



A mixed approach to the heterogeneity of the short-term rentals' regulation in Spain

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Abstract

This paper aims to analyse the current situation of STRs and their regulation in Spain in order to determine whether the restrictions applied contributed to alleviating the volume of STRs. For this purpose, a database from the experimental statistics on tourist accommodation on houses provided by the National Institute of Statistics of Spain and the regional and municipal regulations on STRs have been used. The upward or downward trends of STRs have been examined and linked to the existing regulation. Then, the municipalities were classified according to the type of regulatory measure: laissez-faire, limitation or prohibition. The trend and the problems linked to STRs lead us to believe that more and more municipalities will opt to regulate the activity, seeking a balance between the economic benefit and the social impact of tourism.

Keywords Regulation · Short-term rentals · Spain · Tourism

JEL L83 · O18 · Z32 · Z38

1 Introduction

Technology advances have enabled the development of a collaborative economy focused on providing services between individuals (Gössling and Hall 2019). In the tourism sector, platforms such as Airbnb - in 2008 - and VRBO – in 1995 - were developed, introducing a new business model based on short-term rentals (STRs) (Interian 2016; Wyman et al. 2022). This rental has been linked to externalities such as the

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increase in the price of long-term housing (Edelman and Geradin 2015; Interian 2016; Prayag and Ozanne 2018; Dolnicar 2019; Clancy 2022; Etxezarreta-Etxarri et al. 2020; Bauza-Martorell 2020; Garay-Tamajón et al. 2022) or the rising living standards of residents (Dolnicar 2019), which have prompted the push for regulatory measures (Prayag and Ozanne 2018). The different positions on this phenomenon and the search for regulation that balances economic benefit while ensuring the protection of local communities (Hajibaba and Dolnicar 2017) means that this regulation differs or is even non-existent depending on the country or destination (Dolnicar 2019).

Edelman and Geradin (2015) identify three main motivations for regulating this activity: tax collection, zoning and security. Ensuring security and controlling the labour market and its audition is essential for the proper functioning of the industry and ending illegal supply (Prayag and Ozanne 2018; Nieuwland and Van Melik 2020; Marques-Pereira 2022).

The three most recurrent measures in the literature to regulate the STRs are *laissez-faire*, limitation and prohibition (Nieuwland and Van Melik 2020; Ndaguba et al. 2022; Clancy 2022). However, it should be noted that *laissez-faire* is not a regulation measure per se, as it implies not establishing any regulation at all (Nieuwland and Van Melik 2020). Regarding the limitation of activity, we find quantitative measures such as defining the maximum number of stays, guests, flats, and rental days, etcetera (Nieuwland and Van Melik 2020) or qualitative measures as the need to comply with safety and health requirements or to obtain permits and licences (Prayag and Ozanne 2018; Nieuwland and Van Melik 2020; Guttentag 2015). Furukawa and Onuki (2022) distinguish within the limitation measures four approaches: general approach, residence-centred, host-centred and hybrid one. The ban would eliminate this type of activity altogether (Clancy 2022).

In the United States, the regulation of short-term rentals varies by state and city (Brotman 2020; Yeon et al. 2022). For instance, in New York, the law prohibits renting flats for less than 30 days if the landlord is not present, which is a measure implemented to prevent tenants from converting houses into full-time tourist accommodations and reducing the supply of long-term housing (Yeon et al. 2022). On the other hand, in cities such as San Francisco, a licence is required to rent properties temporarily, and landlords can only rent their main property for a maximum of 90 days per year (Brotman 2020). In Europe, cities such as Paris and Berlin have set strict limits on the number of days landlords can rent their properties through short-term rental platforms (Dredge et al. 2016; Schäfer and Braun 2016). On the one hand, in Paris, landlords can only rent their properties for a maximum of 120 days per year and must register with local authorities (Dredge et al. 2016). On the other hand, in Berlin, short-term rentals of entire flats are prohibited unless landlords have obtained a special permit (Schäfer and Braun 2016). In Asia, Singapore has implemented measures to prevent landlords from renting out their properties on a short-term basis without complying with licensing and registration requirements (Tham 2016). Owners who rent out their properties on a short-term basis must comply with several requirements, including registering with local authorities and obtaining a tourist accommodation licence (Tham 2016). In Australia, the regulation of short-term rentals varies by state (Ndaguba et al. 2022). For example, in New South Wales, in addition to licensing requirements, owners can only rent their properties for a maximum of 180 days per

year if they are not present at the property, this day limit does not exist in Victoria, and in Tasmania, the limitation varies by area (Ndaguba et al. 2022).

The problems arising from the development of STRs and the disparity of existing regulations motivate this study, the main aim of which is to analyse the current situation regarding STRs and their regulation in Spain at the regional and municipal level and try to determine whether the applied constrictions helped alleviate the STRs volume, given the re-emergence of the problem after the COVID-19 pandemic. Thus, after this brief introduction, the article is structured as follows. Section 2 reviews the literature on the regulation of STRs in Spain. Then, Section 3 explains the materials used and the method carried out in this paper, followed by Section 4, which extracts the results of the performed exploratory analysis. Finally, Section 5 discusses the results obtained, and Section 6 presents the conclusions of the research, together with some limitations and future lines of research.

2 Literature review: regulation of STRs in Spain

In Spain, housing rental is regulated through the Urban Leasing Law (LAU), which excludes tourist rental and leaves its regulation to the Autonomous Communities (Dredge et al. 2016; Blanco-Romero et al. 2018; Martín-Martín et al. 2019; Frías 2020). The Autonomous Communities have developed legislative decrees to control the activity derived from STRs, whose main objectives have been to establish customer service and quality requirements, regulate activity licences and implement different inspection, control and sanction measures (Comendador-Sánchez et al. 2021; Blanco-Romero et al. 2018). Thus, Spain presents a heterogeneity of tourism law at the regional level (Martín-Martín et al. 2019). A review of the regulation of STRs in the different autonomous communities of Spain has been carried out and presented in Table 1, summarising the ones that refer to this phenomenon.

Despite the existence of autonomous regulation, the particularity of certain cities has led to the design of municipal regulations on tourism that complement this legislation (Comendador-Sánchez et al. 2021). This fact gives rise to different ways of managing the same event, and its regulation becomes very complex (Frías 2020).

The most remarkable case study takes place in the city of Barcelona, which is very present in the literature due to its tourist massification, gentrification and strong local opposition to the tourist phenomenon (Garay-Tamajón et al. 2022; Wilson et al. 2022; Bauza-Martorell 2020; Lambea-Llop 2017; Blázquez-Salom et al. 2019). It was a pioneer in the regulation of STRs and ranks among the most restrictive Spanish cities, even halting tourist licences from 2015 to 2017 (Wilson et al. 2022; Lambea-Llop 2017; Blanco-Romero et al. 2018). It has a Special Urban Plan for Tourist Accommodation (PEUAT) that seeks to control the implementation of tourist accommodation in the city based on four specifically regulated zones. These measures have had a significant impact, leading to a reduction in the number of STRs (Garay-Tamajón et al. 2022; Wilson et al. 2022; Bauza-Martorell 2020; Lambea-Llop 2017; Blázquez-Salom et al. 2019).

In the city of Palma (Palma de Mallorca), STRs are also related to an increase in gentrification and touristification that led to social movements against tourism,

Table 1 Regional regulations for short-term rentals (STRs) by Autonomous Communities (Spain)

Autonomous Community	Regulation
Cataluña	Decreto 159/2012, de 20 de noviembre, de establecimientos de alojamiento turístico y de viviendas de uso turístico
Andalucía	Decreto 28/2016, de 2 de febrero, de las viviendas con fines turísticos
Comunitat Valenciana	Decreto 10/2021, de 22 de enero, del Consell, de aprobación del Reglamento regulador del alojamiento turístico en la Comunitat Valenciana
Islas Baleares	Ley 8/2012, de 19 de julio, del turismo de las Illes Balears, relativa a la comercialización de estancias turísticas en viviendas
Islas Canarias	Decreto 113/2015 de 22 de mayo, por el que se aprueba el Reglamento de las viviendas vacacionales de la Comunidad Autónoma de Canarias
Madrid	Decreto 79/2014, de 10 de julio, del Consejo de Gobierno, por el que se regulan los apartamentos turísticos y las viviendas de uso turístico de la Comunidad de Madrid
Castilla y León	Decreto 3/2017, de 16 de febrero, por el que se regulan los establecimientos de alojamiento en la modalidad de vivienda de uso turístico en la Comunidad de Castilla y León
Castilla La Mancha	Decreto 36/2018, de 29 de mayo, por el que se establece la ordenación de los apartamentos turísticos y las viviendas de uso turístico en Castilla-La Mancha
Galicia	Decreto 12/2017, de 26 de enero, por el que se establece la ordenación de apartamentos turísticos, viviendas turísticas y viviendas de uso turístico en la Comunidad Autónoma de Galicia
Asturias	Decreto 48/2016, de 10 de agosto, de viviendas vacacionales y viviendas de uso turístico
Cantabria	Decreto 225/2019, de 28 de noviembre, por el que se regulan las viviendas de uso turístico en el ámbito de la Comunidad Autónoma de Cantabria
Navarra	Decreto foral 230/2011, de 26 de octubre, por el que se aprueba el reglamento de ordenación de los apartamentos turísticos en la comunidad foral de Navarra
País Vasco	Decreto 101/2018, de 3 de julio de viviendas y habitaciones de viviendas particulares para uso turístico
La Rioja	Decreto 10/2017, de 17 de marzo, por el que se aprueba el Reglamento General de Turismo de La Rioja en desarrollo de la Ley 2/2001, de 31 de mayo, de Turismo de La Rioja.
Aragón	Decreto 80/2015, de 5 de mayo, del Gobierno de Aragón, por el que se aprueba el Reglamento de las viviendas de uso turístico de Aragón
Murcia	Decreto n.º 174/2018, de 25 de julio, por el que se regulan los apartamentos turísticos de la Región de Murcia
Extremadura	Decreto 182/2012, de 7 de septiembre, por el que se establece la ordenación y clasificación de los apartamentos turísticos de la Comunidad Autónoma de Extremadura

Source: Authors, from the mentioned regulations

forcing the regulation of the activity (González-Pérez 2020). Similar to Barcelona, in 2017, Palma halted for a year the licensing of tourist flats in the centre and certain neighbourhoods until the authorities zoned the city for better management (González-Pérez 2020). The clear link between STR and the rise in the cost of

long-term renting led to the removal of the zoning and more restrictive measures, being the first Spanish city in 2018 to ban STRs in multi-family, only allowing them in single-family dwellings (detached houses) (González-Pérez 2020). This measure was endorsed by the Supreme Court in January 2023 (STS 238/2023) and has resulted in a significant decrease in STR availability.

In the case of Valencia, the requirements for STRs were initially equal to those for hotels until a 2016 ruling associated these dwellings with residential use, leading to an increase in STRs (García-Amaya et al. 2021). However, in 2018 the regional law was passed establishing the need for a use certification from the city council, and this fact, together with the halting of licences in the historic centre between 2018 and 2020, led to a decrease in STRs (García-Amaya et al. 2021). On the contrary, there are cities such as Pollença (Palma de Mallorca) where the city council has supported the excessive development of STRs, with a blatant lack of interest in controlling and sanctioning illegal dwellings according to regional regulations. This *laissez-faire* approach has resulted in an unchecked increase in STRs (Müller et al. 2021).

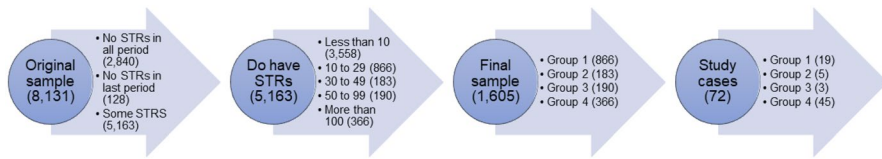
3 Materials and methods

As previously introduced, this exploratory paper aims to assess whether the regulatory policies on STRs affect their supply by performing a descriptive analysis. That, together with the analysis of the extant legislation, offer a mixed – qualitative and quantitative – approach to the study question. Given the case of Spain as an eminent tourist destination, a different scale should be taken because of the legislative competencies described in the previous section. Therefore, the chosen unit is the municipal level, which is the minimum territorial unit with regulatory power. This subdivision of the territory allows a detailed study of the effects of some policies on particular areas, isolating them from higher territory levels such as provincial or regional, which might simplify the analysis but also mask some relevant information.

Thus, the selected database is extracted from the experimental statistics on STRs provided by the National Statistics Institute of Spain (2022). This new database compiles data from different web scraping waves in February and August 2020, including three variables: the number of STRs, their beds and their ratio. Since policies rarely affect the number of beds, this study analyses the number of STRs. As stated before, the chosen unit is the municipal level.

Delving into the data, they contained the 8,131 Spanish municipalities and their figures for the four periods available at the time of running the following results: August 2020, February 2021, August 2021 and February 2022. Given the size of the resulting matrix, several filters ought to be applied before being able to extract any information (Fig. 1).

In the first place, all municipalities without STRs in all periods (2,840) or in the last one (128) were removed as they lacked interest in this particular study. Then, the resulting 5,163 municipalities were classified by their volume of STRs. The categories were made up considering the distribution of their frequencies. Subsequently, five groups were formed: (1) municipalities with less than ten units of accommodation [3,558], (2) municipalities with between 10 and 29 units [866], (3)



Source: Authors

Caption: The data preparation process comprised several steps to analyse and filter the most relevant results. Data from all Spanish municipalities – 8,131 – was collected for the period August 2020 to February 2022. First, those without STRs in all the period – 2,840 – and those without them in February 2022 were discarded, resulting in 5,163 municipalities which had at least 1 STR. Secondly, these municipalities were divided by number of available STRs, as represented in the figure. Since those with less than 10 STRs did not appear to have a large impact on the purpose of this work, they were also discarded, resulting in the final sample in 1,605 municipalities. Thirdly, the remaining municipalities were categorised within four groups which were made up considering the distribution of their frequencies. In the fourth place, after applying the Box and Whiskers described in Table 2, those outliers – 72 municipalities – were extracted to be analysed as study cases.

Fig. 1 Database preparation process.

municipalities with between 30 and 49 units [183], municipalities with between 50 and 99 units [190] and the largest ones with more than 100 units of STRs [366].

Once again, since the study aims to assess the effect of policies on the supply of STRs, the lowest figures lack interest. Consequently, those municipalities with less than ten units of accommodation were removed from the study, reducing the final dataset to 1,605. The four remaining groups were renamed consecutively from Group 1 to Group 4. Given that percentual changes might be slightly biased in the lower part of the distribution - e.g., from 10 to 15 units is a 50% change but also from 100 to 150 - to detect significant changes, these categories are helpful for a better analysis between more homogeneous groups. Hence, the differences in the whole period were the absolute values.

Considering the above, the following step was to detect the outliers of each group. For doing so, Box and Whiskers diagrams were created for each category. Since some outliers distort the representation of the figures, Table 2 shows the threshold values and the number of municipalities surpassing them in each category. All in all, only 72 municipalities present abnormal results, providing the final sample for analysis. The upcoming section delves into their analytical study.

4 Results

After applying all previous filters, Table 3 compiles the data for the 72 municipalities whose evolution in the number of STRs is abnormal. Between groups, the distribution is skewed to the ends. This section aims to analyse these municipalities as case studies, given the available data and the policies implemented within the study period. Thus, the first step was analysing whether there were any tendencies or patterns. To do so, linear graphs were drawn for each municipality's data series – which are available as Supplementary materials. This simple procedure revealed two evident trends. On the one hand, some territories are markedly seasonal, mostly during summer - peaks in August, except Monachil (Granada), a well-known ski destination

Table 2 Box and whiskers figures reference values

	Group 1	Group 2	Group 3	Group 4
<i>First Quartile</i>	-3	-7	7	-80
<i>Third Quartile</i>	3	4	-12	1
<i>Median</i>	0	-2	-3	-92
<i>Upper End</i>	-12	15	24	118
<i>Lower End</i>	12	-23	-37	-188

Source: Authors

Caption: Box and Whiskers plots help identifying abnormal values by graphically representing the median, the first and third quartiles, and the “whiskers”. The latter are the illustration of the Interquartile range (IQR) – which is the difference between Q3 and Q1 – times 1.5. That allows easily pointing out outliers. Table 2 compiles these figures for each group of municipalities, being the values the decrease or increment of STRs for each municipality in the given period. For example, in Group 1, any municipality which has gained – or lost – over 12 STRs within the period August 2020 to February 2022 may be considered as abnormal compared to the figures for the rest of the municipalities within Group 1

but which does not have STR regulations. Despite such seasonality, their final volume of STRs is lower than initially in the period. The most marked seasonal drops are registered in the Islas Baleares, Girona and Tarragona provinces. Also, it is noticeable how Monachil (Granada) and Pollença (Islas Baleares) are seasonal, but both increase their volume of STRs. Specifically, Pollença is a particular case as its mayor decided not to fine those STRs going beyond the law, contradicting the regional regulation (PIAT 2020). In total, 24 municipalities present seasonality, of which two are in Group 1 and 22 in Group 4, including increasing and decreasing municipalities.

On the other hand, there are municipalities whose figures on STRs are steadily downwards in the whole period. Their distribution across the groups is as follows: 10 municipalities in Group 1, four in Group 2, three in Group 3, and 12 in Group 4. In sum, 29 municipalities are constantly decreasing the number of houses rented to tourists. In general, such a phenomenon occurs in the municipalities of the provinces of Málaga, Barcelona and the whole region of Comunitat Valenciana. Starting from the Málaga province, not a single of its municipalities has implemented any specific regulation to prevent STR from spreading. However, the capital - eminently touristic and suffering from lack of houses to STRs - is playing a crucial role in the upcoming Andalusian regional regulation of STR. Some of these points are sound detectors inside the facilities, the obligation for rooms to have a window, shutters and at least 15m², air conditioning and some additional bureaucratic procedures (Junta de Andalucía 2022). Besides, the regional proposal for regulation plans to resemble the requisites of STR to tourist apartments, which are regulated services. Despite these requisites not being implemented yet, they might be already affecting the supply of STR as their figures are in steady decline.

In Barcelona, the touristification and tourist gentrification experienced forced the city council to halt tourist licences until the approval of the PEUAT in 2017. The PEUAT divides the city into four zones, three of which support a policy of

Table 3 Short-term rentals' evolution in absolute values

Province	Municipality	G	20-08	21-02	21-08	22-02	Province	Municipality	G	20-08	21-02	21-08	22-02
Andalucía							Cataluña						
Cádiz	Cádiz	4	1.517	1.328	1.474	1.294	Barcelona	Palafolls	1	39	22	30	26
	Comil de la Fra	4	2.007	1.865	2.018	1.743		S.Fost de Campsentelles	1	10	8	23	25
Granada	Huétor Vega	1	32	27	22	19		S.Joan Despí	1	26	22	14	11
	Nigüelas	1	5	6	5	26		Canet de Mar	3	144	119	116	94
	Trevélez	1	7	11	13	20		El Masnou	3	121	103	89	78
	Granada	4	2.463	2.082	2.145	2.175		Barcelona	4	17.280	14.728	12.930	11.918
Málaga	Monachil	4	495	664	528	623		Sitges	4	1.374	1.239	1.190	1.118
	Benalmádena	4	3.064	2.780	2.873	2.775	Girona	Torroella de Fluvià	1	27	19	22	14
	Estepona	4	2.561	2.424	2.395	2.336		Begur	4	1.095	1.032	1.010	786
	Málaga	4	5.899	4.932	5.054	5.029		Calonge i S.Antoni	4	883	755	863	650
	Marbella	4	6.266	5.871	5.787	5.387		Castelló d'Empúries	4	1.774	1.540	1.641	1.394
Sevilla	Mijas	4	3.516	3.210	3.059	2.999		Castell-Plafja d'Aro	4	1.205	1.018	1.209	933
	Nerja	4	2.132	2.089	2.000	1.849		L'Escala	4	1.404	1.060	1.337	1.097
	Torremolinos	4	2.048	1.844	1.905	1.783		Lloret de Mar	4	2.015	1.831	2.058	1.754
	Sevilla	4	5.540	4.712	4.634	4.713		Palafrugell	4	1.318	1.177	1.183	1.073
								Roses	4	2.585	2.154	2.510	2.048
Aragón							Torroella de Montgrí	4	1.181	881	1.101	921	
Huesca	Binéfar	1	38	38	24	23		Tossa de Mar	4	839	640	772	612
	Huesca	1	42	36	32	26		Salàs de Pallars	2	7	7	29	30
Comunitat Valenciana							Lleida						

Table 3 (continued)

Province	Municipality	G	20-08	21-02	21-08	22-02	Province	Municipality	G	20-08	21-02	21-08	22-02
Alicante	Benidoleig	1	39	35	34	22	Tarragona	Cambrils	4	1.484	1.191	1.336	1.155
	Catral	1	26	22	19	12		Mont-roig del Camp	4	1.321	1.087	1.125	979
	Los Montesinos	1	41	37	31	25		Salou	4	2.611	2.081	2.405	1.959
	Ondara	1	38	31	27	21	Extremadura						
	Alicante	4	3.815	3.451	3.301	3.060	Badajoz	Badajoz	2	58	54	40	30
	Calp	4	2.918	2.622	2.776	2.698	Galicia						
	Dénia	4	3.416	3.077	3.240	3.015	Pontevedra	Oia	1	42	41	36	29
	Jávea	4	2.826	2.740	2.773	2.606	Islas Baleares						
	Orihuela	4	2.593	2.434	2.344	2.263	I.Baleares	Eivissa	4	886	660	762	542
	Torrevieja	4	3.839	3.571	3.476	3.397		Palma	4	1.702	1.467	1.471	1.490
Castelló	Peníscola	4	1.377	1.072	1.423	1.160		Pollença	4	2.739	2.856	3.203	2.930
València	Barx	1	43	33	34	24		S.Josep de sa Talaia	4	1.706	1.579	1.607	1.420
	Mislata	2	56	44	42	30		S.Eulària des Riu	4	1.263	1.125	1.087	972
	Torrent	2	71	51	51	46	Islas Canarias						
	Tavernes de la Valldigna	3	115	97	98	72	I.Canarias	La Oliva	4	2.598	2.662	2.886	2.917
	Gandia	4	1.102	945	1.013	875		S.Bartolomé de Tirajana	4	3.003	3.166	3.127	3.194
	València	4	6.899	5.973	5.616	5.125		Yaiza	4	1.711	1.826	1.854	1.902
Castilla-La Mancha							Madrid						
Toledo	Seseña	1	31	15	17	18	Madrid	Torrelodones	1	32	30	29	13
								Coslada	2	60	55	51	32
								Madrid	4	16.894	15.203	14.686	12.691

Table 3 (continued)

Province	Municipality	G	20-08	21-02	21-08	22-02	Province	Municipality	G	20-08	21-02	21-08	22-02
							Murcia						
							Murcia	Jumilla	1	28	24	14	12
							País Vasco						
							Gipuzkoa	Getaria	1	42	32	30	22

Source: Authors

Caption: Column G stands for each group described in the Section 3, namely, Groups 1 to 4. Municipalities are alphabetically ordered for each province and Autonomous Community – i.e., Estepona is a Group 4 municipality, which is part of the province of Málaga and part of the Autonomous Community of Andalucía. In addition, the following columns represent the date in which data was collected: “20-08” being August 2020, “21-02” being February 2021, “21-08” being August 2021, and “22-02” being February 2022

decreasing or paralysing STRs, so the decrease in STRs is related to this policy of limiting or prohibiting activity (PEUAT 2022).

In addition, the three provinces of the Comunitat Valenciana region seem to be affected by the regional regulation passed on 22nd January 2021 (Decree 10/2021), which stated the prohibition of renting individual rooms as STR. Besides, the STRs that could still be offered must clearly display - online and onsite - the registration number. In fact, despite most of the municipalities in this region behaving similarly - when their behaviour is not attributable to seasonality - the largest drop happened between February and August 2021, within the same period of the passing of the new law.

Finally, the resulting 19 municipalities without a clear trend ought to be individually analysed. Stand out the ones whose geographical belonging to some of the previously mentioned provinces also seem to affect their behaviour. Consequently, the previous explanation might apply. That is the case for most of them, as shown in Table 3. However, some abnormal cases must be highlighted. First, Group 4 includes three municipalities in the Canary Islands which increased their volume of STRs during the given period. That is particularly striking as this region is characterised by hosting tourists mostly in hotels, but indeed might be the reason why the number of STRs in houses is increasing, as regional regulation (Decree 113/2015) is not as strict as in the rest of the Spanish tourist areas and municipal authorities have not still toughen their local rules.

Then, moving the scope from Group 4, it is interesting how three municipalities in Group 1 and one in Group 2 have no municipal legislation and have increased their number of STRs. This is the case for Nigüelas, Trevélez (both in Granada), Sant Fost de Campsentelles (Barcelona), and Salàs de Pallars (Lleida), respectively. The growth in the first two villages seems to be attributable to their appearance as “beautiful towns”, a tourist promotion brand (Los Pueblos más Bonitos de España n.d.) of Granada’s mountain villages. Similarly, Salàs de Pallars also appears repeatedly in tourism blogs and the press. Conversely, the growth in Sant Fost de Campsentelles remains unexplained from a tourist perspective, as it is a rural satellite area of a larger urban area: Martorell.

In this line, the figures in the remaining four municipalities in Group 1 - Seseña (Toledo), Binéfar (Huesca), Jumilla (Murcia) and Torrelodones (Madrid) also appear to remain unexplained from this approach since, despite having regulations in their upper territorial levels, they do not have them at the local level.

Lastly, the cases of Sevilla and Madrid are examples of regulatory success. Regarding the first one, a large drop happened in August 2020 (-828), eight months before the approval of the modification of the city’s urban plan incorporating the STRs legislation (PGOU Sevilla 2022). Then, in February 2022, a second drop took place (-906), just before the final passing of the regulation in April 2022. The most relevant point of this regulation stated that STRs needed to fulfil identical requirements established in the Land-Use Planning for the rest of the STR facilities. The turning point was regarding the environmental ones, which could not be implemented given the characteristics of the buildings where the accommodations were. Thus, despite the regulation not having a retroactive effect, the drops in time with the restrictive norms seem to be clearly related.

Similarly - despite being more restrictive- Madrid applied measures also through their Land-Use Planning (PGOU Madrid 2022). It was repeatedly advised through the media, but it was in February 2022 when the drop was sharper since it was applied in the second half of 2022. In sum, this regulation only allowed STRs on the ground floor or the first floor, only if there were no houses on the ground floor. This simple measure prevents many of these accommodations from operating.

5 Discussion

So far, the casuistry regarding the regulation of the STRs has been proven to be large enough to merit being studied. Table 1 summed the primary regional laws but, as stated, the particularities of certain destinations involved the necessity of local regulations at the municipality level (Comendador-Sánchez et al. 2021), which contributes to the scattering of the regulatory norms (Dolnicar 2019; Frías 2020). This phenomenon also results in different patterns regarding the volume of STRs, as shown in Table 3. However, all changes were not attributable to regulatory issues, but seasonality was also identified in 24 municipalities - 2 in Group 1 and 22 in Group 4.

Thus, apart from those territories in which changes were not registered or could be considered minor ones, excluding the seasonal ups and downs, 48 municipalities reported abnormal trends. The main interest of this paper lies in identifying whether or not these changes occurred due to the introduction of certain regulations, given the need for controlling the STR problem reintroduced after the COVID-19 pandemic. Plus, the stakeholders have been litigating during the last lustrum regarding the required equilibrium between economic benefit and protection of the locals (Hajibaba and Dolnicar 2017), at the same time that illegal offer is prevented (Prayag and Ozanne 2018; Nieuwland and Van Melik 2020; Marques-Pereira 2022), and many of the trials are expected to be sentenced in the short term, as it has been the case of the sentence STS 238/2023.

Turning to the results obtained and summarised in Table 3, 29 municipalities from across different groups but grouped into three larger territories - Málaga, Barcelona and Comunitat Valenciana - were reported as presenting downward trends. Despite none of them prohibiting the establishment of new STRs, Barcelona halted the licences until passing a new Land-Use Planning in 2017, which zoned the city into four areas, of which three of them kept such a halt. This measure could be considered as a constraining one (Nieuwland and Van Melik 2020; Ndaguba et al. 2022; Clancy 2022), which turns out to be a halfway measure between *laissez-faire* and prohibiting. Similarly, the Comunitat Valenciana region limited the offer by banning renting individual rooms - much lighter than Madrid one's - and Málaga opted for very demanding requirements - not approved yet, as stated in the previous section. According to the results retrieved from the preceding analysis, the identified downward trends might be a symptom of the effectiveness of the constraining policies.

Similarly, the municipalities of Sevilla and Madrid also applied to limit regulations but approached them differently. On the one hand, Sevilla opted for assimilating the requirements for STRs and the rest of the hospitality offer while, on the other hand, Madrid vetoed STRs from being established on floors different from the

ground floor or the first one in certain circumstances. In both cases, it was needed to do modification of Land-Use Planning, which takes a considerable amount of time to be performed but allows the local authorities to regulate this type of activity in accordance with the law.

In this sense, the recent sentence of the Spanish Supreme Court ([STS 238/2023](#)) previously introduced means a turning point for the constraining policies. The mentioned sentence, which generates jurisprudence, indicates that in cases of general interest, the STRs could not be established in multi-family housing if determined so by the competent authorities. That implies, by far, the most advanced limiting measure in Spain - nowadays only in Islas Baleares, where the dispute took place - regarding STRs and maybe the lead for unified stricter regulations across the country, given the legal support of it. In fact, this sentence takes further the extant regulation in Madrid and Barcelona and may help in shaping the future - in the process - regulation in the region of Andalucía.

All in all, not every abnormal case identified in [Table 3](#) lies under the constraining regulations. Indeed, the laissez-faire measure ([Nieuwland and Van Melik 2020](#); [Ndaguba et al. 2022](#); [Clancy 2022](#)) can be identified in four municipalities in the Canary Islands, where the regulation is still scarce and lax, and the case of the municipality of Pollença, whose mayor decided not to fine those STRs going beyond the law, contradicting the regional regulation, which may have contributed to the rise of STRs. At the same time, other municipalities are involuntarily facing the same STRs spreading because of sudden tourism success, as is the case for Nigüelas and Trevélez (both in Granada), Sant Fost de Campsentelles (Barcelona), and Salàs de Pallars (Lleida), respectively. Lastly, some other municipalities simply present abnormal values but remain unexplained from a tourism point of view or regulation issues. These territories are Sant Fost de Campsentelles (Barcelona), Seseña (Toledo), Binéfar (Huesca), Jumilla (Murcia), and Torreldones (Madrid). Regarding this last set of municipalities, further analyses could be performed in the future but nowadays, from a regulatory point of view, they remain out of scope.

This article provides value at the international level, as Spain has been one of the pioneer countries in regulating short-term rentals, so the Spanish experience could serve as a model for other countries seeking to implement similar regulations. The challenges and obstacles faced by Spain in regulating short-term rentals could serve as a lesson for other countries and help to avoid common mistakes. In addition, these findings could be compared with the situation in other countries, allowing us to identify similarities and differences between regulations and their outcomes. That could help to identify best practices and strategies to achieve a balance between supply and demand for tourist accommodation, as well as to minimise the negative impact on housing in the long term. Regulations and policies vary from country to country due to cultural, economic and political differences. This article provides a unique and detailed overview of the situation in a particular country, which may help readers to understand better the specific problems faced by individual countries and possible solutions to address them.

6 Conclusions

This article embraces the importance of the impact of STRs on destinations and the need to regulate this activity. In this context, STRs in Spain are analysed from a quantitative approach while qualitatively examining the corresponding regulation at the municipal and regional level to understand their evolution in these destinations.

The results of the study allow classifying the analysed municipalities within the three types of regulations present in the literature: *laissez-faire*, limitation and prohibition. Some of these territories implement some of the mentioned measures to limit or control the activity. However, there are currently municipalities that do not have any of these regulations. The trend and the problems linked to tourism activity lead us to believe that more and more municipalities will opt to regulate the activity, seeking a balance and reducing the social impact of tourism. The lack of regulation may be related to municipalities whose tourism success has occurred all of a sudden, leading to the appearance of the studied problem and then trying to mitigate it through legislation, which is a lengthy process. This pattern is usual in Spain, which undermines the activity of the tourism industry. The approval of [STS 238/2023](#) has been highlighted as a coup for this type of rental, as other cities are likely to join this type of prohibitive regulation.

However, not all detected variations in the supply of STRs can be attributed to the development of specific regulations. Therefore, it may be suggested as future research to analyse the case studies which present an abnormality and whose STRs evolution is not related to a specific policy. Furthermore, this study highlights the need for policymakers to design regulations on STRs, not only for tax collection purposes or to ensure safety, but also to plan and manage the activity in order to curb the impact of STRs on residents' living costs, the increase in prices of long-term housing and tourist gentrification. On the other hand, the complex regulatory structure of tourism activity in Spain means that this study is limited by the impossibility of comparing the data with other tourist destinations worldwide.

7 Theoretical implications

This article presents as theoretical implications the identification of different patterns of STRs evolution across Spanish municipalities, which can be used as a reference for future studies on STRs in other countries. Moreover, the article contributes to developing a theoretical framework for the analysis of STRs' impact on urban and regional development, taking into account the interplay between regulations, supply, and demand.

On the one hand, it advances knowledge in the fields of tourism and hospitality economics as it explores the dynamics of the short-term rental market and how regulations affect the supply of accommodation. On the other hand, it contributes to the fields of law and public policy as it evaluates the effectiveness and implications of different regulations implemented at different administrative scales in Spain.

8 Practical implications

Practical implications of the article include identifying successful policies and measures implemented by some municipalities to tackle the negative effects of STRs. For example, the success of Barcelona's PEUAT and the impact of legislation in Valencia demonstrate the effectiveness of limiting tourist licenses and requiring specific use certifications. On the other hand, the laissez-faire approach observed in Pollença and other municipalities without specific local regulations has led to an uncontrolled increase in STRs, exacerbating social and housing problems. Similarly, the article identifies the impact of the Andalusian regional regulation on STRs, which has led to a decline in STRs figures in the region. Municipalities can use these successful policies as a reference to design and implement their regulations to control the impact of STRs in their territories. Additionally, the article can be useful for tourism policymakers and practitioners to understand the impact of STRs on tourism and the economy and design policies accordingly.

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Declarations

Ethics approval Not applicable.

Consent Not applicable.

Conflict of interest The authors declare that they have no conflict of interest.

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