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Back to business? Taking lessons from Porto (Portugal) to inform sustainable tourism futures after COVID-19

¿De vuelta a la normalidad? Tomando lecciones de Porto (Portugal) para informar el futuro sostenible del turismo post COVID-19

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Abstract

Porto has undergone significant economic and social changes in recent decades, closely intertwined with the evolution of its tourism sector. This research examines the vulnerabilities brought to light by the COVID-19 pandemic of this tourist city and tracks the resultant changes. We conducted an analysis of a set of variables focusing on the changes that have occurred during two distinct periods: during and post COVID-19. The data are analysed through longitudinal, comparative, and spatial approaches. The findings indicate the high exposure of Porto's tourism sector to international demand. Currently, the tourism sector growth exceeds 2019 levels and the challenges related to tourism development and its impact on local communities persist. Despite efforts to diversify tourism, the overall landscape seems largely unchanged from the pre-pandemic scenario. The vulnerabilities highlighted during the pandemic should guide the development towards a more sustainable future. It is crucial to maintain the multifunctionality of cities, particularly in the most tourist-driven areas, accommodating diverse activities alongside tourism, including residential, economic, and administrative functions.

Key words: overtourism; public policies; city centre; urbanism.

Resumen

Porto ha vivido cambios económicos y sociales significativos en las últimas décadas, estrechamente vinculados a la evolución de su sector turístico. Esta investigación examina las vulnerabilidades puestas de manifiesto por la pandemia de COVID-19 en esta ciudad turística y sigue los cambios resultantes. Realizamos un análisis de un conjunto de variables centrándonos en los cambios ocurridos durante dos periodos distintos: durante y después del COVID-19. Los datos se analizan mediante enfoques longitudinales, comparativos y espaciales. Los resultados indican la alta exposición del sector turístico de Porto a la demanda internacional. Actualmente, el crecimiento del sector turístico supera los niveles de 2019 y persisten los desafíos relacionados con el desarrollo turístico y su impacto en las comunidades locales. A pesar de los esfuerzos por diversificar el turismo, el paisaje general parece en gran medida inalterado desde el escenario previo a la pandemia. Las vulnerabilidades resaltadas durante la pandemia deberían guiar el desarrollo hacia un futuro más sostenible. Es crucial mantener la multifuncionalidad de las ciudades, especialmente en las áreas más turísticas, garantizando el mantenimiento de las funciones residenciales, económicas y administrativas.

Palabras clave: overtourism; políticas públicas; centro de la ciudad; urbanismo.

1 Introduction

In many European middle-size cities, tourism has been used as a catalyst for recovering the urban economic and social dynamics throughout the second half of the 20th century. This has been seen as a solution especially for the post-industrial compact central areas. The consumption of services and goods by temporary users who visit these places in the search for cultural and historical experiences facilitates the revitalization. However, when tourism grows "too much" and reaches a point of overtourism, it can cause intense economic, social, and cultural transformations in urban spaces.

Debates on the dangers of having the most emblematic areas of the city taken-over by tourism were taking place when Covid-19 health emergency interrupted the mobility flows. For several months, queues in front of the main tourist attractions were replaced by empty squares and streets, and many visitor-related businesses had their doors closed for months. The lockdown period evidenced the unsustainable nature of a touristic-based urban strategy and showed the vulnerability of tourism-dependent territories. As international tourism arrivals exceeded initial projections in 2022 and certain regions are expected to fully recover to pre-pandemic levels by 2023 (UNWTO, 2023), it is vital to assess the ongoing impacts on tourist cities from a "returning to normal" standpoint after the COVID-19 pandemic underscored the vulnerability of destinations heavily reliant on tourism (Santos-Izquierdo et al., 2023). Given that tourism is acknowledged as susceptible to external shocks and is a highly vulnerable sector within the economy (Williams & Baláž, 2015), it is crucial to delve into the transformations brought by this pandemic. Understanding how changes have influenced the economic and social dynamics of touristic cities, holds significant importance in the construction of more sustainable and robust tourism futures.

In this study, we focus on Porto, a renowned European tourism destination situated in the North of Portugal. Our main objective is to analyse the vulnerabilities that the COVID-19 pandemic has exposed on this touristic city and to explore the resulting changes it has induced. Has the disruption caused by this health crisis changed the view on the touristic-centred model that has been guiding for the past few decades? Or are we witnessing a return to "business as usual"? To address these questions, we develop a detailed characterization of Porto's tourist model and carried out a longitudinal comparative study, analysing the evolution of a set of variables from 2019 to 2022 to capture the effects of the crisis. Moreover, we analyse the policy responses implemented both during the pandemic and throughout the subsequent recovery phase. The results are useful to

inform debates on the future of tourism-dependent cities and identify scopes of action for building post-growth tourist models capable of overcoming short-term rationality.

The paper is structured as follows. The opening section incorporates a literature review delving into the fundamental aspects of urban tourism, exploring its positive and negative externalities in the urban spaces. It also reflects on the impact of the COVID-19 pandemic on numerous academic and political discussions surrounding these questions. Following that, the second section describes the research methodology adopted for this study, including the case study presentation, data collection and analysis methods, and the identification of the sources used. The third section provides a contextualization of Porto, our case study, as a touristic city from an evolutionary perspective. Subsequently, the fourth section presents the main research results. The fifth section assesses policy responses to COVID-19 and relates them to the previously presented results. This section also discusses lessons learned from the crisis and future challenges facing Porto's touristic model. Finally, the conclusion summarizes the main findings and contributions of this research to the debates on sustainable tourism futures.

2 Literature review

In various European regions, city centers experienced a decline in residents and economic activity, while adjacent rural and peripheral areas surrounding larger cities began attracting both people and businesses. The concept "explosion of the city" (Font, 2006) refers to a physical and social fragmentation and the construction of an extended urban archipelago of specialized areas and socially and economically differentiated spaces. Urban areas expand and become more complex due to new arrangements that help to explain the emergence of new concepts such as metapolis (Ascher, 1995) and post metropolis (Soja, 2000). Typically, larger and more traditional industrial cities, characterized by passive public policies, witnessed the most significant decline in their city centers. We may consider a "donut effect" in the context of the triumph of hypermobility that favour the dynamism of areas situated in what used to be the periphery as the old centre of some bigger cities became less attractive and accessible, in contrast with smaller cities where local (and regional and/or central) authorities had a more pro city centre friendly attitude and city centres were more resilient (Fernandes & Chamusca, 2014).

The scientific literature generally recognizes the relevant role that urban tourism has played in the recovery and revitalization of many European city centres over the past few decades (Almeida-García et al., 2021; Rius Ulldemolins, 2014). It is considered a key driver of economic growth, employment creation, and social development in many urban areas. Urban tourism has a positive

impact on local economies by stimulating local business development and investment, exerting a multiplier effect. However, its unplanned increase and expansion, can lead to several negative consequences generally associated to touristification and tourism-led gentrification (Sigler & Wachsmuth, 2020).

Touristification (Cocola-Gant & Lopez-Gay, 2020; Gravari-Barbas & Guinand, 2017) refers to the process by which urban areas are transformed to cater to tourism, often at the expense of local residents and businesses. It may involve changes to the physical landscape, the social fabric, and the economic structure of the city. Some of the key consequences include the displacement of local residents, the loss of affordable housing, the homogenization of culture, facadism and the commodification of urban space. Touristification can also lead to the overconsumption of natural resources and the degradation of the environment. An example of early touristification in Europe can be seen in the city of Venice, Italy (Salerno, 2022) and in Barcelona, Spain (Sánchez-Aguilera & González-Pérez, 2021) where the effects of touristification have been significant and have sparked debates about how to balance the benefits of tourism with the needs of local residents.

Associated to this is the tourism-led gentrification (Carvalho et al., 2019; Lambea Llop, 2017), a process by which tourism development drives up property values, rents, and cost of living in urban neighbourhoods, leading to the displacement of long-term residents and local businesses. The process typically involves the renovation of historic buildings, the development of upscale tourism infrastructure, and the promotion of cultural and creative industries. However, it is usually associated to the loss of social diversity and community cohesion, the erosion of local identity, and the commodification of urban culture.

As tourist numbers grow, local populations feel the pressure of overcrowding and strain on resources. In this context, topics associated to the limits of tourism growth, and overtourism, emerge as central in debates on tourism and urban management, calling the attention of the academics but also tourism professionals and the media (Smith et al., 2019). Overtourism is defined by The World Tourism Organization as the impact that tourism has on a destination, or parts of it, through its strong negative influence on the perceived quality of life of citizens and/or the quality of visitor experiences (UNWTO, 2018).

Urban policies may have a crucial role in controlling the effects of tourism. Common objectives include preventing excessive visitor concentration in some areas, avoiding the creation of spaces exclusively oriented towards tourism, providing access to and mobility within the historic city, and avoiding over-exploitation of certain heritage sites at the expense of neglecting others (Barrera-

Fernandez et al., 2016). In this sense, the integration of tourism in urban planning is considered fundamental as only in that way it is possible to achieve an efficient and sustainable relationship between the different functions of cities (Fistola & La Rocca, 2017).

In a period of a few months after the first outbreak of the SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2) in December 2019 in the Chinese province of Hubei, the tourism landscape has undergone a dramatic shift, with certain places transitioning from a state of overtourism to a "non-tourism" situation (Gössling et al., 2021). On 11 March 2020, the World Health Organization declared the COVID-19 as a global pandemic. That was the consequence of the initial measure taken by various governments to impose limitations on human movement (Askitas et al., 2020) as travel restriction and border closures, along with the closure of many travel-related businesses, causing massive losses for the tourism industry and tourism dependent economies. Globally, and having the year of 2019 as reference, the international tourist arrivals fell 71 % in 2020, 69 % in 2021 and 37 % in 2022 (UNWOT, 2023).

Covid-19 pandemic was taken on many debates as an opportunity to call for more sustainable behaviours in the economic activities related to tourism, especially as several governments had identified tourism as a key sector for direct and indirect economic stimulus and support measures (OECD, 2020). The notion that destinations' recovery should involve addressing the negative consequences of massification gained traction in public debates (The Guardian, 2020). On the academic side, this crisis was considered by many as a transformative opportunity to reevaluate the growth path of tourism and critically reflect on the notion that increased tourist arrivals always correspond to greater benefits (Higgins-Desbiolles, 2021). In fact, the pandemic reconfigured tourism industry through a change of the strategies of the stakeholders, including technological solutions (Goel et al., 2023). Also, the tourist city has undergone through changes mainly associated to the housing market (Jover et al., 2023). For example, Cocola-Gant (2023) noted that the pandemic has temporarily halted touristification-induced displacement in Barcelona and Batalha et al. (2022) argued that COVID-19 was responsible for a decrease in housing prices in Lisbon.

As measures started to be lifted due to increased vaccination rates, most touristic destinations faced a challenging dilemma: to reactivate the previous successful formula and recover from the pandemic's devastating impact on jobs and business by welcoming back visitors, risking overtourism and touristification, or to build a more resilient and sustainable touristic destination, potentially delaying the economic recovery process. Consequently, the ongoing debate was centred around the right balance between addressing the concerns of most inhabitants and

supporting local economic priorities. To deal with dilemmas arising from this debate, some scholars propose new approaches for sustainable tourism, such as abandoning growth through the adoption of more responsible practices (Everingham & Chassagne, 2020). However, others believe that all these proposals are optimistic and idealistic, considering that the industry recovery is resulting into a pre-pandemic "business as usual" situation (Higgins-Desbiolles et al., 2022). As international tourism arrivals are anticipated to exceed pre-pandemic levels by 2023 in certain global regions (UNWTO, 2023), we consider it imperative to gain a comprehensive understanding of the economic and social transformations that have unfolded in tourist-centric cities, such as Porto.

3 Research methodology

This study explores the vulnerabilities of Porto's tourism model through the impact of the COVID-19 pandemic. To fulfil the main objective of scrutinizing these vulnerabilities and understanding the subsequent transformations, different research methods are employed. These methods involve conducting both descriptive and longitudinal analyses of secondary data, as well as examining national and local political strategies employed in response to the pandemic's impact on the tourism industry and its associated sectors. The case study and the details of the data collection and analysis processes are exposed below.

3.1 Case study

Porto is a municipality situated in northern Portugal with a population of 236 003 people (2021) and covering an area of 41.42 km². It is considered the anchor of the second-largest metropolitan area in Portugal, where nearly 17 % of the population resides, a total of 1.755.844 inhabitants. Since the 1960s Porto has witnessed a process of suburbanization as the number of residents increased in neighbour municipalities of Gondomar, Maia, Matosinhos, Valongo, and Vila Nova de Gaia and decrease in the central municipality. Together, these municipalities are known as Grande Porto, which are part of the Metropolitan Area of Porto (Figure 1). Porto is divided in 7 administrative areas, known as *freguesias* (parishes), as it is shown on Figure 1.

The tourism sector is considered one of the main drivers of the city's economy, providing employment and business opportunities for thousands of people. Having its city centre as main attraction, Porto's tourism industry has undergone significant changes in the past few years, with the rapid growth of tourism demand and supply. Figure 1 shows Porto's city centre, encompassing the UNESCO World Heritage Site to which corresponds a protective buffer zone shared with Gaia municipality. The downtown, Baixa, is a relevant commercial and administrative space where

important landmarks like Porto City Hall, São Bento train station, and Bolhão Market are located. Most of Porto's main tourist attractions are concentrated in this area (Gusman et al., 2019) situated within the parish known as U.F de Cedofeita, Santo Ildefonso, Sé, Miragaia, São Nicolau e Vitória.

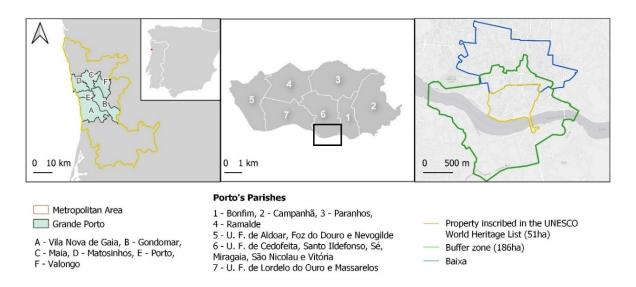


Figure 1. Porto, from the metropolitan area to the city centre

Source: Produced by the authors using data from the Municipality of Porto ¹

3.2 Data collection and analysis

According to Duro et al. (2022), tourism vulnerability should be analysed considering two different aspects. The first is the resistance which is associated to the level of exposure to potential threats and the ability to absorb shocks and maintain functionality. The other one is the resilience which is the capacity to recover from losses following a shock. Following this perspective, we selected a set of variables from official sources which cover economic, touristic and demographic and housing dimensions of the city over the period of 2019 to 2022, as it is presented in Table 1. The selection of variables also took into consideration the existing literature on overtourism and tourism sustainability (Alfaro Navarro et al., 2020; Bouchon & Rauscher, 2019; European Union, 2016) as well as data availability of the official sources, at the municipal and inframunicipal scale over the period under analysis. Additionally, certain data were utilized to provide context for Porto's evolution as a tourist destination, encompassing years preceding the period under examination.

The main sources considered were the Instituto Nacional de Estatística (National Institute of Statistics – INE) and Turismo de Portugal. From Turismo de Portugal the main information collected was

¹ Available on: https://mapas.cm-porto.pt/

through the tourist accommodation dataset. The local tourist accommodation sector in Portugal mainly consists of properties available on short-term rental platforms. These are officially recognized lodging establishments that do not fully meet the criteria of traditional tourist accommodation enterprises but adhere to the minimum lodging standards mandated by law. These establishments, limited by law to 9 rooms and 30 users, must register through a digital platform, disclose specific information, and maintain compliance with regulations to operate. The list of all the active establishments provided by Turismo de Portugal was treated in order to develop a spatial analysis of this economic activity.

Descriptive statistics and graphical tools are employed for the exploration and comparison of variable behaviour over time. This analysis involves scrutinizing certain variables at both the municipal and inframunicipal scales. The national scale is used in some cases to provide a contextual backdrop for understanding the evolution of these variables. In other cases, the focus extends to municipalities within the Grande Porto region, offering a localized perspective on the variables' progression. The collected data from the different sources were used to calculate indicators such as tourism intensity (ratio of guests relative to the resident population) and tourism density (ratio of overnight stays in tourist accommodation establishments and the area of the municipality measured in Km²).

Table 1. Data collection framework

Dimension	Data	Source	Scale
	Business turnover by economic sector (% tourism-related sector)	INE available on: https://www.ine.pt/xportal/xma in?xpid=INE&xpgid=ine_indicad ores&indOcorrCod=0006610&c ontexto=bd&selTab=tab2	
ie.	Employees by economic sector (% tourism-related sector)	INE available on: https://www.ine.pt/xportal/x main?xpid=INE&xpgid=ine_in dicadores&indOcorrCod=001 0378&contexto=bd&selTab=ta b2	Δ _c
Economic	New enterprises by economic sector (% tourism-related sector)	INE available on: https://www.ine.pt/xportal/x main?xpid=INE&xpgid=ine_in dicadores&indOcorrCod=001 1729&contexto=bd&selTab=ta b2	Municipal
	4. Purchases made through a point-of-sale system (monthly variation)	INE available on: https://www.ine.pt/xportal/x main?xpid=INE&xpgid=ine_in dicadores&indOcorrCod=00 08777&contexto=bd&selTab=t ab2	

Table 1. Continuation

Dimension	Data	Source	Scale			
	5. Overnight stays in hotel establishments the last 3 months	INE available on: https://www.ine.pt/xportal/xma in?xpid=INE&xpgid=ine_indicad ores&indOcorrCod=0010083&c ontexto=bd&selTab=tab2				
	6. Number of bed-places	INE available on: https://www.ine.pt/xportal/xma in?xpid=INE&xpgid=ine_indicad ores&indOcorrCod=0008574&c ontexto=bd&selTab=tab2				
Touristic sector	7. Incomes in tourist accommodation establishments (€)	INE available on: https://www.ine.pt/xportal/xma in?xpid=INE&xpgid=ine_indicad ores&indOcorrCod=0009813&c ontexto=bd&selTab=tab2	Municipal			
	8. Disembarked passengers in airports and ports	INE available on: https://www.ine.pt/xportal/xma in?xpid=INE&xpgid=ine_indicad ores&indOcorrCod=0000862&c ontexto=bd&selTab=tab2				
	9. Guests (total and foreign)	INE available on: https://www.ine.pt/xportal/xma in?xpid=INE&xpgid=ine_indicad ores&indOcorrCod=0010416&c ontexto=bd&selTab=tab2				
	10. Tourist accommodation registrations	Turismo de Portugal available on : https://rnt.turismodeportugal.pt /RNT/_default.aspx				
Demographic and housing	11. Resident population	INE available on: https://www.ine.pt/xportal/xma in?xpid=INE&xpgid=ine_indicad ores&indOcorrCod=0005539&c ontexto=bd&selTab=tab2	Infi			
	12. Median value of bank evaluation per m ²	INE available on: https://www.ine.pt/xportal/x main?xpid=INE&xpgid=ine_in dicadores&indOcorrCod=001 0042&contexto=bd&selTab=t ab2	nicipal			
	13. Median value per m ² of dwellings sales	INE available on: https://www.ine.pt/xportal/x main?xpid=INE&xpgid=ine_in dicadores&indOcorrCod=001 0732&contexto=bd&selTab=ta b2				

Source: authors' own elaboration

Additionally, we analyzed the key programs and political strategies targeting tourism and its effects within the framework of the city's resistance and recovery strategy in response to the COVID-19 effects. Through this analysis, we delve into the political objectives driving the measures taken by

the Portuguese Government and the Municipality of Porto, aimed at addressing the crisis and facilitating the city's recovery.

4 The evolution of Porto as a tourist city

The historic part of Porto —the area classified as Heritage Site— was the heart of the city's civic, residential, and commercial activities. With a rich tradition of commerce and industry, the Porto region has been a vital economic hub in Portugal. However, over the last quarter of the XX century, significant transformations have taken place in the city's historic district and its surrounding areas (Domingues, 2001; Fernandes, 1994). Porto's residents started to move to peripheral areas and surrounding municipalities leading to the emergence of new economic poles, nearer industrial and residential areas (Balsas, 2004). At the same time, "Baixa" have passed through the process of social and economic devitalization, similar to other post-industrial places in Europe, with decadent buildings, vacant houses and old shops dominating the landscape (Neto et al., 2010; Porto Vivo SRU, 2022). However, historical, artistic, cultural, and architectural significance given by its heritage, particularly inside the fortified walls built in the 14th century was never lost (Ferreira & Silva, 2019).

Since the 1974, with the Comissariado para a Renovação Urbana da Área de Ribeira-Barredo (CRUARB), many buildings and public spaces were rehabilitated, with the objective of restoring the cultural values of the area inside the 14th century walls. As a corollary this work in 1996, this older part of the city together with Ponte Luiz I and the Mosteiro da Serra do Pilar (in the southern side of Douro river) were classified as a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) (area marked in yellow in Figure 1). However, considering the difficulty to find enough public money for rehabilitation of private housing, whose owners could not see the point in maintenance, as rents were frozen, after 2004 a more liberal approach was initiated with the creation of Sociedade de Reabilitação Urbana (SRU-Porto Vivo).

If a right-wing political shift in 2002 played a central role in this transformation, we need to delve further back in time to comprehend the significance of tourism in the strategy aimed at revitalizing the historic city. Key milestones in this trajectory included Porto's Ibero-American Summit in 1998, its designation as the European Capital of Culture in 2001, complemented by robust international promotion campaigns. These efforts collectively contributed to establishing the city's international reputation (Gusman et al., 2019).

In parallel, numerous initiatives to improve public spaces, including street renovations, cultural facility upgrades, streetscaping, pedestrianization plans, and the installation of new urban furniture were undertaken (Balsas, 2007). Also, numerous abandoned structures underwent a conversion into hotels, restaurants, and other types of hospitality ventures, along with options for short-term rentals, specifically tailored to meet the needs of tourists and international students (Carvalho et al., 2019, Fernandes, et al., 2021). Porto, similarly to Lisbon, is often portrayed by the media as both authentic and traditional, while also embodying a modern, cosmopolitan, and fashionable vibe (Torkington & Ribeiro, 2022). As a result, a more attractive and welcoming environment was created over the years. Formerly known as an industrial and commercial city, Porto became rapidly a city of tourism, responsible for 11% of the foreign guests in the tourist accommodation establishments in Portugal in 2019.

A strategy of adapting the urban landscape of Porto to attract international inflow of new visitors and businesses was implemented and tourism-related businesses, such as tour operators, souvenir shops, and restaurants have increased (Chamusca et al., 2019; Cocola-Gant & Gago, 2021). This strategic focus has been enhanced by the national government approach to the recession caused by the 2008 economic crisis, with the attraction of foreign investment for real estate and the promotion of tourism activities being used as key drivers for economic growth (Mendes, 2018).

Between 2009 and 2019, as Figure 2 shows the number of guests in Porto increased by 183%, surpassing the 109% rise observed across Portugal. This growth can be attributed to the growing demand for foreign guests. In 2009, this demand represented 53%, while a decade later, it increased to 77%. In fact, between 2009 and 2019, the number of passengers disembarking at the nearby airport increased by 193%, while the combined increase for all Portuguese airports was 137%. These numbers show that the positioning of Porto as tourism destination can be largely attributed to the substantial growth in international demand it has generated, and that tourism had a significant impact in the local economy and employment.

Additionally, significant shifts have occurred in the supply side. The number of available bedrooms in tourist accommodations has more than doubled, increasing from 4894 in 2009 to 10 272 in 2019. This growth rate is higher than the national average (60 %). Also, the total revenue generated by tourist accommodations in Porto has grown substantially, increasing by 290 % over the decade (more than double the national average of 143 %).

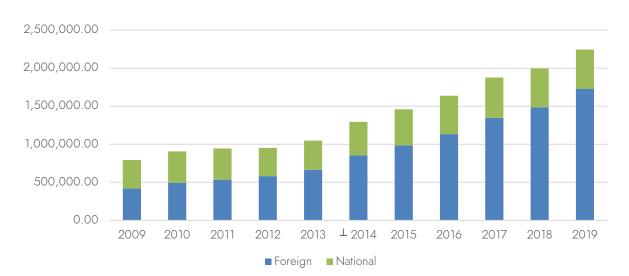


Figure 2. Evolution of the number of guests in Porto between 2009 and 2019, by nationality

Source: produced by the authors using data from INE

As it was mentioned before, the touristification of a territory is usually associated to significant urban changes, including social risks such as displacing residents, overcrowding, overwhelming public spaces, and eroding social cohesion (Cocola-Gant, 2018). The ratio guests in tourist accommodation establishments per 100 inhabitants gives a way of measuring the intensity of tourist activity in a given area. In Porto, it has increased from 326 in 2009 to 950 in 2019, representing a rising of 191 % in a decade. In fact, continuing a trend of resident decline since 1960, the city experienced a nearly 12 % reduction in inhabitants between 2001 and 2021. In contrast, the corresponding metropolitan area witnessed an 8.9 % increase during the same timeframe.

The effects of tourism on house rental market are evident, as the expansion of short-term rentals and hotels cause a direct competition with long-term rental markets with huge impacts on the social dynamics of the urban spaces. This causes the expulsion of the local population, especially the most vulnerable groups within society, which is associated to the erosion of traditional modes of socialization among long-time residents (García Bujalance et al., 2019; Sequera & Nofre, 2020). As shown in Table 3 for Porto, the number of short-term rentals has been rising significantly over the years. Since the mandatory registration requirement began in Portugal in 2017, the central parish of UF Cedofeita, Santo Ildefonso, Sé, Miragaia, São Nicolau e Vitória, consistently maintains the highest number of new establishments, accounting for approximately 73 % of all annual registrations.

Table 3. New registrations of tourist accommodation in Porto between 2017 and 2019, categorized by parishes

	2019	2018	2017
Porto	1308	1786	3441
Bonfim	184 (14,07 %)	238 (13,33 %)	433 (12,58 %)
Campanhã	26 (1,99 %)	39 (2,18 %)	74 (2,15 %)
Paranhos	37 (2,83 %)	59 (3,30 %)	123 (3,57 %)
Ramalde	15 (1,15 %)	29 (1,62 %)	51 (1,48 %)
UF Aldoar, Foz do Douro e Nevogilde	24 (1,83 %)	42 (2,35 %)	81 (2,35 %)
UF Cedofeita, Santo Ildefonso, Sé, Miragaia, São Nicolau e Vitória	962 (73,55 %)	1.301 (72,84 %)	2.512 (73,00 %)
UF Lordelo do Ouro e Massarelos	60 (4,59 %)	78 (4,37 %)	167 (4,85 %)

Source: produced by the authors using data from Turismo de Portugal

5 The disruption(s) of the pandemic

The first human mobility restrictions imposed in Portugal in response to the COVID-19 pandemic were announced on March 13th, 2020, with closure of schools and the establishment of the border control with Spain. On the March 18th the state of emergency and the closure of all the non-essential services were announced, and on the days after the restrictions on circulation were imposed. Only pharmacies, supermarkets and gas stations remained open, and restaurants could sell take-away services. The most severe measures start to be lifted only on the first days of May. But until September 2022, when authorities lift the COVID-19-related state of alert and only minimal measures remained, the country was under a series of lockdowns, with varying levels of restrictions depending on the severity of the situation in each region or municipality. Regarding the tourism sector, the recovery began timidly in the first semester of 2021, as in other parts of Europe (Turismo de Portugal, 2023a). The analysis below outlines the primary disruptions experienced by the city due to the pandemic, categorized into three distinct dimensions.

5.1 On tourism supply and demand

The pandemic's impact reverberated across various aspects of the city, especially within the tourism sector, affecting both its supply and demand dynamics. Figure 3 is illustrative of this impact on the

demand side in Portugal and in Porto, throughout 2020, 2021 and the first five months of 2022 encompassing the period marked by varying intensities of mobility restrictions. Using data on the number of the overnight stays in hotel establishments in periods of three months it shows the stark decline, reaching its lowest point in June 2020. Compared to the same period of 2019, the number of nights spent by tourists was 93 % lower in Portugal and 97 % lower in Porto. Considering all the period it is possible to recognize two moments of recovery: between June and November 2020, and between April and December of 2021. The early months of 2022 reflect a decline in tourism but in April of that year, the value equated that of the same period in 2019, specifically in the case of Porto. When comparing Porto's tourism industry to that of Portugal as a whole, it becomes evident that the negative impact of the pandemic has been greater in Porto during this period, likely due to its higher dependence on foreign tourism. However, based on the available data, the recovery in Porto has surpassed that of Portugal since March 2022, indicating that the touristic sector of the city has a superior capacity of recovering under no travel restrictions situation.

0,40

2020

2021

2022

0,00

Jan Feb Mar Apr May Jun Jul 21 Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul 21 Aug Sep Oct Nov Dec Jan Feb Mar May Jun Jul 21 Aug Sep Oct Nov Dec Jul 21 Aug Sep Oct Nov Dec Jul 22 Aug Sep Oct Nov Dec

Figure 3. Number of overnight stays in hotel establishments for the last 3 months (2020-2022) in Porto and percentage change compared to the same period in 2019

Source: produced by the authors using data from INE

The data shown in Table 3 evidence that the ascending trend observed until 2019, was abruptly disrupted by the pandemic. While the reduction in the number of international guests was proportionate at both the national and municipal levels, the impact was notably more pronounced in Porto compared to the national territory, as showed in Table 3. The decline in guest numbers was significant, reaching 72,4 % in Porto, surpassing the 61,57 % decrease observed across Portugal, even if the decrease in the number of disembarked passengers at airports and ports was similar, with a 66,23 % drop in Porto and a 69,96 % decline in Portugal.

-1.20

Table 3. Tourism sector evolution between 2019 and 2022

		20	19		2020				2021				2022			
	Portugal Porto		to	Portu	gal	Porto		Portugal		Porto		Portugal		Porto		
	Total	Δ 18/19	Total	Δ 18/19	Total	Δ 19/20	Total	Δ 19/20	Total	Δ 20/21	Total	Δ 20/21	Total	Δ 21/22	Total	Δ 21/22
Guests (Total)	27 142 416	7,50%	2 245 291	12,46%	10 430 600	-61,57%	619 644	-72,40%	14 462 011	38,65%	913 883	47,49%	26 519 721	83,38%	2 267 125	148,08%
Guests (Foreign countries)	16 410 114	7,20%	1 776 630	15,67%	3 904 945	-76,20%	409 379	-76,96%	5 917 873	51,55%	615 638	50,38%	15 322 910	158,93%	1780 674	189,24%
Bed-places (Total)	193 164	4,73%	10 272	16,65%	151 751	-21,44%	7439	-27,58%	179 501	18,29%	9428	26,74%	200 748	11,84%	11 694	24,03%
Bed-places (in Short Rental Apartments)	34 958	10,43%	**		24 390	-30,23%	1838	**	29 536	21,10%	2080	13,17%	33 423	13,16%	2506	20,48%
Incomes in tourist accommodation establishments (€)	4 295 814	7,76%	292 135	15,63%	1 445 682	-66,35%	62 992	-78,44%	2 330 271	61,19%	105 459	67,42%	5 014 083	115,17%	331 746	214,57%
Disembarked passengers in airports and ports	29 239 869	6,91%	6 522 895	10,05%	8 782 271	-69,96%	2 202 752	-66,23%	12 241 766	39,39%	2 913 797	32,28%	27 586 968	125,35%	6 316 343	116,77%

Source: produced by the authors using data from INE

The economic support measures of the Portuguese Government helped to mitigate abrupt changes on the supply side. The data indicates a decline in bed-places, showing a decrease of 21.44% in Portugal and 27,58 % in Porto from 2019 to 2020. The total income of tourist accommodation establishments experienced a drastic reduction during this period, with a decline of 78,44 % in Porto, surpassing the nationwide decrease of 66,35 %.

As restrictions eased, a notable resurgence in these figures was observed, highlighting a more pronounced year-on-year variation in the city compared to the entirety of Portugal. Initiating the recovery of pre-pandemic numbers in 2021, Porto experienced a significantly more positive evolution across all considered variables in 2022, compared to the national context. In fact, both the demand and supply in 2022 surpassed 2019 figures, signalling a robust return of Porto's tourism to the growth trajectory it had maintained until 2019. That is evident when considering the two significant indicators for measuring overtourism in 2022: tourism density (bed-nights per km²) and tourism intensity (guests per inhabitants). After two years of very low numbers, they have reached the levels of 2019. In Porto, tourism density in 2022 registered a total of 282,3 bedrooms per km², compared to 247,9 per km² in 2019. Additionally, tourism intensity shifted from 9,47 to 9,42.

5.2 On the economic dynamics

At the economic level, the data presented in Table 4 show a significant decrease in the total business turnover of the municipality of Porto, dropping from 14 672 617 335 € in 2019 to 12 726 699 630 € in 2020. This decline can be associated to the drop of the accommodation and food services businesses turnover, a key tourism-related sector. Their contribution to the overall business turnover decreased notably, accounting for 6,35% in 2019 and plummeting to just 3,77% in 2020. Despite the earlier signs of tourism recovery in Porto as indicated by previous data from 2021, the figures reveal only a hesitant rebound in business turnover. However, the fact that the total business turnover in 2021 surpassed the value registered in 2019 seems to indicate that another economic activity was capable of recovery from the shock of the pandemic crisis. Meanwhile, the data on the establishment of new enterprises revealed a persistent decline from 2019 onwards, particularly evident in the Accommodation and Food Services sector, which accounted for 14 % of these establishments in 2019. This decline continued until 2021, with a noteworthy recovery observed only in 2022. As anticipated earlier, the economic impact translated into job losses across various sectors, notably within those directly associated with tourism. The workforce employed in these sectors decreased from 21788 individuals in 2019 to 18729 in 2021.

Table 4. Economic variables evolution between 2019 and 2022

		2019		2020				2021	2022			
	Total	Accomodation and food services	%	Total	Accomodation and food services	%	Total	Accomodation and food services	%	Total	Accomodation and food services	%
Business turnover (€)	14 672 617 335,00	932 232 803,00	6,35	12 726 699 630,00	479 528 103,00	3,77	14 776 674 790,00	568 735 741,00	3,85			
New enterprises	2176	305	14,02	1604	174	10,85	1811	179	9,88	2168	265	12,22
Employment	161 333	21 788	13,50	154 040	19 924	12,93	155 853	18 729	12,02			

Source: produced by the authors using data from INE

Aiming at analysing the exposure of Porto's local economy to tourism we compared the monthly changes in purchases made through point-of-sale systems during 2020 to 2022 with the corresponding period in 2019. This indicator provides valuable data on consumer spending patterns and can help track changes in local business activity. This is calculated for Porto and surrounding municipalities of "Grande Porto" and with Portugal as a whole. As Figure 5 shows, the decline of this value was more significant in Porto. In April 2020, the amount spent was almost 60 % lower than in the same period of 2019, a much larger drop than the registered 40,42 % in Portugal. In addition, the negative trend persisted in Porto for five more months than in most other territories under analysis, with this negative trend stopping only in September 2021. However, since then, the values in Porto have continued to rise relative to 2019, reaching a 36 % increase in December 2022, slightly above the values registered in the other territories.

40,00

20,00

Jan Feb Mar Apr May Jun ful Avis Sep Oct Nov Dec Jan Feb Mar Apr May Jun ful Avis Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Avis Sep Oct Nov Dec Jan Feb Mar Apr May Jun

Figure 5. Purchases made through a point-of-sale system in Porto between 2020 and 2022 (% change comparing with the same period of 2019)

Source: produced by the authors using data from INE

5.3 On housing market

The short-term rental market in Porto was significantly impacted by the sudden decline in tourist demand. In 2020, only 604 new tourist accommodations were registered with Turismo de Portugal, representing nearly half of the 1250 registrations recorded in 2019. However, the market swiftly rebounded, showing a notable recovery in subsequent years. In 2021, there were a total of 867 new openings, and in 2022, the number surged to 1903, surpassing the figures of the prepandemic years.

Comparing the cumulative new openings of tourist accommodations between the three years before the pandemic (2017-2019) and the three years following its onset (2020-2022), there is a slight decrease from 4530 to 3373, albeit with a similar geographical distribution. Figure 6 data

illustrates that the central parishes remain highly attractive for establishing new short-term rentals, as the majority of new registrations continue to be concentrated in this area.

2 12% União das freguesias de Aldoar, Foz do Douro e Nevogilde 1.69% 2.19% Campanha 1.72% 4.97% União das freguesias de Lordelo do Ouro e Massarelos 4.00% 1.46% Ramalde 1.01% 3.33% Paranhos 2.16% 12.98% Bonfim 13.07% União das freguesias de Cedofeita, Santo Ildefonso, Sé, 72.96% Miragaia, São Nicolau e Vitória 76.34% 0.00% 20.00% 40.00% 60.00% 80.00% 100.00% 2017-2019 2020-2022

Figure 6. Opening of new tourist accommodation in Porto categorized by parishes between 2017-2019 vs. 2020-2022

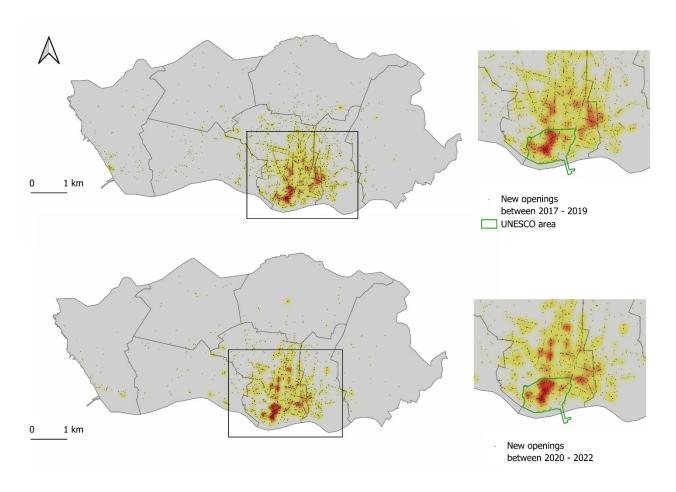
Source: produced by the authors using data from Turismo de Portugal

The spatial visualization of the data in Figure 7 confirms a discernible concentration pattern of short-term rental offerings within the highly tourist-oriented zones of the city, particularly within the UNESCO protected area and its adjacent areas. Upon comparing the three-year period preceding the pandemic with the three-year period following it, it becomes evident that the concentration pattern of new tourist accommodations around these tourist-centric spaces has remained relatively unchanged. However, amidst this continuity, a nuanced evolution emerges. While the overall concentration around established tourist areas remains steady, certain areas of parishes such as UF de Lordelo do Ouro e Massarelos and Ramalde are witnessing an emergent presence of new focal points for concentrated short-term rental activity.

According to Batalha et al. (2022), the sudden drop in the touristic demand for short-term rentals in Lisbon has had two different impacts: rental prices in Lisbon's most touristic areas decreased 3,5 % and the number of apartments for rental in such areas increased by 20 %, in the period

after the pandemic. In Porto, contrary to expectations, although a deceleration was observed in the early months of 2020, the housing prices continued to rise following the outbreak of COVID-19. This trend is evident in both the rental and housing transaction markets. The data show that median value per m2 of dwelling sales in the 4th quarter of 2022 was 38 % higher than in the same period in 2019. However, it should be noted that the effect of rising inflation and interest rates can explain at least a part of the increase in housing prices.

Figure 7. Evolution of tourist accommodation expansion in Porto, 2017-2019 vs. 2020-2022²



Source: produced by the authors using data from Turismo de Portugal

Analysing the demographic trends in Porto using census data from 2011 to 2021 reveals significant shifts in population dynamics, notably in the central parish, which experienced a substantial

21

² The heatmap on the map serves to simplify data comprehension. It was created in QGIS by utilizing its functionalities to style point layers through a renderer, facilitating a clearer visual representation of the information.

decrease of 7,44 % in inhabitants, declining from 40 440 to 37 430. This decline surpassed the overall decrease of 2,44 % recorded for the entire city of Porto during the same period.

More detailed data focusing on residential changes between 2019 and 2021 highlights that central parishes had the lowest percentage of residents maintaining the same address over the two years, as depicted in Figure 8. Specifically, 22,2 % of individuals in this parish relocated during this period. In contrast, parishes situated farther from the city centre showed higher percentages of residents who remained in the same place of residence.

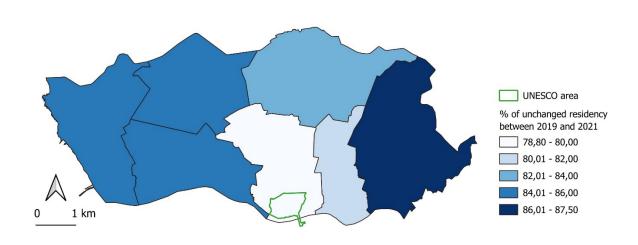


Figure 8. Residency changes in Porto's parishes from 2019 to 2021

Source: produced by the authors using data from INE

6 Adapting to crisis: COVID-19 lessons and policy responses

The rapid growth of tourism is frequently associated to the erosion of the social and economic dynamics of central neighbourhoods, as it has been observed in many tourist cities across Europe (Sequera et al., 2022). In Porto, overcrowding and the conversion of many historic buildings, local businesses, and public areas into visitor-focused spaces have had significant implications as these intense and rapid changes have contributed, as in other places (Cocola-Gant, 2023), to alter the emotional and material connections residents have with their city. The COVID-19 pause revealed vulnerabilities within Porto's tourism-centric economy. The responses of both municipal and national authorities to this crisis shed light on the perspectives and priorities that role tourism plays within urban spaces. The city's recovery from this crisis serves as a reflection of the consequences stemming from these approaches, offering valuable insights into the prospective trajectory of the tourist model.

Starting with the political responses to the crisis, together with the economic support given to families and businesses, Turismo de Portugal used a strategy centred on three messages: trust, hope, and reinvention. To increase the confidence of tourists, a "Clean & Safe" seal was created, an awareness campaign promoting social distancing was launched, and the promoting of tourism in low-density territories and sustainable activities was encouraged (Fernandes et al., 2023). During 2020, the domestic tourism was also actively promoted, with an emphasis on encouraging local exploration and engagement within the national tourism destinations.

As the results of this study demonstrate, the measures implemented to mitigate the negative impacts of COVID-19 were not sufficient to stem the significant decline in tourism demand in Porto. The variations in demand variables throughout the pandemic period achieved more negative values than in the entirety of Portugal, and this can be explained by the fact that tourists demanded low tourist density destinations during the pandemic period (Marques et al., 2022). In fact, the abrupt drop in tourist demand in urban destinations and the consequents impact on the desertification of certain public spaces that were dependent on tourist mobility were among the first visible repercussions of the pandemic at the global scale (Gössling et al., 2021). Being Porto highly dependent on foreign demand, recovery was not possible until transnational mobility restrictions were lifted. However, the signs of recovery emerged as soon as the international mobility flows recuperated, with a gradual increase in the number of visitors and hotel occupancy rates.

Regarding the tourism model expected to guide the city's future, there was a shift in the political narrative. In various interviews, Mayor Rui Moreira emphasized that the recovery of tourism in Porto needed to prioritize sustainable practices not only in terms of the environment but also on social aspects. In April 2022, he stated that "...we do not want mass tourism, but rather a more sustainable approach to tourism. We want visitors to explore and discover different areas" (Jornal Eco, 2022). However, during 2022 and the first months of 2023, most of the available indicators show that the touristic activity of the city is beating the numbers of 2019. As a consequence, the landscape of Porto's historic centre and downtown is back with the crowds of people and lines in front of the city's main tourist attractions.

When the COVID-19 pandemic began, the effects of tourism on housing markets became a central topic of debate in many countries. In Portugal, measures such as the creation of a temporary moratorium on the repayments of capital and interest of rents, mortgages and commercial loans and the suspension of residential and non-residential rental payments were implemented (Batalha et al., 2022). Throughout Europe, several municipal, regional, and national governments have

leveraged the crisis by introducing more stringent regulations, while others adopted a permissive agenda aimed at attracting short-term visitors and temporary residents for economic benefits (Colomb & Gallent, 2022). The portuguese Government introduced tailored incentives aimed at enticing digital nomads (a specific category of remote workers that travel between countries and exclusively perform their work online). In this context, even with international tourism facing a notable downturn, cities like Porto and Lisbon remained appealing to digital nomads. This sustained interest added to the strain on service availability and housing markets within these urban areas.

At the local level a significant initiative aimed at incentivizing the transformation of short-term rental properties into long-term rentals "Porto com Sentido" (SRU, 2020). Despite offering various fiscal advantages to property owners, the program had a limited reach. Over three years, only 200 properties have joined this initiative, when the initial objective was to reach 1000 properties within two years. This indicates a limited market interest and a relatively modest impact to date. Simultaneously, the pandemic prompted the suspension of contention zones for short-term rental accommodation, which had been approved in 2019. The focus shifted towards revitalizing tourist activities again, leading to this suspension.

Throughout 2022 and the early months of 2023, access to housing notably worsened for a growing segment of the population, particularly affecting those residing in tourist-centric areas. It resulted in social protests, with thousands of citizens taking the streets to demand fair and affordable housing. Recently, the Portuguese government announced a new housing policy called "Mais Habitação" (República Portuguesa, 2023), which includes restrictions on the opening of new short-term rental units in certain areas, together with the ending certain legal and tax benefits aimed at foreign real estate investors. The policy also includes tax increases for short-rent owners and tax incentives to encourage these owners to transfer their houses to the long-term market.

The posture assumed by the local authorities in Porto regarding the short-term rentals market and the consequences of its spread over the city has tended to be permissive. The mayor of Porto has been among the most critical voices against the restrictions outlined for short-term rentals by the "Mais Habitação" national policy (Expresso, 2023). The municipal government has recently approved their own regulation regarding short-term rentals, dividing the city into two zones based on the pressure of these unities: "contention areas," where no new licenses will be granted, apart from for a few exceptions, and "sustainable growing areas," where new licenses will be allowed. Bonfim and a part of the central parish, Cedofeita, are among the areas where new licenses are allowed. This decision, however, was delayed, and we believe it should have encompassed a

larger territory, considering the widespread impact of short-term rentals across multiple neighborhoods. A broader regulatory approach that extends to additional areas could have better addressed the pervasive effects of short-term rentals on the city's housing market, community dynamics, and overall urban fabric. Moreover, the recently approved management plan of Porto's city centre reveals the posture that the entity which is responsible for the rehabilitation of the city has concerning these questions, as sentences such as the following can be identified throughout the text: "The loss of population in the historical centre (HCP) of Porto is not the result of tourist activity, nor from the use of buildings for tourist purposes (...) Gentrification of the HCP, which is often referred to, is a scenario that some intend to identify as a reality, but which also needs to be studied and demonstrated." (Porto Vivo SRU, 2022, p. 57).

As Jover et al. (2023) stated, despite the global health emergency and its effects on tourism flows, the urban changes resulting from touristification appear irreversible. The analysis presented here seems to confirm this. The results indicate that tourism in Porto has largely returned to its prepandemic "business as usual" situation in terms of demand and supply. Also no significant changes have been noted in the policy approach to tourism and its effects on urban dynamics. This is leading to a resurgence and aggravation of the problems associated with the excessive use of several areas of the city for tourism. Despite a growing recognition of the need for a more holistic approach to tourism, with new strategies that balance profit and resilience and address the needs of local communities, decision-making in Porto does not seem to reflect this trend. As suburbanization and geographic specialization continue, the city centre remains dedicated to tourism, with entire streets and squares focused on consumption and leisure. The absence of multimunicipal planning and local efforts to combat overtourism aligns with the notion of cities as cultural and civic gathering places (Florida et al., 2021).

Promoting the multifunctionality of the city centre and its riverfront is crucial to avoid over-dependence on tourism. Such areas should foster a harmonious coexistence of various uses, including residential, administrative and other economic functions apart tourism. Porto's case serves as a valuable example of the challenges and opportunities for more sustainable tourism practices. The city's experience highlights the necessity for a more comprehensive and holistic approach to tourism management, prioritizing the well-being of residents and the preservation of local culture and heritage. Both a multisectoral approach and a more horizontal, multiscale planning and management seems to be much needed if something effective is to be done to confront the negative side effects of tourism and its autophagic capacity.

7 Conclusion

Our findings, in conjunction with those of other studies where a shift to tourism-related businesses in the city centre between 2012 and 2018 was detected (Fernandes & Chamusca, 2018), indicate that the social and economic dynamics of Porto are significantly intertwined with its tourism sector. Given that Porto's model relies heavily on international mobility, the city is susceptible to future events that could potentially disrupt travel and tourism flows, as other health crisis, but also natural disasters, terrorist attacks, among others. As a consequence, as before the pandemic, it is essential to prevent overdependency through the maintenance of the multifunctionality of historical areas, where a variety of activities should coexist in harmony (Troitiño Vinuesa, 1995). Initiatives aiming at pursuing a balance between residents and visitors need to be implemented together with strategies for a spatial equilibrium and continuity between centre and periphery of the city, in order to mitigate the negative impacts of mass tourism. Critical policy solutions require cooperation beyond Porto's jurisdiction due to overtourism's multidimensional nature. As noted recently by Yuval (2022), the problems caused by overtourism should be approached at a regional scale, through a coordinated planning which considers tourism over time and space.

The analysis presented here exposes the impacts that the rapid growth of tourism in Porto has had on the social and economic dynamics of the city, particularly its center. Overcrowded spaces, coupled with the transformation of public areas, businesses, and residential buildings into spaces tailored for tourism, fostered the growth of a visitor-dependent monoculture. The COVID-19 pandemic revealed the vulnerabilities of this model, which is highly dependent on intense international flows. In fact, the economic recovery of Porto was not fully achieved before international tourism returned to its pre-pandemic levels. The data here presented, however, indicate that the city's tourism sector is exceeding the figures from 2019.

While Porto appears to be "back to business", the issues associated with touristification and overtourism in certain areas of the city have resurfaced. The high volume of visitors, particularly in these areas, and the resulting housing problems, lead to various consequences, including tensions arising from the needs of visitors and residents. Despite claims by municipal authorities and tourism decision-makers to diversify and spread tourism's impact away from the city center, there has been little change in the supply and demand landscape compared to the pre-pandemic period.

This analysis sheds light on significant transformations during disruptive periods and subsequent recovery, along with responses from national and local authorities, offering insights into future challenges for Porto's tourism model. While some progress has been observed in striking a balance

among the various city functions, a meaningful transition toward more sustainable tourism practices appears to be inconsistent. The pandemic had an influence in the development of sustainable tourism strategies, yet the challenge to control tourism growth remains unresolved in Porto, as in other cities. A multitude of economic activities supporting tourism escalates the utilization of space by visitors, necessitating the restriction of the visitor economy's expansion in residential areas as proposed by other authors (Cocola-Gant, 2023). The focus should be on preserving the multifunctionality of spaces and ensuring that residents and local businesses have a space in the city.

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References

Alfaro Navarro, J.-L., Andrés Martínez, M.-E., & Mondéjar Jiménez, J.-A. (2020). An approach to measuring sustainable tourism at the local level in Europe. *Current Issues in Tourism*, 23(4), 423–437. https://doi.org/10.1080/13683500.2019.1579174

Almeida-García, F., Cortés-Macías, R., & Parzych, K. (2021). Tourism Impacts, Tourism-Phobia and Gentrification in Historic Centers: The Cases of Málaga (Spain) and Gdansk (Poland). *Sustainability*, 13(1), 408. https://doi.org/10.3390/su13010408

Ascher, F. (1995). Métapolis: ou l'avenir des villes. Odile Jacob.

Askitas, N., Tatsiramos, K., & Verheyden, B. (2020). Lockdown Strategies, Mobility Patterns and COVID-19. *Covid Economics*, 23, 263-302. http://arxiv.org/abs/2006.00531

Balsas, C.J.L. (2004). Local Economy City Centre Regeneration in the Context of the 2001 European Capital of Culture in Porto, Portugal. *Local Economy*, 18(4), 396-410. https://doi.org/10.1080/0269094042000286873

Balsas, C.J.L. (2007). City Centre Revitalization in Portugal: A Study of Lisbon and Porto City Centre Revitalization in Portugal: A Study of Lisbon and Porto. *Journal of Urban Design*, 12(2), 231–259. https://doi.org/10.1080/13574800701306328

Barrera-Fernandez, D., Hernández-Escampa, M., & Balbuena Vázquez, A. (2016). Tourism planning the historic city. The impact of urban policies. management in of Scientific Manag e Ment and Tourism, International Iournal 2(4)349-367. https://ojs.scientificmanagementjournal.com/ojs/index.php/smj/article/view/220

Batalha, M., Gonçalves, D., Peralta, S., & Pereira dos Santos, J. (2022). The virus that devastated tourism: The impact of covid-19 on the housing market. *Regional Science and Urban Economics*, 95, 103774. https://doi.org/10.1016/j.regsciurbeco.2022.103774

Benjamin, S., Dillette, A., & Alderman, D.H. (2020). "We can't return to normal": committing to tourism equity in the post-pandemic age. *Tourism Geographies*, 22(3), 476-483. https://doi.org/10.1080/14616688.2020.1759130

Carvalho, L., Chamusca, P., Fernandes, J., & Pinto, J. (2019). Gentrification in Porto: floating city users and internationally-driven urban change. *Urban Geography*. https://doi.org/10.1080/02723638.2019.1585139

Chamusca, P., Fernandes, J., Carvalho, L., & Mendes, T. (2019). The role of Airbnb creating a "new"-old city centre: facts, problems and controversies in Porto. *Boletín de La Asociación de Geógrafos Españoles*, 83(2820), 1-30. https://doi.org/https://doi.org/10.21138/bage.2820

Cocola-Gant, A. (2018). Tourism gentrification. In *Handbook of Gentrification Studies*. Edward Elgar Publishing. https://doi.org/10.4337/9781785361746.00028

Cocola-Gant, A. (2023). Place-based displacement: Touristification and neighborhood change. *Geoforum*, 138, 103665. https://doi.org/10.1016/j.geoforum.2022.103665

Cocola-Gant, A., & Gago, A. (2021). Airbnb, buy-to-let investment and tourism-driven displacement: A case study in Lisbon. *Environment and Planning A: Economy and Space*, *53*(7), 1671-1688. https://doi.org/10.1177/0308518X19869012

Cocola-Gant, A., & Lopez-Gay, A. (2020). Transnational gentrification, tourism and the formation of 'foreign only' enclaves in Barcelona. *Urban Studies*, *57*(15), 3025-3043. https://doi.org/10.1177/0042098020916111

Colomb, C., & Gallent, N. (2022). Post-COVID-19 mobilities and the housing crisis in European urban and rural destinations. Policy challenges and research agenda. *Planning Practice & Research*, 37(5), 624-641. https://doi.org/10.1080/02697459.2022.2119512

Domingues, Á. (2001). A paisagem revisitada. *Finisterra*, 36(72). https://doi.org/https://doi.org/10.18055/Finis1621

Duro, J.A., Perez-Laborda, A., & Fernandez, M. (2022). Territorial tourism resilience in the COVID-19 summer. *Annals of Tourism Research Empirical Insights*, 3(1), 100039. https://doi.org/10.1016/j.annale.2022.100039

ESPON (2020). Carrying capacity methodology for tourism Targeted Analysis Final Report. https://www.espon.eu/sites/default/files/attachments/Tourism_final-report.pdf

European Union. (2016). The European Tourism Indicator System ETIS toolkit for sustainable destination management. https://ec.europa.eu/docsroom/documents/21749

Everingham, P., & Chassagne, N. (2020). Post COVID-19 ecological and social reset: moving away from capitalist growth models towards tourism as Buen Vivir. *Tourism Geographies*, 22(3), 555–566. https://doi.org/10.1080/14616688.2020.1762119

Expresso. (2023). Porto avança com novo regulamento do AL, Lisboa adia. https://expresso.pt/economia/2023-04-20-Porto-avanca-com-novo-regulamento-do-Alojamento-Local-mas-Lisboa-adia-97ebfeab

Fernandes, J. (1994). Porto, cidade e comércio. Arquivo Distrital do Porto.

Fernandes, J., Carvalho, L., Chamusca, P., & Mendes, T. (2019). A Airbnb em Portugal. Book Cover Editora. Book Cover Editora.

Fernandes, J., & Chamusca, P. (2014). Urban policies, planning and retail resilience. *Cities*, *36*, 170-177. https://doi.org/10.1016/j.cities.2012.11.006

Fernandes, J., & Chamusca, P. (2018). Novos tempos, dinâmicas e desafios no centro do Porto. In M.E. Sposito & J.A. Rio Fernandes (Eds.), *Brasil e Portugal vistos desde as cidades. As cidades vistas desde o seu centro*. Cultura Académica.

Fernandes, J., Chamusca, P., Pinto, J., Tenreiro, J., & Figueiredo, P. (2023). Urban Rehabilitation and Tourism: Lessons from Porto (2010-2020). *Sustainability*, 15(8), 6581. https://doi.org/10.3390/su15086581

Ferreira, T.C., & Silva, A. T. (2019). Perspectives for a Historic Urban Landscape Approach in Porto, Portugal. In *Reshaping Urban Conservation*. *Creativity, Heritage and the City* (pp. 403-421). Springer. https://doi.org/10.1007/978-981-10-8887-2_23

Fistola, R., & La Rocca, R.A. (2017). Driving functions for urban sustainability: The double-edged nature of urban tourism. *International Journal of Sustainable Development and Planning*, 12(03), 425-434. https://doi.org/10.2495/SDP-V12-N3-425-434

Florida, R., Rodríguez-Pose, A., & Storper, M. (2021). Cities in a post-COVID world. *Urban Studies*, 004209802110180. https://doi.org/10.1177/00420980211018072

Font, A. (2006). L'explosió de la ciutat: Transformacions territorials recents en les regions urbanes de l'Europa Meridional. COAC/ Forum Universal de la Culturas de Barcelona.

García Bujalance, S., Barrera-Fernández, D., & Scalici, M. (2019). Touristification in historic cities. Reflections on Malaga. *Revista de Turismo Contemporâneo, 7*(1), 93-115. https://doi.org/10.21680/2357-8211.2019v7n1ID16169

Goel, P., Mahadevan, K., & Punjani, K.K. (2023). Augmented and virtual reality in apparel industry: a bibliometric review and future research agenda. *Foresight*, *25*(2), 167-184. https://doi.org/10.1108/FS-10-2021-0202

Gössling, S., Scott, D., & Hall, C.M. (2021). Pandemics, tourism and global change: a rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29(1), 1-20. https://doi.org/10.1080/09669582.2020.1758708

Gravari-Barbas, M., & Guinand, S. (2017). *Tourism and Gentrification in Contemporary Metropolises*. Routledge. https://doi.org/10.4324/9781315629759

Gusman, I., Chamusca, P., Fernandes, J., & Pinto, J. (2019). Culture and Tourism in Porto City Centre: Conflicts and (Im)Possible Solutions. *Sustainability*, 11(20), 5701. https://doi.org/10.3390/su11205701

Higgins-Desbiolles, F. (2021). The "war over tourism": challenges to sustainable tourism in the tourism academy after COVID-19. *Journal of Sustainable Tourism, 29*(4), 551-569. https://doi.org/10.1080/09669582.2020.1803334

Higgins-Desbiolles, F., Bigby, B.C., & Doering, A. (2022). Socialising tourism after COVID-19: reclaiming tourism as a social force? *Journal of Tourism Futures*, 8(2), 208-219. https://doi.org/10.1108/JTF-03-2021-0058

Jornal Eco. (2022). "Não queremos turismo de massas", diz Rui Moreira que quer descentralizar a oferta turística da cidade. https://eco.sapo.pt/contactos/

Jover, J., Barrero-Rescalvo, M., & Díaz-Parra, I. (2023). 'All our eggs in one basket': touristification and displacement amidst the pandemic in Seville, Spain. *City*, *27*(5-6), 829-849. https://doi.org/10.1080/13604813.2023.2225233

Lambea Llop, N. (2017). A policy approach to the impact of tourist dwellings in condominiums and neighbourhoods in Barcelona. *Urban Research & Practice*, 10(1), 120-129. https://doi.org/10.1080/17535069.2017.1250522

Marques, C.P., Guedes, A., & Bento, R. (2022). Rural tourism recovery between two COVID-19 waves: the case of Portugal. *Current Issues in Tourism*, *25*(6), 857-863. https://doi.org/10.1080/13683500.2021.1910216

Mendes, L. (2018). The Panacea of touristification as a scenario of post-capitalist crisis. In I. David (Ed.), *Crisis, austerity, and transformation: How disciplinary neoliberalism is changing Portugal* (pp. 25-46). Lexington Books.

Neto, L., Pinto, N., & Burns, M. (2010). The impacts of urban regeneration companies in Portugal: The case of Porto Vivo SRU. In *Advances in Urban Rehabilitation and Sustainability* (pp. 104-112). http://www.wseas.us/e-library/conferences/2010/Faro/URES/URES-15.pdf

OECD (Organisation for Economic Co-operation and Development) (2020). *Tourism Policy Responses to the coronavirus* (COVID-19). https://www.oecd.org/coronavirus/policy-responses-to-the-coronavirus-covid-19-6466aa20/

Porto Vivo SRU. (2022). Management and Sustainability Plan for the Historic Centre of Porto, World Heritage.

https://www.portovivosru.pt/files/uploads/cms/sru/5/files/16/2021_Plano_de_Gest%C3%A 3o_do_CHP_Patrim%C3%B3nio_Mundial.pdf

Rius Ulldemolins, J. (2014). Culture and authenticity in urban regeneration processes: Place branding in central Barcelona. *Urban Studies*, *51*(14), 3026-3045. https://doi.org/10.1177/0042098013515762

Salerno, G.-M. (2022). Touristification and displacement. The long-standing production of Venice as a tourist attraction. *City*, *26*(2-3), 519-541. https://doi.org/10.1080/13604813.2022.2055359

Sánchez-Aguilera, D., & González-Pérez, J. M. (2021). Geographies of Gentrification in Barcelona. Tourism as a Driver of Social Change (pp. 243-268). https://doi.org/10.1007/978-3-030-77466-0_13

Santos-Izquierdo, F., Blanco-Vílchez, M., Romero-Padilla, Y., & Navarro-Jurado, E. (2023). *The Touristification of Historic Centres Through Commercial Gentrification in Times of COVID-19* (pp. 47-62). https://doi.org/10.1007/978-3-031-36017-6_4

Sequera, J., & Nofre, J. (2020). Touristification, transnational gentrification and urban change in Lisbon: The neighbourhood of Alfama. *Urban Studies*, *57*(15), 3169-3189. https://doi.org/10.1177/0042098019883734

Sequera, J., Nofre, J., Díaz-Parra, I., Gil, J., Yrigoy, I., Mansilla, J., & Sánchez, S. (2022). The impact of COVID-19 on the short-term rental market in Spain: Towards flexibilization? *Cities*, *130*, 103912. https://doi.org/10.1016/j.cities.2022.103912

Sigler, T., & Wachsmuth, D. (2020). New directions in transnational gentrification: Tourism-led, state-led and lifestyle-led urban transformations. *Urban Studies*, *57*(15), 3190-3201. https://doi.org/10.1177/0042098020944041

Smith, M.K., Sziva, I.P., & Olt, G. (2019). Overtourism and Resident Resistance in Budapest. *Tourism Planning & Development*, 16(4), 376-392. https://doi.org/10.1080/21568316.2019.1595705

Soja, E. (2000). Postmetropolis: Critical Studies of Cities and Regions. Wiley-Blackwell.

SRU - Sociedade de Reabilitação Urbana do Porto. (2020). *Programa Municipal Porto com Sentido*. https://arrendamentoacessivel.portovivosru.pt/pt/sobre-o-programa

The Guardian (2020, May 28). 'Things have to change': tourism businesses look to a greener future. https://www.theguardian.com/travel/2020/may/28/things-had-to-change-tourism-businesses-look-to-a-greener-future

Torkington, K., & Ribeiro, F. P. (2022). Whose right to the city? An analysis of the mediatized politics of place surrounding alojamento loca issues in Lisbon and Porto. *Journal of Sustainable Tourism*, 30(5), 1060-1079. https://doi.org/10.1080/09669582.2020.1849230

Troitiño Vinuesa, M.Á. (1995). El turismo en las ciudades históricas. *Polígonos, 5,* 49-65. https://doi.org/10.18002/pol.v0i5.1131

Turismo de Portugal (2023a). *Eurostat: Dashboard de recuperação pós-covid-19 — edição de abril.*https://travelbi.turismodeportugal.pt/turismo-internacional/eurostat-dashboard-de-recuperacao-pos-covid-19-edicao-de-abril/

Turismo de Portugal (2023b). Registo Nacional de Alojamento Local. https://rnt.turismodeportugal.pt/rnt/Pesquisa_AL.aspx?FiltroVisivel=True

UNWOT, World Tourism Organization (2023, April 10). *International Tourism and Covid-19*. https://www.unwto.org/tourism-data/international-tourism-and-covid-19

UNWTO, World Tourism Organization (2018). Overtourism'? Understanding and Managing Urban Tourism Growth beyond Perceptions. https://www.e-unwto.org/doi/pdf/10.18111/9789284420070

UNWTO, World Tourism Organization. (2023, January 17). *Tourism Set to Return to Pre-Pandemic Levels in Some Regions in 2023*. https://www.unwto.org/news/tourism-set-to-return-to-pre-pandemic-levels-in-some-regions-in-2023

Williams, A.M., & Baláž, V. (2015). Tourism Risk and Uncertainty. *Journal of Travel Research*, 54(3), 271-287. https://doi.org/10.1177/0047287514523334

Yuval, F. (2022). To Compete or Cooperate? Intermunicipal Management of Overtourism. *Journal of Travel Research*, 61(6), 1327-1341. https://doi.org/10.1177/00472875211025088