Collaborative Economy: estimation methods for the accommodation sector. Results from the demand approach

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Abstract

The Collaborative Economy refers to business models where activities are facilitated by online/digital platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals.

Due to this new form of commercialization, some sectors such as tourism and especially accommodation, have experienced a strong development that is not easy to measure or regulate. In particular, short-term rentals of private rooms, apartments or homes represent nowadays a higher proportion of the accommodation services, not always included in the registers or in the current surveys.

Traditionally from the point of view of estimation methods, there are different approaches to measure an economic phenomenon: supply approach, demand approach and income approach. Different theoretical scenarios from a supply perspective are considered (improved registers, platform data) to address this lack of information. A new approach, and one that can provide very relevant information, seems now to be feasible based on the recent regulation by the Spanish fiscal authority of the accommodation services provided through digital platforms.

This paper also explores the demand approach, analysing the information collected in Spain through the surveys on domestic, outbound and inbound tourism. These surveys include a question about the different ways of carrying out the reservation or contracting of accommodation services, being one option the use of dedicated websites, such as Airbnb, Booking, etc.

The advantages and disadvantages of the different estimation methods will be exposed, as well as certain indicators that can be obtained in each one of them in order to quantify the accommodation sector in the collaborative economy.

Keywords: collaborative economy, digital platform, peer to peer private accommodation, specialized websites (Airbnb, Booking, etc.), traditional registers, tax registers, main limitations, estimation methods, indicators.

1. Introduction

The Collaborative Economy refers to business models where activities are facilitated by online/digital platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals[1].

Due to this new form of commercialization, some sectors such as tourism and especially accommodation, have experienced a strong development that is not easy to measure or regulate. In particular, short-term rentals of private rooms, apartments or homes, with a long tradition in the tourism accommodation sector, represent nowadays a higher proportion of the accommodation services, not always included in the registers or in the current surveys.

Policy makers, tourism authorities, local administrations and private actors have an urgent need of information about this phenomenon. However, obtaining official figures about it is a big challenge due to the characteristics of the phenomenon itself: on one hand, its dynamism and rapid evolution make it difficult for traditional statistical frameworks to delineate the scope; on the other hand, access to the service providers (a mix of national and international small and medium enterprises operating in the accommodation sector, IT intermediaries an private individuals) to collect the required information also poses a challenge to traditional surveys.

Nevertheless, legal initiatives are being developed at different levels of the administration to complete or build new accommodation registers, opening new opportunities to approach this phenomenon with a sound methodological base. Traditionally from the point of view of estimation methods, there are different approaches to measure an economic phenomenon: supply approach, demand approach and income approach. Different theoretical scenarios from a supply perspective are considered (improved registers, platform data) to address this lack of information. A new approach, and one that can provide very relevant information, seems now to be feasible based on the recent regulation by the Spanish fiscal authority of the accommodation services provided through digital platforms.

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2. Supply approach: obtaining data from service providers and/or intermediaries

Accommodation statistics have a long tradition providing data about the accommodation sector in Spain. Selected establishments (accommodation suppliers) included in the registers of the tourism regional authorities, the ones competent in this

[1] European Commission (2016), A European agenda for the collaborative economy, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions.

area, are asked every month to provide information on their capacity in terms of rooms, apartments or bed places. They also inform about their demand during the period: number of guests, nights spent and place of origin. Prices are also collected.

The development of digital platforms acting as intermediaries in the supply of accommodation services has brought into the scene a considerable share of private individuals acting as suppliers. The fundamental problem is that a large part of these units that provide these services are not available in directories or statistical frameworks.

Therefore, an interesting approach is through the means of commercialization, that is, the so-called collaborative platforms. Strictly speaking, these companies do not correspond to the units supplying the service, but rather to the channels through which it is advertised and booked. Each platform can provide information on the suppliers operating through its system, on the accommodation offered by each supplier and on the bookings effectively made on their site.

The main methodological problems (not an exhaustive list) that will have to be faced are the following:

- Duplicity of units in different platforms: when consolidating data provided by each platform, it should be taken into account that the same supplier can advertise his accommodation offer in several websites. A deduplication work should be made, usually not having a unique identification of the unit (supplier) nor the advertised accommodation.

- Overlapping between official registers and information provided by platforms: a similar work of that needed among the different platforms should be made between them and official registers.

- Suppliers operating outside the platforms environment: results from the demand side (see section 4) show that there is still an important share of bookings made directly with the service provider, mainly by local population. Ad-hoc studies could help to have an estimation of this hidden part of the market.

- Defining/building the statistical unit and problems when determining the type of accommodation: capacity is usually measure in terms of establishments and bed places. Listings of platforms sites refer to ads, which can be complete dwellings, but also rooms of a same dwelling or even small hotels offering each available room in a different add.

Additionally, difficulties in the access to this information are also found: access to third-parties private data is still experimental and mainly pilot experiences can be found in several countries, without a continuity into systematic production. Besides, platforms are, in some cases, non-residents in the country of reference, making access to their data even more difficult.

By the time of writing this paper, INE has just started a pilot study to try to estimate the volume of private accommodation services offered in Spain through these platforms. This pilot is made jointly by INE and a data intelligence company specialised in this industry. The project consists of obtaining information of the main platforms and applying a deduplication algorithm which allows to integrate the information of the different platforms at aggregated level but with important geographical detail. Occupancy data provided by several platforms will also be explored, although new methodological challenges arise for this exercise (selectivity bias, sample sizes…).

3. Income approach: exploiting data from the fiscal authority

The income approach aims to obtain information about short-term rentals through the declarations reported to the fiscal authority.

In this sense, a very important advance has been the approval by the Spanish Tax Agency of the Royal Decree 1070/2017, of December 29, regulating the obligation to report on the cession of use of homes for tourism purposes.

The new obligation of information, as set forth in the Statement of Motives of the aforementioned Royal Decree 1070/2017, is established for the purpose of preventing tax fraud for individuals or entities, in particular, the so-called collaborative platforms, which mediate in the cession of use of homes for tourism purposes.

For this purpose, the model 179 *Informative quarterly declaration of the rental of dwellings for tourism purposes* is approved, together with the corresponding templates through which the information to be supplied is standardized. The new model 179 must be presented by the persons and entities that provide the intermediation service, whether for a price or free of charge. In particular, such persons or entities that are constituted as collaborative platforms intermediate in the assignment of use and have the consideration of service provider of the information society, regardless of whether or not they provide the underlying service object of intermediation or of the imposition of conditions with respect to the assignors or assignees of the service in relation to it, such as price, insurance, terms or other contractual conditions.

The information which should be declared for each transaction is:

a) Identification of the owner of the dwelling
b) Identification of the dwelling (complete address) with specification of the cadastral reference in case it is assigned
c) Number of days the dwelling has been rented and date of arrival
d) Amount of money received by the owner of the dwelling
e) Number of contract under which the under which the intermediate declarant in the assignment of use of housing (optional)
f) f) Date of intermediation in the operation (optional)
g) g) Identification of the means of payment used: transfer, credit or debit card or other means of payment (optional)

INE has signed a collaboration agreement with the Tax Agency through which it is possible to access the information in an aggregate form. As this new tax obligation for the collaborative platforms has come into force as of January 1, 2018 is still premature to be able to analyse the quality of the data.

4. Demand approach: asking about platform booking in tourism demand surveys

Tourism demand surveys are those measuring the trips made by a specific population from the visitor perspective. In Spain, FRONTUR-EGATUR is a survey conducted at the borders (roads border-crossings, airports, railways and ports) to measure the flows of inbound tourists visiting Spain and their main characteristics. The Residents Travel Survey (RTS) aims to quantify and describe the trips made by residents in Spain to a destination within the country (domestic tourism) or abroad (outbound tourism). Both surveys include specific questions about the booking of the trip, making it possible to analyse the use of digital platforms when renting a holiday home or a room in a private dwelling.

The question on the digital platforms was first introduced in 2015 in the RTS questionnaire, so results for the last three years are now available for domestic and outbound trips. A similar question has been included in 2018 in the questionnaire to non-resident tourists visiting Spain. First results will be available in 2019. Therefore, what follows is only about domestic and outbound tourism. A description of the question is made in the next paragraphs. Results are analysed once the context is settled.

The RTS is a household survey with an effective sample size of 8,000 people aged 15 or more per month. Each respondent is asked about the trips made in the two previous months, so estimates of trips for a month of reference are based on 16,000 questionnaires approximately. In a whole year, samples of more than 70,000 trips are achieved.

Once a trip is declared during the interview, its main characteristics are investigated: destination, duration, main purpose, main means of transport, etc. For accommodation, different categories are considered, including those provided either on a commercial basis as a paid service (rented accommodation) or on a non-commercial basis (non-rented accommodation) such as accommodation provided without charge by friends or relatives or on own account (see Figure 1).

In line with the international recommendations, when tourists used more than one accommodation during the trip, the main accommodation is considered to be the one in which more nights were spent. Expenditure and the one used in the main destination are also used as criteria to determine the main means in case the duration is not enough.

Figure 1. Booking of the trip using digital platforms: extracted from RTS questionnaire

- Q1. What was the main type of accommodation used during the trip?

  Rented accommodation

  - 1. Hotels or 2. Similar establishments
  - **3. Rented dwelling** or **4. Rented room in private home**
  - 5. Rural tourism accommodation or 6. Hostels
  - 7. Camping or 8. Cruise
  - 9. Other rented accommodation

  Non-rented accommodation (Q2 not applicable for options 10, 11, 12, 14)

  - 10. Own holiday home
  - 11. Accommodation provided free of charge by friends or relatives
  - 12. Timeshares
  - **13. Home swapping**
  - 14. Other non-rented accommodation

- Q2. How did you book the main accommodation?

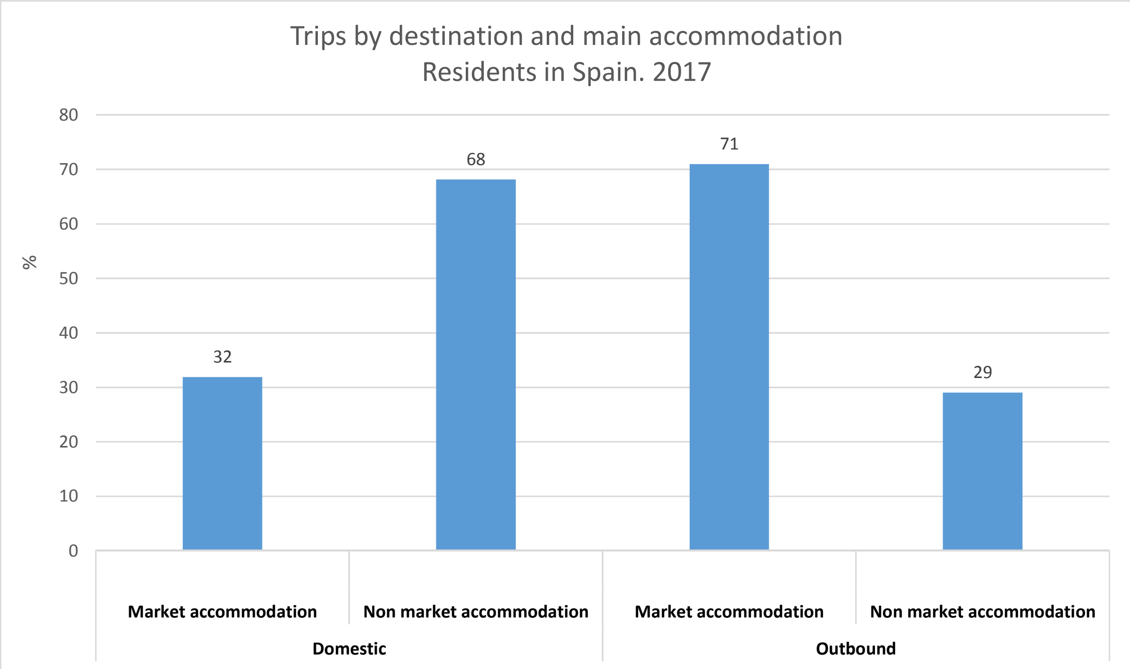
  - Directly with the service provider through its web or App
  - Directly with the service provider in person, by mail or by phone
  - In a travel agency or tour operator (or real estate if 3 or 4) through its web or App
  - In a travel agency or tour operator (or real estate if 3 or 4), in person, by mail or by phone
  - **Through a specialized web page (e.g. AirBnb, Homeaway, Booking, Homelidays, Niumba, Rentalia, Housetrip, Wimdu, Interhome, Friendly Rentals, etc.) – only if accommodation=3, 4 or 13**
  - Don’t know

A block of questions about the booking of accommodation, transport and package tours (if any) comes after the collection of the main qualitative and quantitative (expenditure) characteristics of the trip. The way in which the reservation is made presents four main options as a result of the combination of the agent involved (the service provider vs. intermediaries) and the channel used (on/off-line). Also, as it is shown in figure 1, for the accommodation categories in bold, comprising rented or swapped holiday homes or rooms, a response category includes booking through dedicated websites or digital platforms such as Airbnb, Booking and some other similar examples.

Main results are discussed in the next paragraphs and some conceptual and practical considerations about them are included in section 5. Although the RTS is conducted monthly and delivers monthly and quarterly estimates, analysis of the questions on the booking of the trip are made on yearly basis to ensure consistency of results.

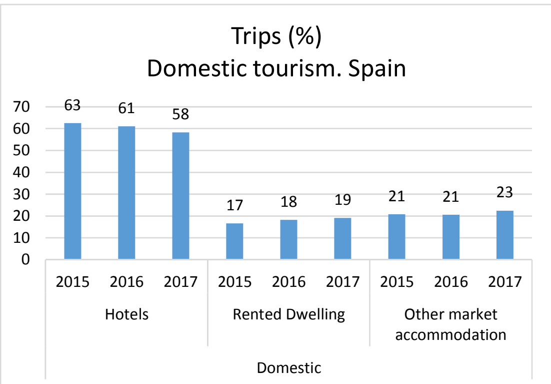
In 2017, 185 million trips were made by residents in Spain. Of those, 91% had a main destination within the country. Outbound trips accounted only for 9% of the total. Opposed patterns are found in the type of accommodation chosen for domestic and outbound trips: residents chose to stay at a rented accommodation establishment in the 32% of their domestic trips and in 71% of their trips abroad (figure 2).

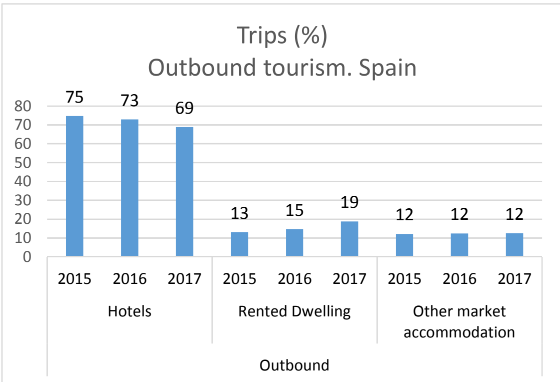
Figure 2. Percentage of trips by rented/non-rented accommodation, by destination



Although both in domestic and outbound trips hotels still represent the highest share of rented accommodation, a significant increase of the share of rented dwellings is observed since 2015 (figure 3). The analysis of the question on how the booking was made shows that this increase of the rented dwellings is related to the increase of the use of digital platforms.

Figure 3. Percentage of trips to rented accommodation by type and destination (2017)





Results show that the role of digital platforms in vacation homes booking is different whether the destination is within the country or abroad. In both cases platforms are the preferred channel to book a rented holiday home (figure 4). When travelling within the country, residents in Spain chose to book their holiday home through a digital platform in the 37% of the cases in 2017. But booking directly with the service provider offline was still an important choice (33% of the trips to rented holiday homes). On the other hand, when traveling abroad, platforms represented up to 68% of the trips using this kind of accommodation.

Figure 4. Percentage of trips to rented holiday homes by booking channel and destination (2017)

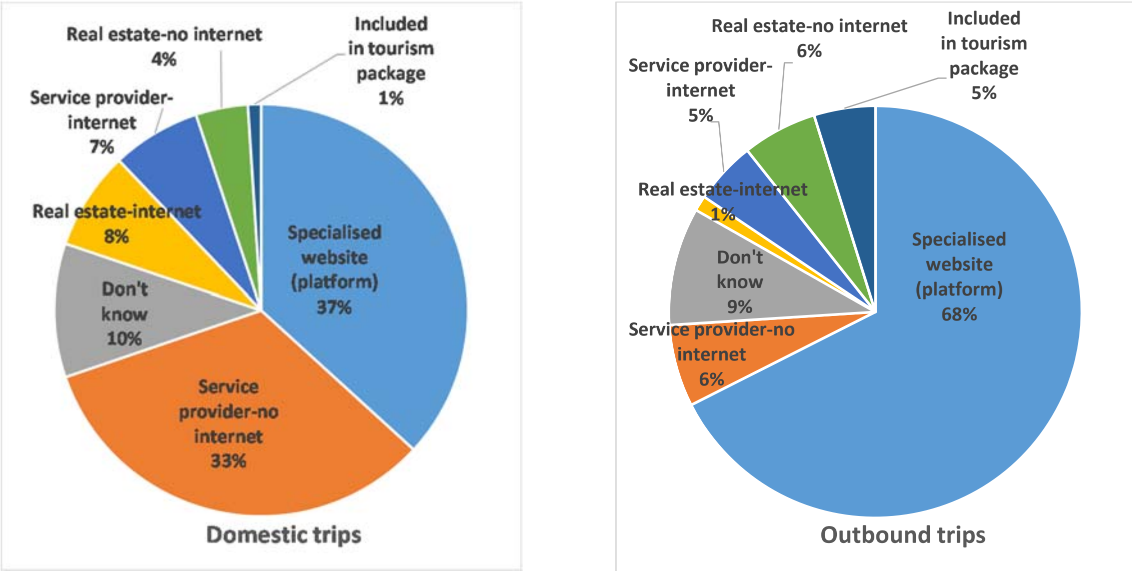
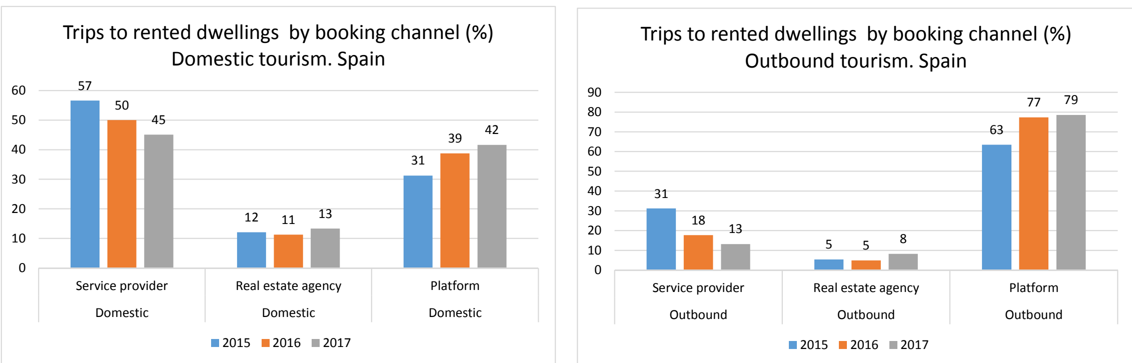


Figure 5 shows there has been a high increase in the use of digital platforms during the years under analysis2. In the same time, the share of reservations made directly with the service provider presents a deep decrease. Effects on the use of real estate agencies are more uncertain due to their smaller volume, which is affected by higher variability, although they also shows an increase of their share. A deeper analysis shows that this increase is mostly due to online reservations in real estate agency. Some research should be made to verify the correct classification of these trips. In absolute terms, the variation rate of the three channels in 2017 compared to 2015 is positive, with a 5% increase for bookings directly with the service provider and a steep increase for reservations through digital platforms, which almost doubled (92%).

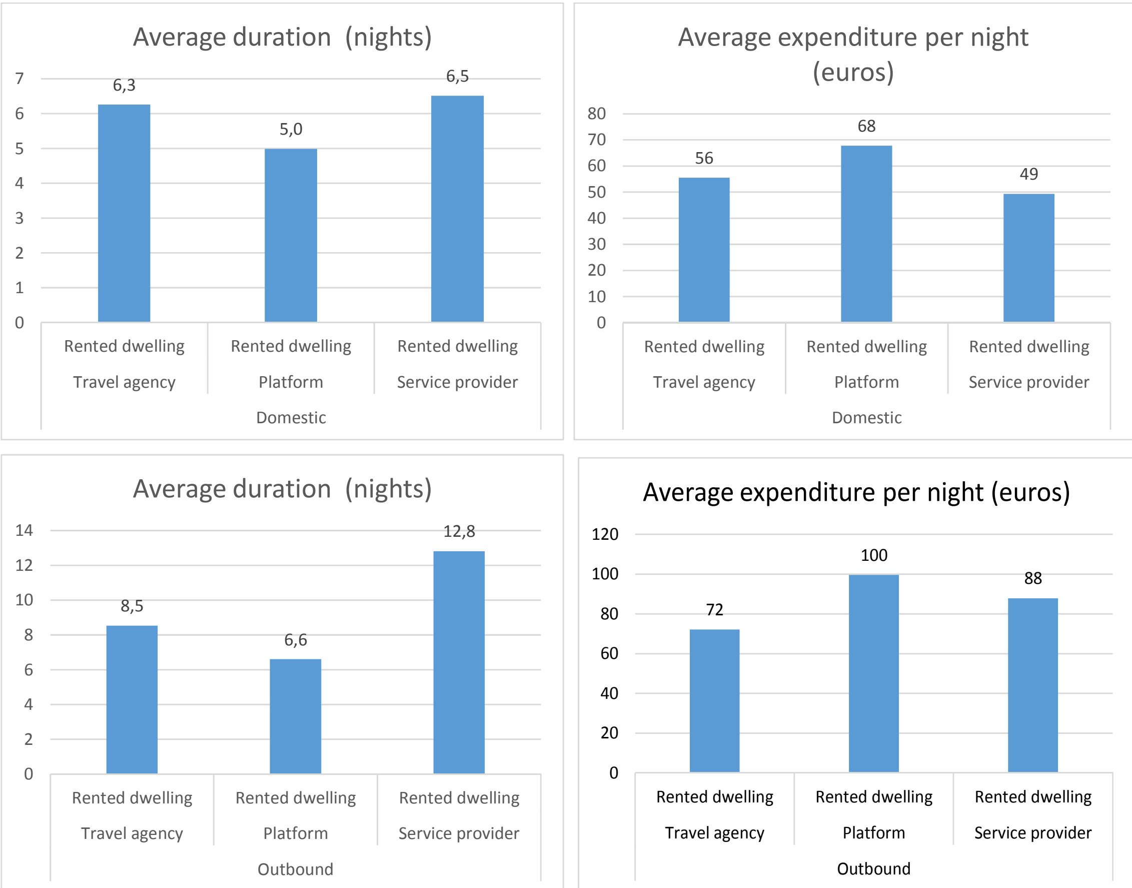
Figure 5. Percentage of trips to rented holiday homes by booking channel per year, by destination



[2] *Don't know* answers have are not taken into account in this figures. Equivalently, it is assumed that *Don't know* answers are distributed among the other three options keeping the share of the respondents.

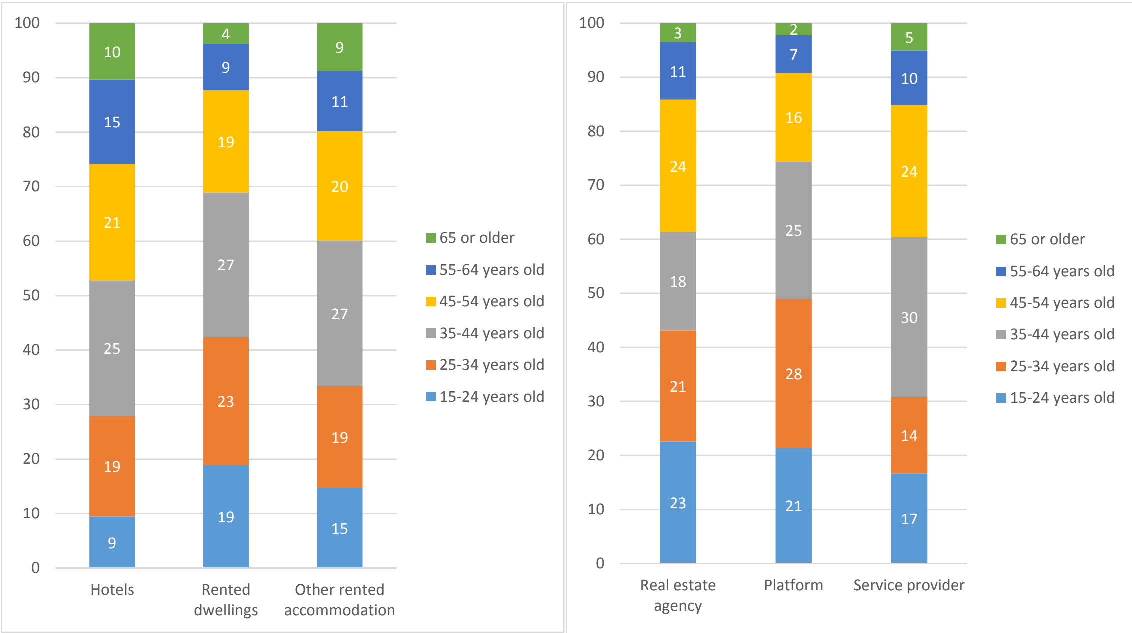
This overview can be complemented with quantitative aspects of the trip such as duration and expenditure (figure 6). Those trips booked through a digital platform are, on average, shorter than other trips to holiday homes and average expenditure per night associated is higher. Considering all domestic trips made by residents in Spain in 2017, using any type of accommodation, those to rented holiday homes booked through platforms represented 2% of the trips, 2.6% of the nights spent and 4.0% of total expenditure. In the case of outbound trips, rented holiday homes booked through platforms represented 9.3% of the trips, 7.5% of the nights spent and 7.4% of total expenditure.

Figure 6. Average duration and average expenditure per night of trips to rented holiday homes by booking channel and destination (2017)



RTS can also give some insights on the profile of the tourists using digital platforms to book accommodation. As an example, figure 7 shows the distribution of trips by age of the tourist for each type of accommodation and booking channel. As expected, platform bookings are mainly made by tourists under 45 years old, up to 74% while this population represents around 60% of the bookings through other channels.

Figure 7. Percentage of trips by age of the tourist, by type of accommodation and destination (left). Percentage of trips to rented holiday homes by age of the tourist and booking channel (right). 2017



5. Conclusions

The collaborative economy is a phenomenon strongly related to tourism, in particular to the accommodation sector. Digital platforms have triggered a high increase of short-term rentals of private holiday homes. The dynamism of this industry and its very fast development poses big challenges to traditional statistical frameworks to be able to measure it.

Different but complementary approaches can be developed to approach the volume and evolution of this phenomenon. When tourism demand surveys are available, introducing a question about the use of digital platforms to book accommodation can give interesting insights with the relatively small cost of a slight increase of the respondents burden and, of course, the adaptation of questionnaires, processes and guidelines. Issues on the understanding of the question, listing the websites under the digital platform denomination and delineating the type of accommodation in the scope should be carefully resolved in advance.

From a supply side perspective, a step-by-step approach should be followed. Intermediaries seem to be a valuable source of information, although difficult to obtain in a continuous and sustainable way. On the other hand, regulatory frameworks (accommodation registers, taxes) are being developed. Integrating all this sources of information can provide, in future, a good picture of this 'new' situation.