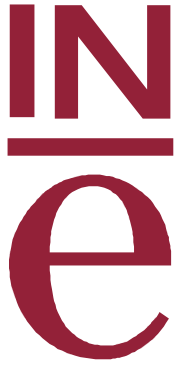


INSTITUTO NACIONAL DE ESTADISTICA



**Holiday Dwelling
Price Index (HDPI).
Base 2002**

Methodological note

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1 Background

The Holiday Dwelling Price Index, HDPI, is a statistical measure of the monthly performance of the series of main price rates used by holiday dwelling establishment.

Information is provided by the **Tourist Accommodation Occupancy Survey: Holiday Dwellings (TAOS)** with the information that is garnered, monthly, from the approximately 3,000 holiday dwelling establishments during the summer and 2,000 during the winter that received a questionnaire. This survey provides information on the occupancy of the holiday dwellings (number of travellers checked in, overnight stays, degree of occupancy, etc.), their structure (vacancies, personnel, etc.) and other variables of interest to the operation, with a vast geographical breakdown. The questionnaire requests prices applied to different types of guests for the occupancy of a dwelling (for the different types of dwellings), as well as the percentage of application of each of the rates. The questionnaire requests the following rates:

- Normal rate
- Weekend rate
- Rate for travel agencies and tour-operators

that are garnered for the different types of dwellings: studios, dwellings with 2/4 bed-places, dwellings with 4/6 bed-places and other.

2 Sample design

As the framework for the selection of the informant units, the survey uses the directories of the Tourist Offices of the Autonomous Communities and other sources, which include, among other data, the following information: name, address, normal opening period, number of bed-places, number of holiday dwellings and category in some cases.

The sample is stratified by province-size, except in Canarias and Baleares where sample is performed considering island-size.

In Illes Balears, Alicante, Castellón, Girona, Murcia, Tarragona and Valencia two samples are selected throughout the year: one for the period between April and October (both inclusive) and another sample, exhaustive, for the rest.

The survey is exhaustive except for some sizes, for the following provinces:

1. Selection by Province-Size:

Provinces	1 (1-25)	2 (26-99)	3 (100 and over)
Alicante/Alacant (03)	1/5(sum); 3/10 (wint)	1/3	S
Almería (04)	1/2	S	S
Ávila (05)	1/3	S	S
Barcelona (08)	1/3	S	S
Cáceres (10)	1/2	S	S
Cádiz (11)	2/5	S	S
Castellón/Castelló (12)	1/3 (sum); 2/3 (wint)	2/3; E (wint)	S
Cuenca (16)	2/5	S	S
Girona (17)	1/5 (sum); 2/5 (wint)	1/2 (sum); E (wint)	S
Granada (18)	2/5	S	S
Guadalajara (19)	1/2	S	S
Huesca (22)	1/4	S	S
Jaén (23)	1/2	S	S
Lleida (25)	1/2	S	S
Rioja, La (26)	1/2	S	S
Madrid, Comunidad de(28)	1/2	S	S
Málaga (29)	1/5	1/2	S
Murcia, Región de (30)	2/5 (sum); 2/3 (wint)	S	S
Navarra, Comunidad Foral de (31)	1/4	S	S
Asturias, Principado de (33)	1/4	S	S
Pontevedra (36)	2/3	S	S
Cantabria (39)	2/5	S	S
Segovia (40)	1/2	S	S
Sevilla(41)	1/2	S	S
Tarragona (43)	1/3 (sum); 2/3 (wint)	2/3(sum); S	S
Teruel (44)	1/2	S	S
Valencia/València (46)	1/3 (sum); 1/2 (wint)	2/3	S
Zaragoza	2/3	S	S

2. Selection by Province-Island-Size:

Provinces	Islands	Size				
		1		2		3
Tenerife (38)	Santa Cruz de Tenerife (1)	1/2		1/2		S
	La Palma (2)	2/3		S		S
	La Gomera (3)	1/2		S		-
	El Hierro (4)	S		-		-
Las Palmas de Gran Canarias (35)	Gran Canaria (1)	1/5		1/3		S
	Lanzarote (2)	1/4		1/2		S
	Fuerteventura (3)	1/2		2/3		S
Illes Balears* (07)	Mallorca (1)	1/5	S	1/2	S	S
	Menorca (2)	1/4	S	1/2	S	S
	Ibiza-Formentera (3)	1/5	S	1/2	S	S

*(The first column refers to summer months and the second to winter months)

3 Estimators

In order to calculate the HAPI, for the year 2002, in month s of year T , the operation uses a chain-linked Laspeyres price index, consisting in referring the prices of the current period to the prices of the previous year, based on the following general formula:

$${}_{s,02}IPAP^{sT} = \left(\sum_{j,a,t,n} {}_{s(T-1)}I_{jam}^{sT} \cdot {}_{s(T-1)}W_{jam} \right) \cdot \frac{{}_{s,02}IPAP^{s(T-1)}}{100}$$

where ${}_{s(T-1)}I_{jam}^{sT} = \frac{\overline{M}_{jam}^{sT}}{\overline{M}_{jam}^{s(T-1)}} \cdot 100$, and the weighting: ${}_{s(T-1)}W_{jam} = \frac{\overline{M}_{jam}^{s(T-1)} \cdot B_{jam}^{s(T-1)}}{\sum_{j,a,t,n} \overline{M}_{jam}^{s(T-1)} \cdot B_{jam}^{s(T-1)}}$

that represents the percentage of income received by holiday dwelling establishments for the dwellings occupied using a specific rate, specific type of dwelling, size (in terms of the number of dwellings in the establishment, they are grouped into establishments with less than 26, between 26 and 99 and more than 99 dwellings) and in a certain province compared to the total income obtained; and where,

\overline{M}_{jam}^{sT} : average price for type a dwellings, that are size n and in province j (without VAT) using rate t , in month s of year T .

$B_{jam}^{s(T-1)}$: total number of dwellings occupied in the establishments of a certain modality a , size n and province j using rate t in month s of the year $T-1$.

$\overline{M}_{jam}^{s(T-1)}$: average price of the dwellings of a certain modality a , size n and province j (without VAT) using rate t in month s of the year $T-1$.

Weightings (W) are calculated considering the province, type of dwelling, size of the establishment and rate, and are then aggregated by rates, categories, sizes, types or provinces and autonomous communities according to the aggregate index to be obtained.

For year T weightings used have been calculated with the most updated data available (year $T-1$). Moreover, and given the high seasonal adjustment that is applicable throughout the year, different weightings are calculated for each month. In other words, from January to December the income structure by province/category/type/size of the establishments differs from month to month. The chain-linked index ensures that the updating of the weightings, which are performed annually, does not create a break in the RTAPI series.

4 Dissemination and statistical secrecy

It is only published indices on a national level, general and broken down by modality (total, studios, 2/4 persons and 4/6 persons holiday dwellings) and by rate (total, normal, weekend and tour-operator).

Some of the Autonomous Communities could be published as a customised petition, all the time observing statistical secrecy (There must be at least 3 establishments and/or exploiting companies with data).

5 Variation quotients

In order to calculate a variance estimation of the Hotel Price Index we apply the JACKKNIFE technique. The elementary indexes are calculated as quotients of geometric averages, and then they are added by using weightings.

We have 3 price fees (t) per client for the each one of the 3 modalities (a) per establishment (i), type (k) and province (j). Out of them 3 elementary indexes are built this way:

$${}_{m(14)}I_{jka}^{m(15)} = 100 \times \frac{\sqrt[n_{jka}]{P_{jka1}^{m(15)} \times P_{jka2}^{m(15)} \times \dots \times P_{jk \tan jka}^{m(15)}}}{\sqrt[n_{jka}]{P_{jka1}^{m(14)} \times P_{jka2}^{m(14)} \times \dots \times P_{jk \tan jka}^{m(14)}}}$$

Where n_{jka} corresponds to the number of clients or establishments of a certain t fee of the a modality, k type and j province.

For each fee and each stratum made up by province and category the Jackknife variance is calculated as follows:

$$\hat{V}(\hat{\theta}) = \sum_{h=1}^L \frac{n_h - 1}{n_h} (1 - f_h) \times \sum_{k=1}^{n_h} (\hat{\theta}_{h(k)} - \hat{\theta}_{h(\cdot)})^2$$

where the $\hat{\theta}_{h(k)}$ subindex indicates that unit k is left out and $\hat{\theta}_{h(\cdot)} = \frac{\sum_{k=1}^{n_h} \theta_{h(k)}}{n_h}$

The variation quotient given by the following expression is published:

$$\hat{CV}(\hat{\theta}) = \frac{\sqrt{\hat{V}(\hat{\theta})}}{\hat{\theta}} \times 100$$

When analysed the results, which are provided as %, it is important to bear in mind the following things:

1. It is a rough calculation of the sampling error;
2. As it is a survey analysing exhaustively a great part of the population, sampling errors are inexistent or almost negligible. In this type of surveys non-sampling errors prevail;
3. The calculation of the variance is carried out in strata with 5 or more sample units.

6 Collection of the information. XML Tourism

The query for basic data refers to a fortnight a month, chosen randomly, in such a way that the whole month is covered between all establishments and/or companies.

Information is provided monthly by holiday dwelling establishments or operating companies, using a questionnaire, to the National Statistics Institute. Likewise, it is possible to submit the information telematically or by uploading an XML file or over an Internet connection by means of the ARCE system, by completing the questionnaire directly on-screen.

For the HOS, a new optional telematic information collection via XML files system has also been implemented, basically consisting of hotel establishment case-handling software extracting from hotel database records all information required in the questionnaire with regard to guests, overnight stays, occupied rooms and days open.

Information on this new collection system is available in the following link, where the establishment also upload the files:

<https://arce.ine.es/ARCE/jsp/encuestaXml.jsp>.

Annex. Questionnaire

Prices (in euros, does not include VAT)

Indicate the average price of the **holiday dwelling per day** according to the different **modalities and rates**, being these applied or not, in the reference fortnight. Please indicate also the approximate **percentage** of every **type of rate** on the total of occupied holiday dwellings of every modality, in the reference fortnight. (This percentage may be zero in some cases).

	Studio		2/4 persons		4/6 persons		Other	
	Price (euros)	%	Price (euros)	%	Price (euros)	%	Price (euros)	%
Normal								
Weekend (per day)								
Tour-operators and travel agencies								
Other (<i>specify</i>):								
		100% ³		100% ³		100% ³		

³ This percentage may be zero for the modality/modalities where the holiday dwellings have not been occupied in the reference fortnight.