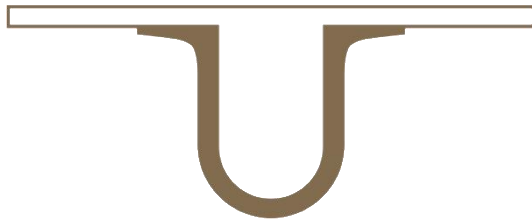




UNIVERSIDADE D
COIMBRA



Felipe Ferri de Camargo Paes

AIRBNBFICATION OF LISBON

EFFECTS OF THE SHORT-TERM RENTALS IN LISBON

VOLUME 1

Master's degree Dissertation in the speciality of Management advised by the Professor Paulo Albuquerque Melo, PhD and by the Professor Filippo Celada, PhD at the University of Roma La Sapienza presented to the Faculty of Economics at the University of Coimbra

February of 2020



Felipe Ferri de Camargo Paes

Airbnbification of Lisbon: Effects of the short-term rentals in Lisbon

Dissertation of thesis in the speciality of Management presented to the Faculty of Economics at the University of Coimbra in order to obtain a Master's degree.

Advisors: Prof. Manuel Paulo Albuquerque Melo, PhD and Prof. Filippo Celata, PhD.

Coimbra, February of 2020

Dedication

To my uncles, Luiz and Sérgio, without their help I would not be here today, they are responsible to the kick-off of my goal to study abroad, giving me all support since the day one.

To my uncle Edmilson whom I have all the respect, he always helped me to drive the rudder of life.

To all my family, especially to my parents, Márcia and Galvão, the ones who helped to build my character and backed me in my decisions, they have taught me to be wise and respect the next, both provided me with a very liberal education. To my siblings, Gabriela and Rodolfo, the ones whom I have the strongest ties and share my tough and happy moments, they both are responsible for sparking into me a new kind of love, the love of being an uncle.

To my friends, I appreciate all the support from far away that they are giving since I took this decision of living abroad alone. To the new ones, I appreciate all the moments we have shared in this new challenge I've decided to live, being the pillar to win the obstacles.

To the city of Coimbra, where I've learnt how to feel love for a new place, where I made new friendships and where I rebuild my mindset, learning and sharing experience with people from the all over the world.

To the Professor Filippo Celata from the University of Rome La Sapienza who gave me huge support on this research, being all the time resilient to help. To Professor Paulo Melo, my advisor from the University of Coimbra who introduced me the idea of working on sharing and engaged me to participate in the Cost 16121 group and encouraged me to go to Erasmus.

Finally, to my aunt Helena who is dead but is the one who galvanize my character as a human being, the most honest person I have known in my life, I always will bear she in my mind and thoughts.

Porque a revolução é uma pátria e uma família.

Jorge Amado, Capitães da Areia, 1937

Resumo

O Airbnb já é um fenómeno dentro do conceito de mercado *peer-to-peer* de compartilhamento de casas. A plataforma funciona como uma intermediária entre anfitriões, aqueles que disponibilizam suas casas para arrendamento e utentes, aqueles que estão em busca de alojamento em modelos de contratos de curta duração. Sendo uma plataforma *peer-to-peer*, o Airbnb foi criado com o conceito da Economia de Compartilhamento, ao qual podem ser estudantes ou pessoas que tem um quarto sobrando em suas casas, usando-o para ganhar dinheiro extra ou simplesmente no âmbito de interação social de conhecer novas pessoas. Entretanto, recentes estudos e grupos académicos estão revelando que o Airbnb não segue as premissas da Economia de Compartilhamento, mas sim uma empresa que se enquadra na economia convencional. No entanto, os reais efeitos causados pelo Airbnb e a Economia de Compartilhamento ainda são desconhecidos e necessitam ser analisados mais profundamente. O objetivo desta pesquisa é explorar e melhor entender as causas e efeitos da plataforma. Através de uma visão expansiva foram feitas uma variedade de análises espaciais usando o *software* ArcGIS. Seguindo este caminho, este trabalho tem a finalidade de analisar como o Airbnb está afetando Lisboa verificando os efeitos no *stock* de casas, preços de aluguel, políticas e regras, gentrificação e o ambiente turístico da cidade. Todos os dados foram providenciados através de *web scrap* do site do Airbnb usando ferramentas de *scrawl*. Além do mais, dados demográficos do último censo realizado em Portugal foram usados para obter-se confiabilidade. Finalmente, métricas de cálculos para estimar a receita bruta de anfitriões, o tempo disponível de casas listadas na plataforma, a desigualdade entre os anfitriões e desta forma correlacionadas com o fluxo turístico de Portugal e Lisboa, sendo variáveis entre si para efeitos de pesquisa.

Palavras chaves: Economia de Compartilhamento; Análise Espacial; Lisboa; Gentrificação; Airbnb; Distribuição de rendimento

Abstract

The Airbnb is currently a phenomenon within the peer-to-peer market concept of house sharing. The platform works as an intermediary between hosts, the ones who provide the property for renting and users, the ones who are looking for lodging to staying in a Short-Term Rental model. As a conceptual peer-to-peer platform, Airbnb has been created under the Sharing Economy umbrella which may be either students or people who have a spare room on their property thereby using it to earn extra money or even in the social interaction sense to know new people. However, what recent studies and academics groups are unveiling is that the Airbnb is not following Sharing Economy premises but a firm that lay in the regular economy. Nevertheless, the real effects caused by Airbnb and Sharing Economy are still unknown or miss to be more deeply analysed. Thus, the objective of this research is to explore and then better understand the causes and effects of the platform's growth. Across an expansive view, the analysis has been provided by doing a variety of spatial analysis through the ArcGIS software. In this regard, this work has the finality to analyse what the Airbnb is affecting on Lisbon in order to realise effects on housing stock, renting price, regulation and policy, gentrification, and the touristic environment of the city. All the data has been provided by web scraping the Airbnb website by using a scrawl tool. Furthermore, the last census tract made in Portugal has been used in order to have reliability sources about demographic data. Finally, metrics of calculating the estimated the host gross revenues, the availability of houses listed on the platforms, the inequality among hosts and then correlated to the touristic flow of Portugal and Lisbon as variables to one another and used as premises of analysis.

Keywords: Sharing economy; Spatial Analysis; Lisbon; Gentrification; Airbnb; Income distribution

Acronyms, abbreviations, etc.:

STR *Short-term rentals*

LTR *Long-term rentals*

P2P *Peer-to-peer*

AL *Alojamento Local (Local Lodging)*

INE *Instituto Nacional de Estadística (National Institute of Statistics)*

B&B *Bed & Breakfast*

Table of Contents

Dedication	iii
Resumo	v
Abstract	vi
Acronyms, abbreviations, etc.:	vii
Figure List	x
Table List	xi
Graphic List	xii
1. Introduction	13
2. Literature Review	17
2.1. An outlook of Sharing Economy	17
2.2. Addressing the sharing economy	19
2.3. Discussing the sharing economy overall effects	26
2.3.1. Economic Effects	27
2.3.2. Regulatory questions	28
2.3.3. Reciprocity Dilemma	29
2.3.4. Drivers of the Sharing Economy	30
2.3.5. Business model	34
2.4. Gentrification	37
3. Airbnb	43
3.1. Business model	43
3.2. Website	44
3.3. Revenue capture	47
3.4. Exploring the website	47
4. Methodology	51
5. Analysis	55
5.1. Correlations	55
5.2. Mapping out the Airbnb growth around Lisbon	58
5.3. Entire home density and demand of Airbnb offers	62
5.1. Legal aspects of STR market	66
5.2. Overview of STR over LTR	68
5.3. Hosts income inequality	70
5.4. Is Airbnb taking over Lisbon housing stock?	71
5.5. Airbnb as a gentrification tool	73
Conclusion	77

Reference List	79
Websites.....	81
Annex 1 – Taxonomy, areas and dwelling scheme, Portuguese General Regulation for Urban Buildings	84
Annexes 2 – Republic Diary nº 166/2014, series I of 08/09/2014, law decree nº 128/2014	85
Annex 3 – Decree nº 19334-A/2018, Republic Diary nº 248/2018, 1º supply, series II of 26/12/2018	86
Annex 4 – Average rent value per m² for new renting contracts, Lisbon and neighbourhoods, 2017.....	87
Appendices 1 – Correlation Matrix of data for the spanning time between 2015-2018 – 5% of critical value (bicaudal) = 0.9500 for n = 4.....	88
Appendices 2 – Several outputs got from Cochrane-Orcutt model by correlating data for the spanning time between 2016-2018 (T=3)	89

Figure List

Figure 1 - Definitions regarding sharing economy and their positions compared to sharing economy	20
Figure 2 - Market segment in the Sharing economy based on Value Creation and Delivery (y-axis) and Value Capture (x-axis), ● product-oriented, ◆ use-oriented, ■ result-oriented Value Proposition (own depiction).	36
Figure 3 – Airbnb website main page	45
Figure 4 – Airbnb website main page part 2	45
Figure 5 – Airbnb host website page	46
Figure 6 – Airbnb website experience page	47
Figure 7 – Simulating a searching option for Lisbon in August/2019.....	48
Figure 8 – Home type selection on the Airbnb website	48
Figure 9 – Lisbon map and its zones	58
Figure 10 – Airbnb listing concentration per neighbourhood in March of 2015	59
Figure 11 – Airbnb listing concentration per neighbourhood in March of 2016	59
Figure 12 – Airbnb listing concentration per neighbourhood in July of 2017	60
Figure 13 – Airbnb listing concentration per neighbourhood in December of 2018.....	60
Figure 14 – Density of Entire Home listed within 2km ² radius in March of 2015.....	62
Figure 15 – Density of Entire Home listed within 2km ² radius in March of 2016.....	62
Figure 16 – Density of Entire Home listed within 2km ² radius in July of 2017	63
Figure 17 – Density of Entire Home listed within 2km ² radius in December of 2018.....	63
Figure 18 – Demand on Airbnb by the number of reviews in March of 2015.....	65
Figure 19 – Demand on Airbnb by the number of reviews in March of 2016.....	65
Figure 20 – Demand on Airbnb by the number of reviews in July of 2017	66
Figure 21 – Demand on Airbnb by the number of reviews in December of 2018.....	66
Figure 22 – Comparison between STR and LTR revenue estimation in July of 2018.	69
Figure 23 – Comparison between STR and LTR revenue estimation in July of 2018.	69
Figure 24 - Airbnb housing stock compared to census tract in March of 2015	72
Figure 25 - Airbnb housing stock compared to census tract in December of 2018.....	72
Figure 26 - Number of new rental contracts of familiar homes	74
Figure 27 - Dot map of Lisbon’s education level according to the census tract of 2011. Dot = 50 properties.	75

Table List

Table 1 – Prototypes and Characteristics	25
Table 2 - Positive and Negative sides of gentrification	41
Table 3 – Consumer profiles and providers target according to Airbnb room type	49
Table 4 – Typology of the data collected by both tool: Tom Slee and Insideairbnb.com	52
Table 5 – Minimum liveable rooms area and supply rooms in squared meters to several house typologies	53
Table 6 – Average renting price of Lisbon according to the property size in square meters...	53
Table 7 – Touristic statistic of Lisbon, INE database	56
Table 8 – Correlation coefficient, using the data from 2015 to 2018. 5% critical value (two-tailed) = 0.9500 to n = 4	56
Table 9 – Cochrane-Orcutt analysis.....	57
Table 10 – Airbnb statistics, Tom Slee and Insideairbnb databases.....	58
Table 11 – Example of the licenses registered on Airbnb	67
Table 12 – Gini index of the host estimated revenue on Airbnb in Lisbon	70
Table 13 – Distribution of the gross revenue of Airbnb hosts in December of 2018.....	71
Table 14 – Availability of Entire Properties in Lisbon.....	73

Graphic List

Graphic 1 – The increasing percentage of the listings by each zone, the whole period and year-by-year comparison.....	61
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1. Introduction

Day after day, technology brings modifications on people's lives, rearranging the way we deal with our daily tasks, interact to each other and how we communicate, as well as affording new paths for the economy.

Following technological breakthroughs, the economy is increasingly employing technology in order to improve its revenue, yet to be more inclusive by reaching a more significant number of people and by making use of tools and gadgets as smartphones, big data, IoT, algorithms and social network (Bauwens et al., 2019a; Kenney & Zysman, 2016).

Collaborate, a new mindset lies at this renovative discourse regarding technology and economy. New enthusiastic of the collaborative model came up together with a new statement of re-building the people purchase power and empowerment. At the same time, they were trying to reinvent themselves after a harsh economic crisis, affording new manners of interaction among consumers, consumption, the reuse of goods as its "idle capacity" and, finally, a newest and greener environmental discourse (Botsman & Rogers, 2010).

At a first glimpse, sharing economy was supposed to afford this fairer economic scope to people trying to rebuild their lives after the aftermaths of the recent economic collapse. However, nowadays, it is easy to see companies profiting vast amounts of money through the sharing business model. However, the sharing economy may enhance social behaviour, thereby allowing different levels of interaction between provider and user.

In 2017, The European Cooperation in Science and Technology (COST) launched an action (Cost 16121 – From Sharing and Caring) which analysis sharing economy by aiming to social and technological aspects of this model. The group suggest a 'practice-focused approach' which this study will take into consideration by focusing on the understanding of specific elements of Airbnb, such as its spatial growth and economic analysis.

Also, one proposal of the cooperation is to formulate an agenda and to discuss elements of the current discourse based on EU values of social innovation¹. Thus, as authors of the sharing economy phenomenon agreed to each other, Airbnb is a subject of study of collaborative consumption (Belk, 2014a; Frenken & Schor, 2017; Teli et al., 2017), the

¹ <https://www.cost.eu/actions/CA16121/#tabs|Name:overview> accessed on 29/04/2019 at 17:18

platform allows people to rent their property or a simple room to earn extra money, being a sharing tool.

Finally, harnessing the action Cost 16121 objectives, this study provides a spatial analysis to afford a solid and expanded overview of the Airbnb's growth throughout Lisbon, the subject of study on this research, along with data collected in the platform's website as well as in-depth scrutiny has been employed.

Motivation

Over the last years, Portugal is undergoing a touristic boom, according to the INE, tourism itself is increasingly playing an essential role in the country economic environment and, practically, account for more than 10% of the Portuguese economy.

For two years in a row, Portugal has received the best touristic destination in the world by the specialized press, therefore, sparking the interest of investors and people looking for leisure.

Thus study will further analyse the share of revenues among hosts offering accommodations on Airbnb. Within the sharing economy business models, platforms can apply a for-profit or non-profit base. However, sharing profits is one conception discussed within the benefits of the collaborative economy.

On the one hand, many people lost their dwellings after the subprime crisis. On the other hand, it brought opportunities to investors to bet on the restructuring of historic centres. Such economic movement suggests a gentrification consequence of more well-off people taking over a place, segregating more vulnerable population. Besides, governments back this phenomenon by facilitating regulations. (August & Walks, 2018; Kayzar & Derickson, 2015; Lees et al., 2007; Quintana, 2018)

This study has a keen in a fairer economy and a more social liveable life. Regularly, many people struggle to improve our society, policies and economy to afford life-quality for most people. The spatial and economic analysis of this study shows up an opportunity for real estate investor or house owners to make money on the STR market in Lisbon, similar to a gentrifier tool.

Consequently, the metropolitan area of Lisbon holds the most robust dwellings issues of Portugal, accounting for 50% of families with urban housing issues (IHRU Instituto de Habitação e da Reabilitação Urbana, 2018), suggesting a critical theme to a study case.

Likewise, the Airbnb has the power to take off houses of the market as Wachsmuth, Chaney, Kerrigan, Shillolo, & Basalaev-Binder (2018) has proven in their report of consequences of the STR market in New York City. Moreover, the platform has already faced communities' outcry of its displacement power around many cities of Europe as Coimbra, Barcelona, Lisbon, Porto, among others.

To conclude, the article 65th of the Portuguese constitution ensures the right to adequate housing to the people as it states: "everyone has the right, for itself and its family, to have an adequately sized dwelling that provides hygienic, comfortable conditions and preserves personal and family privacy."

In addition: "to create an agenda and execute a dwelling policy, backed by national territory's organization plan and urbanization's plans that ensure the existence of an adequate public transport network and social apparatus²."

Finally, the National policy put into force the decree in 2008³, allowing rent of houses, apartments and lodge called "Alojamento Local" (Local lodging). In Lisbon, Airbnb must pay a daily touristic tax (per person), and hosts must provide the platform with an AL register number.

Structure of the Study

The next chapter of this study provides a literature review for the topics of Sharing Economy and Gentrification, and both subjects are giving significance to the theoretical body of the examined field. Chapter 3 describes the Airbnb website by browsing through its pages.

The content of chapter 4 is all the methodology deployed on this work, specifying the application of all the tools (databases, software, statistics data and specialized press), and metrics needed for this study.

Chapter 5 follows the premises that the theoretical body supports to analyse and to map out the expansion and possibility of monetization of the Airbnb in Lisbon throughout its neighbourhoods.

² <https://www.parlamento.pt/Legislacao/PAGINAS/CONSTITUICAOREPUBLICAPORTUGUESA.ASPX> accessed on 29/04/2019 at 12:42.

³ <https://dre.pt/pesquisa/-/search/456213/details/maximized> accessed on 29/04/2019 at 13:14.

The conclusion brings remarkable takeaways of the study, thresholds and possibility of future works regarding this subject.

In conclusion, this study provides a list of references for all the theoretical material and a list of visited websites. Annexes is materials collected from external sources, and appendix is the Tables of the correlation analysis made by the author.

2. Literature Review

The underneath chapter will consist of a literature review and insights of what is sharing economy. Currently, there is a shared sense of a lack of definition of the theme. This study will address subjects such as definitions of collaboration and P2P models, social interaction, anthropologic aspects, business model, environment and platform economy. Subsequently, this study addresses gentrification in order to provide an overview of the effects of the home-sharing in Lisbon.

2.1. An outlook of Sharing Economy

Since the beginning of human interactions, sharing is an anthropologic act of integration of communities and relationship, improving human bonds and even improving the use of resources, such as the development of agriculture.

Belk (2009), described that the act of sharing is not the only way to which we may connect, but highlight its power to create a feeling to solidarity, bond, and behaving communing.

After the 2008's economic crises, people started to discover alternative ways to adapt to the new reality. As a result, the so-called sharing economy came up to stake its space into the market. This recalling of sharing brings ambiguity, whether addressed as a novelty (Frenken & Schor, 2017).

After an economic crisis, saving money is mandatory. Not differently, the recent global economic recession reflected onto markets and government, flooding markets with a lack of trust over people and industry (Selloni, 2017). Consumers lost their purchase power, thus, gaining increasing awareness about consumerism, a significant reason for people start adopting sharing practices (Selloni, 2017).

In 2016, the *PwC* foresaw that five key sectors of the sharing economy in Europe could reach €83 billion by 2025, accounting for a rise of 40% in annual transactions, featured by the sector of service providers, engulfing 85% of the total volume. Besides, sharing platforms and traditional companies will practically share the market, highlighting that on-demand housing services seem to hold the fastest growth within the sectors.

In 2019, the first IPOs of sharing economy platforms, such as Lyft and Uber, with their market value being around \$20 billion and \$80 billion respectively. Besides, the market will witness large-scale bankruptcies of sharing platforms⁴.

Rinne (2019), mentioned “For the first time in human history, the middle class represents the majority of the global population – and it is projected to double in the next ten years, to 5.2 billion people”, which means a boost in the model.

In the extent of term’ misconception, the general term “sharing economy” begins misplaced employing as a trendiness, innovation or disruption (Frenken & Schor, 2017). The claim that it is a novelty ignores and forgets that sharing is a commonplace practice amongst the working class, poor and communities of colour (Frenken & Schor, 2017), these classes have historically been subjected to and have partially maintained it in the face of other markets.

However, sharing was limited to family and trusted individuals, such as friends or neighbours. With some exceptions, individuals were not open to sharing with those out of their social network. What is then a novelty is the “stranger sharing”, facilitated by platforms and technological breakthroughs when people share with those who were not known (Frenken & Schor, 2017; Schor, 2014).

One of the first enthusiasts to address sharing were Botsman and Rogers in 2010 with their book “What is mine is yours: The Rise of Collaborative Consumption”. They make a conceptualization about what is the collaborative economy and its correlations, setting definitions for the collaborative economy, collaborative consumption, sharing economy, peer to peer economy and their essential drivers.

According to Botsman (2013), the collaborative economy connects individuals to community ties by weakening centralized institution, thus modifying behaviours of consumption, production, finance, and learning as described:

“Producing in collaborative networks to design, provide and distribute goods. For instance, online communities or forums of creators, programmers, and so forth.”

It means harnessing the use of assets through shared access, allowing an efficient model of consumption and redistribution, for instance, Airbnb where people can monetize through renting a house or a spare room.

⁴ <https://www.weforum.org/agenda/2019/01/sharing-economy/> accessed on 27/03/2019 at 13:45

It worth noting branches of sharing, such as peer-to-peer platforms, crowdfunding investments. As such, the growth of the FinTech market, which is driving a financial revolution. Currently, banks are looking after their financial assets throughout digital platforms, yet the exchange in the consumer behaviours who increasingly are searching for a decentralised and cheaper market.

Another highlighted modality is platforms for education with free or low-cost courses, in which it is a peer-to-peer learning model that democratizes education.

Therefore, it is easy to make a misconception when many similar benefits are commons over different ideas (Botsman, 2013). According to Belk (2014a), there is a maze of terms describing the sharing economy, splitting into different phenomenons similar to sharing but is not the sharing economy at all.

Among the traps that the term “sharing economy” can bring out, Belk (2014a) discuss another economic phenomenon, it is "Pseudo-sharing: a business relationship masquerading as communal sharing”, for instance, being environmentally friendly does not mean an utter sharing behaviour as it is often stated. In additional, Belk (2014a), considers that short-term rental lies in the pseudo-sharing field because of participants of those platforms such as Airbnb charge one another fees.

2.2. Addressing the sharing economy

“On a personal note, I often go back to the first Post-It note I put on my wall a few years ago when I was trying to Figure out the core meaning of this new economy. It has one word on it: humanness. So regardless of how the space grows and what you choose to call it, let’s not lose or dilute its power to humanize the way we live, work, bank, learn, travel, and consume in the 21st century.” (Botsman, 2013)

Thus, more recent studies bring different strands of the whole phenomena of sharing and collaborative concepts as well as the taxonomies gift economy, digital economy, gig economy, on-demand economy, platform economy, among others.

According to Teli et al. (2017), two main narratives are currently in use, where one of them focuses on social innovation, and eco-friendly model and sustainable economic, by which correlates sharing access to goods and services as sustainable use of resources and assets connected to the early idea that P2P interaction makes people more aware about the use of resources and environmental consequences. The second narrative goes throughout an

idea of market-focused digital innovation, that is, disruptive business models capable of generating economic activities, in which relates to social and environmental benefits as well (Teli et al., 2017).

Görög (2016), addressed a set of definitions regarding sharing economy, exploiting the whole picture of the phenomena. Figure 1 contains layers of all sets until the inner-set that encompasses the “sharing economy”.

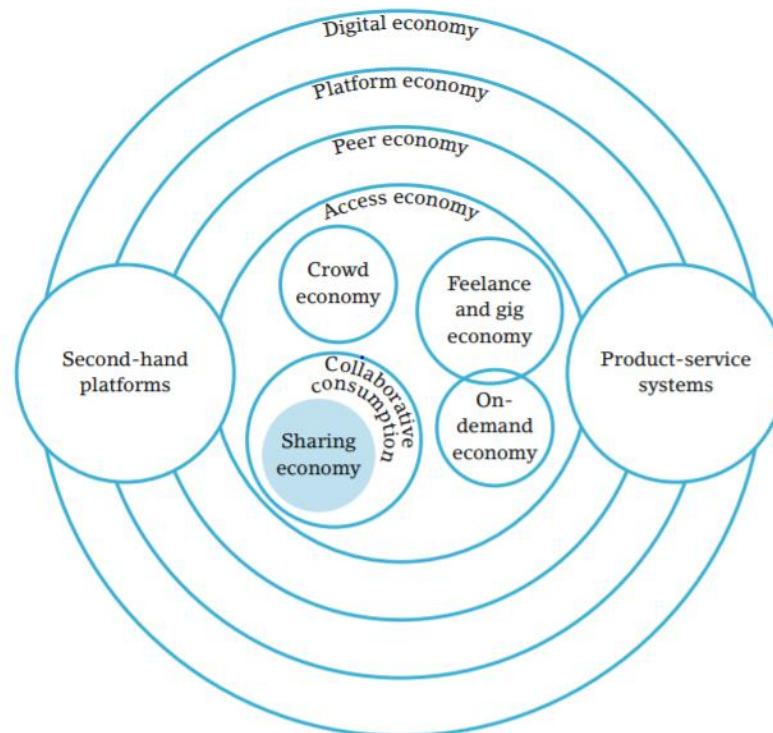


Figure 1 - Definitions regarding sharing economy and their positions compared to sharing economy

Source: Adapted from Görög (2016, p. 185)

Sharing Economy

Botsman (2013), described the sharing economy as an economic model based on sharing underutilised assets, which other authors also agree (Belk, 2014b; Frenken & Schor, 2017; Görög, 2016), for monetary or non-monetary benefits, which correlates either P2P marketplace or Business-to-Consumer models as Uber, Airbnb, Mobike. Pais (2015), coined the term ‘rental economy’ when a company provides its underused goods in a rental schema by transferring the ownership for a period.

The idle capacity of an asset may define the sharing economy. The excess capacity will lead consumers to provide temporary access to the underutilised asset, a shareable good as stated by Benkler (2004), what may be motivated either by money or by social interaction (Frenken & Schor, 2017; Selloni, 2017). However, there is a different approach for sharing of goods from practices of on-demand personal services like BlaBlaCar.com, which is a low-cost carpool service whereas Uber depends on demand. Nevertheless, both are deemed practices of sharing (Frenken & Schor, 2017).

Peer-to-peer

The peer economy is a peer-to-peer market place that helps transaction of sharing and trading among people which is not directly sharing economy. P2P markets usually depend on trust and is a slice of the sharing economy, for instance, a platform that matches product makers with purchasers (Botsman, 2013). However, not all behaviours taking places in a distributed network refer to P2P, which considers those processes that aim to increase more widespread collaboration by its participants (Bauwens, 2007).

“Where P2P process produces use-value through the free cooperation of producers who have access to distributed capital: this is the P2P production mode” (Bauwens, 2007), a decentralised production model with no-profit based model, as well as it is different of public production by state-owned enterprises. It is the case of communities of opensource software, where programmers, engineers and collaborators work together to develop software and share knowledge without any profit in order to harness their capabilities (Bauwens, 2007; Benkler, 2004).

These communities are ruled by their producers, building a database of codes for driving other projects that can be used freely for other interested in and not turned to a specific market, public, or corporates, which Bauwens (2007) described as “P2P governance mode, or third mode of governance.”

The open-source movement claimed as the oldest sharing economy model – FOSS (free open source software) – by Pais (2015), over-arching the peer-produced content, such as Linux, and citizen science produced by volunteer work, such as GitHub. Curiously, old practices of file-sharing, videos and music using P2P software have inspired the FOSS movement (Frenken & Schor, 2017).

Linus Torvalds, source code manager of the Linux kernel (1991) and Git, stated in a TED talk interview⁵ “What I really like about opensource is that it allows different people to work together and we do not need to like each other... It did not start with people contributing code. It started more with people contributing ideas.”

“This explains why file sharing, opensource software, distributed computing, crowdfunding, p2p lending, bitcoin, and sometimes even social media, are quite often put under the umbrella term of the sharing economy." (Frenken & Schor, 2017)

On the other hand, Acquier, Daudigeos, & Pinkse (2017), use the term “Community-based economy” to describe a peer community, by stating "It refers to initiatives coordinating through non-contractual, non-hierarchical or non-monetised forms of interaction (to perform work, participate in a project, or form exchange relationships).” What is essential in those communities is not the monetization but, instead, the individual belonging to a communitarian project and create social bonding through sharing the experience (Acquier et al., 2017).

Görög (2016), in its turn, has described the P2P model in the for-profit sight: “peer-to-peer economy refers to the business between customer and customer without any intermediaries. They can buy and sell products and services from each other.” However, Pais (2015), simply defined P2P as an economy of underused products offered by their owners.

Digital Economy and Platform Economy

The digital economy is the influence of the Internet into businesses. Currently, it is easy to find a webpage or an email address for any kind of business independently of its size, either a small or a big company will do business through Internet, and nowadays the e-commerce is increasingly growing.

The mobile technology and the Internet of things (IoT) provide a countless number of internet access made by people, businesses, devices, data, or anything with digital technologies (Görög, 2016). Additionally, the platform economy is relative to the digital economy, also influencing in businesses, in politics and social activities (Kenney & Zysman, 2016).

⁵ https://www.ted.com/talks/linus_torvalds_the_mind_behind_linux#t-90749 accessed on 29/03/2019 at 15:00

According to Kenney & Zysman (2016), the platform economy bases is the contribution of human interaction to which the main question is how to build a platform that captures users and create value.

Whether it is Google monetizing our searches, Facebook monetizing our social networks, LinkedIn monetizing our professional networks, or Uber monetizing our cars, they all depend on the digitization of value-creating human activities. (Kenney & Zysman, 2016)

The contribution on platforms without monetary compensation is what Belk (2014a) called as “Intentional Online Sharing of Ephemera”. It means, when people freely write a comment or respond on blog or forum, use Twitter and Facebook to share photos or contribute to a Wiki.

According to Acquier et al. (2017), the Platform economy is growing, and it affords decentralized exchanges among individuals throughout digital platforms.

Gig Economy, Freelancer economy and Time Banking

According to Frenken & Schor (2017), “the on-demand or gig economy includes purchasing personal services such as a ride, a handyman or a cooked meal.” The *Investopedia*⁶ describes the gig economy as “temporary and flexible jobs” which is the reverse of the traditional full-time jobs and the idea of a lifetime career with employers preferring freelance contracts, for instance, Uber eats.

Görög (2016), mentions that the freelancer economy is very similar to the gig economy. However, businesses are looking for “tasks contracts” for projects and virtual assistant. Nowadays, there are platforms of freelancers where workers can offer their workforce, for instance, *UpWork.com*.

However, under the paradigm of the gig economy, time banking⁷ is a reciprocal type of sharing because it does not involve money between the parts, but jobs based on a trade-off of labour time or even an alternative currency, for instance, tokens (Pais, 2015).

On-Demand Economy

Car-pooling platforms such as *BlaBlaCar.com* afford people hitchhiking whether a driver is moving from a place to another, whereas ride-hailing services such as Uber or Lyft are platforms that allow drivers to use their car as a taxi. It is, they need to wait for a call on

⁶ <https://www.investopedia.com/terms/g/gig-economy.asp> accessed on 26/03/2019 at 16:38

⁷ <https://www.investopedia.com/terms/t/time-banking.asp> accessed on 26/03/2019 at 16:40

the platform to ride someone as an on-demand need which they would not have otherwise (Frenken & Schor, 2017; Görög, 2016). According to Pais (2015), this model provides professional and non-professional labour.

Access Economy

Access economy encompasses temporary access to a product or service instead of a transfer of ownership. Short-term borrow services in a known access-based model, for instance, borrowing a book from a library in an example of access-based consumption (Acquier et al., 2017; Görög, 2016). Currently, it takes place online or offline.

More recently, there are many businesses offering access for using their services through the payment of a monthly fee or by purchasing a package. It means that consumers do not look for ownership of a product, but the access to use the service or goods, which is a Business-to-Consumer ‘Product-Service’ Models or Product-Service Systems (Görög, 2016).

Second-Hand Platforms

Second-hand platforms such as *eBay* and *Mercado Livre* that peers can sell their used goods to other peers interested in buying those second-hand products. For instance, second-hand clothes shops always have been popular among peers (Görög, 2016). In this regards, Belk (2014a), called “Online-facilitated Offline Sharing” as a pure sharing economy form of second-hand platforms that people can list their goods for free.

Crowd Economy

Crowd economy may be crowdfunding and crowdsourcing. It is related to peers or the ‘crowd’ helping each other, encompassing rewards or merely the social perception of helping (Görög, 2016 *apud* Rinne, 2017). In addition, social lending involves sharing economy. Usually, this model includes loans among peers with low-interest rates in order to help to develop a project, a new idea or even a business of a low-income person (Pais, 2015).

Gift economy

The gift economy is another topic discussed that lay under the sharing economy umbrella; for instance, the gift economy and commodity exchange are easily confused to the sharing concept (Belk, 2009).

“When a gift is too far from the characteristics of the perfect gift, it may not be perceived as a gift at all. Giving money is one instance where the transformation into a gift usually requires, at the least, crisp bills in a special wrapper.” (Belk, 2009)

Table 1 – Prototypes and Characteristics

	Sharing	Gift giving	Commodity exchange
Prototype	1. Mothering 2. Pooling and allocation of household resources	The perfect gift (Della and Jim in “The Gift of the Magi”)	Buying bread at a store for money
Characteristics	Nonreciprocal Social links to others De facto or de jure shared ownership or usufruct rights Money irrelevant Singular objects Networked inclusion Inalienable Personal Dependent Sharing context Social reproduction Nonceremonial Love, caring	Nonreciprocal in appearance; reciprocal exchange in practice Nonobligatory in appearance; obligatory in practice Transfer of ownership Thought that counts Sacrifice; luxury To please recipient Nonfungible Singularizes objects Wrappings; ceremony Lingering imbalance Networked inclusion Inalienable Personal; dependent Gift giving/alliance-formation context Qualitative relations between people Thank yous	Reciprocal Balanced exchange No lingering obligations Transfer of ownership Monetary Nonsingular Partible commodities Calculation Inspection Alienable Impersonal Independent Trade/barter context Quantitative relations between objects
Counterindications	Reciprocal expectations Formal monetary debt Forced compliance Exchange Thank yous	Appearance of reciprocity concern Too quick a return gift Too generous a gift Gift scrutiny; inspection Gift requests	Love, caring Embedded relationships Socially meaningful money (e.g., inheritance) Thank yous
Exceptions	Borrowing and lending Some paid caregiving Voluntary anonymous charity	Age and wealth exceptions to reciprocity Money gifts; gift certificates Mandated charity (e.g., Zakat)	Secondhand goods Relationship marketing Usury prohibitions; Shariah banking

Source: Adapted from Belk (2009, page 721)

In Table 1, some characteristics that make differentiation among sharing, gift and commodity exchange.

Nonreciprocal practices characterise sharing and gift-giving. Although one the side of gifting, the nonreciprocal perception is deceiving, considering the situation when we give money or pay a beer to someone as a gift gesture often we think about reciprocity coming from the other side, it can be a tender gesture or a drink (Belk, 2009). One the side of sharing, Couchsurfing can easily be an example of the Belk (2009) prototype.

The commodity exchange is practically the Airbnb case, it is reciprocal, and the owner expects to receive monetary compensation, whereas the consumer expects to find a cheaper place to stay. Besides, both host and user may be looking for some social relationship.

Collaborative Consumption

“An economic model based on sharing, swapping, trading, or renting products and services, enabling access over ownership. It is reinventing not just what we consume but how we consume.” (Botsman, 2013; Botsman & Rogers, 2010)

Botsman (2013), talks about three concepts that reflect collaborative consumption which shapes the system of sharing, they are: First, redistribution markets such as second-hand economy, in other words, unwanted or underused goods redistributed.

Second, a collaborative lifestyle, such as co-working spaces or non-product assets which afford new ways of exchanging, such as knowledge, acquaintanceship, networking and online forums where people share their experiences, for instance, *Nike Runner*.

Third, a product-service system such as paying to access and benefit from a product instead of ownership upon it.

These three forms over-arch collaborative forms of consumption, production, finance, learning, renting, bartering, lending, among others. However, those are considered all-embedded conceptualization and too broad definitions of collaborative consumption under the sharing economy umbrella, which may mix different business models whereby they may mirror each one (Belk, 2014b; Frenken & Schor, 2017; Görög, 2016).

Within the collaborative consumption, people hold power to “coordinate their acquisitions and distributions of their resources for free or other compensation” as highlighted by Belk (2014b), therefore, Airbnb and listing platforms encompass the model. Including other compensation means involvement of gift or non-monetary reward as well as does not include gift-giving. As foregone, this form of sharing encompasses the transfer of ownership as parents transferring a property to a son which characterise marketplace exchange, then, according to Belk (2014b), the collaborative consumption stands between sharing and marketplace exchange.

2.3. Discussing the sharing economy overall effects

What we share is at least as important as what we own; what we hold in common is at least as important as what we keep for ourselves; what we choose to give away may matter more than what we charge for. In the economy of things, you are identified by what you own – your land, house, car. In the economy of ideas that the web is creating, you are what you share (Belk, 2014a)

2.3.1. Economic Effects

As preceding, the forecasts for sharing economy is to be a stable and profitable economic model addressing sustainability and social impacts (Frenken & Schor, 2017).

On the one hand, there are questionable arguments of how green and social the sharing economy is. On the other hand, new economics ways are continually fostered. The big for-profit players of the sharing economy market claim to have helped their providers to rise business transactions and financial income (Schor, 2014). According to Schor (2014), her students' findings show that Airbnb users are travelling more and using more ride services because it is accessible and affordable to skip public transportation.

Unquestionably, the manner whose people are consuming today is somehow different due to the fact of renting a room through Airbnb or ordering an Uber have changed the old structure of these sorts of businesses.

The sharing economy at first has been deemed a disruptive economic model that would diminish hyper-consumption behaviour that was driving the economy until the great crisis of 2008 (Botsman & Rogers, 2010). Into the disruptive discourse, sharing platforms are reshaping the existing organisations as Kenney & Zysman (2016) point out that “by resetting entry barriers, changing the logic of value creation and value capture, playing regulatory arbitrage, repackaging work, or repositioning power in the economic system.”

Belk (2014b), also explored the disruptive side, according to him “many of the sharing and collaborative consumption organizations that currently exist benefitted from the economic collapse that began in 2008 that caused some consumers to lose their homes, cars, and investments and made most everyone more price sensitive.” Suggesting a drastic change over the basis of ownership-based businesses, once disruptive changes brought more verticals to ownership-based business models.

Frenken & Schor (2017), argue that is undoubted that economic effects of the sharing economy are positive by saying “people who voluntarily enter into a transaction in the sharing economy only do so if it is beneficial to both parties.”

The lower costs afforded by digital transactions is indisputably a boost factor encompassing sharing economy, creating a vast range of economic opportunities by which allow strangers to do business to each other in a transaction that would be too expensive otherwise (Bauwens et al., 2019b; Belk, 2009; Benkler, 2004; Botsman & Rogers, 2010; Frenken & Schor, 2017).

For instance, Frenken & Schor (2017), point out that “even in the case of goods lending there is a benefit: there are few costs for the lender because the person did not need the product during the lending period, whereas the borrower gains access to the product without charge.” Reinforcing it is a direct consequence of lower costs. Schor (2014), argues that “sharing economy sites are generally lower in cost than market alternatives. Airbnb host can deliver a room cheaper than a hotel.”

Within those doubts into the discussion of sharing economy, Schor (2014), mentions “Will the sector [sharing] evolve in line with its stated progressive, green, and utopian goals, or will it devolve into business as usual?”

However, to enlighten and build a picture of the already-caused and current economic effects of the P2P market is a subject that needs more scrutiny, as Kenney & Zysman (2016) highlighted “as with all economic transformations, the disruptions will create winners and loser.”

The aftermaths of the sharing wave are reaching related markets, and workers are likely to be impacted with lower incomes as some studies showed Airbnb affecting earnings of hotels in Texas (Zervas et al., 2016 *apud* Frenken & Schor, 2017). Additionally, Airbnb is an alternative substitute of hotels, mainly due to being a cheaper option, affecting housing supply and its price, as well as effects to the car rentals and taxis markets with the increasing of the P2P carsharing’s platforms (Frenken & Schor, 2017).

According to Frenken & Schor (2017), one of the side-effects of home-sharing on the housing price means “that residents see their rents going up in neighbourhoods where home-sharing is popular.” A recent article published on the *Vox CEPR Policy Portal*⁸ in December of 2018 suggests that in Los Angeles Counties that applied regulatory measure to short-term rentals there was a reduction of 3% over the housing prices and a rump-up of 5% in areas within 5 km of Los Angeles’s central business district.

2.3.2. Regulatory questions

The regulatory issues that would be caused by sharing platforms such as Airbnb and Uber are inherently correlated with economic effects and workforce precariousness (Frenken & Schor, 2017; Pais, 2015; Selloni, 2017). Government and policy-makers are trying to find manners to deal with the lack of regulations that would cause taxes avoidance, lack of labour laws for intermediaries’ platforms (Pais, 2015; Schor, 2014), housing

⁸ <https://voxeu.org/article/short-term-rentals-and-housing-market> accessed on 29/03/2019 at 16:30

affordability issues, gentrification and housing pricing (Wachsmuth et al., 2018), tourism-phobia (Frenken & Schor, 2017), among others. Although some city councils are putting into force or applying regulatory sanctions over some platforms of short-term rentals and gig workforce.

Uber is continually undergoing lawsuits. Recently, the company was sued by drivers in New York⁹ and California¹⁰, for example, where they are claiming that the company misclassifies drivers as independents contractors, avoiding paying benefits to them. In Australia¹¹, taxi drivers are suing Uber because of ‘significant loss’ caused by the company.

Airbnb also faced government regulation after ‘tourism-phobia’ in some cities, such as Barcelona, as well as complaints about the lack of taxes payments claimed as unfair competition by stakeholders in the hotel market. In Barcelona and Lisbon, the homeowner willing to list its house on the platform needs to get a license. In the Lisbon case, it works as a Local Lodging (Alojamento Local, AL) license. In Berlin, for instance, the city council requires hosts to have 50% of occupancy time over their properties. In New York and Amsterdam, hosts are narrowed to a 30-day-limit rental, as well as the 90-day-limit in San Francisco.

2.3.3. Reciprocity Dilemma

Amid many economic forms, Pais (2015), goes through the approach of exchange, redistribution and reciprocity, this latter lays in the sharing economy model.

“Exchange: Symmetric information, clear agreements between parts, no externalities influencing the contracts.” (Pais, 2015)

“Redistribution: resources are allocated by authority and hierarchy subjected to the redistributive regime; they assume the nature of public goods based on rights defined by the law.” (Pais, 2015)

Then, Pais (2015), describes three forms of reciprocity, they are: “Cautious reciprocity - I cooperate with those who cooperated with me at first; Brave reciprocity - I

⁹ <https://www.pymnts.com/news/ridesharing/2018/uber-lawsuit-misclassifying-drivers/> accessed on 29/03/2019 at 17:00

¹⁰ <https://www.bloomberg.com/news/articles/2018-09-12/uber-accused-of-saving-500-million-a-year-by-cheating-drivers> accessed on 29/03/2019 at 17:01

¹¹ <https://www.abc.net.au/news/2018-11-28/uber-sued-class-action-taxi-drivers-wa-qld-nsw-vic/10561554> accessed on 29/03/2019 at 17:10

cooperate at the first round, then I realize how other ones are behaving to lead my behaviour.; Gratitude reciprocity - I always cooperate, regardless of the other one's behaviour.”

In this regard, the sharing economy may encompass three variants of reciprocity (Pais, 2015): The first is reciprocity in the gratitude behaviour thus Couchsurfing fits as an example, once strangers help each other without any monetary reward, on the contrary, they are looking for social interaction backed by the user description on the platform. Reviews gave by another unknown user creates a bonding-value and selectivity sense.

The second is collaboration behaviour, weaker and more cautious than reciprocity, where reputation is required somewhat. Parts are more interested in the benefits instead of creating strong social ties, for instance, Airbnb and BlaBlaCar, crowdfunding and timebanks.

The third is the common-pool arrangement, a communitarian behaviour, in which means a reciprocal bond between those who share, generating a belonging sense, me-you identified as we, this is a mutual and bottom-up arrangement where the parts are free (morally) to leave the relationship, as in case of opensource, platform cooperatives, free-form of knowledge's circulation and open manufacture.

Furthermore, among the reciprocity sense of sharing afforded by Couchsurfing, Belk (2014a), highlighted the “Online Facilitated Hospitality”, it is, “we share because we enjoy the conviviality of a sharing and caring community,” concluding “we also share because it is the moral and right thing to do. Moral principles underwrite the ethos of hospitality, which primarily involves sharing food and shelter.”

2.3.4. Drivers of the Sharing Economy

It has been a decade since the sharing came to shake the structures, bringing along with it many hours of discussions of what this economic model would be or affect, and what is driving this phenomenon. In order to explore what is conducting sharing, some points will be analysed.

Economic values shifting

There had been some drive-values deemed among researchers, companies and even by the ordinary public.

The 2008 crisis reduced the life-quality of the world population, conducted people to reassemble social ties and rethinking about lessening the consumption, production

process. Also, created environmental awareness and greener mindset (Bauwens et al., 2019b; Botsman, 2013; Botsman & Rogers, 2010; Frenken & Schor, 2017).

Furthermore, questioning the actual capitalism model that is based on capital accumulation and scaling cycling of growth is, by itself, impossible to achieve with limited resources on the Earth (Bauwens et al., 2019b), is a premise for the sharing economy.

According to Pais (2015), the Keynesian economic theory and the neoliberalism have overgone failure successively over the years, although the latter has brought a long-term development and shifted behaviours, policies and hierarchies.

To conclude, Bauwens et al. (2019), citing that millennials and post-millennials generations will build a new set of cultural values, be much more engaged on social values and will require a new approach for precarious jobs, which is becoming increasingly scarce over the neoliberal model.

Technology

The growing inclusion of technologies into the daily life is an important driver that is helping people share increasingly (Bauwens, 2007; Botsman, 2013; Botsman & Rogers, 2010; Frenken & Schor, 2017; Kenney & Zysman, 2016; Schor, 2014; Selloni, 2017). According to Botsman & Rogers (2010), every asset has its ‘idle capacity’ and technology aids to harness its potential, binding people who have the idle asset to those who need it.

As previous, the Internet allowed the creation of an online marketplace through many devices and gadgets used nowadays (Botsman & Rogers, 2010), lowering transaction and operation costs in a decentralised model of exchange (Belk, 2014a; Celata, Hendrickson, et al., 2017; Frenken & Schor, 2017). According to Kenney & Zysman (2016), the Internet has the raw material that potentiates the creation over data by providing data, therefore, serving as an ‘economic tool’ where the “the algorithmic revolution and cloud computing are the foundations of the platform economy.”

This technological breakthrough provides a new approach to finance. Currently, FinTech development such as online payments and identity system (Know Your Client) is increasingly becoming common; hence, the public is getting confidence in digital transactions.

“The key aspect is that they provide a set of shared techniques, technologies, and interfaces to a broad set of users who can build what they want on a stable substrate.” (Kenney & Zysman, 2016)

The sharing platforms are trusted to allow empowerment for people (Frenken & Schor, 2017) if they are built to attend to social and community issues and needs. Thus, by using diverse kinds of technologies, platforms of sharing are a field enabling large-scale communication with high speed for individuals to get connected (Selloni, 2017).

Social interaction and trust

As aforementioned, the sharing economy has a robust social concept. Many platforms use the methodology of reviewing to create reliance and surpass a high-risk of strangers-sharing (Celata, Stefania, et al., 2017; Schor, 2014).

It has proven to be a well-accepted model to break down this risk barrier (Frenken & Schor, 2017) and generate more connectivity among users and providers. For instance, CouchSurfing is wholly based on users reviews where individuals that have no ties to each other would accept or not an unknown traveller to sleep in their houses (Schor, 2014).

Celata, Hendrickson, & Sanna (2017), related the evolution of the sharing platforms over the last years, in which the improvement of the regulation of their insurance and refund systems has been an essential medicine to the ‘trust issue’. Moreover, in the beginning, most of the platforms relied on self-regulation and first pioneers.

More recently, for-profits platforms require their user and provider to give feedback after the provision of a service, this generates a new form of reciprocity and give an aspect of confidence (Celata, Hendrickson, et al., 2017).

The meaning of a P2P platform is to be a place where people will collaborate freely and turn sharing values into a relationship, relying on the use of technology as Bauwens et al. (2019) state “a linguistic confusion between P2P as a technological infrastructure and P2P as a human relational dynamic.”

Concerning hospitality, an old practice between people, sharing platforms undoubtedly helped to expand the network of people affording their houses to be rented or shared with strangers.

In the platforms, both the hosts and the guests often expect a social interaction, such as a host eager to be a guide or to give touristic tips of their community (Celata,

Stefania, et al., 2017). Thus, this ‘value shift’ as called by Botsman (2013), is reshaping the interaction of the society.

Green discourse

"Sharing economy is thought to be eco-friendly because it is assumed to reduce the demand for goods and new construction (hotel and facilities)." (Frenken & Schor, 2017)

Diminishing the consumption would bring environmental awareness and the use of less resource (Botsman & Rogers, 2010), indeed, sharing a good instead of buying it means less consumption. However, it is too complicated and hard to define with empirical evidence on how collaborative consumption would reduce greenhouse gas emission (Frenken & Schor, 2017). However, there is the fact that whether people sharing make earnings, they will possibly buy new goods, the “rebound effect” as said by Frenken & Schor (2017).

On this sense, there is the macro-economic effect that connect the GDP’s growth with more carbon emission and footprint, according to Frenken & Schor (2017) “Among high-income OECD countries, a 1% increase in GDP raises carbon emissions by between 0.64% and 1% depending on the carbon metric and the type of estimation technique.”

Nevertheless, the sharing economy companies claim to encourage environmental-friendly practices. Airbnb on its website says to urge their hosts to have sustainable practices, accounting for 88% of providers incorporating green practices such as using green cleaning products, recycling their wastes and encouraging the guest to use public transportation. Additionally, 66% of guests alleged they list their property on the platform because of the environmental benefits of home-sharing¹².

Furthermore, some studies signalise to benefits of ride-hailing services regarding car ownership. In London, about 37% of car-sharing users indicated the service had impacted their car ownership. Nearly 83% indicating they decided not to buy a new car (Vine & Polak, 2017), whereas the car-sharing services would reduce from 5 to 15 car for each car shared¹³.

Therefore, sharing platforms are new marketplaces which may leverage purchase power. However, it is hard measuring whether this scaling of the commercial volume is leading people to act more green or making business-as-usual (Schor, 2014).

¹² <https://press.airbnb.com/airbnb-launches-global-office-of-healthy-tourism/> accessed on 30/03/2019 at 13:25

¹³ <https://www.transportenvironment.org/sites/te/files/publications/Does-sharing-cars-really-reduce-car-use-June%202017.pdf> accessed on 30/03/2019 at 17:03

2.3.5. Business model

As every recent market, the sharing economy is still being explored by scholars about its business model definition, once neither a solid consensus to define what is it nor its consequences are somehow concrete.

However, this new disruptive economic model sheds light to new possibilities for value creation and capture (Kenney & Zysman, 2016), as well as what its ownership-based differentiate from others business models (Frenken & Schor, 2017).

Kenney & Zysman (2016), suggested “The platform economy comprises a distinctly new set of economic relations that depend on the Internet, computation, and data. The ecosystem created by each platform is a source of value and sets the terms by which users can participate.”

Nevertheless, it seems to be too vague and straightforward to define a business model. In this study, two articles were explored in order to analyse concepts for the sharing economy business model. First, Muñoz & Cohen (2017) in their study by which they do a collection of several articles related to sharing and identified seven types of sharing business models that will be divided into topics to address each one’s characteristics:

Platforms for collaboration: “Either digital or physical resource in sharing initiatives aimed at improving sustainable consumption and production.” (Muñoz & Cohen, 2017).

Under-utilized resources: Distinguish feature for the business model that urges individuals to use the idle capacity of their goods.

Peer-to-peer interactions: It means that peers are sharing an asset or even interacting with each other as a fundamental part of the sharing business model. Muñoz & Cohen (2017), defined these three first types of sharing business model as the main ones.

Collaborative governance: It means a community-based model within the sharing economy, not just for financial means. Also, collaborative governance “assesses the extent to which the business is open to integrate the users into value creation activities and benefits.” (Muñoz & Cohen, 2017)

Mission-driven: The sharing economy business model does not seek only for-profit transactions. Practically, every company in this business will lead their activities towards

environmental-friendly or social conduct, for instance, either by benefiting unskilled worker or by crowdfunding social projects, among others.

Alternative funding: Peer-to-peer crowdfunding venture process defines this business model. According to Muñoz & Cohen (2017), the business gives priority to alternative funding such as ‘grants, crowdfunding, equity-based crowdfunding.’

Technology reliance: The sharing business model relies on technology breakthroughs to develop itself, using big-data, geo-location and the evolving of the gadgets to apply to their business.

Second, Ritter & Schanz (2019), approach the sharing economy business models in another way, going by three steps of analysis.

On their set, firstly, they have assessed the value proposition of sharing economy over three sortings: product-oriented – it is, business model guided by selling products and additional services –; use-oriented – it is, the provider owns the product, just selling the use or part of it. The mix product/service also is within this category –; result-oriented – it is, the company sells the result of competence, maintaining the ownership of the product.

Secondly, they assess the level of control over the value creation by sharing companies, whether they “employ” – it is, high control when the company delegates the value creation of its product/service –; or “enable” – it is, low control when the company does not take part of the deal made between user and provider, just working as an intermediary.

Thirdly, they assess the mixture of the revenue stream of the companies, in which they are “bounded” – it is, direct capture of revenue as “one-time transaction” or “usage fees” depending of parameters of use –; and “unbounded” – it is, set-up or subscription fees and advertisements, data mining, sponsorship, donations and premium-users are indirect sources of revenue.

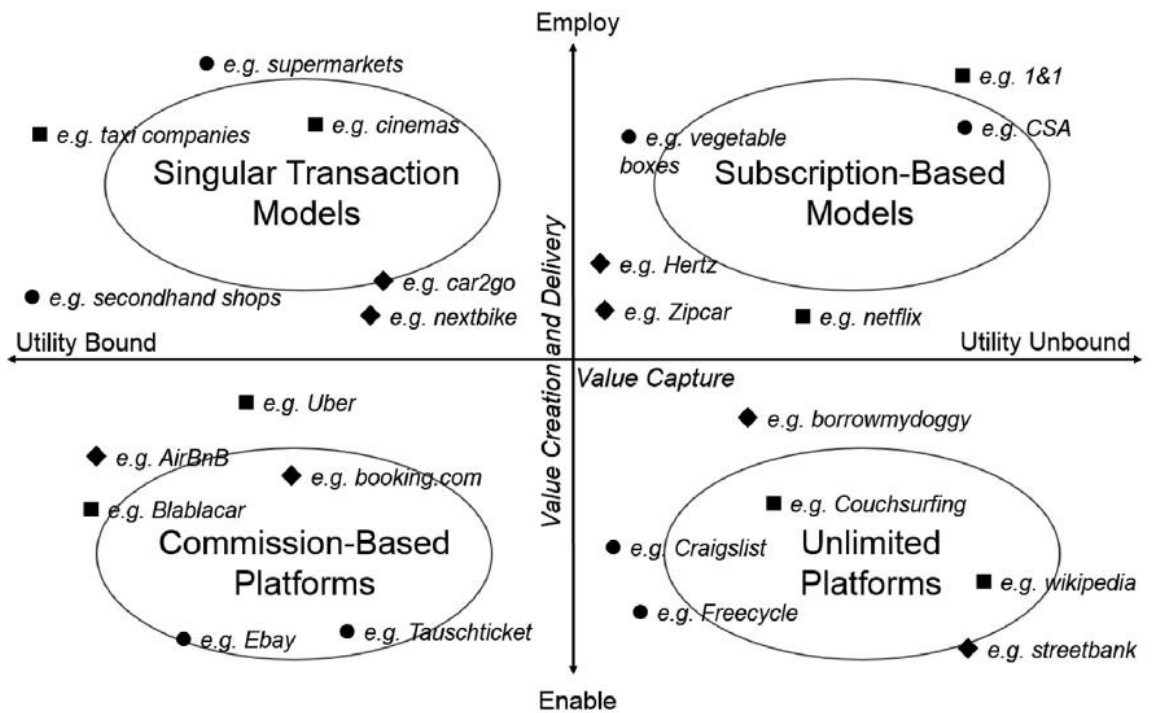


Figure 2 - Market segment in the Sharing economy based on Value Creation and Delivery (y-axis) and Value Capture (x-axis), ● product-oriented, ◆ use-oriented, ■ result-oriented Value Proposition (own depiction).

Source: Ritter & Schanz (2019, pg. 326), *Journal of Cleaner Production* 213 (219) 320-331.

To conclude, Ritter & Schanz (2019), coin four concepts by binding the three steps of their analysis in order to define the sharing economy business model. The description is underneath:

Singular Transaction: Usually not related to sharing economy because this model is deemed “ordinary market”. Thus, consumers do not have real control of the value proposition of the company. Then, only second-hand shops would lie at this model as having a sharing economy correlation because of the idle-capacity.

Subscription-Based Model: This model is similar to single transactions as usually it is delegated a high control of the value proposition. Consumers of this model make contracts with a timespan and are attracted by preferential prices, free usages in the initial period and limited versions of services.

Commission-Based Platforms: The platform works as an intermediary and allows their customers to generate a value proposition by being either a provider or a customer. The platform uses the utility-bound revenue stream with its fees for using. Also, the platform gives its consumers the power to create content, distribute and consume the value proposition whereby they can collaborate. Thus, the platform generates a community sense and reduce

possible risks in the transaction. Besides, this model may generate monopoly, outgrow opponents and create difficulties for its users/providers to change to a competitor without any loss.

Unlimited Platforms: As commission-based platforms, this model uses utility-unbound revenue stream and has a massive number of non-paying users, then, captures its income from indirect sources, such as clicks, data collection and creation of content. Therefore, the platform sells users data to advertisers, to private or public sponsor and donors. There is an engagement to generate community sense by the intermediary side, and they can also claim social, and environmental missions.

2.4. Gentrification

Recently, Airbnb is sparking many discussions among scholar and policy-makers about its power to generate gentrification on the cities the platform plays its business. Currently, Lisbon bears the burden of gentrification over its population, mostly, due to the tourism boom of the last years the city is crossing.

This chapter will provide an analysis of gentrification phenomena as well as some highlighted studies of Airbnb's effects on housing pricing and as a racial platform.

Gentrification is a rebrand of the old English word gentry, which means "People of good social position, specifically the class of people next below the nobility in position and birth."¹⁴

Therefore, gentrification is a process of rebuilding a specific local, whereby a well-off class take over a neighbourhood. This process will affect directly lower-income residents and the working class. The more vulnerable class, who no longer can pay their rents, are subjected to housing pricing's rise and displacements. Hence, it is an open-door to new householders with higher-income. Besides, it generates class inequality and even social polarisation (Hackworth & Smith, 2001; Kayzar & Derickson, 2015; Lees et al., 2007; Quintana, 2018).

At first, gentrification has been studied through the lens of resumption of old house stock in the inner-city by the middle-classes, lower and upper, whose changing in the scope

¹⁴ <https://en.oxforddictionaries.com/definition/gentry> accessed on 14/04/2019 at 15:45

of house ownership will push out the working and poor classes and those who do not identify itself in this new rearrangement (Lees et al., 2007).

Even though the class inequality is one of the main adverse effects of this phenomenon, one of the greatest promoters of gentrification is the governments, not only investors and well-off individuals. Some regulations help to leverage the phenomenon by handling public policies and backing businesses in purchasing properties over the inner-city, turning a disinterested and disinvested site into a hot-point for investing (Hackworth & Smith, 2001; Kayzar & Derickson, 2015; Quintana, 2018).

“Gentrification now receives more explicit governmental support, through both subsidies to large corporate developers and targeted policies designed to attract individual gentrifiers.” (Lees et al., 2007)

As highlighted by Quintana (2018), gentrifier agents are responsible for generating and targeting ‘potentially gentrifiable neighbourhood’, such as well-off individuals, media and the public administration, (this latter the institution that was thought to be the response to the development and urbanistic planning of the city).

Kayzar & Derickson (2015), mention that gentrifiers also tends to push out local businesses by remodelling the commercial space, rebranding the neighbourhood and by changing its old characteristics. Besides, Lees et al. (2007), argue that gentrification goes beyond just physical changes. Thereby, it affects the social dynamic of the local once gentrifier actors have different goals than the previous residents, basically means another economic focus.

Gentrification has its stages of expansion within the local of action, like all investments, it bears its risks and encompasses investor behaviour. First movers are deemed risk-oblivious; they are the forefront investors in vacant properties throughout the disinvested area, whose low prices and mortgages funds presents an opportunity for purchasing properties. A rebranding process in the neighbourhood will start, implying some displacements.

Hence, after the changes provided by the first movers, the neighbourhood gets evidence in the market. The government provides regulations and media provides press publications in favour of investments, therefore, bringing more newcomers deemed as risk-averse or those who are not willing to apply their funds on first stakes.

The influx of new people into the neighbourhood cause a going number of displacements of the working class and previous residents. As a result, this will diminish the number of overall properties, and a rise in the rent value as the area continues to be re-developed (Kerstein, 1990; Lees et al., 2007 *apud* Clay's, 1979).

Lees et al. (2007), argue that “gentrification is a structural product of the land and housing markets”, therefore, gentrifiers may take the risk of investing in specific local when the capitalisation opportunity is enough to offset prices of purchasing a property, payout loans and builders, thereby, profitting by selling the final product at the end.

In this manner, one of the gentrification effects is the capitalisation of the ground rents that the neighbourhood undergoes. Moreover, Hackworth & Smith (2001), point out the lower risk will spread out the gentrification effects outwards the inner-city, expanding to near neighbourhood its consequences.

On a similar vein, Kayzar & Derickson (2015), note that in some gentrifying neighbourhoods the diminishing of affordable housing is not replaced to a neighbouring community, reinforcing the argument of the gentrification’s spatial expansion as well as public interest over the disinvested location.

Atkinson & Bridge (2005), consider the gentrification process as a new colonialism phenomenon once it is white class-based privilege, whereby the dominant class applies its cultural and Anglo aspects upon the urban lifestyle, generating a class preference. Thus, that ruling class inhabit residential enclaves and sieged condominiums. They are provided with the lower-income working force, such as local people charged of domestic services, “those who come to occupy prestigious central city locations frequently have the characteristics of a colonial elite.”

August & Walks (2018), take the way of ‘use-value’ and ‘exchange value’ of the commodity ‘house’, citing the power of this asset to provide opportunities for ‘global finance capital’ to profit through rude forms of lending and investment, usually cheap financing which harms vulnerable people and communities.

The gentrifiers takeover multi-family housing in communities with a strong demand for renting, the families suffer by the rental control deregulation and the landlord targets his profit (August & Walks, 2018), thus, giving preference to different strategies to get more income, for instance, an exchange of a long-term to a short-term rental model.

Eisenschitz (2010), explores the neo-liberalism backdrop concerning gentrification, by which is a key factor to the post-industrial marketplace, mentioning that economic crisis pushes out the working class from the deindustrialized sites. Therefore, the middle-class will drive the city into new and more creative business models, such as art, music, cinema, publishing, entertainment and retailing, encouraging the arrival of new people and new consumers whose purchase power represents a reposition in the global economy, backed by policies that urge privatisation and deregulation of social policies.

In this line, authors explore the 'rent gap' as an opportunity for gentrification (Atkinson & Bridge, 2005; Eisenschitz, 2010; Kayzar & Derickson, 2015; Lees et al., 2007) correlated to neo-colonialism characteristics, neo-liberalism marketplace and for-profit homeowner practices.

However, Eisenschitz (2010), sees in gentrification a tool for politicians to couple with public issues, even if it causes harmful effects for poor classes. Nevertheless, politicians aim their hypes at the redevelopment power of gentrification in which they pledge new economic opportunities for investors, such as local people providing the working force, place's rebrand and revitalised space that will lead to tourism and new consumers.

In this manner, the phenomenon is a market solution by which is not watched the problems it may cause. (Lees et al., 2007)

Lees et al. (2007), classify the typology of people that help to boost the phenomenon. Usually, they are hippest people, young middle-class, gays and students, it is, those who reinforce the white class-based privileges cited by Atkinson & Bridge (2005).

Newcomers move to live around the inner-city zone and demand a rearrangement of the cultural spaces, such as for cycling path, claiming environmental concerns and community-based live style, what means a flip over the old patterns of the neighbourhood and exclusion of the previous residents.

Quintana (2018), explores the psychological side-effect that gentrification may cause on affected individuals, stating "identifying the aspects that make a community unique are a crucial part of the place-making which grants it an identity, and that can make people also feel self-identified with it." Stressing that self-identification and community-ties are extremally important characteristics for human beings and the lack of it causes psychological instability. Reinforcing the market role on the neighbourhood's rebrand, house flipping and

marketing practices to rebuild a completely new place direct affect people at the vulnerable position.

Amongst many discussions, Airbnb is frequently deemed a gentrifier tool by scholar and the general public who contest the platform power to cause displacements of residents and even class harassment.

Wachsmuth et al. (2018), expose effects caused by a few years of Airbnb in New York City on house affordability, renting prices and class privileges through the platform. Their study accounted 7,000 to 13,500 units of houses removed from the long-term rental market by Airbnb. Then, the ‘rent gap’ effect of the platform generated an increase of 1.4% over the long-term rental contracts.

When it comes to analysing the racial effects of the platform, Frenken & Schor (2017), mention that “sharing economy sites can also reproduce class, gender, and racial biases and hierarchies”, stressing that non-black hosts may charge about 12% more in comparison to black host properties. Moreover, African-American guests are more easily rejected by hosts and bear a significant racial disadvantage in rating, prices and reviews on the platform.

Wachsmuth et al. (2018), unveil the ‘racialize effect’ of the Airbnb when white hosts are five times more frequent across the 72 predominantly black neighbourhoods in New York City, being those who will make 530% more income and generate six times more chance of black residents to be affected by housing disruption. In overall, 72% of the population at high risk of Airbnb gentrification throughout New York City is non-white.

By the way, gentrification also sparks many discussions of adverse and sound effects. Table 2 syncretizes the positive and negative effects, according to the authors explored in this study.

Table 2 - Positive and Negative sides of gentrification

Author	Negative	Author	Positive
(Eisenschitz, 2010; Kayzar & Derickson, 2015; Lees et al., 2007)	Displacement through rent/price increases	(Eisenschitz, 2010)	Stabilisation of declining areas
(Eisenschitz, 2010; Lees et al., 2007; Quintana, 2018)	The weakness of community ties and identity	(Atkinson & Bridge, 2005; Eisenschitz, 2010; Hackworth & Smith, 2001; Kayzar & Derickson, 2015; Lees et al., 2007;	Increase properties values; Rehabilitation of vacancy properties

(Quintana, 2018)	Psychological effects on people in disadvantage	Quintana, 2018) (Eisenschitz, 2010; Kayzar & Derickson, 2015; Lees et al., 2007)	New market place opportunities
(Atkinson & Bridge, 2005; Eisenschitz, 2010; Frenken & Schor, 2017; Lees et al., 2007; Wachsmuth et al., 2018)	Class harassment and racialize tool	(Eisenschitz, 2010; Kayzar & Derickson, 2015; Lees et al., 2007; Quintana, 2018)	A mixture of different social classes. Rebranding a neighbourhood
(Eisenschitz, 2010; Kayzar & Derickson, 2015)	Commercial and industrial displacement		

Source: Adapted by the author

Indeed, the theme of gentrification needs to have more empirical and social studies. Many facts that tie the cause and effects of the phenomenon rely on subjects such as house affordability, racial and psychological effects, yet to the overall community sense. Perhaps, further scientists will have more substantial evidence for the phenomenon of which this study explored under a more negative lens that it may cause over cities.

3. Airbnb

The Airbnb platform is an online intermediary marketplace that helps people to rent their house to a third party, gathering on the platform people providing their property and people seeking a place to stay. Thus, the platform is a hotel-like listing of housing available for travellers to rent according to their needs, such as holiday, vacation and even business travels.

On the ‘about us’ tab of the website, the platform is described as:

“Founded in 2008, Airbnb exists to create a world where anyone can belong anywhere, providing healthy travel that is local, authentic, diverse, inclusive and sustainable. Airbnb uniquely leverages technology to economically empower millions of people around the world to unlock and monetize their spaces, passions and talents to become hospitality entrepreneurs. Airbnb’s accommodation marketplace provides access to 6+ million unique places to stay in more than 81,000 cities and 191 countries. With Experiences, Airbnb offers unprecedented access to local communities and interests through 30,000+ unique, handcrafted activities run by hosts across 1,000+ markets around the world. Airbnb’s people-to-people platform benefits all its stakeholders, including hosts, guests, employees and the communities in which it operates.”¹⁵ (Airbnb about us, 25 of April of 2019)

The platform claims to have more than 6 million of listings worldwide; more than 81,000 cities with listing worldwide; playing their business at more than 191 countries around the world; more than 2 million stayings per night¹⁶. These numbers unveil the business power of the company, which is currently considered as the leading of the housing sharing market.

3.1. Business model

The Airbnb’s business model is well-directed and relies on many strands of their strategies such as:

- *Trust and safety*: this section provides ‘risk scoring’ of the guest, ‘watchlist and background checks’ of the place according to its rules, workshop to hosts to be better oriented or ‘preparedness’, and securities tools such as ‘secure payments’, ‘account protection’ and ‘scam prevention’.

¹⁵ <https://press.airbnb.com/about-us/> accessed on 25/04/2019 at 10:52

¹⁶ <https://press.airbnb.com/fast-facts/> accessed on 25/04/2019 at 10:54

- *Hosts community centre*: this section provides to the hosts' community on the site to exchange experience to each other such as 'trips and tricks', 'connect locally' and 'get support.'
- *Why host*: this section encourages homeowners to list their properties on the platform, giving them many advantages of doing so.
- *Event*: this section encourages event organizers to work together with the Airbnb by offering lodges for the event through the platform by hyperlinking to the platform.
- *Experiences*: this section encourages local people who provide a service to host an event through the website; for instance, a cooker may create an event on the platform to host people at his local.
- *Open homes*: this section encourages homeowners to share for free their homes 'for good', it is, to help people that underwent, for instance, with an environmental disaster, to receive refugees and medical staying.
- *Diversity*: this section urges to Airbnb's inclusiveness power, pledging that discrimination 'has no place' on the platform as well as rising of the 'belonging feeling'.
- *Guidebooks*: this section provides guidebook of a variety of cities worldwide.

The platform is struggling and trying to improve its public image to its users once many studies and the press have shown negative aspects of the platforms, such as discrimination, racial bias, lack of diversity, gentrification and a for-profit tool for commercial players.

3.2. Website

The Airbnb's website relies on section such as 'news', in which compiles many articles provided by the company as stories and initiatives that took place through Airbnb, also 'media assets', in which compiles an archive of files about different themes regarding the platform available to download.

Main page

The main website page has a user-friendly and straightforward design where the goal is simply to search for a place to stay, relying on the company logo, host a home, host an experience, help, sign up and login options.

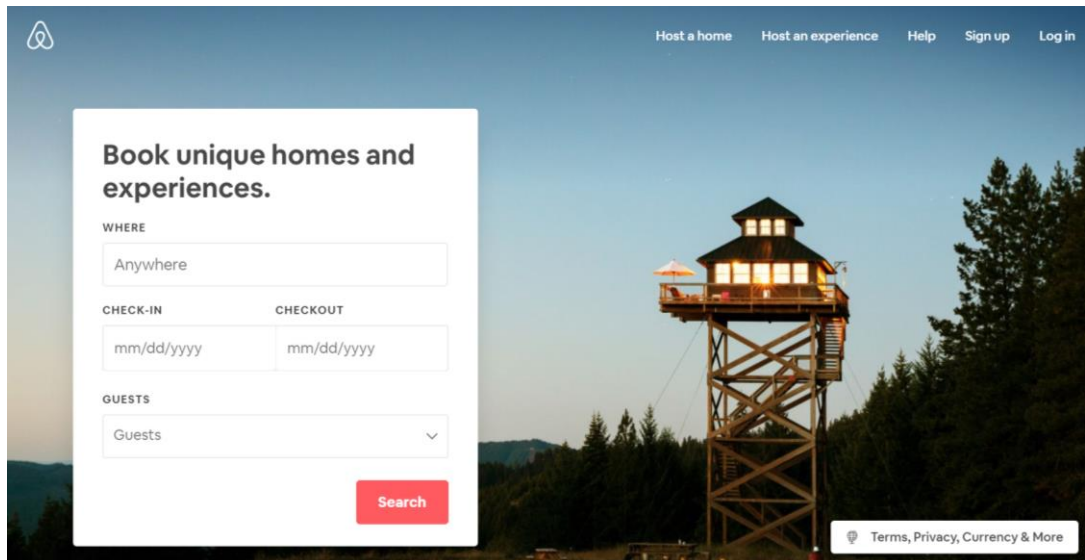
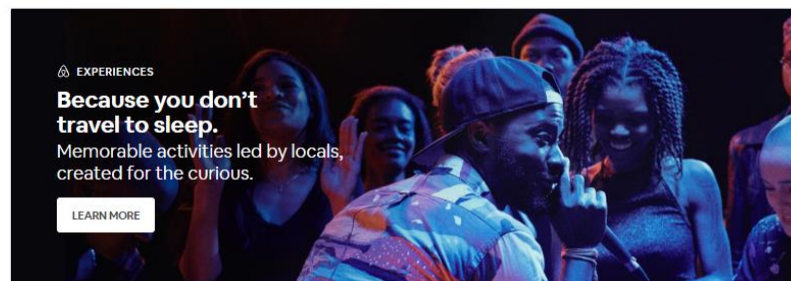
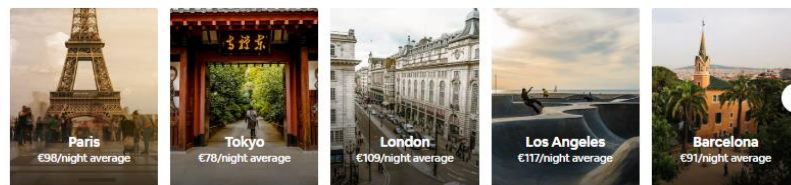


Figure 3 – Airbnb website main page

Source: Retrieved from <https://www.airbnb.com/?logo=1> in 24/04/2019 at 11:53

Recommended for you



Top-rated experiences

Book activities led by local hosts on your next trip

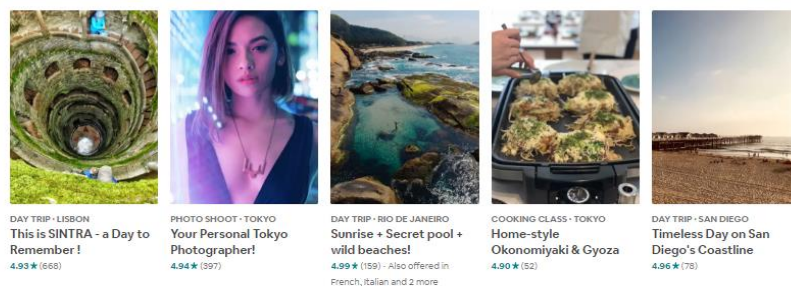


Figure 4 – Airbnb website main page part 2

Source: Retrieved from <https://www.airbnb.com/?logo=1> in 24/04/2019 at 11:53

In the bottom of the page, the platform offers the option for ‘recommended for you’, whereby algorithm is used according to cookies collects from the users, encouraging them to try the ‘experiences’ on the platform, highlighting the top-rated ones.

Host a home

The website’s host page wears light and user-friendly design, where a chance for monetization appears to the host whether using the platform according to its location, calculating an estimation of 15 nights booked per month, using average prices of the region. Furthermore, the platform provides home assurance against damage and liability, yet, the host may get paid quickly once the guest confirms its check-in.

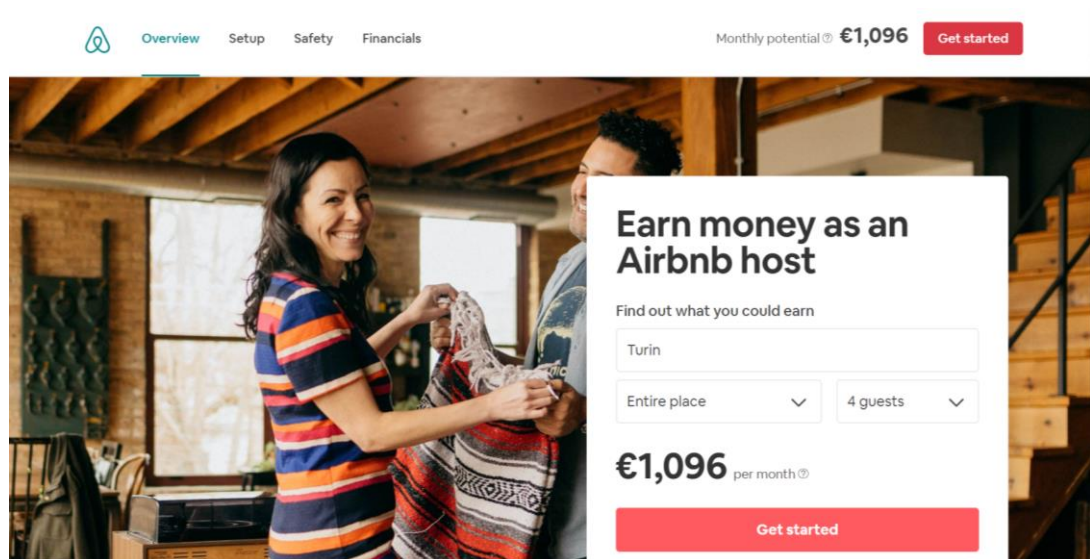


Figure 5 – Airbnb host website page

Source: Retrieved from <https://www.airbnb.com/host/homes> in 24/04/2019 at 11:53

Host an experience

Airbnb encourages local people to earn money by offering ‘experiences’ for travellers, and the guest is encouraged to know the culture of the place they are travelling.

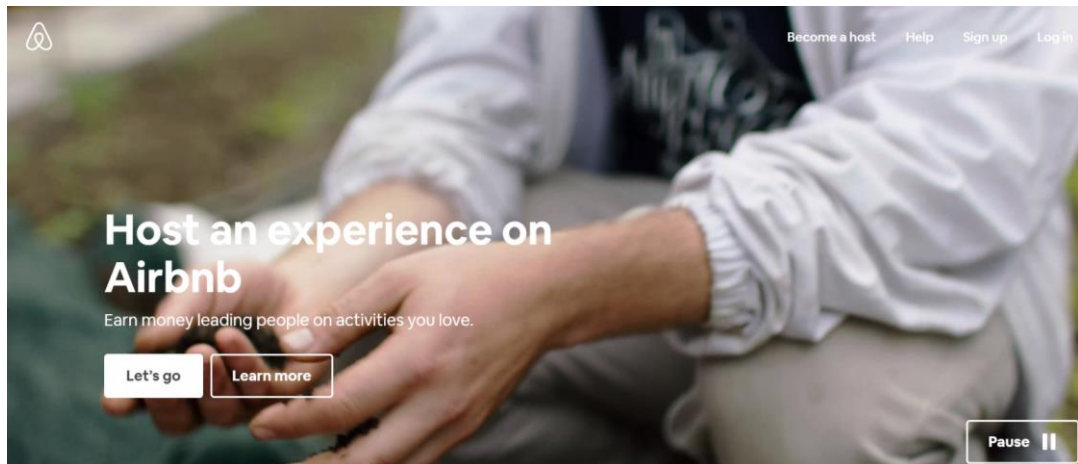


Figure 6 – Airbnb website experience page

Source: Retrieved from https://www.airbnb.com/host/experiences?from_nav=1 in 24/04/2019 at 11:55

3.3. Revenue capture

The Airbnb revenue capture method is by charging both the host and the guest. For hosts, the platform charges a fee of 3% for each reservation, claiming to be among the lowest fees in the market. For guests, Airbnb may charge fees between 0% and 20% as well as nightly rate fee, cleaning fee and additional guest fee, for these extras fees Airbnb does not apply charges.

For ‘experiences’ the platform charges a 20% service fee calculated according to the price of the offer. Moreover, the platform does not charge a guest a fee for the experience. Non-profit partnership the fee is removed. Depending on the location, the VAT fee may be charged for both hosts and guests¹⁷.

3.4. Exploring the website

On the website’s main page, a quick search for staying has been made and filled into Lisbon, for the first week of August/2019, in the high season, and for two guests.

The second step has been searching for homes, third step the home types, which was selected Entire Place, then, the website offered 96 option for the entire home to be rented.

¹⁷ <https://www.airbnb.com/help/article/1857/what-is-the-airbnb-service-fee> accessed on 25/04/2018 at 12:38

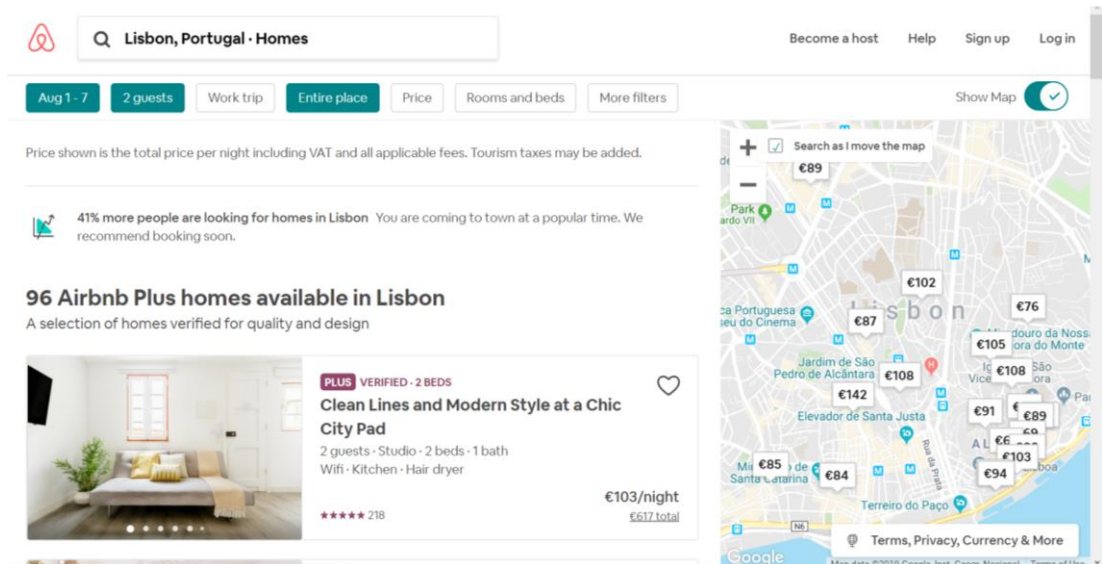


Figure 7 – Simulating a searching option for Lisbon in August/2019

Source: Retrieved from <https://www.airbnb.com/s/Lisbon--Portugal> in 24/04/2019 at 12:51.

A map is displayed on the website with the properties available around the city, a click on the icon will show a new window with listing's information. As it is possible to see in Figure 7, the user may select 'work trip', price range, the number of rooms, and beds desired and amenities filters in its searching. The average price in Lisbon for an Entire place is €139.00, for a hotel room is €119.00, for a private room is €79.00 and for a shared room is €50,00, according to the website's info in the date of the search.

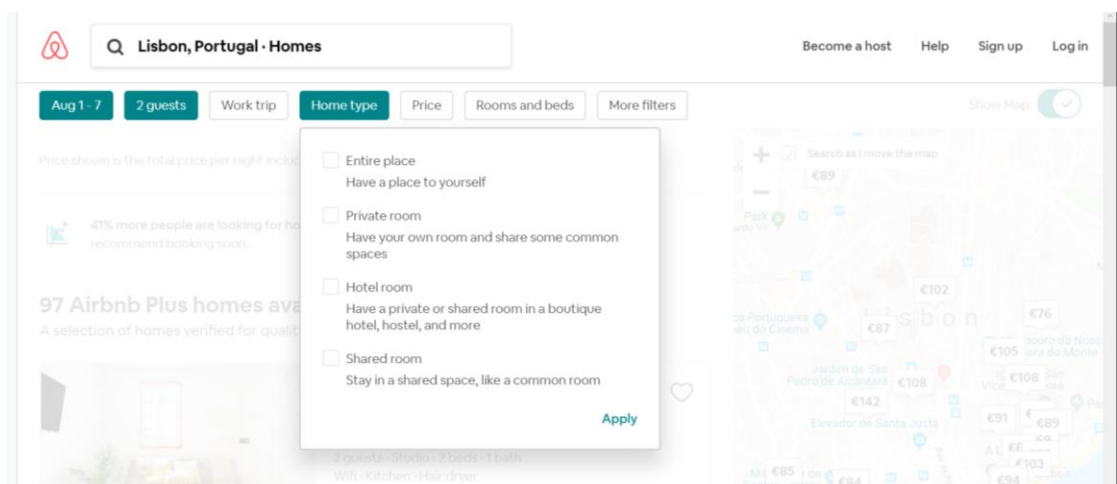


Figure 8 – Home type selection on the Airbnb website

Source: Retrieved from <https://www.airbnb.com/s/Lisbon--Portugal> in 24/04/2019 at 12:51.

On Figure 8, the user can select the type of the home to stay. The range goes through ‘Entire Place’, the main subject of this study, private room, hotel room, this option enters in the sophisticated market as described, and shared room.

Lutz & Newlands (2018), explore the consumer segmentation of the Shared rooms and Entire home. At first, Airbnb was supposed to be a sharing economy platform and the type of home that fits the sharing business model the most is shared rooms, whereas the entire home may scape from sharing concepts.

Table 3 – Consumer profiles and providers target according to Airbnb room type

Accommodation type	Consumer profiles	Provider targeting
Shared rooms	<ul style="list-style-type: none"> More likely to be male Low income No education effect No age effect Single travelers and large groups Low concern with cleanliness Open to social interaction 	<ul style="list-style-type: none"> No gender preference but gender separation Low income High education/digital business professionals Younger guests but not teenagers or children No children and families No expectation about cleanliness Open to social interaction
Entire home	<ul style="list-style-type: none"> No gender effect High income High education No age effect Travel with partner/spouse Cleanliness not an issue Uncomfortable with social interaction 	<ul style="list-style-type: none"> No gender preference High income High education/business travelers Older guests Couples Professional level of cleanliness offered Minimal social interaction

Source: Retrieved from Lutz & Newlands (2018, Journal of Business Research 88, pg. 193)

Table 3 shows that people who opt to shared rooms are looking for social interaction; they are either single or a large group of travellers and more likely to be male. In contrast, the providers are looking for low-income hosts, people with a low expectation of a cleaned house and younger guests. Consumers who opt to entire home are high-incoming and high-education users, are travelling with family or a partner and do not like social interaction. In contrast, the providers are also looking for high-income, high-educated and older guests as well as will not practice social interaction with them.

To conclude, the Airbnb has a robust business model which is playing its role practically worldwide; the website has a bunch of information to clarify any possible

question to either house providers or guests. Currently, the company is working with governments to improve their services and to fit its business model into city fiscal rules and laws.

4. Methodology

The underneath chapter will explain all methodologies this study applies, from the data source to the tools utilised to develop a consistent analysis. The methodology explains the structure of data, the metrics for measuring house availability on Airbnb, and the equation deployed to estimate the gross revenue of a host, which relies on statistical data of Lisbon and the Portuguese house standard.

Data collection

In order to have reliable data, this study relies on two primary online databases of Airbnb data; they are the *Tom Slee blog*¹⁸ and *Insideairbnb.com*¹⁹. Beyond, data collected from the National Statistics Institute of Portugal (INE) online repository, articles, reports and news gathered on the Portuguese press vehicle, as well as information of the COST 16121 “Sharing and Caring” European network research.

The Slee`s database provides Airbnb data through a web scrap tool programmed in Python language. Slee is a Canadian journalist who programmed the web scraper to extract Airbnb`s website data, which served as a sample to *Insideairbnb.com* programmers as well. On Slee`s website, he claims an error of 10% of the original data²⁰. The schema of data collection is as described in Table 4.

This study also makes a spatial analysis by using the ArcGIS, a statistical software that allows geo-statistics correlation analysis. The tool ArcMap that allows geographic studies by inputting database sheets and map-shapefiles, providing a broad view that is possible to shape and tailor information from the database towards the research interest.

The data provided by the Portuguese Statistic Institute (INE) is crucial to the study. In the institute`s database, it is possible to collect demographic information, as well as touristic statistics and reports.

The Institute also provides shapefiles of the whole country and its divisions by zone, district, city, and neighbourhood. For this study, INE`s data, such as shapefiles of Lisbon, city`s neighbourhoods, and Lisbon District, to display all listing throughout the map of the city, according to the approximated coordinate of each listing.

¹⁸ <http://tomslee.net/airbnb-data-collection-get-the-data> accessed on 01/03/2018 at 09:30

¹⁹ <http://insideairbnb.com/get-the-data.html> accessed on 01/03/2018 at 09:40

²⁰ <http://tomslee.net/airbnb-data-collection-methodology-and-accuracy> accessed on 01/03/2018 at 09:30

Finally, data collected from Airbnb and INE websites, have been merged and setup to projecting throughout the Lisbon map, separated by the period of analysis.

Table 4 – Typology of the data collected by both tool: Tom Slee and Insideairbnb.com

Typology	Description
Room_id	A unique number identifying an Airbnb listing. The listing has a URL on the Airbnb web site of http://airbnb.com/rooms/room_id
Host_id	A unique number identifying an Airbnb host. The host’s page has a URL on the Airbnb web site of http://airbnb.com/users/show/host_id
Room_type	One of “Entire home/apt”, “Private room”, or “Shared room”
Borough	A subregion of the city or search area for which the survey is carried out. The borough is taken from a shapefile of the city that is obtained independently of the Airbnb web site.
Neighbourhood	As with borough: a subregion of the city or search area for which the survey is carried out. For cities that have both, a neighbourhood is smaller than a borough.
Reviews	The number of reviews that a listing has received. Also, the first and last review received in that room_id
Overall_satisfaction	The average rating (out of five) that the listing has received from those visitors who left a review.
Accommodation	The number of guests a listing can accommodate.
Bedrooms	The number of bedrooms a listing offers.
Price	The price (in €) for a night stay. In early surveys, there may be some values that were recorded by month.
Latitude and longitude	The latitude and longitude of the listing as posted on the Airbnb site: this may be off by a few hundred meters.
Last_modified	The date and time that the values were read from the Airbnb web site.
House information	Columns containing data of the property listed.: <code>space_description</code>; <code>experience_offered</code>; <code>house_rules</code>.
Availability	Columns containing data of the listing's availability as: <code>has_availability</code>; <code>availability_30</code>; <code>availability_60</code>; <code>availability_90</code>; <code>number_al</code>.
License	The AL (Local lodging) legal code.

Source: Author, adapted from Tom Slee and Insideairbnb.com websites

Metrics

Metrics for estimating revenue and house availability are going to be defined to create a pattern of analysis for this study.

Host’s gross revenue estimation calculation

The formula $Ry=(ry*1.30)*ppn*2,4$ (Picascia et al., 2017) will be applied in this study to calculate the host’s estimated gross income of each listing on Airbnb, where the

adjust of 30% represents a night staying without a corresponding review, as Airbnb itself has once said it maintains²¹ and an average of 2,4 night stays, according to data of INE²² annual tourist report for the years of 2015, 2016, 2017.

Estimation of Long-term rental

The size of the property in square meters is needed to estimate the gross revenue of an LTR. Therefore, Table 5 contains the standard of Portuguese houses in according to the Portuguese Metrology Institute, as well as the average price by meters, according to data from INE of prices of new contracts in 2017, both as suggested by Picascia et al. (2017) analysis.

Table 5 – Minimum liveable rooms area and supply rooms in squared meters to several house typologies

Tp	rooms of the house (m ²)						supply rooms			
	Living room	Kitchen	Bedrooms		Closet	Dining room				
T0	12	6,5			2	4				
T1	12	6,5	10,5		2	4				
T2	14	6,5	10,5	9	3	4				
T3	16	6,5	10,5	9	9	4	6			
T4	16	6,5	10,5	10,5	9	9	4	6		
T5	18	6,5	10,5	10,5	9	9	9	5	8	
T6	18	6,5	10,5	10,5	9	9	9	9	5	10

Source: Adapted from the Portuguese General Regulation for Urban Buildings, 2017, page 20 (annexe 1)

Table 6 – Average renting price of Lisbon according to the property size in square meters

Year	Price average in m ²
2015	
2016	
2017	€9,62 ²³
2018	€11,45

Source: Author

Gini Index

The Gini index was calculated to shed light upon inequality among hosts. In this study, for each period of the analysis and considering that the number of reviews is

²¹ <https://www.quora.com/What-percent-of-Airbnb-hosts-leave-reviews-for-their-guests/answer/Brian-Chesky> accessed on 26/02/2019 at 19:59

²² https://ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes accessed on 26/02/2019 at 20:02

²³ https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=314753314&DESTAQUESmodo=2&xlang=pt accessed on 13/02/2019 at 12:05

cumulative on the Airbnb database, it is possible to learn whether the inequality has arisen, kept steady, or decayed. Population 'n' has been divided by quarters in each period, respecting the bottom-up sum of gross revenue for each listing.

The formula is: $Gini = 1 - \sum_{i=1}^n (p_i)^2$

Where p_i is the probability determined for an object.

House Availability on Airbnb platform

To have a parameter to analyse whether the host is renting its property into the sharing economy concept or not, the time that its property is available on the platform is a useful metric of comparison. As suggest by Wachsmuth et al. (2018), this study will follow the same threshold of 60 days booked and 120 days of availability to estimate a frequent Airbnb listing, which represents a homeowner who is out of the city every weekend of the year, summing 104 days of availability. Then, to estimate a very frequent Airbnb listing a threshold of 120 days booked and 240 days of availability on the platform.

5. Analysis

Over the last few years, Airbnb became an economic phenomenon and an established firm that year after year confirms its robust business model.

The term “*Airfication*” or “*Airbnbification*” of cities (Celata, Stefania, et al., 2017; Picascia et al., 2017) were mentioned to determine the business power of Airbnb over great cities, triggering many subjects to the discussion, such as the platform’s growth, its density around the city, regulation, commercial opportunities, income share inequality and gentrification agents.

The analysis explores whether the platform follows concepts of the sharing economy or it is aiming to the current economy. Therefore, its evidence of a business for-profit, its significant growth in Lisbon by which reinforces its hotel-like business model when listing entire homes on its platform. Finally, its correlation to tourism and even with the scaling of renting prices in Lisbon.

5.1. Correlations

Correlation matrix

A correlation analysis was run to shed light upon main statistics correlated to the Airbnb platform, following the list of variables generated for this study:

Touristic Inflow Variables (overall number of tourists for a determined zone)

- The touristic inflow of Portugal (*TFlow*)
- The touristic inflow of the Metropolitan Zone of Lisbon (*TFlowLis*)

Airbnb Listing Variables (overall number of Airbnb listing for a determined zone)

- Listing of all typologies in Lisbon (*AlllistingLis*)
- Listing of all typologies in the central zone of Lisbon (*AlllistingCentral*)
- Listing of ‘entire home’ listed in the central zone of Lisbon (*EPlaceCentral*)
- Listing of ‘entire home’ listed in Lisbon (*EPlaceLis*)

Financial Variable

- Estimated gross revenue income of the hosts in the central zone (*HostIncCentral*).

The correlation matrix is represented in Table 8, after running a sample of variables the matrix displays some of them with high correlation to one another (near 0,70 or above).

Table 7 – Touristic statistic of Lisbon, INE database

Lisbon Metropolitan Zone (LMZ)	Lisbon hotel Accommodations	Lisbon hotel facilities	Guests Hotels LMZ	Total Guests Portugal	VAB	Average night stays in LMZ
2015	47627	562	5242762	17358547	6,7	2,4
2016	51627	621	5583066	18961446	6,9	2,4
2017	55598	771	6158466	20691321	7,5	2,4
2018	N/A	N/A	5663266	21051013	8,4 ²⁴	N/A
Total growth	17%	37%	8%	21%	25%	

Source: Author

Table 8 – Correlation coefficient, using the data from 2015 to 2018. 5% critical value (two-tailed) = 0.9500 to n = 4

TFlow	TFlowLis	AllistingLis	EPlaceLis	
1,0000	0,7944	0,9852	0,9782	TFlow
	1,0000	0,6907	0,6713	TFlowLis
		1,0000	0,9992	AllistingLis
			1,0000	EPlaceLis

AllistingCentral	EPlaceCentral	HostsIncCentral	
0,9900	0,9782	0,8255	TFlow
0,7105	0,6699	0,4768	TFlowLis
0,9995	0,9992	0,8967	AllistingLis
0,9976	1,0000	0,9133	EPlaceLis
1,0000	0,9976	0,8857	AllistingCentral
	1,0000	0,9123	EPlaceCentral
		1,0000	HostsIncCentral

Source: Author

Thus, the touristic inflow of Portugal is strongly related to all typologies of Airbnb listings as well as to entire home listings. In Lisbon and its Central Zone, reaching correlations coefficient above of 0,90. The touristic inflow of the Metropolitan Zone also

²⁴ <https://www.publico.pt/2018/12/18/economia/noticia/turismo-vai-continuar-crescer-acima-economia-portuguesa-1855065#gs.QCCy61Tm>, accessed on 01/02/2018 at 09:18

had a high coupling near to 0,70 for both All listings and Entire Home, either considering the whole city or the central zone.

The host estimated gross revenue in the short-term rentals market has been a variable strongly correlated to all listing, it would be expected considering the rise of the platform in the city. Moreover, it is strongly correlated to entire homes at both the whole city and central zone, near 0,90 to all listings and above it to entire places.

To conclude, the study will focus on these two lines, the boom of listing over the last years in the city and the estimated revenue that a host can earn, comparing to a rental contract in long-term.

Autoregressive correlation

By using Cochrane-Orcutt estimation for autoregressive correlation, it was possible to reveal an interesting significance between two variables: Airbnb offers in Lisbon to Estimated gross revenues earned by a host.

What Table 9 is pointing out is that when the estimated income increases by 1%, it means that the offers in Lisbon will ascend by 0,57% with 1% of significance as shown underneath.

Table 9 – Cochrane-Orcutt analysis

Dependent variable: All_listing_Lisbon; Durbin-Watson: 2,749793

	Coefficient	Standard errors	Error term-t	p-value
const	-0,457864	2,4677e-05	-18554,3092	<0,0001***
HostsIncCentral	0,571418	1,43121e-06	399255,3026	<0,0001***

Source: Author

It would suggest a good reason for the market scaling of the platform, as a way to people increase profits through STR contracts rather than rent their houses under an LTR contract. Nevertheless, this analysis only relies on data from the Airbnb platform, a limiting factor considering the housing-share market has more platforms listing offers of houses.

5.2. Mapping out the Airbnb growth around Lisbon

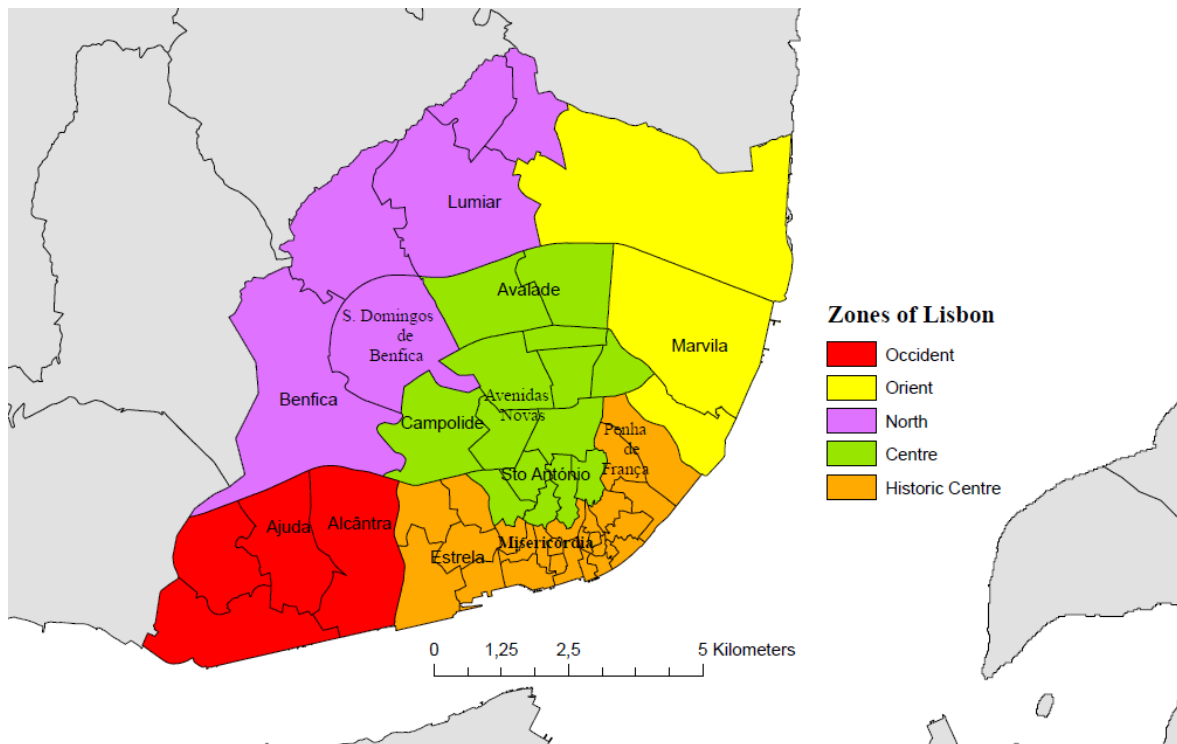


Figure 9 – Lisbon map and its zones

Source: Author

Lisbon is divided into five zones: Occidental, Oriental, North, Centre and Historic Centre²⁵.

Table 10 – Airbnb statistics, Tom Slee and Insideairbnb databases.

Airbnb Listings amount, Entire Place Listing amount, increase in the whole period, and proportion of Entire Places

	All Listing	Entire Place Listing	%	Accommodations
March 15	5644	5067	90%	13880
March 16	8959	6394	71%	21778
July 17	13523	9904	73%	52368
December 18	16497	12361	75%	54585
% Increase	192%	144%		293%

Source: Author

This study has a period starting from March 2015 to December 2018. Tom Slee database has its first Airbnb dataset collect for Lisbon in March of 2015 (first period), and

²⁵ <http://www.cm-lisboa.pt/zonas>, accessed on 25/02/2019 at 16:10

the second in March of 2016. Thus, it is not possible to take into consideration the touristic seasonality to specific periods of analysis.

Currently, Airbnb is one of the leading players in the STR market. Between the first and last period, the platform grew by 192% in listing offers, and the number of accommodations rose by 293% as showed in Table 10. In contrast, the hotel market grew by 17% in accommodations according to the statistics data in Table 7. Also, both markets have a similar number of accommodations available for guests, highlighting the fast pace growth of the platform.

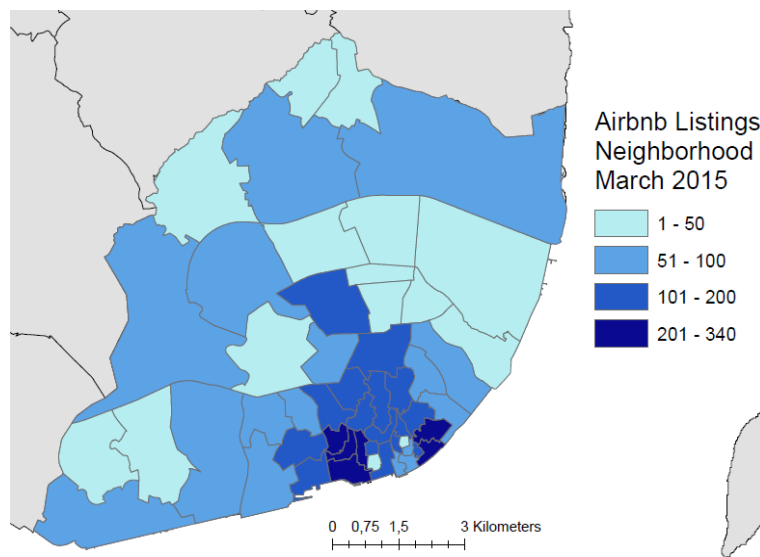


Figure 10 – Airbnb listing concentration per neighbourhood in March of 2015

Source: Author

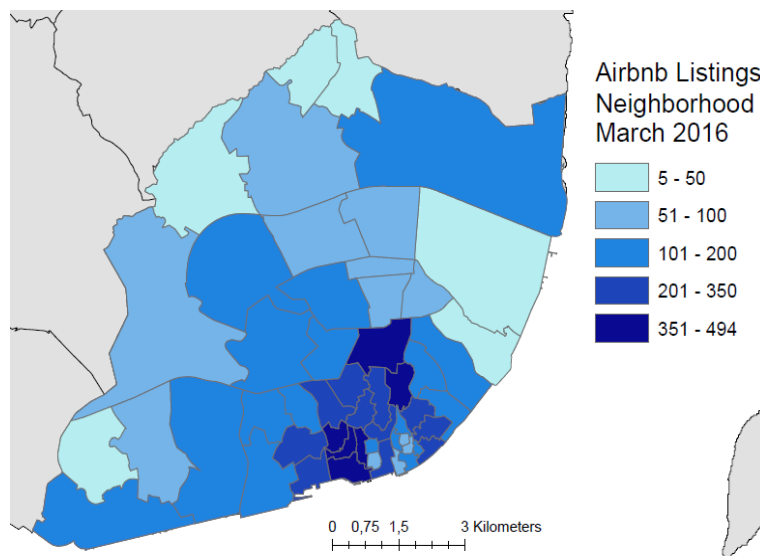


Figure 11 – Airbnb listing concentration per neighbourhood in March of 2016

Source: Author

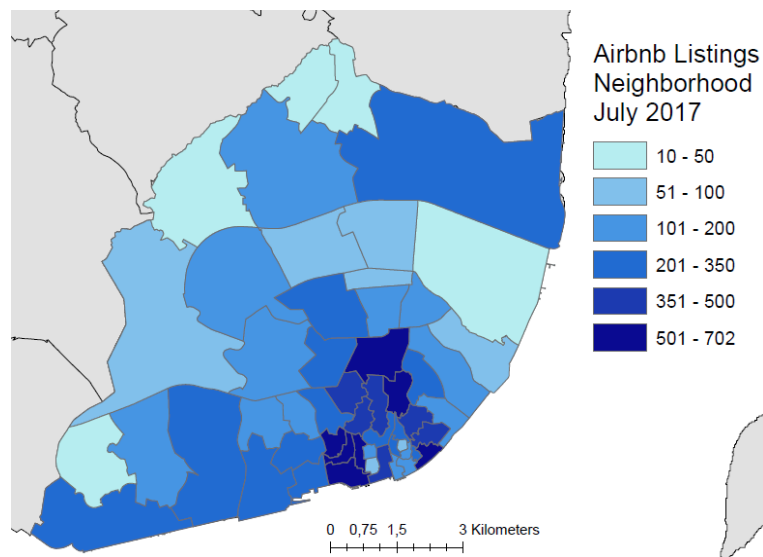


Figure 12 – Airbnb listing concentration per neighbourhood in July of 2017

Source: Author

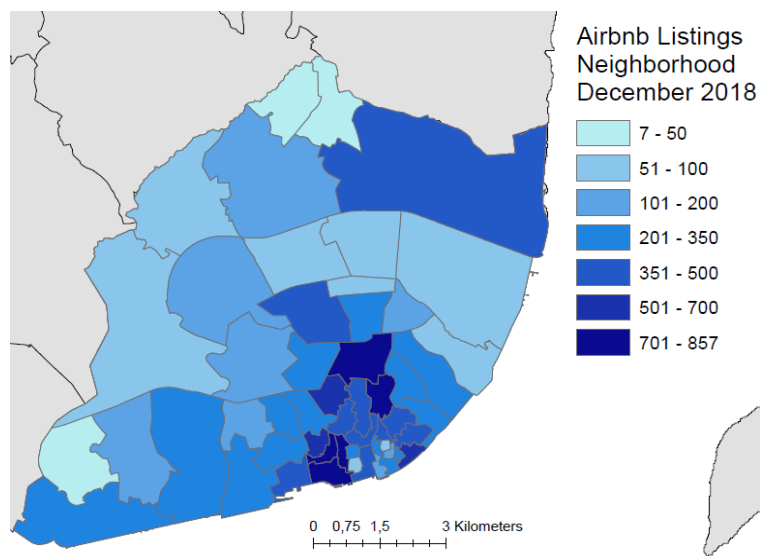


Figure 13 – Airbnb listing concentration per neighbourhood in December of 2018

Source: Author

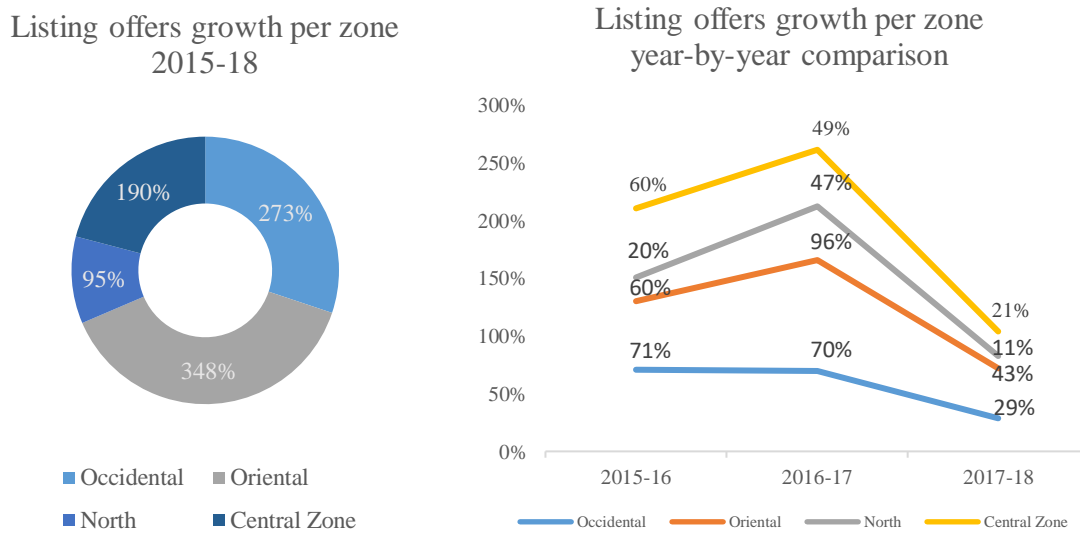
The offers on Airbnb are concentrated over the historic centre and central zone of Lisbon, as displayed in Figures 10, 11, 12 and 13. In 2015, most neighbourhoods over this zone held from 101 to 340 offers. The Olivais (Parque das Nações) and the São Domingos de Benfica neighbourhoods were outliers, accounting for 94 and 96 listings respectively.

In 2016, there was a territorial expansion from the central zone to nearby neighbourhoods, such as the Lisbon Airport in Olivais and famous sightseeings as in Santa

Maria de Belém (Belém Tower, Saint Jerónimos Monastery and the Belém pastry). It worth noting two boroughs, Santa Catarina accounted for approximately 500 listings, and Arroios accounted for approximately 400 listings. The surroundings of the central and airport also had a growing number of listing offers.

In 2017 and 2018, Airbnb underwent substantial growth in Lisbon which reflects on the listing offers. In the central zone, the number of listing grew by the double in comparison to 2015.

Graphic 1 – The increasing percentage of the listings by each zone, the whole period and year-by-year comparison



Source: Author

Graphic 1 displays the proportion of listings by each zone of Lisbon, underlying the Oriental zone of the city, which grew by 348%, as the place with the highest growth during the period of 2015-2018, followed by the occidental (273%), central zone (190%), and north (95%).

Notwithstanding, up to 2016-17, all zones accounted for a fast-pace increasing. However, the year-by-year comparison signalises a decay in the listing offered when growth in the last period did not reach more than 50%.

5.3. Entire home density and demand of Airbnb offers

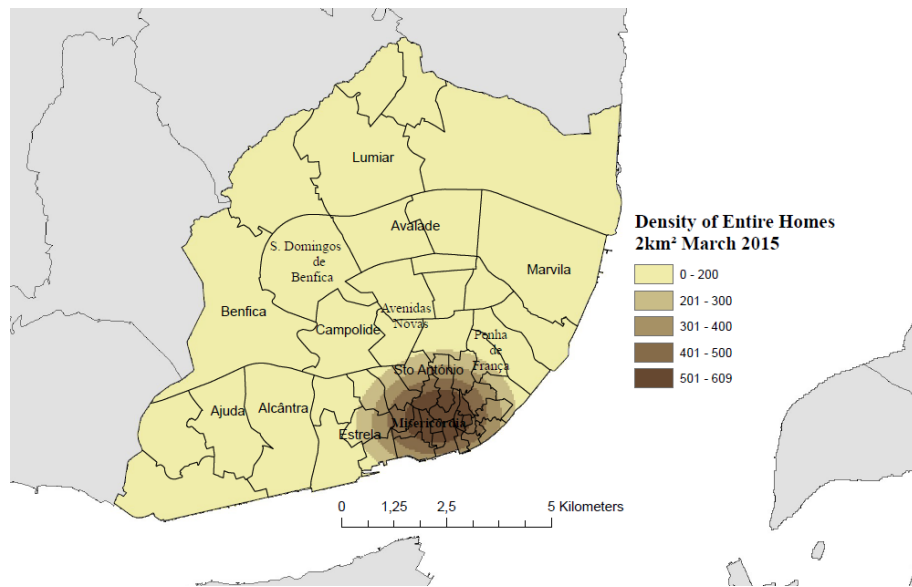


Figure 14 – Density of Entire Home listed within 2km² radius in March of 2015

Source: Author

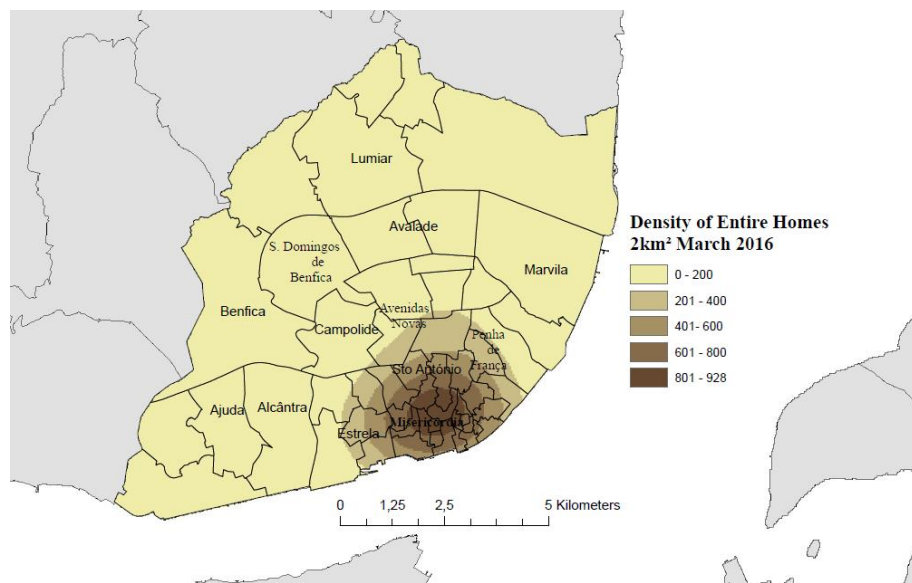


Figure 15 – Density of Entire Home listed within 2km² radius in March of 2016

Source: Author

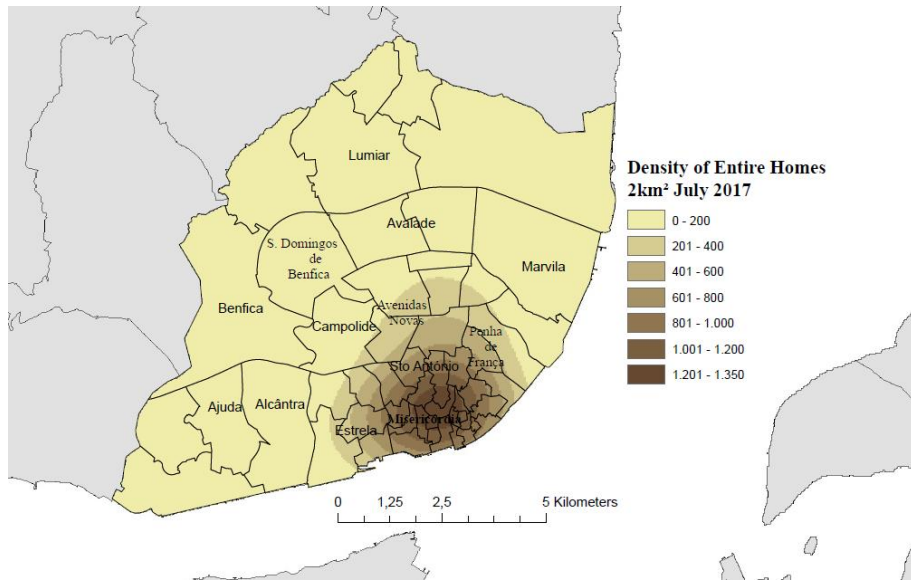


Figure 16 – Density of Entire Home listed within 2km² radius in July of 2017

Source: Author

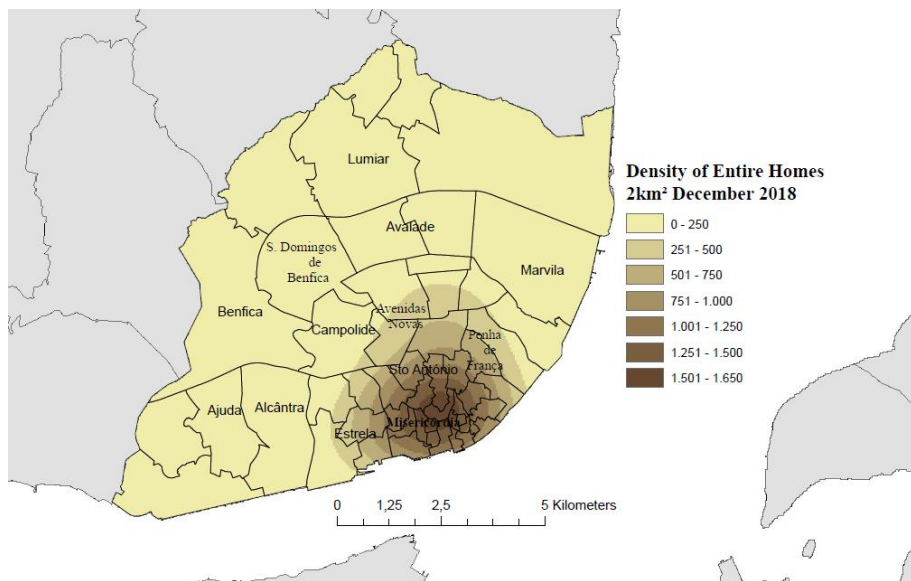


Figure 17 – Density of Entire Home listed within 2km² radius in December of 2018

Source: Author

Density of entire homes

The listing of entire homes on the platform deserves to be particularly analysed, giving the significant proportion of this type of listings as highlighted in Table 10 as well as in the correlation matrix. The proportion of this type of listings may signalise a potential of taking away residencies of the city’s housing stock.

In every period of the analysis, the proportion of entire homes per all listings steadily bordered 75% and reached an outstanding proportion of 90% in March of 2015. Additionally, entire homes listed on the platform had an overall increase of 144%.

Entire homes have a massive concentration over the central zone of Lisbon as mapped out in Figures 14, 15, 16 and 17, which represent the concentration this type of listings in Lisbon within a radius of 2 square kilometres.

Therefore, the historic centre is the zone of the city with the highest concentration, followed by the centre. Between 2016 and 2017 the boom of the listings is evidenced observing their density, a leap from 801-928 to 1201-1350, surpassing a thousand number of listings, which guaranteed the best touristic year of Lisbon's history, according to the statistics, considering the 6.158.466 tourists in the regular hotel market in 2017.

The density of entire homes listed on Airbnb may signalise monetization of STR contracts. Therefore, a property owner would prefer to provide its property in the STR market instead of LTR market. The density is also essential to realise whether it would exist effects on the housing stock or not.

The demand for Airbnb offers

It is possible to estimate how much a host might earn on the Airbnb platform. However, it is necessary to analyse where the platform has demand and where hosts can monetise the most.

The central zone is the main hot-spot for hosts since the first period, where they can get the highest incomes according to their number of reviews. As it is mapped out, for an entire home listed in a particular neighbourhood in Figures 18, 19, 20 and 21. A review means that a host had guests in its lodging and revenue was generated.

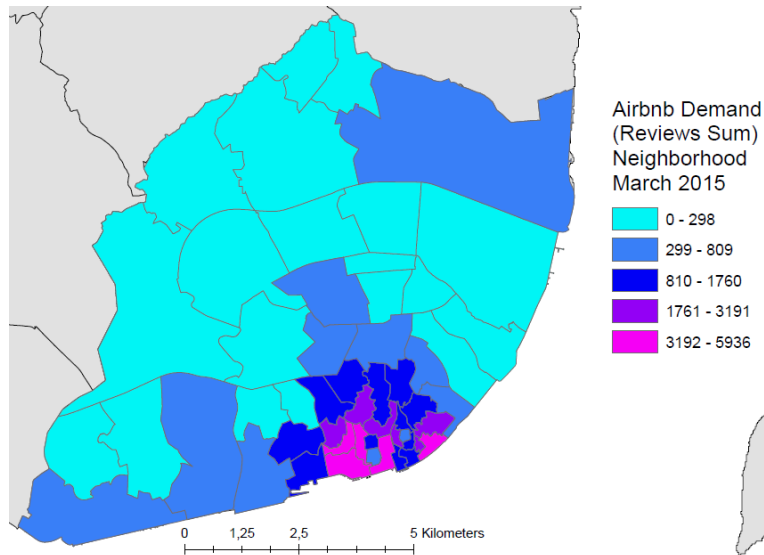


Figure 18 – Demand on Airbnb by the number of reviews in March of 2015

Source: Author

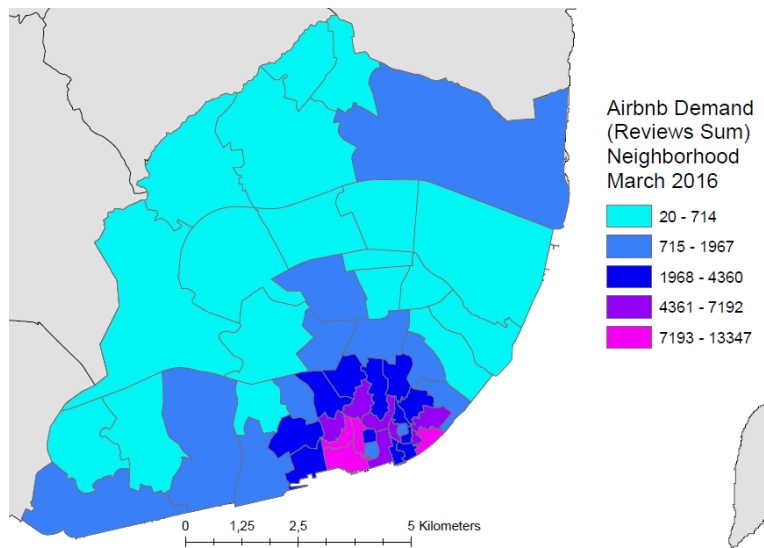


Figure 19 – Demand on Airbnb by the number of reviews in March of 2016

Source: Author

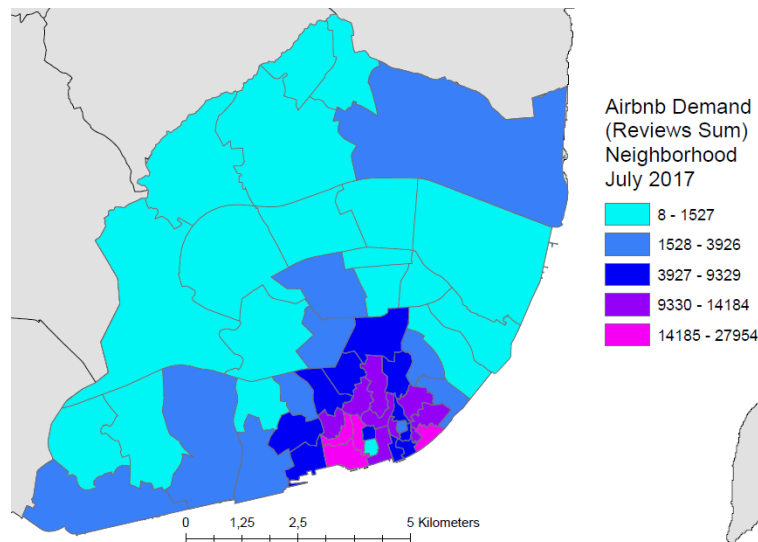


Figure 20 – Demand on Airbnb by the number of reviews in July of 2017

Source: Author

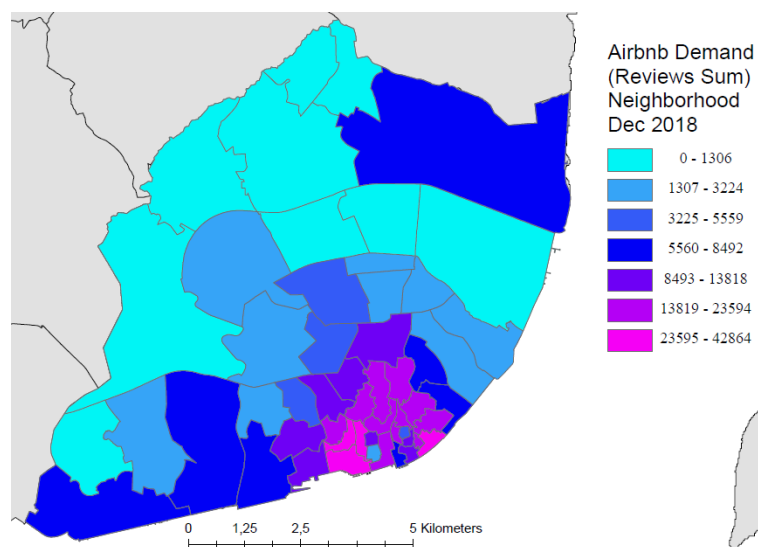


Figure 21 – Demand on Airbnb by the number of reviews in December of 2018

Source: Author

As a progressive sum, the demand confirms that the central zone holds the highest number of listing followed by the outliers São Domingos de Benfica, Parque das Nações and Belém, all those zones make the perimeter of demand in Lisbon.

5.1. Legal aspects of STR market

The legal terms of LTR contracts might explain why hosts prefer to rent under STR contracts. However, since December of 2016 Airbnb must require a Local Lodging (AL)

license from a host who wants to list its property in the platform, according to the law decree n° 128/2014 Portuguese government diary n° 166/2014 series I at 29/08/2014 (annexe 2).

Through the AL license, the Portuguese government to oversight listings and collect taxes. In Lisbon, there is a touristic tax which is a charge of €2 per night for each guest that stays up to 7 nights in the city²⁶, applied through the law decree n° 19334-A/2008 (annexe 3).

The city is collecting funds from touristic tax since 2016. The Lisbon council claims to have received €18,5mm in 2017²⁷ from all B&B platforms, whereby Airbnb claims to have paid about €3,8mm in the same year. Only Airbnb accounted for a slice of 20% or approximately €6mm²⁸.

However, Airbnb seems to turn a blind eye to AL licenses. As displayed in Table 11, many registers are either misspelt or are exempt from having a license. It may indicate that the platform is not supervising the legal licenses efficiently.

Hence, it is also suggestive to say that taxes are not being right accounted for or the platform is evading them.

Table 11 – Example of the licenses registered on Airbnb

Host Id	AL License	Total of Hosts without AL	Exempt of AL
27051967	(23565/AL)	1696	547
22998414	0000/AL		
42468178	0000000		
9962826	0000002907948		
219646835	02779/AL		
182218037	03077		
48772471	124618/AL		
215266590	1000/POL/2012		
20321071	10197/AL		
155110322	12345		
122499010	12345/AL		
11840202	12345/ZL		
66172221	12345678/AL		
1243754	12345AL		
217716292	Exempt		

²⁶ <http://www.cm-lisboa.pt/servicos/pedidos/pagamentos-taxas-e-tarifas/taxa-municipal-turistica-de-dormida/o-que> accessed on 04/03/2019 at 17:21

²⁷ <https://observador.pt/2018/10/12/camara-de-lisboa-duplica-taxa-turistica-em-2019/> accessed on 04/03/2019 at 17:21

²⁸ <https://www.airbnbcitizen.com/airbnb-remits-e3-8-million-in-tourist-taxes-to-city-of-lisbon/> accessed on 04/03/2019 at 17:21

80281070	Exempt
61362102	Exempt
50627546	Exempt

Source: Author

5.2. Overview of STR over LTR

The dataset afforded by *Insideairbnb.com* contains data of the first and last review of a listing, providing a more reliable calculation of the formula for estimating incomes. By matters of analysis, the time between the first and last reviews was deducted and deployed to divide the estimated revenue of a listing. Therefore, it has been possible to calculate how much a listing monetised to a host per month.

The second step was removing a listing without any given review. This study considers a property which did not monetise within the period of analysis, would affect and downsize the financial significance of the estimation. One objective of this comparison is to calculate the possibility of incomes between the two types of renting contracts.

The third step was estimating how much incomes an LTR contract would generate for a property according to its size. Two periods were analysed, July of 2018 and December of 2018, from summer until the end of the year.

Since July of 2018, a host may profit in the central zone, and some neighbourhoods within the historic centre may earning twice as much, as seen in Figure 22. The neighbourhoods of Olivais and Belém, both outliers in listings, did not show the same result when comparing incomes of STR before LTR.

In December of 2018, after the summer vacation, hosts were estimated to profit more through a short-term rental contract in almost all neighbourhoods, as displayed in Figure 23.

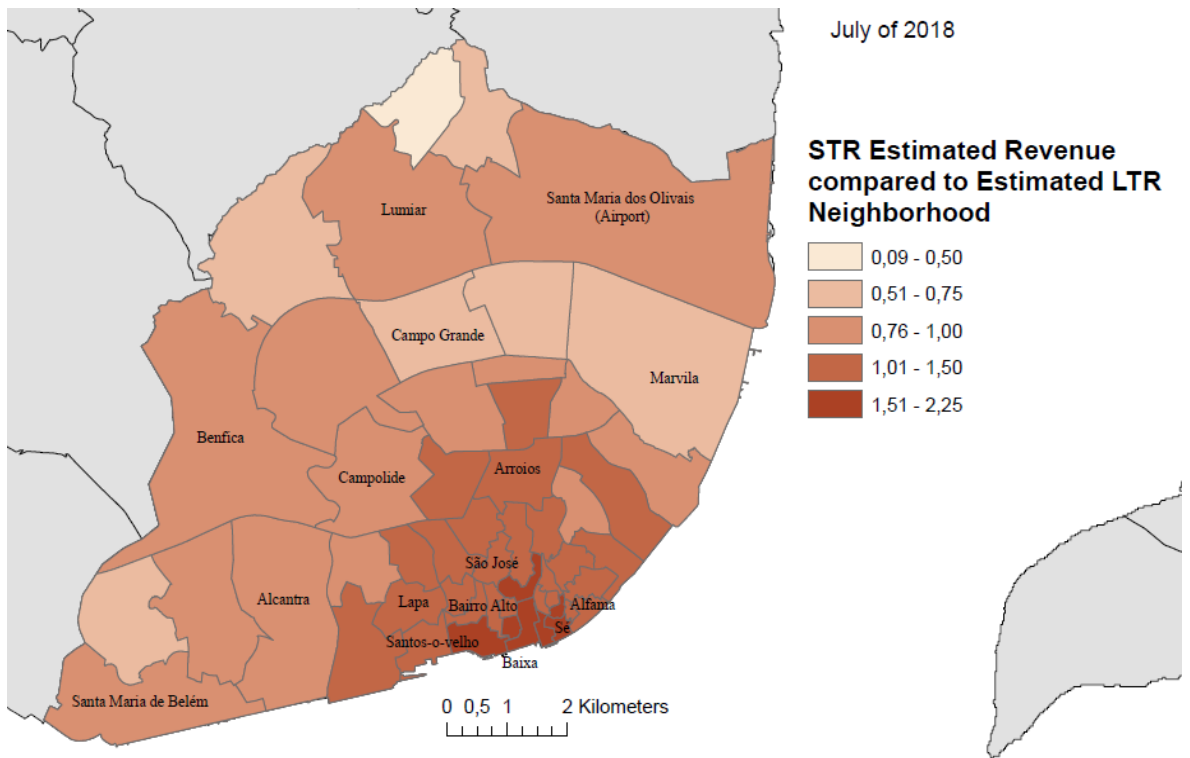


Figure 22 – Comparison between STR and LTR revenue estimation in July of 2018.

Source: Author

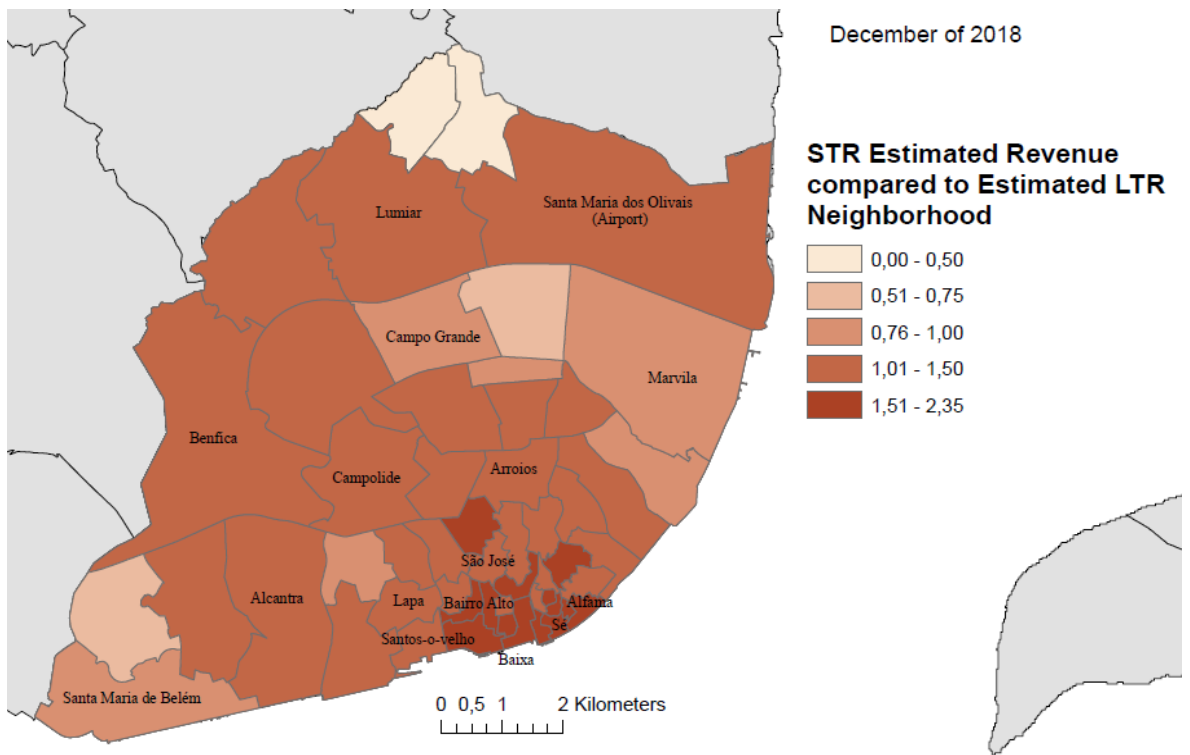


Figure 23 – Comparison between STR and LTR revenue estimation in July of 2018.

Source: Author

5.3. Hosts income inequality

Gini index

As seen above, Figures 22 and 23 display the incomes inequality among the neighbourhoods, which has a concentration in the historic centre. Then, calculating the Gini index for each year is a way of having a clear notion of the inequality in the platform, once the index compares a given population in a bottom-up analysis.

Thereby, the listings were standardized and divided in quarters to calculate the Gini index, for instance, the 20% poorest up to the 20% richest.

Table 12 – Gini index of the host estimated revenue on Airbnb in Lisbon

Period	Gini Index
March 2015	0,683
March 2016	0,700
July 2017	0,674
December 2018	0,629

Source: Author

In 2015, the World Bank Gini index estimated an index of 0,355²⁹ for Portugal. Although Table 12 shows a slight decay of the index over the year-by-year comparison, Airbnb has a poor income distribution, compared to a poor or emerging market.

Commercial players

Table 13 shows the income distribution among hosts in Lisbon, confirming the high Gini index of the platform.

Among the providers, by 59% earn up to €10.000,00, the threshold not to pay income tax in Portugal (€833,33 per month), others 16% earn up to €20.000,00, they sum a total of 75% of hosts although it represents an income share of just 17%.

The others 25% of the hosts in the platform earn 83% of the gross revenue, the disparity is so massive that only 0,21% or a sum of 15 hosts share 19% of incomes.

²⁹ <https://data.worldbank.org/indicator/SI.POV.GINI?locations=PT> accessed on 27/02/2019 at 13:56

Table 13 – Distribution of the gross revenue of Airbnb hosts in December of 2018

Range	Host count	Proportion of hosts	Accumulated gross revenue generated	Proportion per overall revenue
€0-€10.000	4235	58,88%	€ 12.507.437,21	7%
€10.001-€20.000	1135	15,78%	€ 16.462.200,14	10%
€20.001-€50.000	1110	15,43%	€ 35.187.073,54	20%
€50.001-€100.000	440	6,12%	€ 30.400.307,82	18%
€100.001-€150.000	144	2,00%	€ 17.332.433,71	10%
€150.001-€500.000	114	1,58%	€ 28.544.268,97	16%
€500.001-€1.580.000	15	0,21%	€ 32.802.746,34	19%

Source: Author

5.4. Is Airbnb taking over Lisbon housing stock?

As foreseen in Table 10, entire homes represent the biggest slice of offers in the platform, which may suggest that Airbnb would be removing houses out of the LTR market.

In this way, the proportion of listing was divided by the number of family houses within a neighbourhood, conform data of family houses collected from INE database.

A distinct and independent place that, by the manner that it was built, rebuilt, amplified, transformed or it is used, it is deemed a dwelling, in the condition of not being used for another purpose at the referenced moment. It is composed of walls of classic or another type. It is roofed and allows that one person or a group may sleep, prepare meals, or shelter themselves from inclement weather, separated from other members of the society; for being independent, its members do not need to cross another property to go in or go out of the dwelling. (INE, Census of population and habitation, 2011)³⁰

Notwithstanding, the central zone holds a high proportion of Airbnb offers before the housing stock of this zone. It worth noting that some neighbourhoods in the historic centre, such as Santa Justa, Madalena, and Alfama had from 33% to 51% of their properties listed on the platform, signalling to be touristic areas. In 2018, most central neighbourhoods and Belém had a significant proportion of listings per family houses.

On the last period analysed, the Belém zone had 4,11% of the neighbourhood's properties listed on Airbnb.

³⁰ https://www.ine.pt/bddXplorer/htdocs/minfo.jsp?var_cd=0006272 accessed on 03/04/2018 at 11:00

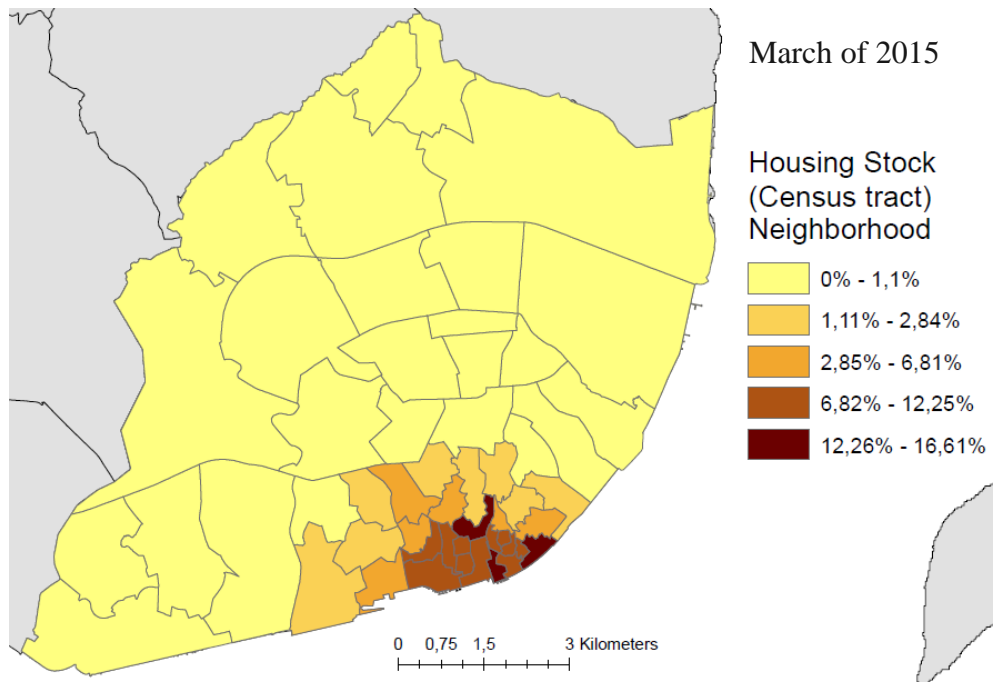


Figure 24 - Airbnb housing stock compared to census tract in March of 2015

Source: Author

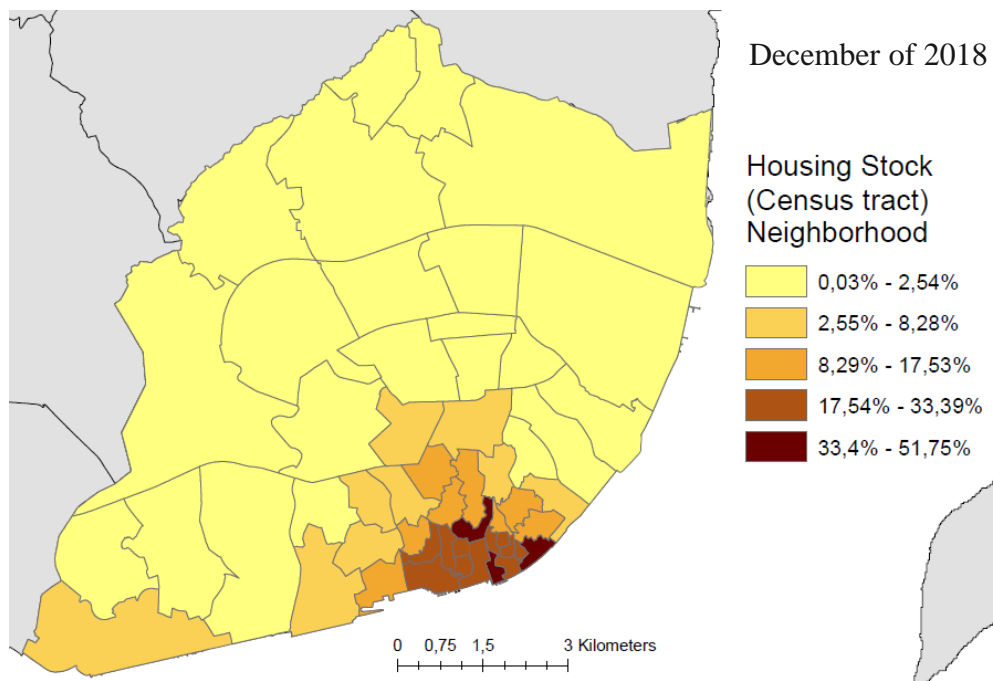


Figure 25 - Airbnb housing stock compared to census tract in December of 2018

Source: Author

5.5. Airbnb as a gentrification tool

As aforementioned, gentrification may encompass many other subtopics, such as house pricing, rent pricing, expropriation of poor residents, rebranding of the neighbourhood, racialism, among others.

So, house availability in the platform, it is, for how long a property is available will be a variable to measure gentrification. Assuming that once a house is listed, it is reducing the chance of a regular tenant to rent this property under an LTR contract. Hence, stimulating a rise in the rental prices in Lisbon, suggesting a gentrification agent.

Property availability on the platform

Table 14 – Availability of Entire Properties in Lisbon

Entire property availability in Lisbon over December 2018				
	< 120 days	>= 120 days <240 days	>= 240 days	365 days
Amount	2431	2071	7856	195
% over total EP	20%	17%	64%	2%
Total EP	12361			

Source: Author

By 64% of entire homes or 7.856 houses are available up to 240 days, and about 2% or 195 houses, are available the whole year. According to the suggested metric, these properties are ‘very frequently available’.

Properties are ‘frequently available’ if listed from 120 to 240 days, which is 17% or 2.071 houses. Finally, the remaining 20% or 2.431 houses are regularly available on Airbnb, this is hosts renting their property all weekends of a year (Wachsmuth et al., 2018).

Thus, by 80% of hosts listing entire property are prone to the economic benefits that an STR contract can bring over an LTR contract.

The *Airdna.co*³¹ website is a market minder platform for investors whose purpose is to assist them in monetising their property. According to their data, Lisbon has a high proportion of listings “full time” available or more than four months (181 days onwards), as well as a high proportion of properties booked continuously.

³¹ <https://www.airdna.co/vacation-rental-data/app/pt/lisboa/lisbon/overview> accessed on 28/02/2019 at 14:10

Even though *Airdna.co* “full time” range slightly high, both metrics have shown a considerable proportion of entire properties ‘frequently available’ listed on Airbnb, suggesting a gentrification agent.

Rental prices

Over the last years, the Portuguese press and Real Estate specialised agencies are highlighting the astonishing increasing of rental prices in Lisbon.

In 2017, The INE published a study of rental prices (annexe 3), and Lisbon leads the escalation of prices. In average, a new LTR contract cost of €9,62/m², in contrast to the average price of €4,39 in Portugal. The study shows a total of 35% of new contracts signed in Lisbon in 2017 or 6.980 new contracts.

Figure 26 displays that most new contracts were in the central zone, followed by the neighbourhoods of São Domingos de Benfica, Lumiar, Parque das Nações and Ajuda.

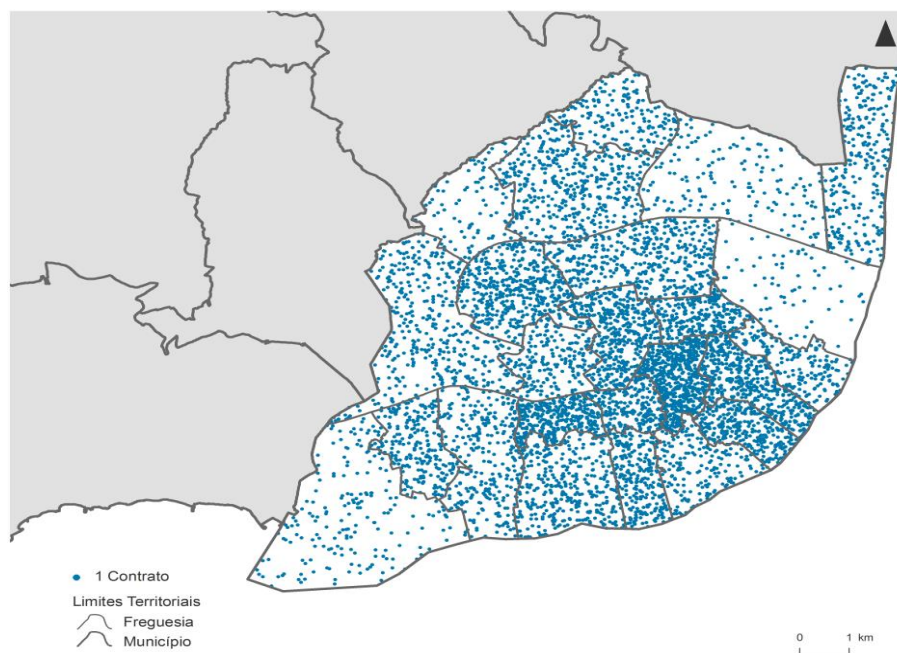


Figure 26 - Number of new rental contracts of familiar homes

Source: INE (Portuguese National Statistics Institute)

Some of the real-estate press highlighted that in 2016 the rental prices increased by 26%³² in comparison to 2015, and since 2013 the prices kept escalating by 20% each quarter of the analysis³³ until the second quarter of 2018.

Education level

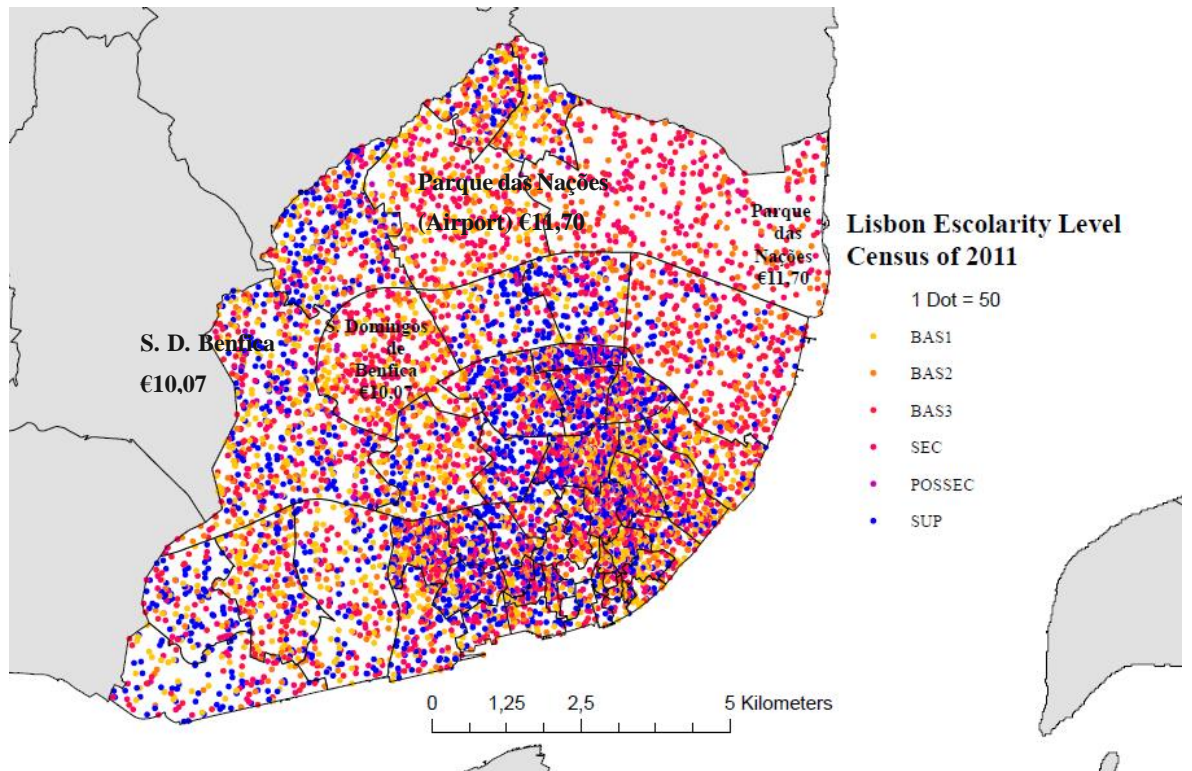


Figure 27 - Dot map of Lisbon's education level according to the census tract of 2011. Dot = 50 properties.

Source: Author

The education level of Lisbon was mapped out according to the 2011 census. Economically, GDP per capita is linked to the education level, which may signalise the zones with the wealthier population.

It worth noting that a neighbourhood which accounts for a higher number of people holding a superior academic degree, tend to have more entire properties available on the platform. There are two outliers, Parque das Nações and São Domingos de Benfica, and both neighbourhoods show a small population for higher education levels.

³² <https://www.dinheirovivo.pt/economia/renda-media-em-lisboa-ja-custa-830-euros-valor-disparou-23-em-2016/> accessed on 28/02/2019 at 15:20

³³ <https://www.jornaldenegocios.pt/economia/rendas/detalhe/subida-das-rendas-em-lisboa-abranda-mas-precos-ja-cresceram-71-desde-2013> accessed on 28/02/2019 at 15:20

Parque das Nações seem to be most affected by gentrifier agents. The neighbourhood has a high number of listing, differently from São Domingos de Benfica. However, according to data from the INE, both had a high rental price in 2017, the average price in the Parque das Nações was €11,70, and in São Domingos de Benfica was €10,07.

Racial agent and sexuality options

The High Commission for Migration has implemented a so-called National Roma Communities Integration Strategy (2013-2020), according to their findings, Romas (*ciganos*) are living under vulnerable and substandard housing conditions, accounting for 31% of its population.

It worth noting that the Portuguese constitution forbids collecting ethnic-racial data of its population. Unfortunately, there is no such data when it comes to analysing racial aspects and sexual options, and both are fundamental aspects to analyse gentrification.

CONCLUSION

Following the tourist's explosive inflow in Portugal, Airbnb business is growing in stride around the country. In Lisbon, the platform has increased by 192% number of listing and by 144% entire homes listings in the time of the analysis, rising throughout the historic centre and expanding to the surroundings, similar to a gentrification tendency. The statistics correlations reinforced the connection between the touristic inflow and profits of a host.

The touristic inflow has a strong relationship to offers of entire homes. Thus, the platform seems to be a profitable way to investor monetise a property by renting under an STR contract instead of an LTR contract.

Another consequence of Airbnb, but not only, is the rise in rental prices over the last years, also supported by the touristic inflow. Recently, the rental prices of the city have reached a plateau, out of the reality of the Portuguese standard where a minimum wage may be charged for a single room.

Regarding regulation, the Portuguese government has fitted Airbnb listings into Local Lodging license. The Lisbon council has applied a daily touristic tax by which the platform must pay for each client. The city claims a positive return on taxes generated by house-sharing platforms and the Airbnb is the primary payer among all. Recently, the Lisbon council blocked some AL license registrations as well as the Portuguese government took measures against foreign investors by stopping to issue investment visa in Lisbon.

However, STR contracts may bring more incomes than LTR contracts according to the estimation, some neighbourhoods up to the double of revenue. This economic opportunity and a lighter regulation for STR in terms of contracts may explain the rapid growth of this type of contract.

In economic regard, the Airbnb presents a high inequality among hosts. In Lisbon, about 10% of the hosts earn 63% of the estimated gross revenue on the platform, confirmed by a considerable high Gini index of 0,623 in 2018, the double of the country's Gini index for the adult people accounted by 0,319 in 2018³⁴. Among them, many are commercial

34

https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_indicadores&indOcorrCod=0004212&contexto=bd&selTab=tab2 accessed on 29/04/2019 at 18:28

players, having more than one property listed on the platform, representing a marketplace opportunity for investors.

Airbnb does not seem to be taking the housing stock of the whole city, only within some neighbourhoods as the concentration of listings is within the central zone and Belém, relying on a high density of offers for an entire home, the main instrument of gentrification. Within the central zone, there are neighbourhoods with half of the family houses listed, being the region more affected by gentrification effects.

The gentrification phenomena and the sharing economy are delicate subjects that need more empirical and field studies. This research has tried to provide a clear understanding of these issues that spark many discussions among academics, policymakers and the general public. I truly believe the results bring reliable findings from a little part of the whole consequences, either positives or negatives, that the sharing economy may bring to our life.

Moreover, this work had some limitations in which future studies may explore. Airbnb itself creates a limitation for market analysis. They use the sharing economy as a support for their business model. In contrast, they do not release reports containing reliable data of eco-friendly and consumption behaviours benefits that sharing may bring, opening a room for future analysis. Hopefully, firms within this market will provide more transparency and future studies could explore the real sharing economy effects of house-sharing platforms.

This study is not a market analysis, such as the hotel market against the Airbnb platform. The intention was to analyse mainly income distribution and the market growth of Airbnb.

Additionally, the Portuguese constitution forbids the collection of racial and sexual orientation data. Both are essential bases to the gentrification phenomenon. Whether in the future the country changes its law, there will be a room for analysing this issue more deeply.

Questions: Will Lisbon citizens withstand the rental prices increase? Is the life quality of the individuals in Lisbon worsening? Should the Portuguese government pay more attention to racial and poverty issues, once people more vulnerable to undergo displacement are the Afro, ciganos and poor?

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Annex 1 – Taxonomy, areas and dwelling scheme, Portuguese General Regulation for Urban Buildings

SECÇÃO II – Habitação

Artigo 33º – Tipologias, áreas e organização dos fogos

1. Para efeitos de aplicação do presente regime, consideram-se com a designação de quartos todos os compartimentos habitáveis, para além da sala e da cozinha.
2. As áreas mínimas dos compartimentos habitáveis, e dos suplementos de área para os vários tipos de fogos, são as indicadas no quadro seguinte:

Tn	Compartimentos (m ²)								Suplementos de área (m ²)	
	Sala(1)	Cozinha	Quartos						Tr. Roupa(2)	Refeições(3)
To	12	6,5	---						2	4
T1	12	6,5	10,5						2	4
T2	14	6,5	10,5	9					3	4
T3	16	6,5	10,5	9	9				4	6
T4	16	6,5	10,5	10,5	9	9			4	6
T5	18	6,5	10,5	10,5	9	9	9		5	8
T6	18	6,5	10,5	10,5	9	9	9	9	5	10

(1) - Nos fogos de tipologia maior ou igual a T 1, quando o acesso aos quartos, cozinha e corredores se fizer através da sala, deve ser acrescentada a esta, a área de 1,00 m² por cada um dos acessos.

(2) - Esta área deve localizar-se na cozinha podendo constituir um espaço autónomo encerrado quando tiver uma área igual ou superior a 4,00 m².

(3) - Este suplemento de área deve localizar-se na sala ou na cozinha, podendo constituir um espaço autónomo encerrado, quando tiver uma área igual ou superior a 10,00 m² e tiver condições de iluminação e ventilação adequadas.

Annexes 2 – Republic Diary nº 166/2014, series I of 08/09/2014, law decree nº 128/2014

Decreto-Lei n.º 128/2014

☑ **Publicação:** Diário da República n.º 166/2014, Série I de 2014-08-29

☑ **Emissor:** Ministério da Economia

☑ **Tipo de Diploma:** Decreto-Lei

☑ **Número:** 128/2014

☑ **Páginas:** 4570 - 4577

📄 **ELI** : <https://data.dre.pt/eli/dec-lei/128/2014/08/29/p/dre/pt/html>

📄 **Versão pdf:** [Descarregar](#)

SUMÁRIO

Aprova o regime jurídico da exploração dos estabelecimentos de alojamento local

TEXTO

Decreto-Lei n.º 128/2014

de 29 de agosto

A figura do alojamento local foi criada pelo Decreto-Lei n.º 39/2008, de 7 de março, alterado pelos Decretos-Leis n.os 228/2009, de 14 de setembro, e 15/2014, de 23 de janeiro, para permitir a prestação de serviços de alojamento temporário em estabelecimentos que não reunissem os requisitos legalmente exigidos para os empreendimentos turísticos.

Tal realidade viria a ser regulamentada através da Portaria n.º 517/2008, de 25 de junho, entretanto alterada pela Portaria n.º 138/2012, de 14 de maio, que, no seguimento da transposição da [Diretiva n.º 2006/123/CE](#), do

Source: Diário da República Eletrónico (29th August 2014). Retrived from <https://dre.pt/web/guest/pesquisa/-/search/56384880/details/maximized>

Annex 3 – Decree n° 19334-A/2018, Republic Diary n° 248/2018, 1° supply, series II of 26/12/2018

Aviso n.º 19334-A/2018

Publicação: Diário da República n.º 248/2018, 1º Suplemento, Série II de 2018-12-26


Emissor: Município de Lisboa

Tipo de Diploma: Aviso

Parte: H - Autarquias locais

Número: 19334-A/2018

Páginas: 34578-(2) a 34578-(8)

Versão pdf: [Descarregar](#) 

SUMÁRIO

Alteração ao Regulamento Geral de Taxas, Preços e Outras Receitas do Município de Lisboa

TEXTO

Aviso n.º 19334-A/2018

Torna-se público que, por deliberações tomadas em reunião de Câmara Municipal e em Assembleia Municipal, realizadas em, respetivamente, 13 e 18 de dezembro de 2018, foi aprovada a 5.ª alteração ao Regulamento Geral de Taxas, Preços e Outras Receitas do Município de Lisboa, nos termos constantes dos anexos que fazem parte integrante do presente Aviso, cuja publicação é efetuada ao abrigo do art. 139.º do Decreto-Lei n.º 4/2015 de 07 de janeiro.

A presente alteração entra em vigor a partir de 1 de janeiro de 2019.

20 de dezembro de 2018. - O Vereador de Finanças, João Paulo Saraiva.

Alteração ao Regulamento Geral de Taxas, Preços e Outras Receitas do Município de Lisboa

Source: Diário da República Eletrónico (20th December 2018). Retrieved from <https://dre.pt/home/-/dre/117487474/details/maximized>

Annex 4 – Average rent value per m² for new renting contracts, Lisbon and neighbourhoods, 2017



Source: Instituto Nacional de Estatística. Retrieved from <https://www.ine.pt/> updated on 20th march 2018, accessed on 20/02/2019 at 13:52

Appendices 1 – Correlation Matrix of data for the spanning time between 2015-2018 – 5% of critical value (bicaudal) = 0.9500 for n = 4

Tflow	TFlowLis	AllistingLis	EPlaceLis	epperall	
1,0000	0,7944	0,9852	0,9782	-0,0123	Tflow
	1,0000	0,6907	0,6713	-0,2622	TFlowLis
		1,0000	0,9992	0,1240	AllistingLis
			1,0000	0,1632	EPlaceLis
				1,0000	epperall

	AllistingCentral	EPlaceCentral	epperall1	HostsIncCentral	
	0,9900	0,9782	0,1485	0,8255	Tflow
	0,7105	0,6699	-0,2429	0,4768	TFlowLis
	0,9995	0,9992	0,2999	0,8967	AllistingLis
	0,9976	1,0000	0,3382	0,9133	EPlaceLis
	0,0995	0,1610	0,9640	0,5500	epperall
	1,0000	0,9976	0,2732	0,8857	AllistingCentral
		1,0000	0,3368	0,9123	EPlaceCentral
			1,0000	0,6781	epperall1
				1,0000	HostsIncCentral

Allisting/Tflow: these two variables are highly correlated to each other, coupled by 69%. Represent a positive linear correlation.

The tourist flow has stronger correlation to the rose of Airbnb offers than the estimated gross revenue get by hosts.

Appendices 2 – Several outputs got from Cochrane-Orcutt model by correlating data for the spanning time between 2016-2018 (T=3)

Model 6: Cochrane-Orcutt, observation used as 2016-2018 (T = 3)

Dependent variable: l_AllistingLis

rho = -0,139761

	<i>Coefficient</i>	<i>Std Error</i>	<i>t</i>	<i>p-value</i>	
const	-0,457864	2,4677e-05	-18554,3092	<0,0001	***
l_HostsIncCentral	0,571418	1,43121e-06	399255,3026	<0,0001	***

Estatistics based on data - rho

Average dependent var.	9,434099	D.P. dependent var.	0,302315
Sum residual sqr.	1,65e-12	E.P. regression	1,28e-06
R-squared	1,000000	R-squared adjusted	1,000000
F(1, 1)	1,59e+11	P-value(F)	1,59e-06
rô	-0,901524	Durbin-Watson	2,749793

The rise of 1% of host's profit generate 0,57% of listing's rise. Guarantee 99%, 1% of significance

Model 7: Cochrane-Orcutt, observation used as 2016-2018 (T = 3)

Dependent variable: l_AllistingLis

rho = 0,0892672

	<i>Coefficient</i>	<i>Std Error</i>	<i>t</i>	<i>p-value</i>	
const	-0,485836	0,26322	-1,8457	0,3161	
l_AllistingCentral	1,06478	0,0281479	37,8280	0,0168	**

Statistics based on data – different rho

Average dependent var.	9,434099	D.P. dependent var.	0,302315
Sum residual sqr.	0,000097	E.P. regression	0,009871
R-squared	0,999468	R- squared adjusted	0,998935
F(1, 1)	1430,957	P-value(F)	0,016825
rô	-0,940807	Durbin-Watson	2,847099

The rise of 1% of Airbnb's offers over the central zone generates 1,06% over Lisbon's offers. Guarantee 95%, 5% of significance.

Model 11: MQO, observation used as 2015-2018 (T = 4)

Dependent variable: l_Tflow					
	<i>Coefficient</i>	<i>Std Error</i>	<i>t</i>	<i>p-value</i>	
const	15,0368	0,094382	159,3186	<0,0001	***
l_AllistingLis	0,189168	0,01021	18,5277	0,0029	***
Statistics based on data – different rho					
Average dependent var.	16,78380	D.P. dependent var.		0,088831	
Sum residual sqr.	0,000137	E.P. regression		0,008280	
R-squared	0,994208	R- squared adjusted		0,991311	
F(1, 2)	343,2769	P-value(F)		0,002900	
Likelihood log	14,88609	Akaike criteria		-25,77218	
Schwarz criteria	-26,99959	Hannan-Quinn criteria		-28,46564	
ro	-0,830186	Durbin-Watson		2,605082	

The rise of 1% of Airbnb's offers in Lisbon lead to 0,18% of tourist flow's rise. 1%. 99% Guarantee 99%, 1% of significance

Model 12: Cochrane-Orcutt, observation used as 2016-2018 (T = 3)

Dependent variable: l_Tflow					
rho = -0,411483					
	<i>Coefficient</i>	<i>Std Error</i>	<i>t</i>	<i>p-value</i>	
const	15,1627	0,147857	102,5501	0,0062	***
l_EPlaceLis	0,181906	0,0163876	11,1002	0,0572	*
Statistics based on data – different rho					
Average dependent var.	16,82187	D.P. dependent var.		0,056048	
Sum residual sqr.	0,000133	E.P. regression		0,011511	
R-squared	0,979072	R- squared adjusted		0,958143	
F(1, 1)	123,2143	P-value(F)		0,057198	
ro	-0,873156	Durbin-Watson		2,963025	

The rise of 1% of Entire places in Lisbon generate 0,18% of touristic flow's rise. 5% significance.

Model 18: Cochrane-Orcutt, observation used as 2016-2018 (T = 3)

Dependent variable: l_Tflow

rho = -0,580646

	<i>Coefficient</i>	<i>Std Error</i>	<i>t</i>	<i>p-value</i>	
const	15,1367	0,131542	115,0711	0,0055	***
l_EPlaceCentral	0,186922	0,0147904	12,6381	0,0503	*

Statistics based on data – different rho

Average dependent var.	16,82187	D.P. dependent var.	0,056048
Sum residual sqr.	0,000138	E.P. regression	0,011741
R-squared	0,978300	R- squared adjusted	0,956599
F(1, 1)	159,7215	P-value(F)	0,050268
ro	-0,862649	Durbin-Watson	2,973175

The rise of 1% of entire places generate 0,18% in the central area of Lisbon. 5% of significance.