



Campsite Occupancy Survey (EOAC)

Methodology

Contents

1	Presentation	3
2	Aims	3
3	Statistical unit	3
4	Scope of the survey	4
5	Definition of variables	4
6	Survey framework and sample design	6
7	Estimators	6
8	Information Collection	13
9	Dissemination of Information	14
10	Statistical secrecy	14
11	Variation coefficients	14
12	Treatment of empty strata	16

1 Presentation

This publication presents the methodology of the Campsite Occupancy Survey.

The most important information from the survey is provided on a monthly basis, in accordance with INE dissemination rules.

The data provided reflect the dual aspect considered in the study of tourism: on the demand side, information is offered on travellers, overnight stays and average stay distributed by country of residence for non-resident travellers in Spain and category of the establishments they occupy or by Autonomous Community of origin in the case of Spanish travellers, as well as information on the total number of occupied pitches distributed according to the category of establishment. On the supply side, the estimated number of establishments open, estimated bed-places, estimated sites, degrees of occupancy and information on employment in the sector, according to the category of establishment, is provided.

This information is offered monthly on a national level, by autonomous community and provinces with the highest number of overnight stays, as well as the most significant tourist areas and tourist resorts throughout the year.

The National Statistics Institute would like to thank all professionals, business people and organisations related to the tourism sector for their collaboration, which is essential for carrying out this survey.

2 Aims

The main aim of the Hotel Occupancy Survey (HOS) is to ascertain the behaviour of a series of variables that make it possible to describe the fundamental characteristics of the hotel sector, from the viewpoint of both supply and demand, thus meeting the needs of national institutions and the requirements of international organisations for knowledge regarding the sector.

3 Statistical unit

All the campsite establishments in each Autonomous Community.

Campsites are defined as those duly delimited, equipped and prepared areas of land, intended to provide people, on a regular basis and for payment of a stipulated price, with a place to live in the open air for a limited period of time for holiday or tourist purposes and using mobile shelters, caravans, tents or other similar easily transportable elements as a dwelling.

Campsites are classified according to their facilities and services into the following categories: luxury and first, second and third.

4 Scope of the survey

The entire national territory, with the exception of Ceuta and Melilla, where there are no establishments of this type.

5 Definition of variables

5.1 ESTIMATED OPEN ESTABLISHMENTS

Number of establishments open for the season estimated by the survey.

Seasonal open establishments are defined as those in which the reference month is within its opening period.

5.2 ESTIMATED BED-PLACES

Estimated number of bed-places by the survey of establishments open for the season.

On campsites the number of bed-places is calculated based on the authorised capacity in people.

5.3 ESTIMATED PITCHES

The estimated total number of pitches in a campsite is defined as the sum of:

- estimated pitches
- estimated bungalows
- estimated caravans owned by the campsite
- the area not divided into pitches for estimated unrestricted camping of seasonally open establishments.

Plot is defined as the numbered and clearly delimited area for camping.

Bungalow is defined as a fixed construction within the campsite intended as an accommodation unit.

Caravan owned by the campsite is defined as a mobile accommodation unit whose use is rented for a stipulated price.

An unplotted area is an unrestricted camping area within the campsite.

5.4 TRAVELLERS ENTERED

Any person who makes one or more consecutive overnight stays in the same accommodation.

Travellers are classified according to their place of residence. In the case of residents in Spain, information is requested on the Autonomous Community or City of origin.

5.5 OVERNIGHT STAYS OR OCCUPIED BED-PLACES

An overnight stay is understood to be each night that a traveller stays at the establishment.

As with travellers entering, the occupied bed-places are broken down according to the place of residence.

5.6 AVERAGE STAY

This variable is an approximation of the number of days that, on average, travellers stay in campsites and is calculated as the ratio between overnight stays and the number of travellers.

5.7 TOTAL OCCUPIED PITCHES

This is defined as the sum total of: occupied pitches, occupied bungalows, occupied caravans owned by the campsite and occupied undivided area.

5.8 OCCUPANCY RATE PER PLOT

Ratio, in percentage, between the total number of pitches occupied in the month and those available in the campsite in the same period multiplied by the days of the reference month.

5.9 OCCUPANCY RATE PER PLOT AT THE WEEKEND

Ratio, as a percentage, between the total number of occupied pitches on Friday and Saturday falling within the reference week and the product of multiplying the number of pitches by the days to which the occupied pitches refer, in this case two.

5.10 STAFF EMPLOYED

It is defined as all persons, paid and unpaid, who contribute, through their labour, to the production of goods and services during the survey reference period, even if they work outside the premises of the survey.

5.11 TOURIST RESORT

Municipality with a significant tourist offering concentration.

5.12 TOURIST AREA

Group of municipalities where the tourist influx is specially focused. Information is provided on the main areas of tourist interest.

In the document [List of municipalities comprising each tourist area](#), the main areas of tourist interest are attached, together with the municipalities that make up these areas.

6 Survey framework and sample design

The sampling framework is formed from the directories of the Autonomous Community Tourism Departments and other secondary sources, which contain, among others, the following data for each establishment: name, address, category, normal opening period, number of bed-places and rooms. These directories are continuously updated.

From 2025 onwards, this statistical operation will no longer be exhaustive and will become probabilistic. The sample design is based on stratified random sampling where the strata are defined by cross-checking by province and category.

To calculate the sample size, an optimal allocation has been applied, requiring a prefixed sampling error for the stratified estimator of the total number of bed-places of 4.5% at the provincial level.

The minimum sample size required in each province-category stratum is 5 establishments.

There are establishments that are studied comprehensively, and therefore belong to the sample with probability 1, because they have high capacity within the province-category crossover.

The sampling fractions are detailed in the document [Sampling fractions](#).

The sample is selected within each stratum in a systematic manner. Each month the sample is renewed by adding new establishments. The establishments in the sample are maintained for 4 years, with approximately 25% being renewed (this applies to the sampling strata only).

7 Estimators

The **variables** used are:

- E = number of campsites open in the month, existing in the directory
- e = no. of campsites that respond to the survey through the usual method to the questionnaire (incidences 1 and 2)
- e' = number of campsites that respond to the monthly survey through the usual questionnaire method (occurrences 1 and 2 in the monthly questionnaire)
- c = number of campsites in the sample that are closed within their opening period (in the reference week, incidence 3)

- c' = number of campsites that are closed within their opening period (in the reference month, incidence 3)
- D = number of days in the reference month (28, 29, 30, 31)
- dm = number of days the establishment has been open in the reference month
- P = no. of places according to directory
- p = no. of places per plot
- V = number of incoming travellers
- VM = number of incoming travellers in the total month
- N = no. of occupied bed-places or overnight stays
- NM = no. of occupied bed-places or overnight stays in the total of the month
- ES = average stay
- T = staff employed
- GP = Occupancy rate by bed-places
- RP = no. of pitches according to directory
- RB = no. of bungalows according to directory
- RC = no. of caravans owned by the campsite according to the directory
- RS = no. of unplotted places according to directory
- RT = total number of pitches
- QP = total number of occupied pitches ($QP = QP1 + QP2$)
- QM = No. of occupied pitches (total) in the total of the month
- $QP1$ = occupied long-term rented pitches of land
- $QP2$ = remainder of occupied pitches
- QB = no. of occupied bungalows
- QC = No. of occupied caravans in ownership
- QS = no. of occupied unplotted places
- QT = No. of total occupied pitches
- GR = occupancy rate per plot

The **subindices** used are:

- i = campsite
- j = province
- k = category (1st and luxury, 2nd and 3rd)
- $t = 1$ for establishments that are not fixed sample within stratum jk
- $t = 2$ for establishments that are fixed sample within stratum jk
- m = type (professional status, place of residence, etc.)

The calculated **estimators** are as follows:

1. Estimated number of establishments open for the month

$$\widehat{EM}_{jk} = \sum_{t=1}^2 E_{jkt} \cdot \frac{\sum_{i=1}^{e'_{jkt}} \frac{dm_{ijkt}}{D}}{e'_{jkt} + c'_{jkt}}$$

2. Estimated number of bed-places of establishments open in the month

$$\widehat{PM}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{E_{jkt}} P_{ijkt} \cdot \frac{\sum_{i=1}^{e'_{jkt}} P_{ijkt} \cdot \frac{dm_{ijkt}}{D}}{\sum_{i=1}^{e'_{jkt}} P_{ijkt} + \sum_{i=1}^{c'_{jkt}} P_{ijkt}} = \sum_{t=1}^2 \widehat{PM}_{jkt}$$

3. Estimated number of pitches of the establishments open in the month

$$\widehat{RPM}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{E_{jkt}} RP_{ijkt} \cdot \frac{\sum_{i=1}^{e'_{jkt}} RP_{ijkt} \cdot \frac{dm_{ijkt}}{D}}{t \sum_{i=1}^{e'_{jkt}} RP_{ijkt} + \sum_{i=1}^{c'_{jkt}} RP_{ijkt}}$$

4. Estimated number of bungalows of the establishments open in the month

$$\widehat{RBM}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{E_{jkt}} RB_{ijkt} \cdot \frac{\sum_{i=1}^{e'_{jkt}} RB_{ijkt} \cdot \frac{dm_{ijkt}}{D}}{\sum_{i=1}^{e'_{jkt}} RB_{ijkt} + \sum_{i=1}^{c'_{jkt}} RB_{ijkt}}$$

5. Estimated number of caravans owned by the establishments open in the month

$$\widehat{RCM}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{E_{jkt}} RC_{ijkt} \cdot \frac{\sum_{i=1}^{e'_{jkt}} RC_{ijkt} \cdot \frac{dm_{ijkt}}{D}}{\sum_{i=1}^{e'_{jkt}} RC_{ijkt} + \sum_{i=1}^{c'_{jkt}} RC_{ijkt}}$$

6. Estimated number of unplotted bed-places of the establishments in the month

$$\widehat{RSM}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{E_{jkt}} RS_{ijkt} \cdot \frac{\sum_{i=1}^{e'_{jkt}} RS_{ijkt} \cdot \frac{dm_{ijkt}}{D}}{\sum_{i=1}^{e'_{jkt}} RS_{ijkt} + \sum_{i=1}^{c'_{jkt}} RS_{ijkt}}$$

7. Estimated total number of pitches of the establishments open in the month

$$\widehat{RM}_{jk} = \widehat{RPM}_{jk} + \widehat{RBM}_{jk} + \widehat{RCM}_{jk} + \frac{\widehat{RSM}_{jk}}{\hat{p}_{jk}}$$

$$\hat{p}_{jk} = \frac{\widehat{PM}_{jk} - \widehat{RSM}_{jk}}{\hat{R}_{jk}}$$

where $\hat{R}_{jk} = \widehat{RPM}_{jk} + \widehat{RBM}_{jk} + \widehat{RCM}_{jk}$

8. Estimated number of inbound travellers in the month

$$\widehat{VM}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{e'_{jkt}} VM_{ijkt} \cdot \frac{\widehat{PM}_{jkt}}{\sum_{i=1}^{e'_{jkt}} P_{ijkt} \cdot \frac{dm_{ijkt}}{D}}$$

To obtain the number of inbound travellers in the month according to residence, firstly, the estimator is obtained from the weekly data:

$$\widehat{VM}_{jkm} = \widehat{VM}_{jk} \cdot \frac{\widehat{V}_{jkm}}{\sum_m \widehat{V}_{jkm}}$$

Where $\widehat{V}_{jkm} = \sum_{t=1}^2 \sum_{i=1}^{e'_{jkt}} V_{ijktm} \cdot \frac{D}{7} \cdot \frac{\widehat{PM}_{jkt}}{\sum_{i=1}^{e'_{jkt}} P_{ijkt}}$; m = place of residence

9. Estimated number of occupied bed-places or overnight stays

$$\widehat{NM}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{e'_{jkt}} NM_{ijkt} \cdot \frac{\widehat{PM}_{jkt}}{\sum_{i=1}^{e'_{jkt}} P_{ijkt} \cdot \frac{dm_{ijkt}}{D}}$$

To obtain the number of overnight stays in the month according to residence, firstly, the estimator is obtained from the weekly data:

$$\widehat{NM}_{jkm} = \widehat{NM}_{jk} \cdot \frac{\widehat{N}_{jkm}}{\sum_m \widehat{N}_{jkm}}$$

Where $\widehat{N}_{jkm} = \sum_{t=1}^2 \sum_{i=1}^{e'_{jkt}} N_{ijktm} \cdot \frac{D}{7} \cdot \frac{\widehat{PM}_{jkt}}{\sum_{i=1}^{e'_{jkt}} P_{ijkt}}$; m = place of residence

10. Estimated average length of stay

The average stay shall be estimated on condition that it does not exceed the days of the month, i.e. **D**, otherwise **D** shall be assigned.

a) Average stay by province and category

$$\widehat{ES}_{jk} = \frac{\sum_m \widehat{NM}_{jkm}}{\sum_m \widehat{VM}_{jkm}}$$

b) Average stay by province and place of residence (m)

$$\widehat{ES}_{jm} = \frac{\sum_k \widehat{NM}_{jkm}}{\sum_k \widehat{VM}_{jkm}}$$

11. Estimated total occupied pitches

$$\widehat{QM}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{e'_{jkt}} QM_{ijkt} \cdot \frac{\widehat{R}_{jkt}}{\sum_{i=1}^{e'_{jkt}} R_{ijkt} \cdot \frac{dm_{ijkt}}{D}}$$

Estimators obtained from the weekly questionnaire data:

a) Plots occupied with long term rental during the month:

$$\widehat{QP1}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} QP1_{ijkt} \cdot \frac{D}{7} \cdot \frac{\widehat{RP}_{jkt}}{\sum_{i=1}^{e_{jkt}} R_{ijkt}}$$

$$\widehat{QP1}_j = \sum_k \widehat{QP1}_{jk}$$

b) Pitches occupied with long-term weekend rentals:

$$\widehat{QP1}^{fs}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} QP1^{fs}_{ijkt} \cdot \frac{D^{fs}}{2} \cdot \frac{\widehat{RP}_{jkt}}{\sum_{i=1}^{e_{jkt}} R_{ijkt}}$$

$$\widehat{QP1}^{fs}_j = \sum_k \widehat{QP1}^{fs}_{jk}$$

c) Remaining pitches occupied in the month:

$$\widehat{QP2}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} QP2_{ijkt} \cdot \frac{D}{7} \cdot \frac{\widehat{RP}_{jkt}}{\sum_{i=1}^{e_{jkt}} R_{ijkt}}$$

$$\widehat{QP2}_j = \sum_k \widehat{QP2}_{jk}$$

d) Remaining pitches occupied at the weekend:

$$\widehat{QP2}^{fs}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} QP2^{fs}_{ijkt} \cdot \frac{D^{fs}}{2} \cdot \frac{\widehat{RP}_{jkt}}{\sum_{i=1}^{e_{jkt}} R_{ijkt}}$$

$$\widehat{QP2}^{fs}_j = \sum_k \widehat{QP2}^{fs}_{jk}$$

e) Total number of occupied pitches in the month:

$$\widehat{QP}_{jk} = \widehat{QP1}_{jk} + \widehat{QP2}_{jk}; \quad \widehat{QP}_j = \widehat{QP1}_j + \widehat{QP2}_j$$

f) Total number of pitches occupied over the weekend:

$$\widehat{QP}_{jk}^{fs} = \widehat{QP1}_{jk}^{fs} + \widehat{QP2}_{jk}^{fs}, \quad \widehat{QP}_j^{fs} = \widehat{QP1}_j^{fs} + \widehat{QP2}_j^{fs}$$

g) Bungalows occupied in the month:

$$\widehat{QB}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} QB_{ijkt} \cdot \frac{D}{7} \cdot \frac{\widehat{RB}_{jkt}}{\sum_{i=1}^{e_{jkt}} RB_{ijkt}}$$

$$\widehat{QB}_j = \sum_k \widehat{QB}_{jk}$$

h) Bungalows occupied at the weekend:

$$\widehat{QB}_{jk}^{fs} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} QB_{ijkt}^{fs} \cdot \frac{D^{fs}}{2} \cdot \frac{\widehat{RB}_{jkt}}{\sum_{i=1}^{e_{jkt}} RB_{ijkt}}$$

i) Caravans owned by the campsite occupied during the month:

$$\widehat{QC}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} QC_{ijkt} \cdot \frac{D}{7} \cdot \frac{\widehat{RC}_{jkt}}{\sum_{i=1}^{e_{jkt}} RC_{ijkt}}$$

$$\widehat{QC}_j = \sum_k \widehat{QC}_{jk}$$

j) Caravans owned by the campsite are occupied at the weekend:

$$\widehat{QC}_{jk}^{fs} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} QC_{ijkt}^{fs} \cdot \frac{D^{fs}}{2} \cdot \frac{\widehat{RC}_{jkt}}{\sum_{i=1}^{e_{jkt}} RC_{ijkt}}$$

k) Unplotted bed-places occupied in the month:

$$\widehat{QS}_{jk} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} QS_{ijkt} \cdot \frac{D}{7} \cdot \frac{\widehat{RS}_{jkt}}{\sum_{i=1}^{e_{jkt}} RS_{ijkt}}$$

$$\widehat{QS}_j = \sum_k \widehat{QS}_{jk}$$

l) Unplotted bed-places occupied at the weekend:

$$\widehat{QS}_{jk}^{fs} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} QS_{ijkt}^{fs} \cdot \frac{D^{fs}}{2} \cdot \frac{\widehat{RS}_{jkt}}{\sum_{i=1}^{e_{jkt}} RS_{ijkt}}$$

- m) Total number of pitches occupied in the month (including bungalows, caravans owned by the campsite and unplotted bed-places):

$$\widehat{QT}_{jk} = \widehat{QP}_{jk} + \widehat{QB}_{jk} + \widehat{QC}_{jk} + \frac{\widehat{QS}_{jk}}{\widehat{p}_{jk}}$$

$$\widehat{QT}_j = \sum_k \widehat{QT}_{jk}$$

Estimators obtained from the monthly questionnaire:

- n) Plots occupied on a long-term rental basis

$$\widehat{QP1M}_{jk} = \widehat{QM}_{jk} \cdot \frac{\widehat{QP1}_{jk}}{\left(\widehat{QT}_{jk} - \frac{\widehat{QS}_{jk}}{\widehat{p}_{jk}}\right)}$$

- o) Remaining occupied pitches

$$\widehat{QP2M}_{jk} = \widehat{QM}_{jk} \cdot \frac{\widehat{QP2}_{jk}}{\left(\widehat{QT}_{jk} - \frac{\widehat{QS}_{jk}}{\widehat{p}_{jk}}\right)}$$

- p) Total occupied pitches

$$\widehat{QPM}_{jk} = \widehat{QP1M}_{jk} + \widehat{QP2M}_{jk}$$

12. Occupied bungalows

$$\widehat{QBM}_{jk} = \widehat{QM}_{jk} \cdot \frac{\widehat{QB}_{jk}}{\left(\widehat{QT}_{jk} - \frac{\widehat{QS}_{jk}}{\widehat{p}_{jk}}\right)}$$

13. Occupied caravans owned by the campsite

$$\widehat{QCM}_{jk} = \widehat{QM}_{jk} \cdot \frac{\widehat{QC}_{jk}}{\left(\widehat{QT}_{jk} - \frac{\widehat{QS}_{jk}}{\widehat{p}_{jk}}\right)}$$

14. Total occupied pitches (including bungalows, caravans owned by the campsite and unplotted bed-places)

$$\widehat{QTM}_{jk} = \widehat{QM}_{jk} + \frac{\widehat{QS}_{jk}}{\widehat{p}_{jk}}$$

15. Estimated occupancy rate

a) Net occupancy rate by bed-places

$$\widehat{GP}_{jk} = \frac{NM_{jk}}{D \cdot PM_{jk}} \cdot 100$$

For the total of a province

$$\widehat{GP}_j = \frac{\sum_k \widehat{GP}_{jk} \cdot PM_{jk}}{\sum_k PM_{jk}}$$

b) Net occupancy rate per plot

$$\widehat{GR}_{jk} = \frac{QTM_{jk}}{D \cdot RM_{jk}} \cdot 100$$

For the total of a province

$$\widehat{GR}_j = \frac{\sum_k \widehat{GR}_{jk} \cdot RM_{jk}}{\sum_k RM_{jk}}$$

c) Weekend occupancy rate per plot

$$\widehat{GR}_{jk}^{fs} = \frac{QT_{jk}^{fs}}{2 \cdot RT_{jk}} \cdot 100$$

For the total of a province

$$\widehat{GR}_j^{fs} = \frac{\sum_k \widehat{GR}_{jk}^{fs} \cdot RT_{jk}}{\sum_k RT_{jk}}$$

16. Estimated number of staff employed

$$\hat{T}_{jkm} = \sum_{t=1}^2 \sum_{i=1}^{e_{jkt}} T_{ijktm} \cdot \frac{PM_{jkt}}{\sum_{i=1}^{e_{jkt}} P_{ijkt}}$$

8 Information Collection

The consultation of basic data refers to a week of the month, chosen randomly, in such a way that the complete month is covered among all establishments.

From January 2003 onwards, a second consultation is made on monthly totals; total number of travellers, overnight stays and occupied pitches throughout the month, as well as the number of days that the establishment remains open in the reference month.

The information published for the variables: travellers, overnight stays and occupied pitches is estimated on the basis of the data provided in the monthly module.

The information is supplied on a monthly basis by the campsites, by means of a questionnaire, to the National Statistics Institute. It is also possible to submit the information via Internet connection through the IRIA system by filling in the questionnaire directly on screen.

9 Dissemination of Information

The information is presented at different levels of geographical disaggregation: national, autonomous community, provincial, zones and tourist resorts.

The areas (set of municipalities) have been considered, as well as the municipalities in which the tourist influx is specifically located.

Provisional results for a reference month are published around the 30th of the following month.

10 Statistical secrecy

Information may be provided for all those strata (or geographical groupings of data) where the number of establishments with incidence 1 (open with activity) is 3 or more.

11 Variation coefficients

Variation coefficients or relative sampling errors are calculated and published for the estimators of the total number of travellers who enter in the month, \widehat{VM}_{jk} , and of the total number of occupied bed-places (overnight stays), \widehat{NM}_{jk} , both in the case in which the number of days that the establishment has been open in the reference month, dm , is considered, and in the case in which this data are not considered:

Let \hat{Y}_{jkm} be the estimator of any of these variables, for each province, j , category, k , and type (residents or non-residents), m .

The estimate of the relative sampling error (as a percentage) is calculated as follows:

$$\widehat{CV}(\hat{Y}_m) = \frac{\sqrt{\widehat{V}(\hat{Y}_m)}}{\hat{Y}_m} * 100$$

where:

$$\widehat{V}(\hat{Y}_m) = \sum_h \widehat{V}(\hat{Y}_{jktm})$$

Y_h denotes the stratum (jk)

and $\hat{V}(\hat{Y}_{jkm})$ shall be calculated as follows depending on the type of estimator.

Group A estimators: Weekly information, without taking into account information on the number of days the establishment is open in the reference month, dm

$$\hat{V}(\hat{Y}_{jkm}) = (1 - f_{jk}) \cdot \frac{e_{jk}}{e_{jk} - 1} \cdot \frac{\hat{P}_{jk}^2}{\left(\sum_{i=1}^{e_{jk}} P_{ijk}\right)^2} \cdot \sum_s (Y_{ijkm} - \hat{R}_{jkm} P_{ijk})^2$$

where

$$f_{jk} = \frac{e_{jk} + c_{jk}}{E_{jk}} \quad y \quad s = e$$

therefore:

$$Y_{ijkm} = Y_{ijkm} \cdot \frac{D}{7}, \text{ if } i \in e$$

$$\hat{R}_{jkm} = \frac{\sum_{i=1}^{e_{jk}} Y_{ijkm} \cdot \frac{D}{7}}{\sum_{i=1}^{e_{jk}} P_{ijk}}$$

Group B estimators: Monthly information, taking into account information on the number of days the establishment is open in the reference month, dm

$$\hat{V}(\hat{Y}_{jkm}) = (1 - f'_{jk}) \cdot \frac{e'_{jk}}{e'_{jk} - 1} \cdot \frac{\widehat{PM}_{jk}^2}{\left(\sum_{i=1}^{e'_{jk}} P_{ijk} \cdot \frac{dm_{ijk}}{D}\right)^2} \cdot \sum_s (Y_{ijkm} - \hat{R}_{jkm} P_{ijk})^2$$

where

$$f'_{jk} = \frac{e'_{jk} + c'_{jk}}{E_{jk}} \quad \text{and } s = e'$$

therefore:

$$Y_{ijkm} = YM_{ijkm}, \text{ if } i \in e'$$

$$\hat{R}_{jkm} = \frac{\sum_{i=1}^{e'_{jk}} YM_{ijkm}}{\sum_{i=1}^{e'_{jk}} P_{ijk}}$$

12 Treatment of empty strata

A stratum (province - category) is considered empty when there are no questionnaires available for the sample selected in the stratum. When this occurs, the procedure is as described below:

Empty strata with the weekly questionnaire

1. If in such a stratum there are only negative and closed establishments ($c_{jk} \neq 0$), the estimate of any variable in that stratum will be ZERO, as all negatives are assumed to be closed.
2. If there are no closed establishments, the following coefficients shall be calculated for each province j

$$R1_j = \frac{\sum_{k''} P_{jk''} + \sum_{k'} \hat{P}_{jk'}}{\sum_{k'} \hat{P}_{jk'}}$$

$$R2_j = \frac{\sum_{k''} RP_{jk''} + \sum_{k'} \hat{RP}_{jk'}}{\sum_{k'} \hat{RP}_{jk'}}$$

$$R3_j = \frac{\sum_{k''} RB_{jk''} + \sum_{k'} \hat{RB}_{jk'}}{\sum_{k'} \hat{RB}_{jk'}}$$

$$R4_j = \frac{\sum_{k''} RC_{jk''} + \sum_{k'} \hat{RC}_{jk'}}{\sum_{k'} \hat{RC}_{jk'}}$$

$$R5_j = \frac{\sum_{k''} RS_{jk''} + \sum_{k'} \hat{RS}_{jk'}}{\sum_{k'} \hat{RS}_{jk'}}$$

where k'' are the vacant strata of the province j , k' the non-empty strata; P, RP, RB, RC and RS are the directory bed-places, pitches, bungalows, caravans and unplotted bed-places, and $\hat{P}_{jk'}$, $\hat{RP}_{jk'}$, $\hat{RB}_{jk'}$, $\hat{RC}_{jk'}$ and $\hat{RS}_{jk'}$ are the estimates with weekly data of the same variables.

The final estimate of a variable X for the province j will be:

$$\hat{X}_j = RI_j \cdot \sum_{k'} \hat{X}_{jk'}$$

where

$$I = 1 \quad \text{for} \quad X = V ; N ; T$$

$$I = 2 \quad \text{for} \quad X = QP$$

$$I = 3 \quad \text{for} \quad X = QB$$

$$I = 4 \quad \text{for} \quad X = QC$$

$$I = 5 \quad \text{for} \quad X = QS$$

Where V stands for travellers, N overnight stays, T staff employed, QP total number of occupied sites, QB number of occupied bungalows, QC number of occupied caravans owned by the campsite, QS number of occupied bed-places in unplotted areas.

The estimation of the variables, number of establishments, bed-places and pitches of the establishments open in the month will be the data point of the directory.

In order to estimate national data by category, it is necessary to know what the imputation of the empty stratum is. In order to work it out, one needs to calculate, in each province where there are empty categories, the difference between the final estimate factoring in the R_j coefficients and the estimate that would be obtained without factoring them in. This difference will be the estimate, for each variable, of the empty stratum, i.e.,

$$RI_j \cdot \sum_{k'} \hat{X}_{jk'} - \sum_{k'} \hat{X}_{jk'}$$

In the event that there is more than one empty category, the difference calculated above must be distributed proportionally to the number of bed-places in each of the empty categories for the variables of travellers, overnight stays and staff), for the rest of the variables (sites, bungalows, caravans...) it would be distributed proportionally according to the number of pitches in the open categories according to the directory.

Special cases in the EOAC taking into account the monthly module/questionnaire

For strata where all monthly questionnaires have $inci=4$, if there are weekly questionnaires with $inci=1$, they are estimated only with the information collected in the weekly questionnaires.

On the other hand, and because they have a monthly module, the following cases will require specific treatment:

1. In a stratum where all establishments have monthly incidence 3 and 4 (incidence 3 is changed to 4 and the weekly data is imputed in the stratum):
 - a) If all establishments have weekly incidence 3 and 4, or if all establishments have weekly incidence 3, then estimates of the number of pitches, bungalows, caravans and unplotted bed-places of the establishments open in the month are calculated, if any indeterminacy occurs in any of them, these estimates will take the value of the sum of the pitches, bungalows, caravans or unplotted bed-places of the open establishments existing in the directory, if there is no indeterminacy then the estimate of any variable will be considered ZERO.

- b) If all establishments have weekly incidence 4, (empty stratum) then the difference of the R_j is calculated and imputed to this value.
 - c) If all establishments have weekly incidence 1 and/or 2, then estimates are calculated with weekly data and imputed to monthly data.
2. In a stratum where an establishment has monthly incidence 1 or 2:
- a) If all the establishments have weekly incidence 4, then to calculate the totals of travellers, overnight stays and occupied sites there is no problem: they are calculated with the monthly ones. To distribute them by nationality and to calculate the rest of the variables, the empty strata treatment needs to be applied to the week.
 - b) If all establishments have weekly incidence 3, then the incidence in the weekly questionnaire will be reassigned as negative, 4. We are then dealing with case 2.1.
 - c) If all the establishments have weekly incidences 2 and 3 or all of them have weekly incidence 2, then there is no problem to calculate the totals of travellers and overnight stays; they are calculated with the monthly ones. As it is not possible to distribute them by nationality, they will all be considered Spanish and from the same Autonomous Community as the questionnaire.

Particular case:

If in a stratum the total number of inbound travellers in the week is 0 and there are overnight stays in the week, as it is not possible to distribute travellers by nationality on a monthly basis, the same proportion that exists in overnight stays will be considered.