Demand for Airbnb accommodation from Swiss citizens in Covid-19 Summer: Cocooning style

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Extended Abstract

Introduction

The coivd-19 pandemic, together with the resulting international travel restrictions, new hygiene standards, capacity regulations for tourist attractions, minimum distance rules, will lead to a change in travel behaviour. Evidence based on a recent survey conducted by the Institute of Tourism of the University of Applied Sciences of Western Switzerland shows that for Swiss people, their preferred destination is "at home". In particular, rural areas are preferred (for instance the Rustici in Ticino) with a strong increase in demand for camping and rental of mobile homes. This can be called the new cocooning style of the tourists. Cities that heavily relies on business and cultural tourists have a disadvantage. However, it remains unclear whether and to what extent the demand for short-term rentals (Airbnb) is affected in different regions and by type of listing.

The aim of this paper is to investigate the evolution of the demand for Airbnb properties and their prices in the Covid-19 summer months June and July 2020. Special attention is paid to the location of the Airbnb properties, which are characterized by the population and tourism density of the destination and the characteristics of the listing. Here listings are characterized by type of cocooning style (i.e. camping-car, chalet, individual home, boats, etc.). The analysis focuses on the short-term effects after the end of the lockdown in May. Quantile regression models and spatial econometric models are used to estimate the relationships. Data is based on the total universe for the Airbnb listings provided by AirDNA for Switzerland. The raw data consist on a series of key performance indicators (total revenues, number of bookings) at the Airbnb listing level from January 2017 to July 2020 totaling more than 1.16 million observations. A key novelty of paper is the introduction of new indicators for visitor and resident density, measured as tourist flows per tourist area and population density at destination and location.

This study contributes to the growing studies on the demand for Airbnb listings and prices (See Domenech et al 2019, Falk, Larpin and Scaglione 2019 for Switzerland and Gunter and Oender, 2018 for Austria; Eugenio-Martin, Cazorla-Artiles and González-Martel, 2019 and Moreno-Izquierdo, et al. 2019 for Spain). For instance, Gunter and Oender (2018) conclude that Airbnb demand in cities is price-inelastic and that demand increases with the size of the listing, the number of photos and the responsiveness of the host. Several studies have investigated the role of population size and population density in the demand for Airbnb lists (Eugenio-Martin, Cazorla-Artiles and González-Martel, 2019). The authors note that in city and nature travel destinations, Airbnb's offer has a strong position compared to established hotels. Other studies put emphasis on the role of location for Airbnb prices with significant differences between rural and urban locations (Moreno-Izquierdo, et al. 2019). Overall, few studies explicitly focus on the role of location and population density for the demand for Airbnb properties. The majorities of studies using Airbnb data for cities (Adamiak, 2018; Gunter et al. 2020). Exceptions are the study on Airbnb prices in rural and city regions by (Falk, Larpin and Scaglione, 2019; Moreno-Izquierdo, et al. 2019).

Conceptual background and empirical model

With the arrival of Covid-19 the issue of tourism crowding has taken a new urgency as hygiene and social distancing become new priorities in post-pandemic tourism. During the Covid -19 pandemic, domestic tourists prefer a destination with a small number of tourists and inhabitants per area. The reason for this is that regions with a larger area are considered safer and visitors are less likely to be infected. Therefore, it is expected that visitor (or tourism) density and population density will have a strong influence on the demand for Airbnb listings. Thus, the main hypothesis of the study is that rural areas measured by the population density of the destination and tourism flows per surface as well as entire holiday home in rural areas have an advantage.

In tourism and leisure research there is a long tradition to measure visitor density. For instance, Shelby et al. (1989) define density is a "descriptive term that refers to the number of people per unit area". Crowding is commonly used as the negative evaluation of a certain density - a value judgement that indicates that there are too many people (Graefe, Vaske and Kuss, 1984). The tourism literature has long developed so-called visitor or tourism intensity indices. Harrison (1992) introduces the "tourism intensity rate", which is measured as the number of visitors per 1,000 inhabitants and per square kilometre of total or arable land.

The first step of the analysis is a multilingual text analysis of the title of the objects using multilingual tools to detect the relevant concepts related with cocooning style (i.e. camping-car, chalet, individual home, boats, etc.).

The empirical model consists of a model of Airbnb demand and prices, in which the performance of the Airbnb listing is modelled as a function of the characteristics of the Airbnb listing (size, entire property), the amenities and location characteristics as well as population and tourism density of the corresponding village. In order to take into account, the seasonality, the performance indicators for June and July 2020 are compared with the same months in previous years. The key variables are the characteristics of the Airbnb listing measuring the "cocooning style" (i.e. camping-car, chalet, individual home) and the population and tourism density of the surrounding area. The calculated indicators include performance indicators such as occupancy rate, revenues, ADR, number of reservations, number of reservation days, number of blocked days and supply indicators such as whether the Airbnb rental is active or not. This gives a complete picture of the performance of Airbnb listings during the different phases of the crises. Control variables include the number of bedrooms, room type (entire or shared), property type, number of bath rooms, number of maximum guests, response rate and number of reviews.

Quantile regression models based on the first difference specification are used to estimate the relationships. Quantile regression models allow the estimation of the relationships at different points of the conditional distribution of the change in performance compared to the pre-crisis level. In addition, spatial econometric methods are used to consider the neighbourhood effect (Gunter, Önder and Zekan, 2020; Lee, Jang and Kim (2020). Information on longitudes and latitudes in the database allows the construction of the spatial weight matrix.

Results

Estimates obtained from the robust regression model shows that the percentage change in revenues in July 2020 compared to the same month in 2019 depends on the characteristics of the listing and the location-specific characteristics (See table 2 and Table 1 for descriptive statistics). Whole Airbnb houses, properties in nature areas and near vineyards have an advantage. The growth rate of Airbnb properties in natural areas has a 20 percentage points higher growth rate compared to non-natural areas. In contrast, Airbnb properties in cities have an 18 percentage points lower growth rate. The type of property is important, with whole houses or holiday flats having a 17

percentage points higher growth rate. The population density of the region is also of great importance. The higher the population density of the region, the lower the growth rate of revenues. Similarly, the share of non-cultivable land is significantly positively correlated. All this indicates that Swiss inhabitants prefer whole Airbnb properties in remote regions. Quantile regressions also show that the population density at the destination is significantly negatively linked to the change in performance. In addition, Airbnb's services differ significantly according to the type of listing. QR 0.25 and QR 0.75 regressions show that the role of regional characteristics and the type of Airbnb listing is more important for Airbnb properties with a high conditional growth rate of revenues. Unreported results show that the estimates are robust if the spatially lag growth rate of the neighbouring properties is taken into account.

Conclusions and future research

The study shows that the demand for an Airbnb listing during the pandemic is significantly dependent on both the population density of the destination and individual characteristics. Entire properties and listings in rural areas, which are characterized by a lower visitor and population density, are at an advantage.

In Switzerland, the seasonal analysis of overnights shows that the importance of summer domestic tourism has decreased especially in the XXI century (Scaglione, 2012), probably as a consequence of the overvaluation of Swiss Franc at the same period. From hereafter we are going to refer to trips with at least an overnight as "trips". In Switzerland, either in 2016 or 2018, the share of domestic trips was 33% on the whole year whereas the share of summer season (from May to October) was 60% of the total annual trips. During summer, the share of outbound trips by Swiss residents was 70% in 2016 and 72% in 2018 (Office fédéral de la statistique, 2015, 2019). Since 2016 to 2018, on the one hand the revenue from foreign tourists has stagnated around CHF 16.4 billion in average, and on the other hand, the Swiss' tourism balance is slightly negative: CHF-0.3 million in 2016, CHF -0,1 billion in 2017 and CHF -1.3 billion in 2018. Given the importance of the summer season for the domestic market, the open question is to what extent this "enforced " experience in the Covid-19 summer with an increase in demand for mountain/country-side destinations for Swiss residents will permanently increase the demand for domestic tourism even after the end of the disease. This question will be the medium-term consequence of this research, and in the short term the analysis of the remaining summer months will be added to the modelling.

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Appendix

Table 1: : Descriptive statistics

	Percentage change in revenue 7/2020 to 7/2019		
	Median		Median
No Entire home	-0.31	Other	-0.05
Entire home	0.04	Campsite	0.11
Other	-0.05	Other	-0.05
Nature	0.01	Boat	0.03
Other	-0.05	Other	-0.05
City	-0.52	oasis	-0.30
Other	-0.05	Other	-0.05
City centre	-0.40	garden	-0.05
Other	-0.05	Other	-0.05
Rustico	0.10	Forest	0.07
Other	-0.05	Other	-0.05
Pool	0.05	chalet	0.01
Other	-0.05	Other	-0.05
Alps	0.15	cocon	0.02
Other	-0.05		
Vineyards	0.07		

Table 2: : Determinants of the percentage change in revenues between July 2019 and July 2020

	Robust regression method			QR0.50		
	Coef.		t-stat	Coef.		t-stat
Entire home	0.172	***	10.84	0.266	***	16.83
Nature	0.193	***	2.97	0.125		1.53
City	-0.184	***	-2.89	-0.185	***	-3.15
City centre	-0.117		-0.45	-0.484		-0.68

	Coef.		t-stat	Coef.		t-stat
Pool	0.147	*	1.83	0.097		0.82
Rustico	0.050		0.60	0.019		0.15
Alps	0.050		0.14	0.420		0.30
Vineyards	0.338	**	1.97	0.341		0.79
Campsite	0.302	*	1.79	0.240		0.69
Boat	-0.309		-0.62	-0.238		-0.93
Oasis	-0.034		-0.23	-0.086		-0.46
Garden	0.156	*	1.66	-0.080		-0.97
Forest	0.157		1.08	0.218		1.43
Chalet	0.221		1.65	-0.140		-0.77
Cocoon	0.044		0.17	-0.077		-0.31
Ln Pop density	-0.057	***	-13.46	-0.069	***	-12.40
Uncultivable land	0.002	***	4.57	0.003	***	6.21
Constant	-0.074	***	-2.61	-0.107	***	-3.05
# of observations	17380			17380		

	QR0.25			QR0.75		
	Coef.		t-stat	Coef.		t-stat
Entire home	0.164	***	11.89	0.667	***	12.62
Nature	0.116	*	1.71	0.018		0.13
City	-0.141	***	-4.44	-0.494	***	-4.67
Centrevillage	-0.209		-0.65	-0.479		-0.07
Pool	0.125		1.38	-0.467	***	-3.20
Rustico	0.118		0.94	-0.356		-1.34
Alps	0.455		0.45	2.257		1.32
Vineyards	0.269		1.21	0.912		0.35
Campsite	0.345	*	1.68	0.259		0.28
Boat	-0.217		-0.85	-0.971	**	-2.14
Oasis	0.000		0.00	-0.093		-0.36
Garden	0.204	***	2.59	-0.227		-1.14
Forest	-0.003		-0.01	0.080		0.22
Chalet	0.138		1.21	-0.190		-0.74
Cocoon	0.258		1.47	-0.283		-0.89
Ln Pop density	-0.048	***	-11.72	-0.060	***	-5.91
Uncultivable land	0.002	***	4.82	0.017	***	12.35
Constant	-0.602	***	-17.22	0.189	***	3.12
# of observations	17380			17380		

Notes: Asterisks ***, **, * denote significance at the ¨1, 5 and 10 per cent levels, respectively