Measuring Collaborative Economy: a case study in tourism statistics

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Measuring Collaborative Economy: a case study in tourism statistics

During the recent years Collaborative Economy has gained a lot of publicity among businesses cycles, government and citizens. This relatively new phenomenon, which is highly interrelated with Digital economy, creates many challenges for businesses, labour market and consumers. This calls for the development of new indicators for a wide spectrum of policies in many areas, such as economy, transport, labour market, consumer protection and environment.
Measuring Collaborative Economy

Need to frame the collaborative economy from the statistical point of view especially in the accommodation sector

WHY?

Provide evidence for analysis
Compilation of statistical indicators for
Evidence-informed policy making and citizens
Defining the concept of Collaborative Economy

Difficult to provide a single definition due to the variety and diversity of collaborative business models.

There are not many countries that have provided a national definition for collaborative economy.
Need to define the concept of Collaborative Economy

**EU Definition**

- Commission Communication · *A European agenda for the collaborative economy* (2016)

**National definition**

- The national definition - in line with the one adopted by the European Commission Communication - is defined in the tax law 4446/2016, art. 113 which regulates the short-term lease of properties.
- “Collaborative economy” refers to business models where digital platforms create an open market place for the temporary usage of goods or services often provided by private individuals”.
- The concepts of “short-term lease”, “manager of the property” (who is the peer provider) and “digital platform” are also defined.
Exploring available data sources

In the context of the production of tourist accommodation statistics, the possibility of using various sources was explored.
Challenges for using the administrative data

- Full coverage
- New statistical indicators
- Less burden to respondents
- Lower production cost for statistics

- Data are collected for non statistical purposes
- The control of data collection and processing is out of the NSI
- Changes in the regulatory framework
- Restriction to access due to confidentiality
Milestones for the implementation of a regulatory framework for collaborative economy in short-term lease properties

- **Dec 2016**: Adoption of the National law “Arrangements for short-term lease property in the context of collaborative economy (4446/2016 Art.111)
- **May 2017**: Adoption of the law no 4472/2017 Art. 84 amending the above
- **June 2017-July 2018**: Development of the IT system, drafting of the implementing acts and the manuals communication to the public
- **Aug 30, 2018**: Tax Authorities release the web application system for short term lease properties declarations
- **Aug 30 - Nov 30, 2018**: Registration and submission of the leases declaration for the period January – October 2018
- **Dec 2018**: From December 2018 and onwards the web application system will be in a regular operational environment
Regulatory Framework for collaborative economy in short-term lease properties

Obligations

- Any natural or legal person who post a property for lease on the digital platforms of the collaborative economy has to register each property in the Short-Term Properties Register of tax authorities (Independent Authority for Public Revenue - IAPR).

- A “Short Term Lease” declaration has to be submitted to tax authority system for every short-term lease contract that is performed via the digital platforms within 20 days after the end of the month following the realization of the lease transaction.

In case of non compliance with the obligations penalties are applied.
Regulatory Framework for collaborative economy in short-term lease properties

Limitations

There are not other restrictions in the existing legal framework.

- Defines the limits between business activity and the exploitation of property by natural or legal persons.
- The property may be leased furnished but without any other services except from the provision of bed line.
Analysis of the structure and content of the tax data on collaborative economy

Identification of the variables that could be derived from the tax data

Tax Register of Short-Term Lease Property

- Property Registration Number
- Tax ID number of the property manager/administrator
- Status of the manager (owner, co-owner, lessee, etc)
- Rental type (entire or partial leasing)
- Rental size (in square meters)
- Location of the property (region, municipality, post address, etc.)
Analysis of the structure and content of the tax data on collaborative economy

Identification of the variables that could be derived from the tax data (cont.)

Database of the short-term property lease

- Property Registration Number
- Arrival date
- Departure date
- Total agreed rental
- Mode of payment

- Digital platform performed the intermediation transaction
- Tax ID for resident lessees
- Passport nr (for third countries)
- ID card (for EU countries)
A comparative analysis between the statistical characteristics and the tax data characteristics resulted that:

- **Reference population**
  - The reference population is common: tax data cover the short-term property leases through digital platforms, excluding booking with regard to licensed tourist accommodation.

- **Characteristics**
  - The characteristics are: in some cases completely identical, in other cases partially identical while for some other characteristics there is no available information.
Analysis of the structure and content of the tax data on collaborative economy

The statistical variables for tourist accommodation on private lodgings that could be derived from the tax data

Tax Register of Short-Term Lease Property

Accommodation capacity statistics at national and regional level

- Number of private properties
- Size of the private properties in terms of sqm

Missing

Number of bedrooms & bed places
Analysis of the structure and content of the tax data on collaborative economy

The statistical variables for tourist accommodation on private lodgings that could be derived from the tax data

Database of the short-term property lease → Accommodation occupancy statistics at national and regional level

- Number of leases
- Number of days of lease
- Income generated

All information is available broken down by digital platform
Assessment of tax data along with official statistics

Importance

Relevance

Plausibility

To showcase the perspective to measure tourist accommodation from the supply side
### Short-term lease properties by rental type and by status of the manager
(provisional data – reference date 9/11/2018)

| Total number of registered properties | 27,912 |
| Rental type                          |       |
| Entire home                          | 20,201 |
| Partial leasing                      | 7,711  |
| Status of the manager                |       |
| Owner or co-owner of the property    | 21,483 |
| Other, such as lessee, etc           | 6,429  |

Source: Tax authorities (IAPR)

### Average days of lease and average rent per day of lease by resident and non-resident tourists in short-term lease properties, 2018 (provisional data)

<table>
<thead>
<tr>
<th></th>
<th>Average days per lease</th>
<th>Average rent per day of lease (Euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total leases</td>
<td>6.0</td>
<td>61.5</td>
</tr>
<tr>
<td>Leases by residents</td>
<td>9.2</td>
<td>35.8</td>
</tr>
<tr>
<td>Leases by non residents</td>
<td>5.5</td>
<td>69.1</td>
</tr>
</tbody>
</table>
Experimental statistics

Leases, Days of lease and Rent paid by residents and non-residents (%), 2018 (provisional data)

Leases
- Residents: 15.0%
- Non residents: 85.0%

Days of lease
- Residents: 77.2%
- Non residents: 22.8%

Rent
- Residents: 86.7%
- Non residents: 13.3%

Source: Tax authorities (IAPR)
Experimental statistics

Leases and days of lease by digital platform (%), 2018
(provisional data)

[Bar chart showing leases and days of lease by digital platform (%), 2018]

Source: Tax authorities (IAPR)
# Experimental statistics

<table>
<thead>
<tr>
<th></th>
<th>Hotels and similar establishments</th>
<th>Short-stay accommodation establishments*</th>
<th>Tourist campsites</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All guests</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrivals</td>
<td>20,936,316</td>
<td>4,831,783</td>
<td>367,819</td>
<td>26,135,918</td>
</tr>
<tr>
<td>Nights spent</td>
<td>87,628,373</td>
<td>21,968,111</td>
<td>1,674,998</td>
<td>111,271,482</td>
</tr>
<tr>
<td>Average nights spent per guest</td>
<td>4.2</td>
<td>4.5</td>
<td>4.6</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Residents</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrivals</td>
<td>6,105,805</td>
<td>1,967,906</td>
<td>133,184</td>
<td>8,206,895</td>
</tr>
<tr>
<td>Nights spent</td>
<td>14,154,141</td>
<td>7,028,557</td>
<td>804,398</td>
<td>21,987,096</td>
</tr>
<tr>
<td>Average nights spent per guest</td>
<td>2.3</td>
<td>3.6</td>
<td>6.0</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Non residents</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrivals</td>
<td>14,830,511</td>
<td>2,863,877</td>
<td>234,635</td>
<td>17,929,023</td>
</tr>
<tr>
<td>Nights spent</td>
<td>73,474,232</td>
<td>14,939,554</td>
<td>870,600</td>
<td>89,284,386</td>
</tr>
<tr>
<td>Average nights spent per guest</td>
<td>5.0</td>
<td>5.2</td>
<td>3.7</td>
<td>5.0</td>
</tr>
</tbody>
</table>

*Estimation
Source: ELSTAT
Experimental statistics

Registered properties by regional unit, 2018 (provisional data)

Source: Tax authorities (IAPR)

Hotels and short-stay accommodation establishments by regional unit, 2017

Source: ELSTAT
Existing surveys

ELSTAT is already using existing surveys to collect information on collaborative accommodation from the demand side

- **ICT usage survey**
  - *collaborative economy indicators*

- **Tourism Demand Survey**
  - *Measurement of* the use of private accommodation booked via digital platforms as a main means of accommodation of the tourism trips made by residents *sin ref. year 2017*
Future challenges

- considers that tax data provide a good base for measuring the collaborative tourist accommodation
- will continue the work to arrange the formalities with the tax authorities
- will further its work towards integrating variables of statistical interest from tax and other administrative data sources
- explores the possibility to collect data on digital accommodation platforms with the use of web-scraping techniques
CONCLUSIONS

The challenge for statisticians is to develop a strategy to adapt the existing statistical domains to new circumstances resulting from the complex phenomenon of digital collaborative economy; this can be achieved by transforming the traditional data production cycle, which is usually based on single-source information, into multiple new data sources production, incorporating new data science techniques, acquiring new platforms and making algorithms, all in all, moving from a vertical value chain towards an integrated one promoting new sources, methods and partners.
THANK YOU

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