



# Can Airbnb provide livable incomes to property owners?

Brian Fabo, Silvia Hudáčková and Arthur Nogacz

WP 168  
January 2017

AIAS  
Working Paper Serie

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# Acknowledgements

Authors are grateful to Miroslav Beblavý, Karolien Lenaerts and Kea Tijdens for important feedback on the drafts. We are also thankful to Murray Cox for publishing the Airbnb city-level data for researchers to use.

Brian Fabo acknowledges the financial support of the Eduworks Marie Curie Initial Training Network Project (PITN-GA-2013-608311) of the European Commission's 7<sup>th</sup> Framework Program

January 2017

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## **Bibliographical information**

Fabo, B., Hudáčková, S., Nogacz, A. (2017). Can Airbnb Provide Livable Incomes to Property Owners? An Analysis on National, Regional and City District Level. Universiteit van Amsterdam, AIAS Working Paper 168.

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ISSN online: 2213-4980

ISSN print: 1570-3185

# Can Airbnb provide livable incomes to property owners?

An analysis on national, regional  
and city district level

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## Table of contents

<b>Abstract</b> .....	<b>5</b>
<b>1 Introduction</b> .....	<b>6</b>
<b>2 Literature review</b> .....	<b>7</b>
<b>3 Methodology and data</b> .....	<b>9</b>
<b>4 Country-level overview</b> .....	<b>10</b>
<b>5 District-level Analysis: Vancouver</b> .....	<b>15</b>
<b>6 Conclusion</b> .....	<b>18</b>
<b>Bibliography</b> .....	<b>20</b>
<b>ANNEXES</b> .....	<b>22</b>
ANNEX I: Living wages around the World .....	22
ANNEX II: Wages of Skilled Workers Around the World .....	22
ANNEX III: Average price of Airbnb rentals .....	23
ANNEX IV: Number of tourists per country .....	24
ANNEX V: Prices of Airbnb rentals in Slovakia .....	25
ANNEX VI: Visitors in tourism accommodation establishments in the Slovak Republic in year 2015 - by regions .....	25
ANNEX VII: Prices of Airbnb rentals in Vancouver per district .....	26

## Abstract

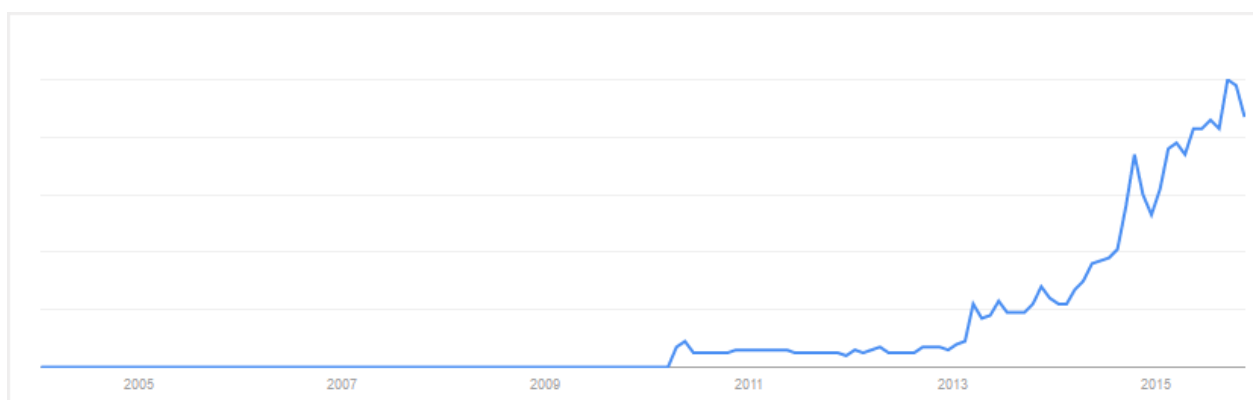
In this paper, we explore the Airbnb payoffs on the macro (global), mezzo (national) and micro (city) level. The main aim of the paper is to pilot a methodology for exploring, whether Airbnb can serve as a source for income replacement. Combining a variety of data sources on the affluence of a given location, we aim to estimate the potential payoffs to property owners from renting out a property on Airbnb vis-à-vis the living cost in that place. We discover a great variety of payoffs between individual countries, regions and city districts, which appear to be quite complex and cannot be universally simplified to indicators such as prosperity or tourists visits. Many interesting patterns found in this study would require further examination.

# 1 Introduction

Airbnb represents one of the most successful examples of the so-called sharing economy, often also referred to as “platform”, “collaborative” or “on-demand” economy. What is the sharing economy? It is a collective denomination for “business models where activities are facilitated by online platforms that create an open marketplace for the temporary use of goods or services often provided by private individuals.” (European Commission, 2016) In spite of being a relatively young industry, the sharing economy has already spawned several promising start ups and attracted investment from market leaders (Puschmann and Alt, 2016).

While use of the term sharing economy is highly problematic (Drahokoupil and Fabo, 2016), it is one of the buzzwords of the 2010s and the interest in the term in Google searches is growing fast (Figure 1). In line with the growth of the phenomenon, the market value is surging as well. According to PwC (2014) estimates that the sector will grow from \$15 billion in 2014 to \$337 billion by 2025.

Figure 1: Google trends query for “sharing economy”. Source: Google Trends



Along with the taxi service Uber, Airbnb represents the most successful example of the sharing economy. The product offered on the platform is short-term accommodation in private housing. The type of housing offered on the platform is very diverse and includes spare rooms in private apartments, studios, entire vacant apartments, houses, condos, and villas (See Box 1 for details).

But how great are the payoffs for participating on the platform for property owners? Our previous inquiries into sharing economy have shown that due to the “one night stand” nature of transactions, the income from sharing economy tend to be unstable and in the end typically insufficient to cover the living cost (de Groen et al., 2016; Maselli and Fabo, 2015). In this empirical exploratory piece, we look at the payoffs from participating in Airbnb on the global, country and district level.

## 2 Literature review

Sharing economy has become a prominent issue in the academia. The phenomenon has been discussed using the concept of global working class, the cybertariat (Huws, 2014). Questions have been asked, whether the rise of the on demand economy does not result in precarious work in new digital sweatshops (Drahokoupil and Fabo 2016). Nonetheless, other authors connect the rise of sharing economy with a more fair and sustainable distribution of wealth (Heinrichs, 2013).

The size of the body of literature discussing Airbnb specifically is limited to less than two dozen papers. Additionally, a large body of the academic literature deals with the issue of sharing economy in general and only refers to Airbnb as an example, without paying particular attention to it (Cusumano, 2015; Teubner, 2014). Some scholars have approached Airbnb from the legal perspective (Jefferson-Jones, 2014; Miller, 2014), exploring ways to regulate the phenomenon. Another stream of literature is interested in decision-making, such as the dynamics of customer ratings (Fradkin et al., 2015; Zervas et al., 2015), discrimination (Edelman and Luca, 2014), or principles of monetarization of hospitality exchange (Ikkala and Lampinen, 2015). Other works focus on more business relevant concerns such as the role of branding (Yannopoulou et al., 2013) or the impact Airbnb on the tourism industry (Guttentag, 2015).

### Box 1. How Airbnb works

Airbnb is an application and website that matches residents and travellers for home rentals. It allows real estate residents to advertise their place on a popular platform (more than 60 mil. users in 190 countries as of November 2015) for free and pay a provision in case someone rents their place. Customers can search among a diversity of offers (more than 2 mil.) and pay to Airbnb an extra service fee on top of the rent. The property owners are charged 3 % of the total income from a rental, and the customer is charged a service fee of between 6-12%. Customers and hosts rate themselves publicly in many categories such as cleanliness, thus the service provides some assurance for both sides of the contract. In comparison to usual hotel services, Airbnb is perceived as cheaper alternative and it can also provide the feeling of intimacy at home or interesting forms of accommodation such as castles, yurts or lighthouses. The service for travellers is usually connected with local tips and advice from the resident (see Table 1 for more detailed elaboration on the benefits of using Airbnb).

**Table 1: Benefits of Airbnb**

Benefits for the user	Benefits for the property owner
Lowered transaction costs (All offers on one website, straightforward and safe payments)	Lowered transaction costs (Presence on a busy marketplace, timely and dependable payouts)
Decreased information asymmetry (Can check ratings of owners, pictures and information about property)	Decreased information asymmetry (Can check ratings of users from previous stays, gets a scanned ID of the guest)
Convenience (integration with social media, simple user interface)	Convenience (easy to set up income stream)

Own elaboration

Empirical enquiries into the sharing economy as a source of income are very rare. Ipeirotis (2010) conducted a survey among the workers at the Amazon Mechanical Turk crowdsourcing platform to discover demographics of the workers, discovering high polarization between the workers in developed countries, for whom the service was mainly a source of extra income, and the workers in the developing countries, whose living depended on the service. Maselli and Fabo (2015), as well as deGroen et al. (2016) have examined the earnings of workers at on-demand platforms CoContest and Listminut, discovering that the services generally do not generate sufficient income for living in a high income countries, except in special cases, although they can be used as an interesting source of income for people in middle-income countries.

There seems to be no literature dealing directly with the subject of Airbnb as a source of income. A rare empirical exploration of the phenomenon is accessible at the website [insideAirbnb.com](https://insideairbnb.com) by „digital storyteller“ Murray Cox, who presents estimates of the supply and demand for Airbnb services for selected cities. However, the website, while very useful, is limited to presentation of the raw data. This study, therefore, likely represents first prototype attempt to explore the issue in a comparative and systematic way and thus hopes to fill a gap in the literature on the nascent phenomenon of Airbnb rentals.



### 3 Methodology and data

The main aim of the study is to pilot a methodology for exploring, whether Airbnb can serve as a source for replacement income. To determine this, we contrast various measures of the affluence of a given location with average Airbnb price. The aim of this exercise is to determine, whether it is possible to identify locations, which combine modest cost of living with high potential income from the Airbnb rentals.

We apply our analysis on the level of international comparison and on the level of regional comparison inside the country of Slovakia, and city-level analysis of the Airbnb services in the city of Vancouver, Canada. Due to the exploratory nature of this exercise, we chose to focus on localities, where we can draw from personal knowledge of the local circumstances.

On each of these levels of analysis, we aim to establish the relation between the relative living expenses and potential of earnings for Airbnb rental. While we are lacking specific data about many relevant factors, such as the cost of individual properties offered, the precise demand for individual properties, and most importantly the individual strategies pursued by renters, we are able to infer basic figures from aggregated numbers.

On the national level, we use the “living wages”(Guzi, 2014) estimated according to a survey of prices in 58 countries, which we consider a bare minimum to survive in the country as well as wages of highly educated workers, which we use as a proxy for a decent standard of living. Both types of wages are expressed as an interval. These figures were downloaded using the “web crawling” technique through the <http://www.wageindicator.org/> website on 18 February 2016. According to the website, the data are updated yearly and the presented data are representative for the year 2015.

The cost of accommodation is obtained through the Airbnb site on 29 December 2015 in the following way: An average price of one night stay from 25 October 2016 to 26 October 2016 – a randomly chosen dates with sufficient time lag from the date of data collection to ensure most properties are still unoccupied was extracted from the Airbnb website. Two scenarios were checked – rental of an entire housing unit and a rental of a room in shared housing. A 3 % Airbnb fee is deducted from the amount extracted from the website.

On the regional level, we use mean gross wage calculated by survey on the Slovak website [www.platy.sk](http://www.platy.sk), which has much higher number of observations than the local WageIndicator website and thus allows for more precise estimation of regional wages. We furthermore use the price of housing as reported by the Slovak National Bank. This we contrast with Airbnb accommodation prices, obtained through the same way as on the national level.

Finally, we go to the level of a city, where we contrast the cost of living in Vancouver districts, and the potential earnings through Airbnb in different neighbourhoods. The cost of living measure used comes from the Living Wage for Families Campaign report, which measures the cost of living for a family of four in the city. On the city level, we obtained data on Airbnb demand - the neighbourhood Airbnb average income comes from the [insideAirbnb.com](http://insideAirbnb.com) website.

## 4 Country-level overview

In terms of living costs, data show large differences between countries largely in line with the level of their economic development as well as differences in family size. In Western countries, the cost of basic needs for a family can surpass €1,000 monthly, in the case of the UK, likely reflecting the high cost of living in the city of London. Nonetheless, income of around €700 appear to be sufficient for basic necessities in developed countries such as USA, France or Italy. Countries such as Russia, Hungary, or Argentina are generally well under €300 threshold. The living wage in poorer countries, including Ukraine, Tanzania and Mexico falls generally under €200 threshold. Finally, the group of countries with lowest cost of living, with living expenses under €100 monthly includes among others Egypt, India and Pakistan (see ANNEX I).

When it comes to skilled wages, the situation is the same in some respect. In highly developed countries, such as USA, UK, or France the wages are very high and can even surpass €3000 monthly threshold on average. Meanwhile, even skilled workers receive very poor wages in places such as Ethiopia, Ukraine, or El Salvador. Indeed, in Ethiopia, Togo and Ukraine the wage received by highly educated workers is not necessarily sufficient even to cover the living costs. Nonetheless, many relatively less developed countries are providing good life for the elite when accounted for the low cost of living, among others Mexico, India, and Chile (see ANNEX II).

The prices of Airbnb accommodations are similarly varied, although seemingly rooted more in national specificities, rather than a unifying external indicator, such as the level of development. US is by far the most expensive country to rent accommodation using Airbnb, with the average price of €395 and €106 for the whole home and single room respectively. In Russia, meanwhile, the price is just €34 and €25. (see ANNEX III)

The prices of whole properties and single rooms are highly correlated ( $r = .76$ ) The correlation between prices of Airbnb accommodation and wages, regardless of whether we consider the living wages or wages of skilled workers, is less strong. In general, we see that the upper bound of wage average correlates more strongly with the Airbnb prices as the lower bound and the prices of rental of the entire property is more strongly correlated with wages than the price of a single room in a shared property. The correlations range in between  $r=.46$  and  $r=.66$ .

Table 2: Correlation between Living Wage, the skilled workers' wage and Airbnb prices

	Living wage min	Living wage max	Skilled wage min	Skilled wage max
Room	0.46	0.53	0.48	0.56
Entire home	0.61	0.66	0.60	0.65

*Own calculation*

When price of an overnight rental is expressed as a percentage of Living and Skilled wages, we see that in some countries, it is really high. These are countries like Egypt, Indonesia, or Mozambique.

In this question, it is unclear just how much demand is there for such services<sup>1</sup>. Meanwhile, in very touristic countries, such as France, Italy or Spain the payoffs seem rather low. Finally, we also see reasonably developed and touristic countries, with very different payoffs to Airbnb rentals such as Hungary, Mexico or the USA. (Table 3).

Table 3: Price of nightly Airbnb rental compared with Living and Skilled Worker wage

	House		Room			House		Room	
	Living Wage	Skilled Wage	Living Wage	Skilled Wage		Living Wage	Skilled Wage	Living Wage	Skilled Wage
Argentina	32.74%	10.52%	15.98%	5.14%	Madagascar	132.00%	44.53%	64.92%	21.90%
Belarus	28.30%	24.82%	18.87%	16.54%	Mexico	96.82%	23.27%	26.75%	6.43%
Belgium	14.55%	3.77%	8.52%	2.21%	Mozambique	201.23%	62.48%	146.76%	45.57%
Benin	51.17%	30.81%	31.15%	18.75%	Netherlands	18.79%	4.87%	9.78%	2.53%
Brazil	101.38%	36.97%	27.33%	9.97%	Pakistan	101.77%	30.47%	56.54%	16.93%
Bulgaria	29.54%	11.28%	16.88%	6.45%	Paraguay	57.38%	13.24%	32.79%	7.56%
Chile	35.38%	7.93%	17.13%	3.84%	Peru	68.57%	10.70%	28.72%	4.48%
Colombia	88.09%	20.49%	23.83%	5.54%	Portugal	20.89%	9.90%	10.45%	4.95%
Costa Rica	43.66%	11.65%	18.46%	4.93%	Russia	18.73%	10.85%	13.77%	7.98%
Czech Republic	24.18%	6.99%	12.09%	3.50%	Rwanda	69.50%	19.13%	42.31%	11.65%
Egypt	112.75%	33.76%	51.68%	15.47%	Senegal	48.71%	18.56%	23.97%	9.13%
El Salvador	668.23%	222.74%	180.98%	60.33%	Slovak Republic	21.63%	8.04%	10.50%	3.90%
Ethiopia	46.12%	63.91%	17.22%	23.86%	South Africa	41.57%	10.87%	19.72%	5.15%
Finland	13.03%	3.13%	6.37%	1.53%	Spain	21.32%	6.82%	8.74%	2.80%
France	17.60%	4.41%	9.93%	2.49%	Sri Lanka	59.20%	30.93%	29.23%	15.27%
Ghana	57.36%	33.76%	35.63%	20.97%	Tanzania	57.08%	42.55%	30.15%	22.47%
Guatemala	108.84%	17.32%	30.23%	4.81%	Togo	27.61%	35.04%	21.55%	27.35%
Honduras	104.75%	28.13%	37.95%	10.19%	Uganda	103.88%	30.44%	61.48%	18.02%
Hungary	28.65%	9.88%	17.19%	5.93%	Ukraine	40.04%	42.69%	27.59%	29.41%
India	77.61%	14.47%	42.13%	7.86%	United Kingdom	19.51%	7.23%	9.65%	3.58%
Indonesia	122.24%	51.11%	38.60%	16.14%	United States	46.29%	12.49%	12.42%	3.35%
Italy	14.20%	3.97%	9.62%	2.69%	Vietnam	60.92%	22.53%	30.89%	11.42%
Kazakhstan	31.66%	19.37%	22.71%	13.89%	Zambia	61.34%	15.43%	42.84%	10.78%
Kenya	58.87%	24.59%	27.13%	11.33%	Zimbabwe	47.61%	13.65%	30.17%	8.65%

*Own calculation*

Nonetheless, statistically we see a negative correlation, although not particularly strong ( $r$  ranges between 0.19 and 0.42) between the number of tourists in a country both in absolute terms and expressed as percentage of population (see ANNEX IV) and the price of Airbnb rentals expressed as percentage of Living and Skilled Wages.

<sup>1</sup> Airbnb only reports the number of properties offered up to 300. If the number is greater, only „300+“ information is given. However, the countries we found to have fewer than 300 offers (Senegal, Guatemala, Uganda, Tanzania, Madagascar, Honduras, El Salvador, Ghana, Zimbabwe, Mozambique, Paraguay, Benin, Pakistan, Rwanda, Ethiopia, Togo and Zambia) are in many cases the ones with very high Airbnb rate compared to wages.

Table 4: Price of nightly Airbnb rental compared with Living and Skilled Worker wage

	House		Room	
	Living Wage	Skilled Wage	Living Wage	Skilled Wage
Tourist no. % of population	-0.26	-0.30	-0.36	-0.42
No. of tourists	-0.19	-0.24	-0.29	-0.33

Own calculation

The role of tourism on Airbnb prices is thus probably not linear. While intuitively we can assume Airbnb rental can be attractive as a source of income in countries, where there is a high number of tourist the data does not seem to confirm this. One reason why that might be the case is that more touristy places are likely to offer higher number and variety of alternatives, such as hotels or hostels and thus the competition might be bringing the price down.

### Regional Level Analysis: Case of Slovakia

In addition to the international comparison, we are interested in regional differences inside a country. For that reason, we look closely at the case of Slovakia. This Eastern European Union member country is potentially interesting as an Airbnb market due to its very high home ownership rate, enabling many Slovak property owners to possibly rent out their properties. According to the Eurostat<sup>2</sup>, 90 % of Slovaks live in owned housing, rather than rented one, the second highest share in the EU after Romania.

Interestingly, only 803 people in Slovakia, a country of some 5.5 million inhabitants, rent their place or room through Airbnb (as of October 25, 2015). *Prima facie*, it is a strikingly low number given the fact that more than 290,000 people were actively searching employment in Slovakia<sup>3</sup> at that time and the combination of high rate of home ownership and unemployment. Furthermore, the Slovak government did not enact legislation or practical measures against the Airbnb service so far.

Figure 2: Regional division of Slovakia



2 [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Population\\_by\\_tenure\\_status,\\_2013\\_\(%25\\_of\\_population\)\\_YB15.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Population_by_tenure_status,_2013_(%25_of_population)_YB15.png)

3 Official figure for November 2015 ([http://www.upsvar.sk/statistiky/nezamestnanost-mesacne-statistiky/2015.html?page\\_id=467299](http://www.upsvar.sk/statistiky/nezamestnanost-mesacne-statistiky/2015.html?page_id=467299)).

The country is administratively divided between 8 districts (see Figure 2), which differ in terms of relative prosperity. According to a large scale (N = 75,000) web survey of wages at [platy.sk](http://platy.sk), the median gross wage in the region of the capital city of Bratislava was € 1280, while in the economically challenged region of Prešov it was just € 801. Even bigger diversity is observable when considering average price of real estate per square meter, which varies between € 1693 in Bratislava and just € 556 in Banská Bystrica. This difference has a great potential to influence property owners in deciding whether to start with Airbnb business (Table 5).

Table 5: Median wage and cost of housing in Slovak regions

	Median monthly wage	Average price of housing per square meter
Bratislava	1280	1693
Trnava	912	830
Zilina	880	753
Nitra	865	556
Kosice	915	946
Presov	801	745
Banska Bystrica	840	712
Trencin	900	633
Slovakia	924	1227

*Data valid for 2015 in €, Source: [Platy.sk](http://Platy.sk), National Bank of Slovakia*

Average prices of all types of Slovak Airbnb offer vary even more than income or housing. Prices detailed in ANNEX V show that it is possible to rent a place in Trenčín almost two times cheaper than in Trnava. However, the average price in Trnava was skewed by extremely expensive golf resort villas offered there and a small number of cases overall. The same holds for room rentals – prices regionally vary from €20 to €40.33. On average, renting a room cost about half of the price comparing to the whole house or apartment rentals.

When we look at relative cost of Airbnb compared to local wages and housing prices, we see renting is relatively lucrative in the regions of Trnava, Zilina and Presov and the least lucrative in Bratislava.

Table 6: Median wage and cost of housing in Slovak regions

	House		Room	
	Median wage	Housing price	Median wage	Housing price
Bratislava	4.75%	3.59%	2.19%	1.66%
Trnava	9.88%	10.85%	3.21%	3.53%
Žilina	8.85%	10.34%	4.24%	4.96%
Nitra	5.06%	7.88%	2.68%	4.17%
Košice	6.62%	6.40%	4.28%	4.14%
Prešov	8.54%	9.18%	4.77%	5.13%
Banská Bystrica	7.49%	8.83%	2.94%	3.46%
Trenčín	5.41%	7.69%	2.16%	3.06%
Slovakia	7.16%	5.39%	3.43%	2.58%

Source: *Platy.sk*; National Bank of Slovakia; Own calculation

The Prešov region is particularly interesting here, because it is the one containing the country's top tourist attraction, the High Tatra mountains. Consequently a case could be made that with low local wages and property prices, renting at Airbnb can be a meaningful choice for the locals. In the wealthy capital of Bratislava, renting out the property seems the least lucrative in terms of payoffs. Despite low payoffs and high prices of real estate of the Airbnb business is located there anyhow. One possible explanation can be the high demand - Bratislava is the most touristic region in Slovakia (See ANNEX VI).

## 5 District-level Analysis: Vancouver

The final analysis is conducted on the district-level using the city of Vancouver, in Canada as the subject. This analysis adds to the previous two by targeting micro-level detail in contrast with the macro and meso level approach seen above, as well as providing material from outside of the European scope. Vancouver is one of the most popular tourist destinations in Canada.

Numbeo, a website which specializes on cost of living trends across the globe shows that Vancouver ranks 4<sup>th</sup> in Canada on their Cost of Living Index<sup>4</sup>. The Living Wage for Families Campaign, a report by the Canadian Centre for Policy Alternatives, indicates that the living wage for a family of four, in which both parents work full time, is [CAD20.64/hour](#) in Metro Vancouver, the highest in Canada<sup>5</sup>.

In terms of rent prices, the picture is very similar as to cost of living. Numbeo's Rent Index shows Vancouver as the most expensive rental market in Canada. Padmapper, a website that tracks rental listing across Canada shows in their June 2016 report that the median rental price for a 1-bedroom apartment in Vancouver is CAD 1700, almost CAD 400 higher than the second place, Toronto<sup>6</sup>.

The collaborative nature of the Airbnb provides visitors with alternatives apart from hotels and hostels for their stay, while generating income for locals. The question proposed by this paper, and applied to Vancouver, is whether payoffs from Airbnb are interesting enough for renters to be used as a primary source of income.

This district-level analysis has the goal of accounting for within-city differences in terms of Airbnb use. In order to account for these differences, the postings analysed are separated on a neighbourhood-basis. [InsideAirbnb.com](#) divides Vancouver in 23 neighbourhoods. Considering that most tourist attractions in Vancouver are in the downtown area, the majority of postings come from a group of 8 neighbourhoods in and around downtown. Annex VII contains the estimated average monthly income from Airbnb postings for all kinds of properties (entire home, private room and shared room), and only private and shared rooms (which are the postings this paper is mostly interested in).

As expected, the difference between the most and least sought-after neighbourhoods is extremely high. This shows that a simple overview of city averages might not capture the entirety of the story in terms of Airbnb income. For instance, renting a private/shared room in Downtown Vancouver is 5.6 times more sought-after than in Victoria-Fraserview. Obviously, the cost of owning or renting a house/apartment in Downtown is much higher than in other parts of the city; yet, the difference is not as big as the difference in potential Airbnb income.

The first analysis will look at living costs. For the purposes of this research, the Living Wage for Families report, already mentioned above, will be used. This report calculates that the minimum hourly rate that both adults of a family of four must make while working full-time is CAD 20.64, before benefits. In this scenario, we can imagine a family renting out a room or a set of rooms (so

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4 [http://www.numbeo.com/cost-of-living/country\\_result.jsp?country=Canada](http://www.numbeo.com/cost-of-living/country_result.jsp?country=Canada)

5 [http://www.livingwageforfamilies.ca/what\\_is\\_living\\_wage](http://www.livingwageforfamilies.ca/what_is_living_wage)

6 <http://blog.padmapper.com/2016/06/14/canada-average-rent-report-june-2016/>



to make it an “entire home/apartment” for Airbnb standards) of their house for the added income. The CAD 20.64/hour wage accounts for a total of CAD 3035/month after taxes, or CAD 6070 for the entire household. The table below shows the percentage of living wage covered by Airbnb income.

Table 7: Percentage of Living Costs Covered by Airbnb Income

	All Properties	Private/ Shared Room
Arbutus Ridge	10.37%	5.42%
Downtown*	22.83%	11.66%
Downtown East Side*	17.97%	7.42%
Dunbar Southlands	10.59%	7.13%
Fairview*	10.65%	6.24%
Granville-Woodland	11.23%	5.78%
Hastings-Sunrise	9.78%	4.0%
Kensington-Cedar Cottage*	6.54%	4.41%
Kerrisdale	17.06%	8.73%
Killarney	7.16%	4.71%
Kitsilano*	12.27%	7.28%
Marpole	7.51%	7.89%
Mount Pleasant*	11.59%	7.64%
Oakridge	8.27%	5.74%
Renfrew-Collingwood	7.31%	4.11%
Riley Park*	10.21%	6.04%
Shaughnessy	15.14%	5.37%
South Cambie	14.77%	7.42%
Strathcona	13.50%	10.82%
Sunset	8.56%	4.89%
Victoria-Fraserview	5.07%	2.07%
West End*	13.70%	9.12%
West Point Grey	16.11%	5.28%

\* = Most sought-after neighbourhoods, located in and around downtown Vancouver.

Source: Statistics Canada

As it is clear, Airbnb is not a viable option for replacement income in Vancouver. Yet, it can certainly be considered an added source of income, especially for the most sought-after neighbourhoods. In these cases, roughly 10% of the costs of living can be covered by renting or sharing rooms, which is not a negligible amount.

A different perspective that can come from the data above is that the Cost of Living Report includes rent as an expense for a family. In a case where a family does not pay rent, and own their house, the situation might change. [RentBoard.ca](http://RentBoard.ca) and [RentJungle.com](http://RentJungle.com) are websites that track rental prices. RentBoard indicates that the average rental rate for 2-bedroom listings in Vancouver over the last year (as of July 2016) is CAD 2429<sup>7</sup>. RentJungle looks at the month of June 2016, and indicates

<sup>7</sup> [https://www.rentboard.ca/rentals/rental\\_rates.aspx?locid=1040](https://www.rentboard.ca/rentals/rental_rates.aspx?locid=1040)



and average of CAD 2491 for the same 2-bedroom category<sup>8</sup>. The mean of the two indicators is CAD 2460, and is the price used in this analysis. By subtracting the average rental cost from the minimum cost of living as seen above (CAD 6070), we reach CAD 3610<sup>9</sup>. The table below shows the percentage figures under the new cost of living.

Table 8: Percentage of Monthly Living Costs Without Rent Covered by Airbnb Income

Neighbourhood	Percentage of Living Costs Without Rent Covered by Airbnb Income	
	All Properties	Private/Shared Room
Arbutus Ridge	17.45%	9.11%
Downtown*	38.39%	19.61%
Downtown East Side*	30.22%	12.49%
Dunbar Southlands	17.81%	11.99%
Fairview*	17.92%	10.49%
Granville-Woodland	18.89%	9.72%
Hastings-Sunrise	16.45%	6.73%
Kensington-Cedar Cottage*	10.99%	7.42%
Kerrisdale	28.69%	14.68%
Killarney	12.04%	7.92%
Kitsilano*	20.63%	12.24%
Marpole	12.63%	13.26%
Mount Pleasant*	19.50%	12.85%
Oakridge	13.90%	9.66%
Renfrew-Collingwood	12.29%	6.92%
Riley Park*	17.17%	10.16%
Shaughnessy	25.45%	9.03%
South Cambie	24.84%	12.49%
Strathcona	22.71%	18.19%
Sunset	14.40%	8.22%
Victoria-Fraserview	8.53%	3.49%
West End*	23.04%	15.34%
West Point Grey	27.09%	8.89%

\* = Most sought-after neighbourhoods, located in and around downtown Vancouver.

Source: Statistics Canada

The table shows that in the case of property owners, their income can receive a substantial boost by renting through Airbnb. The numbers indicate that Airbnb can be a very strong source of added income, although not sufficient to replace income from work.

<sup>8</sup> <https://www.rentjungle.com/average-rent-in-vancouver-bc-rent-trends/>

<sup>9</sup> It is important to note that there are other expenses that are brought by house ownership, such as maintenance and taxes. Still, because of the general difficulty in estimating these expenses, they have been left out of the equation.

## 6 Conclusion

Results show a great deal of variance in payoffs on all levels of our analysis.

Our analysis of Slovak regions showed that the payoffs for whole country tell us very little about particular parts of the country due to large regional differences. Moreover, we found that the variance is large on the level of city districts, too.

On the country level, when price of an overnight rental is expressed as a percentage of Living and Skilled wages, we see that in some countries, it is really high. We identified countries such as Mozambique, where renting a house overnight can surpass the Living wage in the country two times (201.23%). On the other side of the spectrum, renting a whole place overnight in Finland generates only 13.03% of Living wage. Renting out a whole real estate overnight generates approximately a quarter of Living wage in Bulgaria, Czech Republic and Togo. The differences between countries mentioned show that the payoffs cannot be universally simplified to indicators such as prosperity or tourist visits.

Statistically, we see a negative correlation, although not particularly strong ( $r$  ranges between 0.19 and 0.42) between the number of tourists in a country both in absolute terms and expressed as percentage of population (see ANNEX IV) and the price of Airbnb rentals expressed as percentage of Living and Skilled Wages.

The prices of Airbnb accommodations are similarly varied, although seemingly rooted more in national specificities, rather than a unifying external indicator, such as the level of development. The correlation between prices of Airbnb accommodation and wages, regardless of whether we consider the living wages or wages of skilled workers, range in between  $r=.46$  and  $r=.66$ .

On the country level, we examined 8 Slovak districts which had large variation in income and housing prices. However, average prices of all types of Slovak Airbnb offer vary even more. With low local wages and property prices, renting through Airbnb can be a meaningful alternative to employment for the less developed regions. We see that renting generates highest payoffs in the regions of Trnava, Žilina and Prešov, while it is the least lucrative in Bratislava. Expressed as a percentage of median monthly regional wage, renting a whole real estate overnight ranges from the highest payoffs in Trnava (9.88%) to the lowest in Bratislava (4.75%).

Interestingly, in the wealthy capital of Bratislava with low payoffs and high prices of real estate, renting out the property seems the least lucrative. And yet, most of the Airbnb offers was located there (295 out of 803). Bratislava is the most frequently visited region by tourists in Slovakia (ANNEX VI), however, Airbnb prices there are almost at country average (ANNEX V). Further research would be needed to determine, whether the lower payoffs from Airbnb in Bratislava can be caused by competition among hosts.

The final analysis was conducted on the 23 districts of Vancouver, in Canada. We found that the difference in monthly payoff between the most and least sought-after neighbourhoods is extremely high. Expressed in percentage of living costs without rent covered, the least lucrative is Victoria-Fraserview with 5.07% of living costs covered and the most lucrative is Downtown, which covers on

average 22.83% living costs. Thus, income from all types of real estate is 5.6 times higher in Downtown than in Victoria-Fraserview. Therefore, when considering income replacement by Airbnb, hosting with one real estate does not have the potential to replace the Living wage in any part of Vancouver.

Further research should focus on determinants of Airbnb growth. If researchers can add demand factor and other likely determinants such as market competition, it would be possible to predict where more hosts are going to start their Airbnb business.

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## ANNEXES

### ANNEX I: Living wages around the World

Living Wage					
United Kingdom	787 - 1003	Hungary	162 - 211	Ghana	101 - 122
United States	677 - 979	Ethiopia	147 - 168	Guatemala	97 - 127
Finland	620 - 780	Russia	144 - 208	Ukraine	93 - 125
France	620 - 670	Bulgaria	143 - 179	Zambia	92 - 108
Belgium	580 - 740	Belarus	139 - 190	Peru	89 - 121
Netherlands	570 - 700	Togo	139 - 150	Vietnam	87 - 139
Italy	550 - 680	Kenya	138 - 198	Rwanda	87 - 106
Spain	480 - 630	Kazakhstan	127 - 155	Benin	78 - 97
Portugal	400 - 510	Mexico	124 - 181	Pakistan	76 - 96
Slovak Republic	290 - 320	Zimbabwe	119 - 293	India	72 - 103
Czech Republic	241 - 320	Senegal	117 - 134	Indonesia	66 - 115
Argentina	219 - 279	Sri Lanka	110 - 155	Mozambique	56 - 72
Costa Rica	197 - 349	Tanzania	109 - 193	Egypt	50 - 74
Chile	197 - 324	Paraguay	106 - 131	Madagascar	37 - 53
South Africa	181 - 272	Colombia	103 - 165	Uganda	33 - 58
Brazil	175 - 265	Honduras	101 - 155	El Salvador	19 - 23

Source: WageIndicator.

### ANNEX II: Wages of Skilled Workers Around the World

United Kingdom	2034 - 2793	Hungary	479 - 601	Ghana	139 - 240
United States	2387 - 3749	Ethiopia	93 - 135	Guatemala	516 - 895
Finland	2630 - 3200	Russia	228 - 380	Ukraine	81 - 123
France	2200 - 2950	Bulgaria	332 - 511	Zambia	292 - 500
Belgium	2300 - 2800	Belarus	153 - 222	Peru	403 - 939
Netherlands	2100 - 2800	Togo	84 - 143	Vietnam	240 - 372
Italy	1900 - 2500	Kenya	295 - 510	Rwanda	246 - 454
Spain	1470 - 2000	Kazakhstan	189 - 272	Benin	107 - 183
Portugal	800 - 1120	Mexico	471 - 796	Pakistan	218 - 355
Slovak Republic	690 - 950	Zimbabwe	521 - 915	India	345 - 593
Czech Republic	832 - 1110	Senegal	229 - 430	Indonesia	166 - 266
Argentina	629 - 919	Sri Lanka	191 - 318	Mozambique	130 - 283
Costa Rica	845 - 1203	Tanzania	106 - 299	Egypt	151 - 263
Chile	904 - 1421	Paraguay	395 - 630	Madagascar	100 - 166
South Africa	657 - 1075	Colombia	433 - 722	Uganda	117 - 196
Brazil	450 - 757	Honduras	380 - 572	El Salvador	52 - 73

Source: WageIndicator.

## ANNEX III: Average price of Airbnb rentals

	Whole home	Single Room		Whole home	Single Room		Whole home	Single Room
United Kingdom	180	89	Hungary	55	33	Ghana	66	41
United States	395	106	Ethiopia	75	28	Guatemala	126	35
Finland	94	46	Russia	34	25	Ukraine	45	31
France	117	66	Bulgaria	49	28	Zambia	63	44
Belgium	99	58	Belarus	48	32	Peru	74	31
Netherlands	123	64	Togo	41	32	Vietnam	71	36
Italy	90	61	Kenya	102	47	Rwanda	69	42
Spain	122	50	Kazakhstan	46	33	Benin	46	28
Portugal	98	49	Mexico	152	42	Pakistan	90	50
Slovak Republic	68	33	Zimbabwe	101	64	India	70	38
Czech Republic	70	35	Senegal	63	31	Indonesia	114	36
Argentina	84	41	Sri Lanka	81	40	Mozambique	133	97
Costa Rica	123	52	Tanzania	89	47	Egypt	72	33
Chile	95	46	Paraguay	70	40	Madagascar	61	30
South Africa	97	46	Colombia	122	33	Uganda	49	29
Brazil	230	62	Honduras	138	50	El Salvador	144	39

Source: Airbnb, own calculation



## ANNEX IV: Number of tourists per country

Country	Popula- tion (in millions)	Tour- ists (in millions)	Tourists no. as per- centage of population	Country	Popula- tion (in millions)	Tour- ists (in millions)	Tourists no. as per- centage of population
Spain	46.48	65.00	139.85%	Egypt, Arab Rep.	89.58	9.63	10.75%
France	66.22	83.77	126.50%	Peru	30.97	3.22	10.38%
Hungary	9.86	12.14	123.08%	Paraguay	6.55	0.65	9.90%
Slovak Republic	5.42	6.24	115.07%	Guatemala	16.02	1.46	9.08%
Bulgaria	7.22	7.31	101.21%	Vietnam	90.73	7.87	8.68%
Czech Republic	10.53	10.62	100.87%	Rwanda	11.34	0.93	8.16%
Portugal	10.40	9.09	87.41%	Sri Lanka	20.77	1.53	7.35%
Netherlands	16.87	13.93	82.57%	Mozambique	27.22	1.66	6.10%
Italy	60.79	48.58	79.91%	Zambia	15.72	0.95	6.02%
Finland	5.46	4.23	77.38%	Senegal	14.67	0.84	5.70%
Belgium	11.23	7.89	70.22%	Colombia	47.79	2.57	5.37%
Costa Rica	4.76	2.53	53.11%	Ghana	26.79	1.09	4.08%
United Kingdom	64.56	32.61	50.52%	Togo	7.12	0.28	3.96%
Ukraine	45.36	12.71	28.02%	Indonesia	254.45	9.44	3.71%
Kazakhstan	17.29	4.56	26.37%	Uganda	37.78	1.27	3.35%
United States	318.86	75.01	23.52%	Brazil	206.08	6.43	3.12%
Mexico	125.39	29.35	23.40%	Kenya	44.86	1.26	2.81%
Russian Federation	143.82	32.42	22.54%	Benin	10.60	0.24	2.28%
El Salvador	6.11	1.35	22.02%	Tanzania	51.82	1.11	2.15%
Chile	17.76	3.67	20.68%	Belarus	9.47	0.14	1.45%
South Africa	54.00	9.55	17.68%	Madagascar	23.57	0.22	0.94%
Argentina	42.98	5.93	13.80%	Ethiopia	96.96	0.77	0.79%
Zimbabwe	15.25	1.91	12.50%	India	1295.29	7.68	0.59%
Honduras	7.96	0.87	10.90%	Pakistan	185.04	0.97	0.52%

Source: World Bank

## ANNEX V: Prices of Airbnb rentals in Slovakia

Average price of whole place in each region	Price per day (EUR)	Average price minus 3 % Airbnb fee	Number of cases
Bratislava	62,64	60,76	231
Trnava	92,85	90,06	26
Zilina	80,25	77,84	118
Nitra	45,17	43,81	18
Kosice	62,42	60,55	33
Presov	70,51	68,39	96
Banska Bystrica	64,83	62,89	41
Trencin	50,2	48,69	15
Slovakia	68,18	66,13	578

Source: Airbnb , own calculation.

Average price of single room in each region	Price per day (EUR)	Average price minus 3 % Airbnb fee	Number of cases
Bratislava	28,91	28,04	64
Trnava	30,2	29,29	10
Zilina	38,47	37,32	34
Nitra	23,92	23,20	12
Kosice	40,33	39,12	15
Presov	39,42	38,24	43
Banska Bystrica	25,42	24,66	25
Trencin	20	19,40	5
Slovakia	32,64	31,66	208

Source: Airbnb , own calculation.

## ANNEX VI: Visitors in tourism accommodation establishments in the Slovak Republic in year 2015 - by regions

Region	Number of nights spend by tourists
Region of Bratislava	2 554 879
Region of Trnava	1 181 037
Region of Trenčín	1 108 518
Region of Nitra	707 945
Region of Žilina	2 440 296
Region of Banská Bystrica	1 397 260
Region of Prešov	2 362 383
Region of Košice	597 762

Source: Slovak Statistical Office (2016)

## ANNEX VII: Prices of Airbnb rentals in Vancouver per district

Neighbourhood	Average Monthly Income in Canadian Dollars	
	All Properties	Private/Shared Room
Arbutus Ridge	630	329
Downtown	1386	708
Downtown East Side	1091	451
Dunbar Southlands	643	433
Fairview	647	379
Granville-Woodland	682	351
Hastings-Sunrise	594	243
Kensington-Cedar Cottage	397	268
Kerrisdale	1036	530
Killarney	435	286
Kitsilano	745	442
Marpole	456	479
Mount Pleasant	704	464
Oakridge	502	349
Renfrew-Collingwood	444	250
Riley Park	620	367
Shaughnessy	919	326
South Cambie	897	451
Strathcona	820	657
Sunset	520	297
Victoria-Fraserview	308	126
West End	832	554
West Point Grey	978	321

Source: Own elaboration





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ISSN online 2213-4980

ISSN print 1570-3185

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