). This has been the object of fierce criticism because these facilities are currently subject to a lower level of taxation and are exempted from the observance of some regulations such as those concerning guests security and privacy owing to the fact that the renting of private rooms is not considered an entrepreneurial activity (for the Italian low, as for the ones of many countries, any economic activity managed professionally makes you an entrepreneur).

The total turnover of these "hotel comparable" facilities exceeds 25,4 million euros (before CoVid-19 in 2019), that is *45,5%* of the total turnover of Airbnb facilities in Bologna metro area. Thus, this percentage can be taken as a *measure of direct competition between Airbnb and hotel industry* for Bologna. Obviously, it would be wrong to assume that this amount would have been directed, entirely, towards the hotel facilities in the absence of the sharing-economy. However, among the possible comparisons between hotel facilities and those accommodations retrievable on the portals, the one with the "hotel comparable" facilities is, by far, the most fitting one. It follows that a big part of this turnover would be certainly addressed to the facilities of professional hospitality in the absence of the sharing option.

It is possible to compare the weight of "hotel comparable" with that of hotel facilities taking into consideration the different availability rate for lease of the two types of rooms together with the different occupancy rate. Having the occupancy rate (for beds) and the number of rooms for the Metropolitan area of Bologna[6] it is possible to estimate the room-nights booked in hotels every year of the observed period. In 2016 in the hotel system of the metropolitan area of Bologna is just over 1,84[7] million. As for the Airbnb world, the estimate of the facility-nights expressed by "comparable hotels" is equal, in the same year, to 210.343[8]. For the very conformation of these accommodations (they have one bedroom or are studio-like accommodations), the number of facility-nights is equal to the number of room-nights. As a result, in 2016, there was *one night-room booked in a "hotel comparable" Airbnb accommodation every 8.8 room-nights booked at hotels* in Bologna. The result of the same calculation made for the year 2017 is *one Airbnb room-night each 6.3 nights booked at hotel facilities*. This figure has been decreasing since then, year after year, and reached 3.6 in 2019 and 3.3 in 2020, during the pandemic (remarking that the increase of weight of "sharing economy" in local tourism system also during the pandemic crisis).

So, even *confining the comparison between Airbnb and hotel industry* to the field where the competition is more direct (the field of "*hotel comparable*" accommodation facilities)

[6] Provided by Istat and by Emilia-Romagna Region.

[7] This procedure of calculation has been clarified in a previous note.

[8] Using data from annual series to make the comparison with the previous paragraph easier.

the extent of the two phenomena is now comparable, especially given the speed of growth of Airbnb "hotel comparable" facilities.

The year of the pandemic deserved to be considered on its own. The total turnover of the hotel comparable facilities esteemed for the year have more than halved. The same for the number of booked facility-nights, while the number of booked facilities (as the annual average of monthly data) has decreased only by 28%. This combination made the average turnover per booked facility to decrease from 14.600 euros to 10.000 euros. The fiercer competition between facilities made also the average price for one night to go down as well as the average nights booked each month for each booked facility.

4. Entire places

The category of "hotel comparable" facilities (entire homes with one bedroom and studio-type facilities) is a subset of the larger category of "entire places" (entire homes, regardless of the number of bedrooms).

While the public opinion attention towards "hotels comparable" facilities derives from the fact that they can be considered as those that exert the most direct type of competition in relation to hospitality activities carried out professionally (hotels and hotel-like accommodations), the attention to the short-term lease of entire lodgings - regardless of the number of rooms they have - derives from the fact that these accommodations are those that are most likely managed semi-professionally or professionally. This paragraph tries to understand why.

Since the beginning of the historical series available, the rent of entire places (homes) *represented more than half of the accommodation facilities advertised (i.e. bookable)* on Airbnb portal in the metro area of Bologna ad have always been on the rise (a bit less than 55.6% in 2016, reaching 70.4 in 2020). *The trend of the nights available on average per month per accommodation recalls the above for "hotel comparable" facilities* with values that go from 18.0 nights in 2016 to 22.6 nights in 2019 (decreasing in the year of CoVid-19 to 17.0 as a direct consequence of the total ban of travel that was ruled during the first wave of pandemic (from March to June).

The weight of this kind of facilities appears in its true size if the estimated turnover is taken into consideration. Multiplying the number of booked facility-nights for each month for the average rate recorded for the corresponding month, an estimate of the monthly turnover is obtained. By adding these monthly revenues, an *estimate of the annual turnover* is calculated.

The annual turnover estimated for "entire places" for 2019 amounts to *more than 43.8 million euros* for Bologna metro area. It was previously highlighted that the annual collection for 2019 of all the accommodations advertised on Airbnb and located in Bologna is close to 55 million and 923 thousand euros. We therefore have that, in 2019, 66.3% of the facilities advertised (or bookable) *generated a percentage that exceeds 78.4% of the total estimated turnover for Airbnb in Bologna*.

The difference between the weight of these accommodation measured in term of bookable units and in term of turnover depends, firstly, on the average number of *nights in which these facilities are available* for booking (22.6 units per month for 2019) which is far bigger than the average value for the total facilities. Secondly, also the average number of nights for which the advertised accommodations *have been booked (almost 15,6 in a month)* is higher than the overall average figure. Finally, it is also undeniable the *influence of the rates charged* for the facilities. It should also be noted that *all these variables were increasing during the years considered*. As a consequence to all this, *the estimated average annual revenue per facility advertised of "entire place" kind has gone from almost 14,000 euros in 2016 to almost 16,700 euros in 2019* (figures that are much higher than those that can be granted by long term lease of real estates in Bologna).

Figure 3: Data about "entire place" accommodation facilities on Airbnb portal located in the Bologna metropolitan area.

Year	Bookable Facility (av. Monthly data)	Booked Facility (av. Monthly data)	Weight %	Bookable facility-nights	Booked facility-night	Net utilization rate	Bookable facility-nights per month
2016	1.384	968	69,9%	301.196	156.226	51,9%	18,0
2017	1.988	1.520	76,4%	473.408	260.195	55,0%	19,7
2018	2.523	2.042	81,0%	634.847	369.441	58,2%	20,9
2019	3.010	2.628	87,3%	819.089	496.584	60,6%	22,6
2020	2.716	1.866	68,7%	559.953	247.420	44,2%	17,0
19/16	**117,5%**	**171,5%**	**24,8%**	**171,9%**	**217,9%**	**16,9%**	**25,4%**
20/16	**96,3%**	**92,9%**	**-1,8%**	**85,9%**	**58,4%**	**-14,8%**	**-5,6%**

Year	Booked facility-nights per month	Weight %	Turnover EUR	Weight % on total	Daily rate	Turnover per booked facility	Turnover per bookable facility
2016	13,4	74,2%	13.543.558 €	73,2%	86,7 €	13.996 €	9.787 €
2017	14,2	71,8%	23.590.314 €	75,4%	90,7 €	15.525 €	11.865 €
2018	15,0	71,6%	33.257.755 €	79,0%	90,0 €	16.286 €	13.184 €
2019	15,6	69,0%	43.841.424 €	78,4%	88,3 €	16.686 €	14.564 €
2020	10,8	63,3%	21.321.999 €	92,1%	86,2 €	11.425 €	7.849 €
19/16	**16,7%**	**-7,0%**	**223,7%**	**7,1%**	**1,8%**	**19,2%**	**48,8%**
20/16	**-19,4%**	**-14,6%**	**57,4%**	**25,7%**	**-0,6%**	**-18,4%**	**-19,8%**

Source: Economic Study Centre of Unioncamere Emilia-Romagna on data provided by AirDNA.

Certainly, a part of these houses are *second homes* that are rented when they are not useful to owners or apartments temporarily empty *waiting for sale* or for *hereditary destination* or following a *temporary* or *part-time moving* to other towns. Many other cases are possible and are consequences into the housing market of life habits that are less and less based on stability and permanence. All these cases, however, have a common feature: *they make properties available for rent for a limited number of nights a year*, so these typically sharing reasons to hold houses for short-time tourist lease don't make the majority. Therefore, *the phenomenon is linked* to the increase in the number of accommodations available for many nights a month, accommodations *whose managers are quite likely to be driven by purposes (and behaviour) more typical of the traditional economy* than those of the sharing-economy.

As specified at the very beginning of this paper, the peer-to-peer economy was originally created to share assets not fully used by owners in a peer-to-peer approach. It was not intended to provide an alternative way to permanently make money out of real estate used for renting without any form of sharing of space and time with owners or regular tenants of the facility. Outside the cases in which the short-term lease of entire homes is related to sharing purposes exemplified before, the short-term lease of entire homes risk to be the permanent destination of a house (also embodying the legal requirements of professional conduct of an economic activity in Italy, making the conditions that justify favourable measures to fail). *The link between the renting of these facilities and the sharing-economy is therefore fragile* partly explaining the negative attention that some media showed to tourist sharing-economy in general and Airbnb in particular.

The difference between the turnover of a facility rented short-run and long-run determine a *premium for short-run lease* that is particularly high in tourist areas of Bologna where finding a flat for long-term rent (especially up to the pandemic) is becoming difficult for common people. This is another reason why some media showed negative attention to sharing and Airbnb.

As mentioned, the estimate of revenues for “entire places” is 43.8 million euros while the one for "hotel comparables" is 25.4 million euros so the difference between the two values, *close to 18.4 million euros*, is an estimate of the *annual revenues of the "entire place" accommodations with two or more rooms* for Bologna metro area (corresponding to around 32.9% of the total revenue for Airbnb).

It can be argued that a *big share of these visitors would not have travelled* in the absence of this kind of accommodations. *When travelling in large groups* sharing-mode facilities allows people to save substantially (and, at least in theory, to have a completely different accommodation experience). In particular, a four-bedroom apartment costs far less than renting four one-bedroom apartments while renting four hotel rooms costs, in general, close to four times the rent of one room. This advantage increases with the number of rooms in the facility rented. If it is true that part of the group travellers would have opted for hotel solutions in case of lack of sharing mode, it is certainly true that a far larger part of these tourists would not have travelled, or would have gone to other destinations, in the absence of sharing-mode option. As a result, the bigger part of these 18.4 million euros collected for "entire place" facilities with 2 or more bedrooms are *certainly incremental for tourism flows to Bologna destination*.

Overall, it can be said that *of the 78.4% (48.481 million euros) of Airbnb phenomenon represented by “entire place” accommodation facilities, 45.5% (25.436 million euros) represent a direct competition for hotel facilities while the other 32.9% (18.405 million euros) can be considered an estimate of the new tourist flows for Bologna activated by Airbnb.*

The 2020 has seen a big increase in the weight of “entire place” facilities that reached the ever-highest value of 92.1% in terms of turnover. The reason for that is the pandemic itself: when the Government gradually eased and then removed the ban on travel, people preferred to rent entire places to avoid interpersonal contact with people from outside their family and friend circle. This made the “entire places” particularly attractive, even compared to proper hotels thanks to the lack of shared spaces like corridors, dining/breakfast rooms.

5. More “properly sharing” facilities

The available dataset about the private rooms in shared apartments and shared rooms are not as detailed as those relating to the "entire place" and "hotel comparable" accommodations, however some considerations can also be made regarding these facilities that make up the *"sharing-core" of Airbnb business*. Since the total annual revenue for 2019 for Airbnb for the metropolitan area of Bologna is close to 55.923 million euros and that of the "entire place" facilities, regardless of the number of rooms, is almost 43.841 million, then the estimate turnover of shared rooms and private rooms for the year 2019 in shared apartments is, approximately, 12.081 million euros, that is, *about 21.6% of the total turnover for Airbnb* in Bologna.

This can be considered *the minimum quantification of the most exquisitely sharing part of Airbnb business* since it is the one relating to the accommodations that require, for they very nature, sharing space and/or time with the habitual occupants of the dwelling during the stay of travellers. The true extension of the “actually-sharing” part of Airbnb will certainly be greater than this core since a part of the "entire place" accommodations, even in the "hotel-comparable" configuration, is certainly made of accommodations rented on a peer-to-peer basis. However, the available data allow us to get to an acceptable quantification only of this minimum core part of the sharing-economy in Airbnb.

Summarizing what has emerged so far, it is possible to make a schematic quantification of the impact of the different phenomena behind Airbnb in the case of the metropolitan area of Bologna:

a) 21,6% of the proceeds are related to the "very-core" of properly sharing facilities;

b) The remaining 78.4% of turnover is related to facilities that, in many cases, give rise to the doubt of professional management (and therefore can’t be considered “properly-sharing” because sharing requires a peer-to-peer cooperation);

c) 45.5% of receipts (part of the 78.4% referred to in point b) relates to facilities that exert an almost direct form of competition for hotels;

d) 32.9% of the collections (part of the 78.4% referred to in point b, as well) are related to facilities that, with a greater degree of probability, generate incremental flows for local tourism flows.

e) The above-mentioned figures have changed dramatically in 2020 due to the consequences of CoVid-19 pandemics. Besides the enormous decrease in booked facilities and turnover due long ban or strict regulation of travel and to the preference of tourists for facilities enabling them to avoid sharing space with un-known people. As a consequence:

> *e.1) the “very core” of properly sharing facilities have decreased the weight of its turnover to 7,9%;*
>
> *e.2) The remaining 92.1% of turnover is related “entire places” with the above-mentioned risks of professional management;*
>
> *e.3) 53.8% of receipts (part of the 92.1% referred to in point 2) relates to hotel comparable;*

e.4) 38.2% of collections (part of the 92.1% referred to in point 2) are related to facilities that, with a greater degree of probability, generate incremental flows for local tourism flows.

6. The sharing that is becoming less and less peer-to-peer

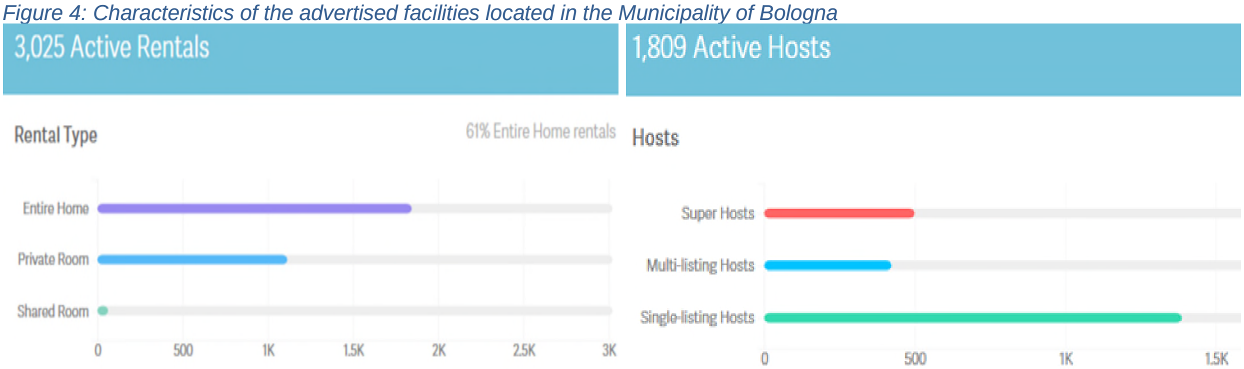
Among the "entire place" facilities available on Airbnb, some are even less "*sharing*" and "*peer-to-peer*" than those analysed in previous paragraphs. Just think of the hosts that promote more than one – sometimes many – "entire place" accommodation at the same time, thus making evident their very nature as professional managers of a proper for-profit economic activity. Or think about those cases in which company staff travelling for work rent an apartment to attend a trade-fair and put the cost to company reimbursement; perhaps an apartment that the owner has entrusted to a company specialized in managing ads, check-in, check-out and cleaning of the premises. Or think about the fact that recently Airbnb also allows hotels – properly defined ones – to promote themselves on the portal. *What is it left of "sharing" and of "pee-to-peer" in these accommodation solutions*? The answer is not simple. If traveling is a group of colleagues who, to attend a fair, lease at the expense of the company, a whole apartment from an owner who has entrusted it to a specialized company, we are quite probably out of the sharing-economy. If traveling is a single person who leases a single room in an apartment occupied by the owners we are outside or within the borders of the collaborative economy?

It is easy to understand how this tendency contributes in making increasingly difficult to draw a boundary between the collaborative economy in proper sense and the traditional economy. These two become *the extremes of a continuum of reality in which the two natures mix with varying gradation*.

7. Less and less sharing situations: multi-listings

The fact that a flat permanently used for short-term rent risk to be a professional management of economic activity has already been mentioned. Let alone the fact that this risk increases disproportionally with *the number of real-estates managed by hosts*.

Figure 4: Characteristics of the advertised facilities located in the Municipality of Bologna



Source: AirDNA, Market overview for the Municipality of Bologna.

According to data on the territory of the Municipality of Bologna and provided by AirDNA for the Airbnb portal, on February 23 of 2018[9] there were 1,809 different advertisers active for 3,025 accommodations advertised. This is an average of 1.67 facilities per advertiser. The average figure is produced by 46% for advertisers present with a single facilities and by 54% of advertisers who promotes more than one. Thus, multi-property hosts are very common in Bologna as in many other towns around the world.

8. Economic margins that leave the country

A further consequence for the territory of the use of sharing-economy platforms, in the case in which these are not based in the European-Union, consists of the fact that a *percentage of the proceeds corresponding to the commissions for portals leaves the territory and won't come back*. This means that a non-negligible part of margins generated by an activity carried out in a country is not reinvested within its borders. In the case of Bologna metro area, applying the fees declared by Airbnb to the figures calculated above, it's possible to get to an estimate of fees collected by the Portal. The estimate is (more than) *7.456 million euros* on (a little less than) 55.923 million euros of total collection for 2019. This money is leaving the country and *won't be reinvested in, as an example, the modernization of local tourism industry* to the detriment of the development of the sector itself and the whole economy. The total amount for the observation period can be estimated in *23.603 million euros*.

9. Other portals for tourist sharing-economy in Bologna metro area

Airbnb is not the only short-term rental portal in the metropolitan area of Bologna. There are others against which we can hazard an estimate by drawing on an empirical audit by the offices of Unioncamere Emilia-Romagna.

In order to investigate the proportion between those tourist accommodations promoted on Airbnb and the other portals, the offices of Unioncamere Emilia-Romagna made a "pilot-drill" that took into consideration, for the metropolitan area of Bologna, the municipality of Imola, the second biggest one. The platforms that are believed to be the most used, in the light of the indications published on the media, have been investigated. *Airbnb apart, the portals that have been investigated are VRBO, Home away, House Trip, Holidu, Windu, Home To Go*.

The survey has shown that *60% of the facilities were present also - or only - on Airbnb, while 40% of them were not present on this portal*. Clearly, without having any indication of the room-nights available for these facilities and the relative occupancy rate, we can't asses the weight of the accommodations that are being promoted outside of Airbnb. However, this first indication allows us to conclude that *there is a further cluster of tourist facilities that goes beyond the measurement carried out in the previous pages and, therefore, increases the incidence of the so-called sharing-economy on the tourism sector* of the metropolitan area of Bologna.

[9] More recent data are not available.

10. Sharing-economy in countryside and urban areas

The *spread of sharing-economy in non-densely populated area can be very good for local tourism development*. In these areas the tourist flows are, in general, not enough intense to sustain the development of professionally managed tourist accommodations, like hotels, so the short term tourist rents make this areas reachable by tourists that, otherwise, would have had to visit them on a commuting basis from the closest hotel or not visiting them at all. Since that, for these locations *all flows generated by sharing-accommodations are incremental for local tourism*.

The spread of tourist short-time rent provides *supplementary earnings* for residents of these areas avoiding the depopulation of economically marginal areas that are culturally interesting and/or have interesting landscapes. This phenomenon crosses with another one: the development of *experiential tourism*. Over the last few years tourists are looking for "real" experience during their holidays, especially when travelling in non-urban areas and properly-sharing economy is ideal in providing authentic experiences.

Figure 5: Percentage of town-centre housing stock bookable on Airbnb and percentual variation 2015-2016

City	% Housing stock 2015	% Housing stock 2016	Variation 2015-2016
Bari	0.80%	1.00%	25.00%
Bologna	1.00%	2.40%	140.00%
Catania	1.40%	2.20%	57.10%
Firenze	11.10%	17.90%	61.30%
Genova	0.60%	1.00%	66.70%
Matera	17.30%	25.30%	46.20%
Milano	1.70%	3.60%	111.80%
Napoli	1.00%	3.10%	210.00%
Roma	7.10%	8.00%	12.70%
Siena	2.50%	4.00%	60.00%
Torino	1.00%	2.80%	180.00%
Venezia	6.10%	8.90%	45.90%
Verona	2.20%	4.10%	86.40%

Source: "Airification" delle città: uno studio sull'impatto degli affitti a breve termine", University of Siena, from "Il Sole 24 Ore[10]"

The spread of this form of rent in urban areas, *especially of economic dense ones, work in a completely different way*. Here, tourism is only one of the possible destinations of real estates and the spread of tourist sharing-economy is competing with other economic destinations of tourist valuable areas.

This phenomenon has already reached considerable intensity in many cities, including Italian ones. According to a study conducted by the University of Siena, already at the end of 2016, full housing offerings on the Airbnb portal *amounted to 25% of the housing stock available in the historic centre of Matera*. This percentage was equal to 18% for

[10] http://www.ilsole24ore.com/art/notizie/2017-06-12/metto-casa-airbnb-cosi-cambia-cuore-citta-d-arte-ecco-chi-ci-guadagna-e-dove--171816.shtml?uuid=AEo9FAdB

Florence, 9% for Venice and 8% for Rome. If the percentage of Matera can be considered strongly influenced by the reduced size of this town and by the fact that it's historical centre has (almost) only a tourist usability, the same can not be said for the other Italian cities mentioned.

The percentage referring to the centre of Bologna in 2016 was just 2.4%, therefore much lower than that of the cities mentioned. However, if we consider that it was 1.0% in 2015, it is clear that the increase in just one year was more than remarkable (+140%). If we add the fact that 2017 marked a further significant increase in the facilities advertised in the municipal area, and therefore also in the historic centre, it is reasonable to expect that the percentage in question has further increased.

The historical centres of many cities, therefore, are *turning into areas where almost no one resides permanently or semi-permanently* and the population changes continuously following the tourist flows, radically changing the urban sociology not only of the centre but of the entire city, breaking - or attenuating - the typical functional link between the central area and the other districts of a town.

The services and commercial activities located in these areas are likely to be more and more targeted to tourists (especially if high-spending) and less and less to inhabitants (of the centre or other districts). A historical centre with a cost of living more linked to that of other tourist resorts and the countries of origin of travellers than to other neighbourhoods. A centre in which economic activities, in search of bigger profits, are increasingly directed towards the service of travellers and less and less to the service of the inhabitants of the area. A centre, therefore, less and less visited and experienced by local population and in which, therefore, the business activities can't do anything but direct themselves to travellers in a phenomenon that develops in a spiral and that, exceeded a certain level, is self-feeding. A "*centre less central*" to the town, it could be said.

11. The economic premium for short-term rentals

There is an economic reason that explains why short rentals tend to be concentrated in the historical centres of the cities. In the case of Bologna, while in the non-central areas, the income guaranteed by long-term and short-term rentals are, at current conditions, generally comparable, in central areas the economic advantage deriving from short-term rentals is significant, despite the relatively-high level of long-term rent fees. In the central areas, this differential is such as to persuade owners to convert their real-estates to short-term rentals. To realize this, it is possible to refer to a differential example that compares the yields of the two types of leases (short and long term) in two areas of Bologna.

A property used as a short-term lease through sharing-economy portals can be managed in very different ways. In the example of this paper, the two extreme cases of the spectrum have been examined: a totally "internal" management in which the activities of insertion and feed-back, check-in and check-out, cleaning, reordering and replacing the laundry are carried out directly from the property. A second type, completely “external”, in which all the activities indicated are carried out by an external subject remunerated for this with a percentage of the proceeds[11].

The net amount which is attained with this calculation is not the effective net income for the owner since other expenses should be deducted, such as taxes on the property and extraordinary condominium expenses since they would still be charged on the property of the real estate, and always with the same amount, regardless of the type of rental used for the same or the fee charged. Therefore, it is a net income determined with the sole purpose of allowing comparison, in purely monetary terms, between long-term and short-term leases. This is why the collection is called differential net and not net earnings[12].

Figure 6: Simulation of comparison of DIFFERENTIAL yield between short-term and long-term rent. Municipality of Bologna.

SHORT-RUN RENT: "ENTIRE PLACE" APPARTMENTS WITH TWO BED-ROOMS ON AIRBNB IN BOLOGNA MUNICIPAL AREA

App.t location	Average daily rate 2017	Booked nights	Gross revenue	waste tax	income tax	Portal fees	Utilities	Ordinary condo. expenses	City tourism-tax	Management company fees	total differential costs by type of management		DIFFERENTIAL NET
"not specified"	€ 110	138	€ 15.205	€ 220	€ 3.193	€ 760	€ 804	€ 1.300	€ 760	€ 0	Internal	€ 7.037	€ 8.167
		37,9%		idem	idem	€ 0,00	idem	idem	idem	€ 4.561	Extenal	€ 10.839	€ 4.366
Central Bologna	€ 154	194	€ 29.801	€ 220	€ 6.258	€ 1.490	€ 804	€ 1.300	€ 1.490	€ 0	Internal	€ 11.562	€ 18.239
		53,1%		idem	idem	€ 0,00	idem	idem	idem	€ 8.940	Extenal	€ 19.013	€ 10.788

LONG-RUN RENT IN BOLOGNA MUNICIPAL AREA

Apartment location appart.	Monthly rent	Months	Gross revenue	waste tax	income tax	Portal fees	Utilities	Ordinary condo.- expenses	City tourism-tax	Management company fees	total differential costs by type of management		DIFFERENTIAL NET
"not specified"	€ 750	12	€ 9.000	€ 0,00	€ 1.890	€ 0,00	€ 0,00	€ 200	€ 0,00	€ 0,00	flat tax	€ 2.090	€ 6.910
				idem	€ 3.420	idem	idem	idem	idem	idem	non flat	€ 3.620	
Central Bologna	€ 1.050	12	€ 12.600	€ 0,00	€ 2.646	€ 0,00	€ 0,00	€ 200	€ 0,00	€ 0,00	flat tax	€ 2.846	€ 9.754
				idem	€ 4.788	idem	idem	idem	idem	idem	non flat	€ 4.988	

Unioncamere ER on AirDNA data, Tecnocasa Data and direct observatios (flat tax on rents applied)

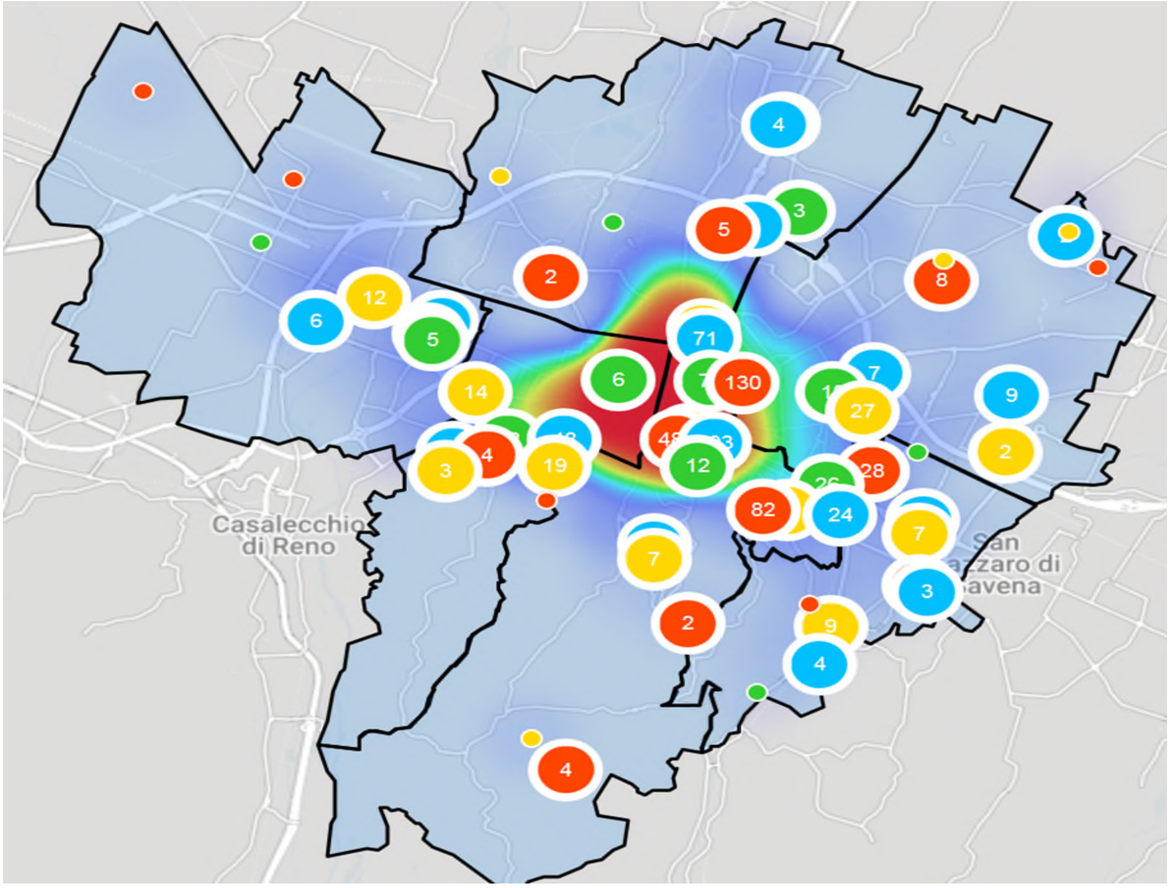
Source: Economic Study Centre of Unioncamere E.R. on data provided by AirDNA, by ”Il Sole 24 Ore” and direct observations.

From the direct observations on the major internet-sites active in the rental of real-estates in Bologna, emerged an average monthly price for the long-term lease of an apartment of about 75-80 square meters with 2 bedrooms of, on average, 750 euros per month, that is, 9,000 euros a year. Subtracted the differential management that affect the property it is possible to get to a net differential of just over 6,900 euros per year. This is a lower figure, but all in all, not unlike the one calculated in the case of short-term rent with direct management by the property but significantly higher than the one which would be obtained in the case of a short lease with totally external management.

[11] In the first case, the costs of the portal and not the management costs should be considered as costs. The opposite is necessary in case of external management. In both cases, however, income taxes must be considered since, being proportional to the same income, they have a different value in the various simulations. For the determination of income taxes it has been assumed that the flat-rate income tax can be applied so as to be able to disregard the taxable income of the owner that would determine the marginal rate applicable to the lease fee, making arbitrary the comparison.

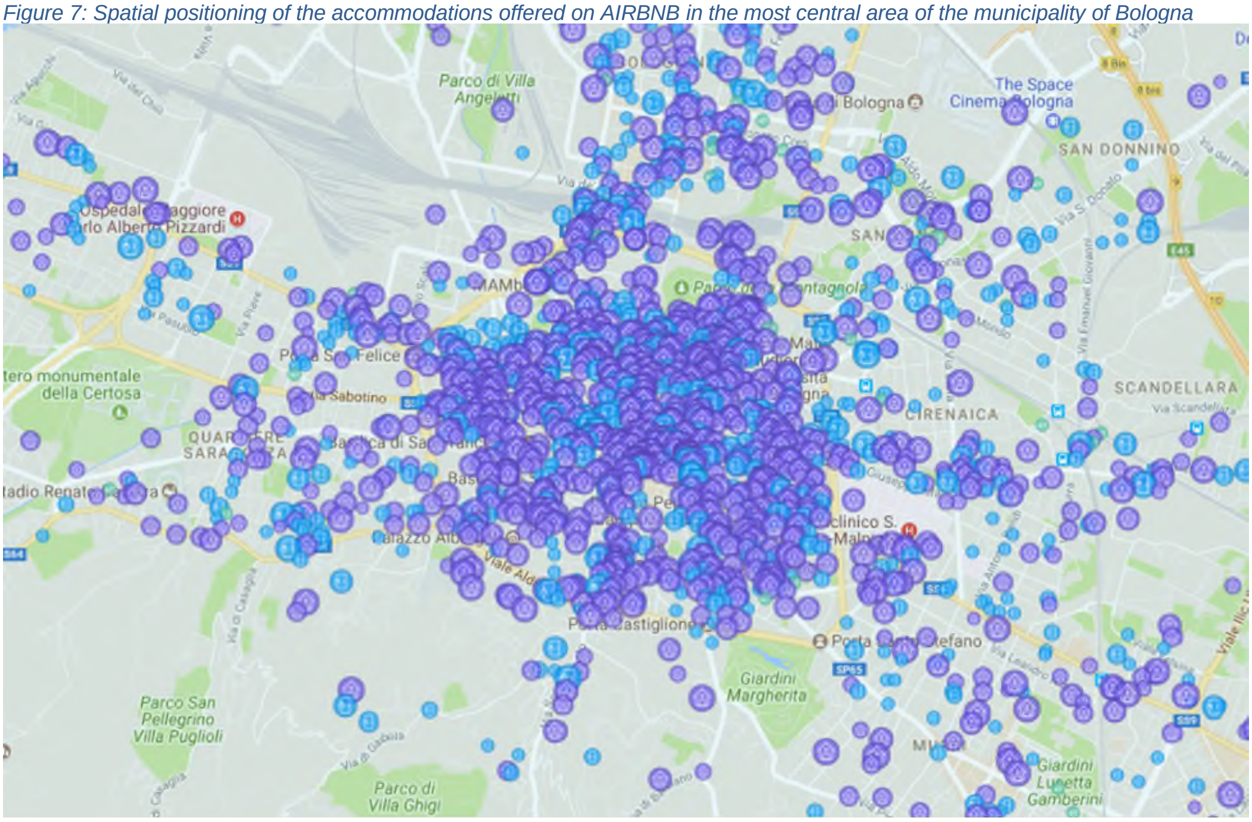
[12] See the simulation of differential yield in these pages.

The coloring of the map is as warmer as the concentration of facilities on Airbnb is greater



Source: Monitoring of Airbnb, November. 2017. Municipality of Bologna's Open data: http://dati.comune.bologna.it/node/3088

Figure 7: Spatial positioning of the accommodations offered on AIRBNB in the most central area of the municipality of Bologna



Fonte: AirDNA, Market overview

If the apartment instead of being placed in an imaginary "average area" of the city of Bologna is located inside the (former) walls of the city that separate historical centre from the rest of the city, the rent of the same, always in the form of long-term rent, would rise to around 1,050 euros per month. Under the same circumstances, the short-term leasing on Airbnb could result in a net differential of over 18,200 euros (over 8,400 euros more than long-term rent) in case of completely internal management of the accommodations rented on the portals. The net differential would become more than 10,700 euros in the case totally external management of the short-term lease (over 1,000 euros more than long-term leasing). In both cases, the differential yield would be higher than the one guaranteed by long-term leasing.

The example highlights how, for those who own real estate in the city centre, *the economic premium for moving to a short-term rental management is considerable and, probably, growing* along with the effectiveness of the portal in securing the lease fee. This award is strictly localized in central-city and is of substantial entity. For this reason the phenomenon of displacement is as well located within the (former) city-walls. It is therefore not surprising that most of the accommodations on Airbnb are located in central areas of Bologna.

In addition to the differences in the amount of earnings granted, another element that owners take into consideration in choosing between short-term and long-term leases is certainly *the risk of delay/lack of payment*. While with a short-term lease this risk is almost unknown (the prior authorization on credit cards makes it dissolve), with a long-term lease the risk is concrete (given the ultra-annual commitment of the parties and costs and timing of the eviction procedure).

All these elements are particularly critical for those groups that are already struggling to find apartments for rent, especially in large cities. The immediate reference is to large, low-income families and out-of-town students. The fear for the increase of rents in cities with the highest housing tension has already been felt abroad.

12. Final remarks and conclusions

The sharing-economy is based on the *exchange* of goods and services with other goods and services or a (limited) amount of money. The economy of sharing has landed on tourism to follow the *needs of savings* of travellers but is also consolidating as a chance to live a *more authentic experience* in the visited locations, an experience less mediated by professional operators. In many cases the spirit of liberality among peers is maintained in transactions while in other cases it is transforming into a proper business that integrates many of the requirements, also from the legal point of view, of *entrepreneurial professionalism*.

Apart from this problem, of no small account, another one remains. The historical centres of many towns and cities suffer from the "*displacement of the habitual inhabitants*" in favour of the tourists accommodated in facilities in short-lease which offer to the owners yields not comparable to those granted by the traditional, long-term rent. This phenomenon has already reached considerable intensity in many cities around the world and is also growing in Bologna.

On the other hand, it is true that these platforms allow, especially in *economically marginal but culturally and scenically interesting areas*, forms of income integration that allow to take care of properties that otherwise would not be profitable enabling residents to stay on site. It should not be neglect the fact that, where the underlined characteristics of exchange between peers remain, the dimension of "*experiential-tourism*" for guests and owners is a source of reciprocal cultural enrichment. Another aspect not to be overlooked is the fact that *numerous groups and families*, with limited budgets, could not travel without the saving opportunities offered by the sharing-economy.

The analysis of data related to the different types of accommodation available on Airbnb for the metropolitan area of Bologna has made evident the coexistence of these very different phenomena within the accommodation portal analysed.

Alongside properly sharing and peer-to-peer solutions such as beds in shared rooms and private rooms in shared apartments (which account for 20% of Airbnb turnover for Bologna), there are solutions more typical of the traditional economy as apartments professionally managed by specialized agencies and permanently available for rent on the portal. These *not-so-sharing* solutions have to be found among those that make up 80% Airbnb turnover, the "entire places". Among "entire places", the "hotel comparable" accommodations have to be spot-lighted because they are in a relation of proper direct competition with hotel accommodations. They represent 44% of total Airbnb revenue while the remaining 36% can be considered an estimate of the additional tourism flows generated by Airbnb for Bologna as tourist destination.

It is, thus, true that - on the one hand - the Airbnb phenomenon has an area of overlap - and therefore competition - with the (hotel) industry of accommodation. It's however equally true, on the other hand, that it has activated tourist flows that were previously only potential. The carrying out of this study has allowed to size, with a certain degree of approximation, these aspects in the territory of the Metropolitan area of Bologna.

The paper also tried to illustrate the different consequences of the spread of tourist *sharing in urban and extra-urban frames*, highlighting the risk of displacement of habitual dwellers from tourist areas as well as the permanent destination of historical areas to the service of mass-over-tourism with obvious angry reactions.

Net of this, the phenomenon of the economy of sharing in tourism has a remarkable scope that has only begun to show its potential and its effects on the world of tourism. It is reasonable to expect that there will be no trend reversals in the foreseeable future, that is, the sharing-economy - in tourism as in other sectors - has arrived to stay and must, therefore, be managed.

A unique solution to avoid distortions has not yet been found but this is not a good reason not to insist. Radical technological innovations that take the form of radical economic and social innovations require adequate measures to protect society from the externalities they produce, (they produce externalities even to the detriment of themselves).

It is not easy. It is necessary.

Matteo Beghelli
Unioncamere Emilia-Romagna

13. Empirical data checks

In order to verify the consistency between the data provided by AirDNA regarding the Airbnb portal and the reality resulting from the material consultation of the Portal, the offices of Unioncamere Emilia-Romagna during the second week of February 2018 performed an empirical verification on all the facilities available on the Portal for the Metropolitan area of Bologna. In the week indicated almost 1,000 facilities were listed, equivalent to more than 1,600 rooms for a maximum capacity of more than 3,400 guests.

The annual average, for 2017, of the monthly facilities available for the reservation is over 3,600. Can data that have been detected directly be considered consistent with those provided by AirDNA and analysed in the previous pages?

To answer the question it is necessary to consider the conceptual differences existing between the quantities taken into consideration. First of all, the range of time considered falls in low season for tourism in Bologna. The value for 2017 of the facilities available for the reservation for the month of February is 2,885, a value closer to that found directly compared to the annual average. Secondly, it is necessary to keep in mind that while the values provided by AirDNA are monthly data, those recorded by Unioncamere Emilia-Romagna's offices are related to a specific week, this means that the facilities that were available for reservation only in one of the other weeks of the month have not been counted. In third and last place, having monitored the accommodations bookable for a given week, the accommodations already booked were not displayed.

All the above considerations been made, It’s possible to conclude that the data relating to the bookable facilities collected directly from Unioncamere and those provided by AirDNA are compatible with each other.

As far as the average tariffs are concerned, the only comparison that can be made directly is the one for entire apartments. The average price noted for these facilities by the offices (including cleaning costs) is equal, for the week indicated, to 101.77 euros per night. From the data provided by AirDNA it is obtained that the average annual tariff of 2017 for "entire places" is equal to 91.10 euros. Even in this case, however, the comparison must be made with the data relative to the month of February which is 72.20 euros.

Therefore we have that the average rate deriving from the direct observations is equal to 101.77 euros while the one that is derived from the AirDNA is equal to 72.20 euros. Are these two values compatible?

Also in this case, it is necessary to analyze the conceptual differences that are behind the two figures in comparison. While the data provided by AirDNA lead to the calculation of the average tariff applied by the actually leased facilities, the data collected by the offices lead to the calculation of the average fare required by advertised accommodations on the portal in the week indicated and not yet booked. It is reasonable to expect that, *ceteris paribus*, a lower price is preferred during the actual booking phase. It follows that it is reasonable to expect an average price charged lower than the average price required by the facilities. Such difference, then, in a low season period characterized by a weak demand, should also be consistently big.

In the light of these considerations, it is certainly possible to conclude that the data relating to tariffs collected directly from the offices and those provided by AirDNA are compatible with each other.

14. Methodical Appendix

AirDNA data methodology

AirDNA data are based on Airbnb data gathered from information publicly available on the Airbnb website and is the only “trusted” (by hosts themselves) source for short-term rental data that provides occupancy rates and revenue data.

About the recognition of booking vs. blocking listings

AirDNA has developed advanced artificial intelligence and machine learning technology that allows accurate identification of blocks of unavailable dates observed on Airbnb’s platform as either booked by a customer or blocked by the host. This ability to discern between booked and blocked nights is core to any analysis of Airbnb data.

AirDNA utilizes statistical pattern-recognition techniques, which define a mathematical relationship between what is known about a property and actual classification of genuine reservations or dates blocked by the host. These are similar in concept to the algorithms that enable Amazon to recommend new products that you might be interested in Netflix to recommend new movies and OkCupid to recommend potential partners.

The accuracy of AirDNA’s prediction model is tested by setting aside a portion of AirDNA’s known booked/blocked historical data, hiding it from the model training data and then asking the system to classify the blocks of unavailable dates once it's been trained. This output is then compared against the actual known booked/blocked status of each grouping of days to assess the degree of predictive accuracy.

True to its machine learning classification, AirDNA’s artificial intelligence model continues to learn and improve as time goes on. This is important as Airbnb booking trends are likely to continuously evolve over time as evidenced by past behaviour. AirDNA’s AI continues to observe behaviour, extract patterns from new information and historical knowledge and, as a result, predict Airbnb booking information with accuracy.

About the listing revenue calculation

AirDNA reviews constantly the calendar information of Airbnb properties to determine when a place was booked and for how long. When a new reservation is recorded, the advertised daily rate of each of those days directly before the booking occurred is calculated. Then, the cleaning fee for each unique reservation is added in. At the end of the month AirDNA sums up how many days have been booked and at what rate and calculate monthly revenue.

Fees for additional guests or last-minute discount are not visible so they have not been taken into account.

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