Assessment of the quality of the Economically Active Population Survey

Year 2009

Foreword

Since 1971, the National Statistics Institute has carried out a quality evaluation programme of the Economically Active Population Survey. Its purpose is to make information available regarding sampling erros and errors not related to sampling, which allows, one the one hand, to make opportune decisions on the perfection of the methods, and on the other hand, to provide the user with information regarding the quality of the data offered.

The current publication offers the results obtained in the year 2009, linked with the previous publications on quality evalution of the Economically Active Population Survey.

The National Statistics Institute would like to express its gratitude to the families that have provided the information requested, and to all of the persons who have been involved in carrying out this work.

Jaume García Villar

INE President

Introduction

On evaluating the quality of the results of statistics, the goal is to achieve two fundamental objectives:

- To detect the errors that have been produced during the different stages of their compilation.

- To provide users with detailed information regarding the quality of the data that they deal with.

The detection of the errors produced should not be reduced to a mere numerical presentation of them. The primordial objective should be their analysis, in order to decipher the possible causes of their origin. This is important, even essential, in all statistics, so as to improve the quality thereof. Continuous surveys such as the Household Budget Survey (HBS) also include the attraction of the immediate collection of their results, avoiding in parallel the deterioration of the quality of all of the routine work that this type of survey entails. To reduce the errors unrelated to sampling allows us to improve the quality of the estimates, for the purpose of obtaining acceptable levels of error, and maintaining them over time, which allows for a more adequate study of the resulting time series.

On valuing the results of an evaluation program, it is necessary to bear in mind the conditioning factors under which the surveys are conducted, which prevent, in many cases, evading the errors later detected in the evaluation, with the compilers of the statistics still being conscious of the possibility of their presence. However, the supply of the information on the limitations of the data is an unavoidable duty, since an inappropriate use of the figures can cause the failure of socio-economic and demographic plans and projects, and falsify conclusions on measures developed by politicians, economists and the remaining users of the statistics.

In the APS, the quality evaluation has been extended in successive phases to the different phases of the survey, currently constituting one of the most complete evaluation programmes worldwide. The information obtained has been used to introduce amendments to the methodology applied, aimed at improving data quality The user is provided with results of the evaluation of varying lengths in three types of publication: quarterly in *Main Results and Detailed Results* and annually, in monographic reports such as this one, dedicated exclusively to data quality.

The present volume offers the data regarding the quality of the survey for the year 2008.

1. Quality of the data and total error

When we try to estimate a population parameter with the data from a sampling survey, under the hypothesis that we are using an appropriate estimator, an estimate thereof will be of high quality if the data on which it is based is of high quality. Conversely, if the survey data is of low quality, the estimates will also be of low quality.

However, the sample size on which the estimates are based also constitutes an important determining factor of quality. Even if the data is of great quality, an estimate based on a very small number of observations will scarcely be reliable. Therefore, the quality of an estimator of a population parameter is a function of the ***total survey error***, which encompasses an error deriving solely from the fact of selecting a sample rather than carrying out a complete census, called ***sampling error***, as well as other error related to the data collection and processing procedures, known as ***errors other than sampling errors***.

Errors other than sampling errors may be considered to be *unintentional* and may occur in any phase of the statistical process. Despite the greatest efforts to avoid them, errors other than sampling errors are particularly inevitable in large-scale data collection operations (such as censuses).

Conversely, sampling errors may be considered to be *intentional or deliberate errors*, in the sense that it is possible to control their magnitude by adjusting the size of the sample. Therefore, the sampling error can be as small as we want or can afford, without doing anything other than increasing the size of the sample.

In recent years, researchers have discovered that, in many cases, errors other than sampling errors can be much more harmful, for the estimates, than sampling errors.

The optimisation of the sample design implies finding a balance between the sampling errors and the errors other than sampling errors, in such a way that the total error is as small as possible for the available budget.

Errors other than sampling errors can come from five main sources:

- **Specification errors**: these errors occur when what we are trying to measure or verify through the survey does not coincide with what is actually asked in the survey, due to the fact that there are concepts or definitions that are not well specified. These are frequently caused by poor communication between the researcher or promoter of the survey and the person or persons who design the survey questionnaire.
- **Framework errors**: these take place when there are elements of the population that are omitted or duplicated within the sampling framework, or when there are elements included therein that should not be (erroneously included elements).
- **Errors due to non-response**: three types are distinguished:
    - **Non-response of the unit**: this occurs when an element of the sample does not participate in the sample, due to different reasons (refusal to participate, absence, unlocatable, etc.).

    - **Non-response to one or more questions**: this occurs when the questionnaire has been only partially completed, due to there being questions that have remained unanswered (in surveys aimed at households, a typical example are those questions referring to household income).
    - **Incomplete response**: this occurs when, in open questions, the informant provides some information, but the answer is too short to allow for adequate encoding.

- **Measurement errors**: these errors are fundamentally due to the informant, the interviewer and the questionnaire of the survey. Informants may give, whether deliberately or not, incorrect information. Interviewers may falsify data, inappropriately influence responses, incorrectly register responses, etc. The questionnaire may contain ambiguous questions, confusing instructions, etc.

  This modality also includes those errors that might come from the information collection method used. Finally, the framework or scenario in which the interviews are conducted can contribute to increasing measurement errors (for example, in surveys dealing with somewhat sensitive subjects).

- **Processing errors**: these are errors that occur during the data processing stage, including errors in recording, encoding, assignation of weightings and data tabulation, among others.

The total error is the difference between the true value of the population parameter and the estimation thereof, based on the sample selected. Due to the fact that the true value of the population parameter is unknown, the total error of an estimate will likewise be unknown, but can be approached using special methods for evaluating surveys.

The development of the survey design implies many decisions that can affect the total error of an estimate. There are decisions with regard to the size of the sample, the collection method, the training and supervision of the interviewers, the design of the questionnaire, etc., which in the long run will determine the quality of the survey data.

An important support when designing a survey is to have a means of quantifying the total error, since this makes it possible to compare alternative designs, not only on the basis of cost and punctuality in the dissemination of the data, but also considering its total error.

There are many ways of quantifying the total error associated with an estimate obtained from a survey. One of the most frequently used measurements is the *total average square error*, which measures the magnitude of the total error, or more precisely, the magnitude of the effect of the total error on the estimate in question. A small average square error indicates that the total error is likewise

small and under control. A large average square error indicates that one or more sources of error are adversely affecting the accuracy of the estimate.

Unfortunately, it is not possible to calculate the average square error regularly, directly from the survey data, and in particular, when the data is subject to significant errors other than sampling errors. Many situations require special assessment studies, supplementary to the main survey, in order to measure the total average square error.

For years, in order to assess the quality of the data, the EAPS has used the method of the repeat interview, which consists of repeating the interview, shortly after having conducted the original interview, of a part of the surveyed units. Through the comparison of the data collected in both interviews for the same units, it is possible to estimate the quality of the results, and provide the users with some numerical indices regarding said quality. This procedure is based on the model by Hansen, Hurwitz and Bershad, applied by the United States Census Office.

In relation to this model, it is appropriate to mention that more progress has been made in individualised analysis of the influence of certain factors giving rise to errors, and in applying controls and imputation methods for resolving them, than in evaluating the overall effect of sampling errors and errors other than sampling errors on the results. The first line contains evaluations carried out by the INE in the EAPS.

In the following sections of this report, the different types of error are analysed individually, indicating the methodology applied for their assessment.

2. Sampling errors

2.1 Methodology

In the successive semisamples method is applied for calculation for errors, which enables estimation of the variance of an estimator $\hat{X}$ by means of the formula:

$$\hat{V}(\hat{X}) = \frac{1}{r}\sum_{i}^{r}(\hat{X}_i - \hat{X})^2$$

where:

r is the number of repetitions used

$\hat{X}_i$ is the estimate obtained with the i-th repetition

$\hat{X}$ is the estimate obtained with the complete sample

Each repetition is a subsample composed by a number of sections equivalent to 50 per cent of the complete sample. The number of repetitions used in the APS has been set at 40. In order to form them, sections of each stratum are grouped into pairs, and the first section of each pair is randomly assigned to 20 repetitions, and the second to the remaining 20. Thus, each section appears in half the repetitions and the number of sections in each repeat is equal to 50 percent of the complete sample.

This repetition structure remains indefinitely, thus enabling calculation of the sampling error of any survey estimate without further programming problems, in theory, than applying 40 times the same formula of the estimator used in the survey, and finding the mean square of the values estimated on the basis of the 40 repetitions as compared with the estimate based on the complete sample.

Calculation of the estimates taken from the semisamples is carried out in the same way as with the full sample, in other words, by means of a ratio estimator calibrated by age group and sex and population total by province.

2.2 Presentation of sampling errors

In the tables of this document the sampling error is presented as a variation coefficient, in other words, expressed as a percentage of the estimate, with the following formula:

$$C\hat{V}(\hat{X}) = \frac{\sqrt{\hat{V}(\hat{X})}}{\hat{X}} \cdot 100$$

Variation coefficients have been calculated for the following characteristics:

National level

1) Population age 16 years old and over by age group and sex (table E.M.1)

2) Active persons by age group and sex (table E.M.2)

3) Active persons by branches of activity and sex (table E.M.3)

4) Unemployed person by economic sector and sex (table E.M.4)

5) Active persons by age group and sex (table E.M.5)

6) Employed persons by economic sector and sex (table E.M.8)

7) Employees persons by economic sector and sex (table E.M.9)

8) Persons employed part-time by economic sector and sex (table E.M.10)

9) Unemployed persons who have worked previously having stopped working less de than 36 months ago, by reason for having left their last job by sex (table E.M.11)

10) Potential Active Population by reason for not seeking employment and sex (table E.M.12)

11) Inactive persons by type of inactivity and sex (table E.M.13)

Autonomous and provincial level

1) Population aged 16 years old and over, by sex and relationship with the economic activity by province (tables E.M.6)

2) Population aged 16 years old and over, by sex and relationship with the economic activity by Autonomous Community (tables E.M.7)

Data provided in these tables makes it possible to have an approximate idea of the reliability of the different survey estimates. In general, the greater the level of breakdown of the figures, the greater the resulting sampling error, and therefore the lesser the accuracy of the estimate.

2.3 Use of tables

When calculating and publishing the sampling error, the statistician provides the user with a means of obtaining a numerical interval that has certain confidence (measured in probability terms) of containing the real value that we wish to estimate.

Sample theory determines that, in the interval between the estimate less twice the absolute sample error and the estimate plus twice the absolute sample error, there is 95% confidence in finding the real value or parameter that we want to estimate. From here on this interval is called the 95% *confidence interval*. It may

be interpreted that, on average, of each 100 samples obtained under the same design and general conditions these confidence intervals obtained from each sample will contain the real value 95 times out of a 100.

From the estimate of a certain characteristic and its sample error other confidence intervals may be formed with similar interpretation, for example:

estimate ± 1 times the sample error = confidence interval of 67 percent.

estimate ± 2 times the sample error = confidence interval of 95 percent.

estimate ± 3 times the sample error = confidence interval of 99,7 percent.

For example, the estimate of the total unemployed persons on a national level in the third quarter of the year is 4,123,300, with a relative sampling error of 1.12 percent. This means that there is a great deal of confidence, measured in probability terms confidence of 95 percent, of which the real value of the total unemployed persons in said quarter will be within the interval between 4,030,938 and 4,215,662 (that is, 4,123,300 $\pm$ 2 x 46,181).

It can be concluded that it is up to the user to determine whether or not a figure with a certain sampling error is useful to him or her for making decisions, in accordance with the degree of reliability needed for this.

The magnitude of relative sampling errors may invalidate certain provincial estimates; nevertheless, the latter may be useful if grouped by Autonomous Community in accordance with the needs of each user. In these cases, an estimate of the relative sampling error may be obtained by means of the formula:

$$\hat{CV}(\hat{X}) = \frac{1}{\sum \hat{X}_h} \sqrt{\sum (\hat{X}_h \cdot \hat{CV}(\hat{X}_h))^2}$$

where:

$\hat{CV}(\hat{X})$ = estimate of the relative sampling error in the Autonomous Community.

$\hat{X}_h$ = the estimation of characteristics in the h-th province.

$\hat{CV}(\hat{X}_h)$ = estimate of the relative sampling error in the h-th province,

with the sums extended to all provinces in the Autonomous Community.

In tables E.M.7 the corresponding relative sampling error are presented for the Autonomous Communities as a percentage.

3. Non-response

In the EAPS, the sample selection is carried out through a two-stage sampling, selecting, in the first stage, a given number of census sections, and in the second stage, a given number of dwellings in each one of the previously selected sections.

The selected dwellings remain in the sample for six consecutive quarters, after which they are replaced by other dwellings from the same section.

In order for there to be a considerable amount of common sample between two consecutive quarters (5/6 of the sample), the replacement of dwellings with others is staggered, whereby each quarter, one sixth of the sample is renewed, the part corresponding to those dwellings which were in the sixth interview the previous quarter. In order for this process to be easy to carry out, the sample of sections is distributed into six parts or *rotation shifts*, in such a way that each quarter, the dwellings corresponding to the sections of a given rotation shift are renewed.

In the dwellings corresponding to the sections of the rotation shift in the first interview, solely the CAPI collection method is used. In the dwellings corresponding to shifts that are in their second and subsequent interviews, the CATI method is used primarily, only leaving for CAPI those dwellings without a telephone and those that, even though they have a telephone number, prefer to continue with the personal interview method in subsequent quarters. In other words, whereas the CAPI method is used in all of the interviews, the CATI method is only used in the second to sixth interviews (subsequent interviews).

The dwellings selected for the sample (incumbent households), according to the situation they are in at the time of interview, are classified into three types:

- **Unavailable dwellings**: in CAPI, those dwellings which are unreachable for conducting the interview are included under this designation, generally due to climatological causes (snowstorms, floods, etc.) or geographical causes, where there are no transitable roads to arrive there. This may also include the cases in which doormen or concierges, in those buildings in which there is such a person, do not allow access to the dwellings.
  In CATI, those dwellings for which, despite having a contact telephone number, and even including those having been interviewed previously via the CATI system, it is not possible establish telephone contact, however often the calls are repeated, or obtain another contact number under this designation. Under these circumstances, attempts are made to interview the dwelling via the CAPI method, but if there is no longer enough time, they are ultimately classified as unavailable, and are passed on to CAPI for the second quarter.

- **Unsurveyable dwellings**: these are those dwellings that do not belong to the group being studied, due to not being used all year or most of the year as a habitual or permanent family residence. Included within this type are empty dwellings, secondary or seasonal dwellings, those intended in their entirety

for purposes other than those of a family residence and those dwellings that are unreachable at the address shown on the work order (the latter are only possible in CAPI).

- **Surveyable dwellings**: these are the dwellings that are used the whole year or most of it as a permanent family residence. Within this type, there are cases in which data cannot be obtained from the occupants of the dwelling due to absence or refusal thereof to participate in the survey. These cases constitute what is known as *non-response*.

Chart 1.1 shows the total incumbent dwellings selected in the four quarters of the year, broken down into the three types mentioned, whereas **charts 1.1 and 1.3** show the breakdown of said dwellings, according to the collection method used, whether CATI or CAPI. Starting with the third quarter, the sample in the Autonomous Community of Galicia was doubled, due to a partnership agreement signed between the INE and the Statistics Institute of Galicia. This explains the increase in the number of dwellings observed in the third and fourth quarters.

The treatment, within the general process of the survey, of the *unsurveyable* dwellings, and of the dwellings of whose occupants information is not obtained (non-response), differs noticeably due to the characteristics and influence on the estimates of both types of incidence, as will be seen below.

1.1 Selected incumbent dwellings. Total

Dwellings	Quarter							
	First		Second		Third		Fourth	
	No.	%	No.	%	No.	%	No.	%
Total	83,600	100.00	83,559	100.00	89,081	100.00	89,027	100.00
- Inaccessible	1,197	1.43	1,370	1.64	1,373	1.54	1,316	1.48
- Unsurveyable	15,261	18.25	15,423	18.46	16,488	18.51	16,664	18.72
- Surveyable	67,142	80.31	66,766	79.90	71,220	79.95	71,047	79.80

1.2 Selected incumbent dwellings. CATI

Dwellings	Quarter							
	First		Second		Third		Fourth	
	No.	%	No.	%	No.	%	No.	%
Total	49,967	100.00	50,327	100.00	53,022	100.00	52,384	100.00
- Inaccessible	1,115	2.23	1,290	2.56	1,272	2.40	1,196	2.28
- Unsurveyable	848	1.70	837	1.66	865	1.63	851	1.62
- Surveyable	48,004	96.07	48,200	95.77	50,885	95.97	50,337	96.09

1.3 Selected incumbent dwellings. CAPI

Dwellings	Quarter							
	First		Second		Third		Fourth	
	No.	%	No.	%	No.	%	No.	%
Total	33,633	100.00	33,232	100.00	36,059	100.00	36,643	100.00
- Inaccessible	82	0.24	80	0.24	101	0.28	120	0.33
- Unsurveyable	14,413	42.85	14,586	43.89	15,623	43.33	15,813	43.15
- Surveyable	19,138	56.90	18,566	55.87	20,335	56.39	20,710	56.52

3.1 Unavailable dwellings

In the preceding paragraph the circumstances have been described, which must occur together in a dwelling in order for it to be considered inaccessible or unavailable. As mentioned above, this type of dwelling may appear either where data is collected using CAPI, or where this is done using CATI.

In the case of inaccessibility in CAPI, the interviewer waits for the causes of this to disappear, in order to be able to access the dwelling and conduct the interview, insofar as the duration of the work in the section allows for this. Otherwise, the dwelling is finally considered inaccessible and revisited the following quarter.

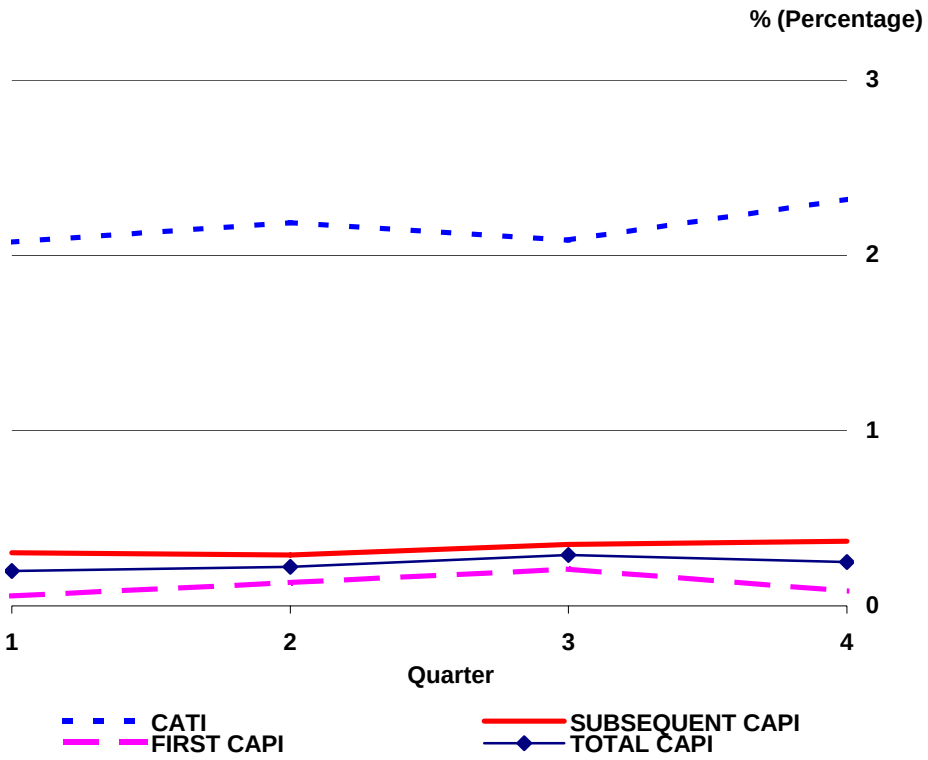
In the case of inaccessibility in CATI, it is attempted to collect information by means of a personal interview, so long as this is feasible. Otherwise, the dwelling is finally considered inaccessible and revisited the following quarter, but assigning it to CAPI.

Graphs 1 and 2 represent the percentages of unavailable dwellings, in the four quarters of the year, in the selected dwellings assigned to CATI and in those assigned to CAPI. The percentages are calculated with regard to the corresponding number of selected dwellings. In the case of the latter collection method, a distinction is made between the first and subsequent interviews.

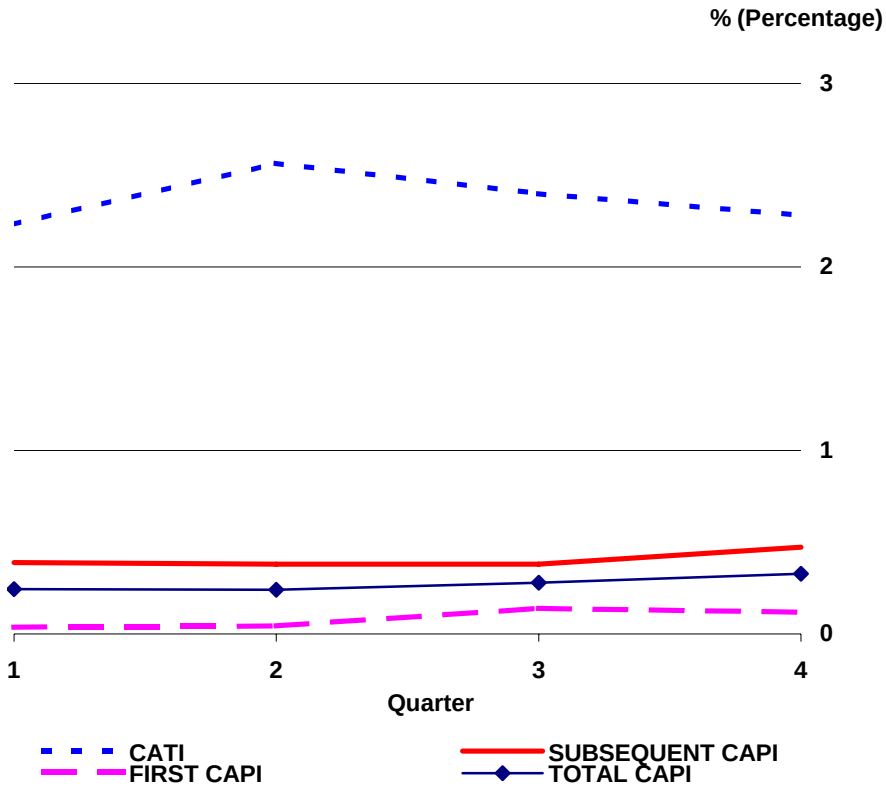
Graph 1 shows, at first sight, that the percentages of unavailable dwellings are quite a bit higher with CATI than with CAPI, which seems logical since, in CAPI, inaccessibility is due, as has already been mentioned, to adverse climatological conditions or to the absence of adequate roads to access them, circumstances which, normally, do not involve a high number of cases.

In the case of CAPI, a distinction is made between first and subsequent interviews, with it being possible to observe that percentages are smaller in the first interview.

Graph 1
Inaccessible dwellings

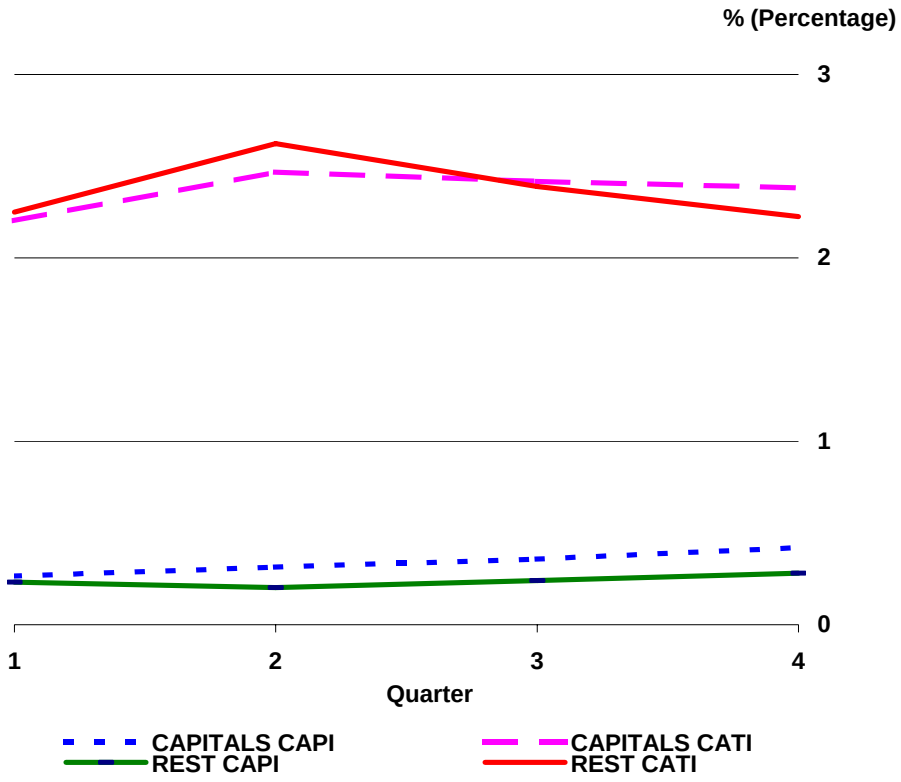


Graph 1
Inaccessible dwellings



The percentages of inaccessible dwellings, according to the type of municipality (capitals or the rest) are presented in **graph 2**, where it can be observed that, though there are no appreciable differences, in CAPI, they are slightly higher in the capitals, whereas in CATI, there is more equality between both types of municipality.

Graph 2
Inaccessible dwellings



3.2 Failure to update the framework

A dwelling is defined as *unsurveyable* in the EAPS when, at the time of the interview, it is empty, it is a seasonal dwelling, it is intended for purposes other than those of a family residence (other purposes), or it is unlocatable at the address that appears in the selection list. These cases indicate that the framework of the survey contains errors due to not being updated, and therefore, these units may be considered as *erroneous inclusions in the framework*.

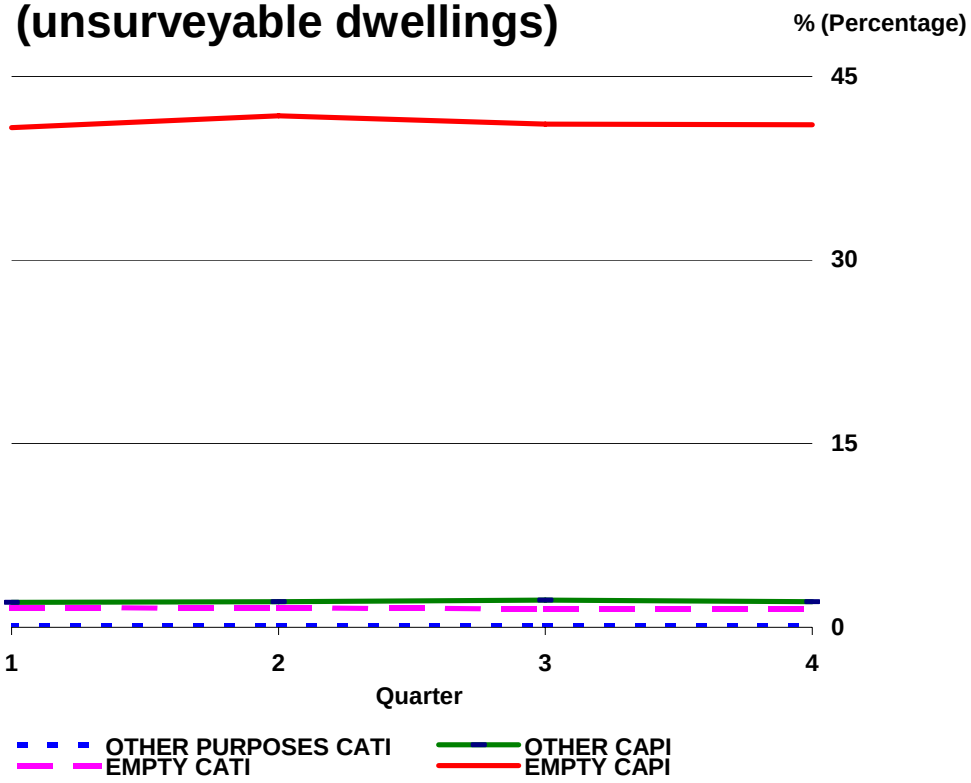
Table F.D.0 of the Annex presents a summary of the incidences that have occurred, in the four quarters of the year, in the total of the dwellings selected, that is, including those assigned to CAPI and those assigned to CATI. The information is broken down into *first and subsequent interviews*, on the one hand, and into *capitals and other municipalities*, on the other. This table, as with F.D.1 and F.D.2, only shows the incumbent dwellings, not including therein the reserve dwellings.

The breakdown of incidences in dwellings assigned to the CAPI method can be seen in table F.D.1 of the Annex, where a distinction is made been between the *provincial capitals* (stratum 1) and the *rest of the municipalities* (strata 2 to 9) and between the *first and subsequent interviews*. In this table, we can observe that the fact that it is out of date is basically due to the high number of *empty* dwellings, regarding which the number corresponding to those *intended for other purposes* and those that are *unreachable*, jointly known as *others* in **graph 3** shown below, is practically insignificant. The percentage of the total empty dwellings in CAPI experiences such small variations that it could be stated that it remains practically constant.

In turn, table F.D.2 of the Annex shows the incidences of dwellings assigned to the CATI method, and it can also be seen that the failure to update the framework is primarily due to the empty dwellings, which are equally insignificant regarding those *intended for other purposes* as a whole (in CATI there are no unreachable dwellings). It is observed that the percentage of empty dwellings remains constant throughout the year, at approximately 1.6 percent. This table only draws a distinction between capitals and the rest of the municipalities, since all of the dwellings assigned to CATI are in subsequent interviews.

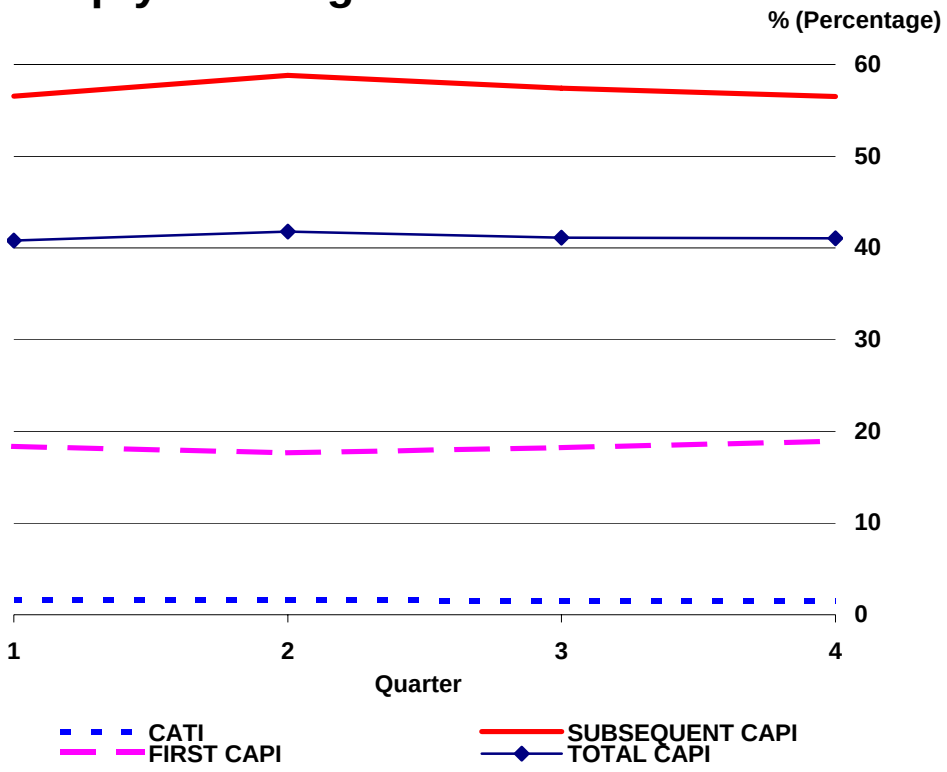
Graph 3 shows the percentages of unsurveyable dwellings in CATI and in CAPI throughout the year; we can observe the large difference between the percentages of empty dwellings in CAPI and in CATI. This difference may be explained by the fact that, for the majority of the empty dwellings, there is no telephone number, and therefore, once they have been detected in the first interview, they must remain assigned to CAPI rather than passing to CATI.

Graph 3
Failure to update the framework (unsurveyable dwellings)



In turn, empty dwellings are visited (or contacted by telephone where possible) all of the quarters, in case they come to be inhabited; therefore the highest percentages for empty dwellings in subsequent interviews in CAPI (see table F.D.1), fluctuating between 54 and 57.4 percent of the selected dwellings, whereas in the first interview, they fluctuate between 17.5 and 19 percent, as can be verified in **graph 4**.

Graph 4
Failure to update the framework
Empty dwellings

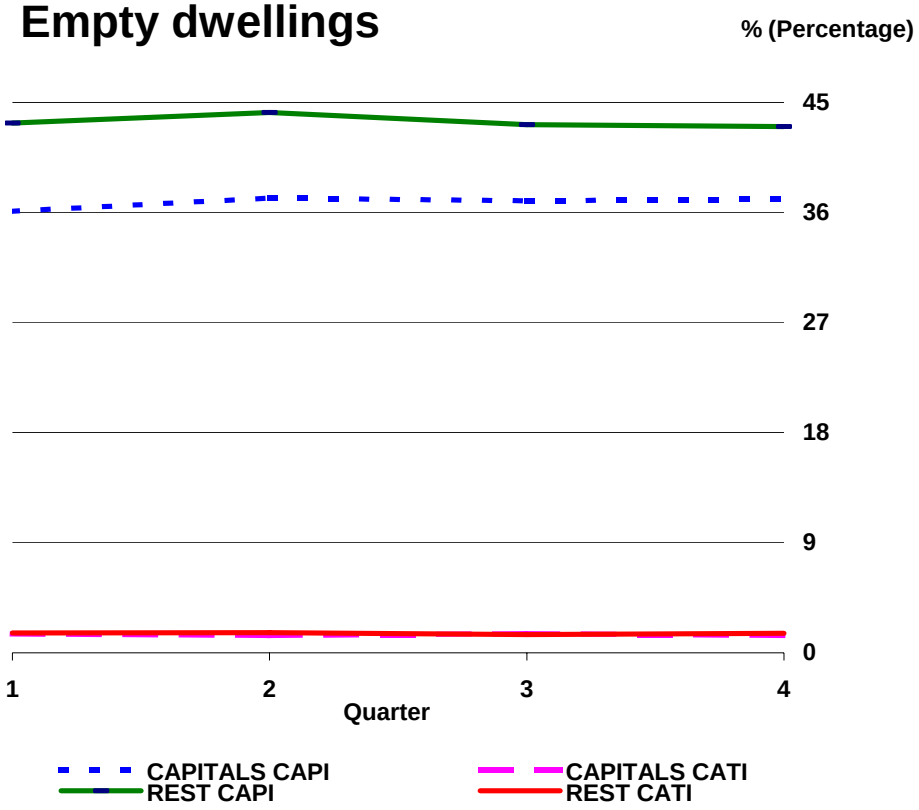


In turn, **graph 5** shows empty dwellings in CATI and in CAPI, differentiating in both cases between capitals and the rest of the municipalities. It can be seen that both in CATI and in CAPI, the percentages of empty dwellings are higher in the other municipalities than in the capitals, although in CAPI the differences are much greater than in CATI, where they are minimal.

In addition to the periodic updating of likelihood of the section sample, and in order to keep the sample updated, in each quarter of the survey, the framework of dwellings of one sixth of the sample sections is updated, according to the established rotation shifts mentioned above.

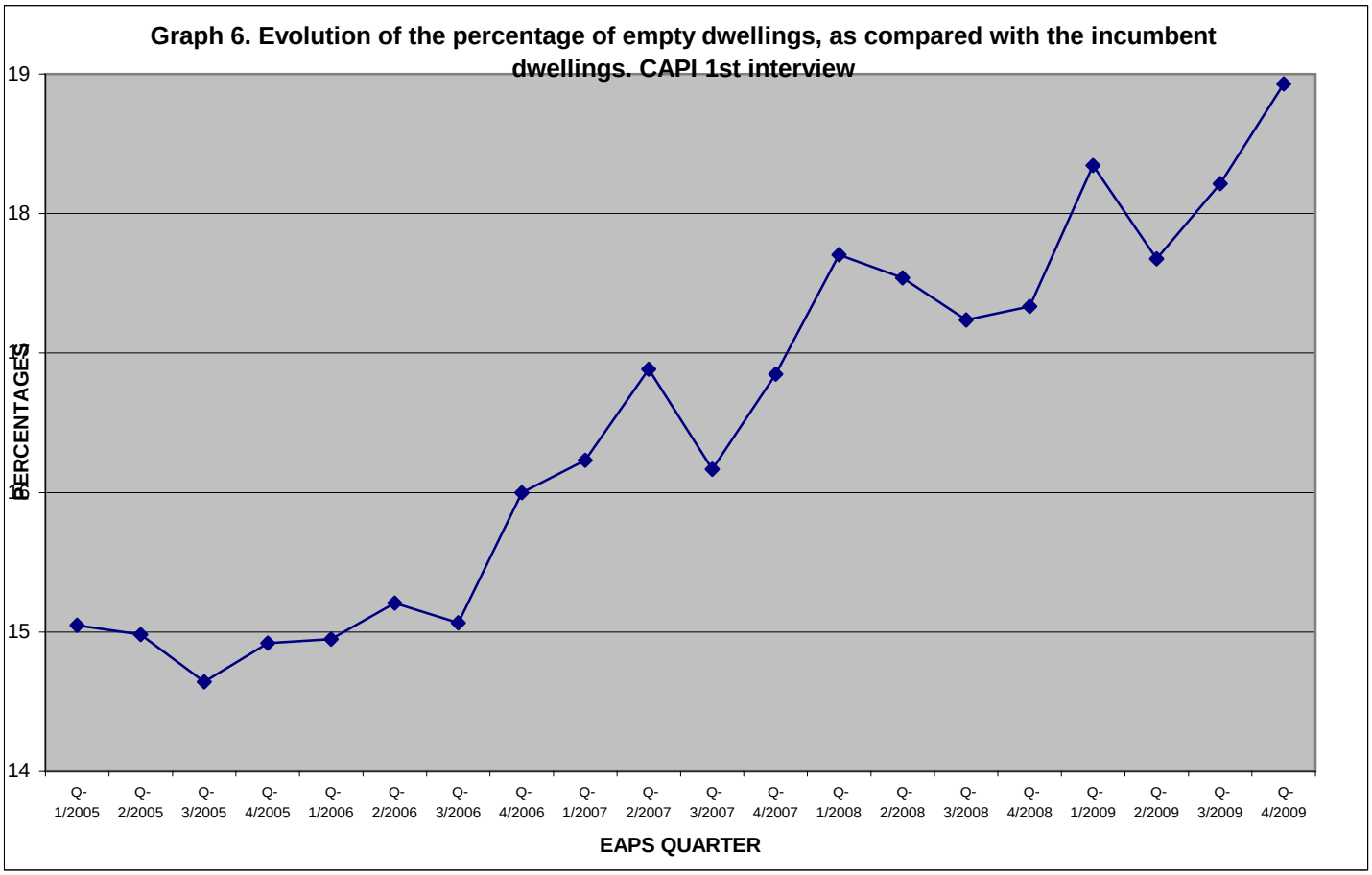
This updating consists of going through the section in order to register newly-constructed buildings and dwellings, visit empty dwellings and commercial premises, in case any of them have become inhabited dwellings, and verify the section's limits. Conversely, the inhabited dwellings are not visited to check on whether they are still inhabited, and therefore, it is possible for the percentage of empty dwellings of the framework to increase gradually over the years.

Graph 5
Failure to update the framework
Empty dwellings



In order to finish with the empty dwellings, **graph 6** shows the evolution, over time, of the percentage of this type of dwelling, with regard to the selected incumbent dwellings. We have presented the evolution since the first quarter of 2005, the date on which the collection through the CAPI and CATI methods began, until now, considering only the data from the dwellings assigned to CAPI that were in the first interview, for the purpose of obtaining more representative results, since the empty dwellings detected in the first interview are visited again in the subsequent interviews, so as to see if the situation has changed, and by which the great majority of the empty dwellings in subsequent interviews are

empty dwellings from the first interview. The aforementioned may be observed: the percentage of empty dwellings increases over time.



Within the quality assessment programme, in order to detect mistakes made in the process of updating the sample sections, a sample of 200 sections per year has been selected to go through it a second time (50 in each quarter), of which, it has only been possible to study 134, due to different incidences arising in th e organisation of the fieldwork.

The *Unsurveyable* dwellings, according to the original interview (O.I.), and the *surveyable* dwellings, according to the repeat interview (R.I.) are actually *omitted* in the framework, and therefore they are unlikely to be part of the sample.

The results by stratum, expressed as a percentage of the surveyable dwellings from the sections selected for the assessment, are shown in **chart 2**.

It is observed that the percentage of dwellings omitted in the framework for the total of the strata is very small, only 1.32 percent, which allows us to state that the form in which the updatings are performed is reasonably good.

2. Omissions of dwellings in the framework

Stratum	Sections updated in R.I.	Surveyable dwellings in O.I.	Dwellings that are unsurveyable in O.I. and surveyable in R.I. (omissions)	
			Total	Percentage
1	47	29,870	412	1.38
2	8	4,661	33	0.71
3	2	1143	0	0.00
4	7	4,396	45	1.02
5	14	9,655	80	0.83
6	17	11,669	302	2.59
7	16	19,027	148	0.78
8	11	6,267	49	0.78
9	12	3,981	125	3.14
Total	134	90,669	1,194	1.32

3.3 Non-response

Non-response in a dwelling belonging to the group being studied may be due to the **absence** of its occupants, or to their **refusal** to participate in the survey.

The percentages of these two types of incidence are shown in tables F.D.1 and F.D. 2 of the Annex, these being calculated with regard to the total for surveyable dwellings, as can be seen. **Graph 7** similarly shows the evolution, throughout the year, of the two components of non-response, with a distinction being made between CATI and CAPI.

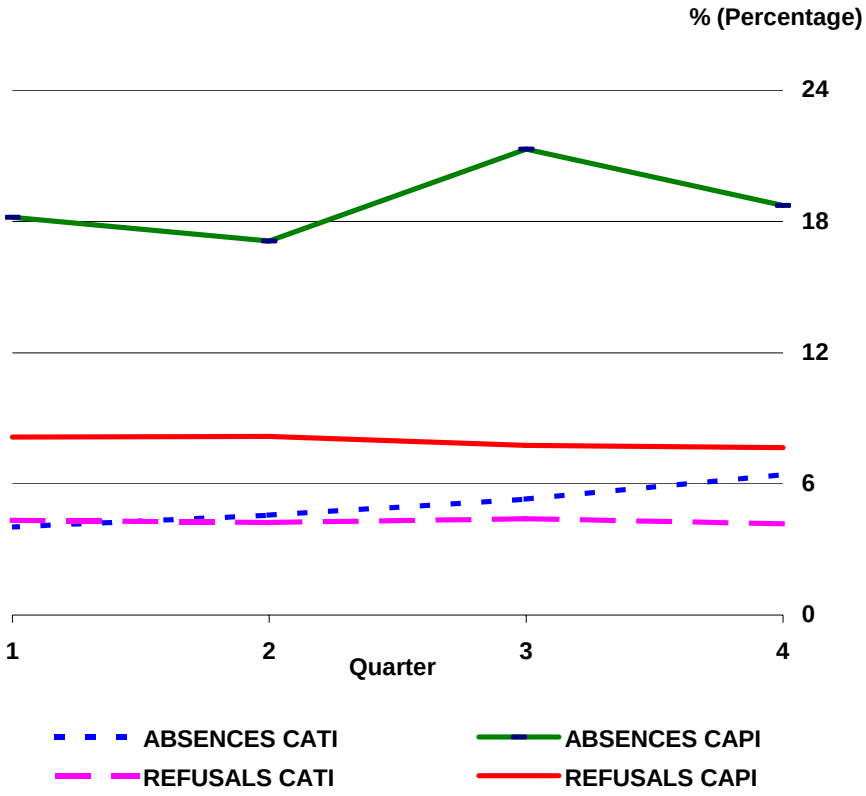
With CAPI, we can observe that the percentages of absences are significantly higher than those corresponding to refusals, since whereas the former stand, on average, at around 18.5 percent, the latter stand at around 8 percent. With CATI, on the other hand, the differences between the percentages of refusals and absences are minimal.

If we compare the percentages of absences in CATI and in CAPI, we can see that they are much higher with the latter collection method. This seems reasonable if we take into account the fact that it is easier to contact a resident in the dwelling, during the day, by telephone, rather than by a personal visit, particularly in the dwellings in which all residents work outside of the home.

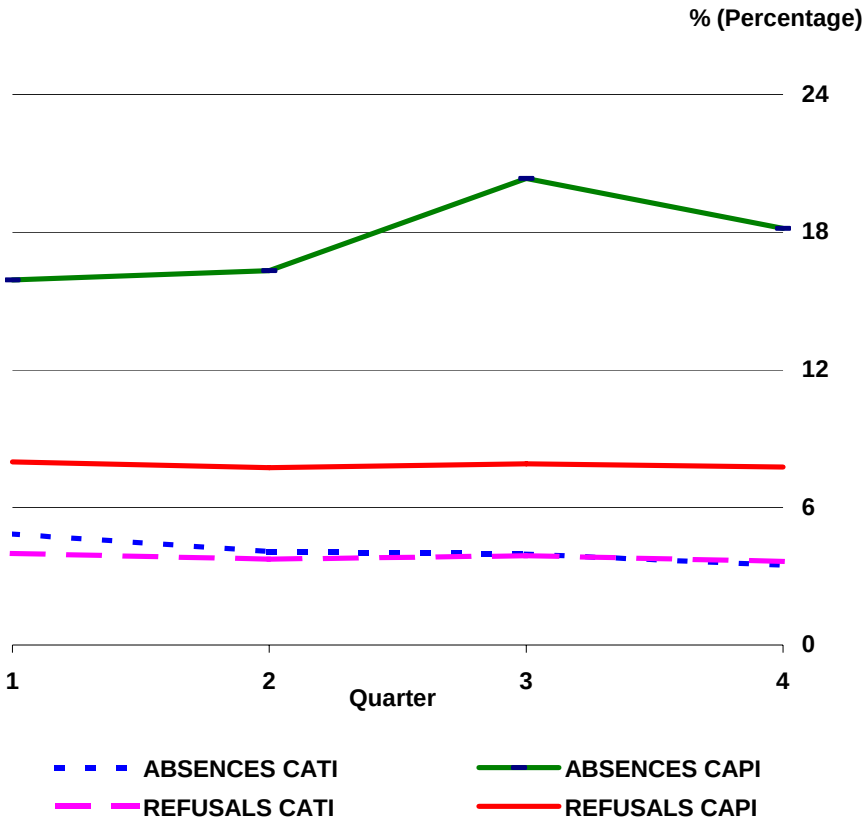
Regarding refusals, we can observe that the percentages are likewise higher in CAPI than in CATI, although in this case, the differences are smaller. This is due

to the fact that the dwellings in CATI, for the most part, have participated previously, on at least one occasion.

Graph 6
Non-response



Graph 7
Non-response



3.3.1. REFUSALS

A refusal occurs when all persons aged 16 years old or over, who are resident in a dwelling, refuse to participate in the survey.

If the refusal occurs in the first quarter of participation, the dwelling is randomly replaced by a reserve dwelling from the same section, until a group is found that will participate or will be absent or inaccessible. When a refusal occurs in the second or subsequent quarters of participation, no replacement is made and an imputation is carried out with the data for the previous quarter, with the dwellings revisited during the remaining quarters during which they remain in the survey (up to six), in case they change their stance or in case of changes in the human group. This imputation is only carried out the first time there is a refusal; if this persists into the following quarters, it entails a sample loss.

Therefore, refusals in subsequent interviews are not, by and large, first-time refusals, but rather *ongoing* refusals from previous interviews.

In tables F.D.1 and F.D.2 of the Annex and in graph 6, we can see that the percentage of refusals remains fairly stable throughout the year, both in CATI and in CAPI, with its average percentage standing at approximately 4 percent of the surveyable dwellings in CATI and around 8 percent in CAPI.

When refusal occurs for *the first time*, a *questionnaire of refusals* is completed in order to collect some of the data for assessing possible biases, which may arise from non-response. This data is: sex, age and relationship with the dwelling reference person who refuses to participate in the survey, and age, sex, nationality, educational level, relationship with economic activity, occupation and branch of activity for the reference person.

In the case that the human group refuses to provide this information (direct information), information is viewed from previous interviews (if they have participated previously), or as a last resort, from the Municipal Register. **Chart 3** shows the origin of the information for refusal questionnaires in the four quarters, for the total of these, and making a distinction between CATI and CAPI.

Focusing on the quarterly average, it can be observed that, in the case of CAPI, most (78 percent on average) of the data from the refusal questionnaires is obtained by *direct information*, whereas in CATI, it is the *information from previous interviews* that which constitutes the main source of information, thus obtaining 91 percent of the data.

The fact that in CATI, the majority of the information is obtained from previous interview data makes sense, since this collection is only used in subsequent interviews, once the dwellings have already participated, in general, on at least one occasion, except in the cases of change in the human group or absence in the first interview.

If we compare the average quarterly number of refusals for the first time from chart 3, with the average quarterly number of total refusals (obtained by adding the refusals from charts F.D.1 and F.D.2 of the Annex), we obtain that the average quarterly number of *refusals for the first time* stands at 57 percent of the total number of refusals.

As previously mentioned, the dwellings composing the sample remain in it for six consecutive quarters, and one sixth of them is renewed each quarter in accordance with established rotation shifts.

3. Origin of the information from the questionnaires on refusals for the first time

Origin	Quarter									
	First		Second		Third		Fourth		Average	
Total	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	2,074	100.0	2,162	100.0	2,195	100.0	2,043	100.0	2,119	100.0
- Municipal register	128	6.2	131	6.1	137	6.2	130	6.4		6.2
- Information from previous interview	1,001	48.3	1,087	50.3	1,121	51.1	1,001	49.0		49.7
- Direct information	945	45.6	944	43.7	937	42.7	912	44.6		44.1
CATI	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	974	100.0	1,043	100.0	1,123	100.0	944	100.0	1,021	100.0
- Municipal register	11	1.1	9	0.9	18	1.6	8	0.9		1.1
- Information from previous interview	902	92.6	979	93.9	1,017	90.6	896	94.9		93.0
- Direct information	61	6.3	55	5.3	88	7.8	40	4.2		5.9
CAPI	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	1,100	100.0	1,119	100.0	1,072	100.0	1,099	100.0	1,098	100.0
- Municipal register	117	10.6	122	10.9	119	11.1	122	11.1		10.9
- Information from previous interview	99	9.0	108	9.7	104	9.7	105	9.6		9.5
- Direct information	884	80.4	889	79.5	849	79.2	872	79.3		79.6

3. Origin of the information from the questionnaires on refusals for the first time

Origin	Quarter									
	First		Second		Third		Fourth		Average	
Total	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	1,967	100.0	1,865	100.0	2,099	100.0	1,937	100.0	1,967	100.0
- Municipal register	136	6.5	127	6.0	120	5.7	135	7.0	130	6.6
- Information from previous interviews	948	40.2	912	45.7	1,027	48.9	886	45.7	943	48.0
- Direct information	883	53.3	826	48.3	952	45.4	916	47.3	894	45.5
CATI	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	890	100.0	879	100.0	1,024	100.0	891	100.0	921	100.0
- Municipal register	8	0.9	9	0.9	6	0.6	9	1.0	8	0.9
- Information from previous interviews	845	94.9	825	86.3	898	87.7	776	87.1	836	90.8
- Direct information	37	4.2	45	12.8	120	11.7	106	11.9	77	8.4
CAPI	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	1,077	100.0	986	100.0	1,075	100.0	1,046	100.0	1,046	100.0
- Municipal register	128	9.8	118	10.5	114	10.6	126	12.1	122	11.6
- Information from previous interviews	103	8.7	87	9.9	129	12.0	110	10.5	107	10.3
- Direct information	846	81.6	781	79.7	832	77.4	810	77.4	817	78.1

4. Refusals for the first time, according to the interview number of the human group. Totals

Interview number	Quarter First		Second		Third		Fourth		Average	
Total	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	1,967	100.0	1,865	100.0	2,099	100.0	1,937	100.0	1,967	100.0
- First interview	755	38.4	738	39.6	764	36.4	774	40.0	758	38.5
- Second interview	131	6.7	132	7.1	159	7.6	159	8.2	145	7.4
- Third interview	186	9.5	164	8.8	190	9.1	151	7.8	173	8.8
- Fourth interview	203	10.3	186	10.0	257	12.2	212	10.9	215	10.9
- Fifth interview	292	14.8	272	14.6	305	14.5	284	14.7	288	14.7
- Sixth interview	400	20.3	373	20.0	424	20.2	357	18.4	389	19.8
CATI	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	890	100.0	879	100.0	1,024	100.0	891	100.0	921	100.0
- First interview	36	4.0	41	4.7	39	3.8	50	5.6	42	4.5
- Second interview	302	33.9	291	33.1	322	31.5	263	29.5	295	32.0
- Third interview	206	23.2	202	23.0	284	27.7	208	23.3	225	24.4
- Fourth interview	144	16.2	135	15.4	171	16.7	170	19.1	155	16.8
- Fifth interview	121	13.6	123	14.0	117	11.4	103	11.6	116	12.6
- Sixth interview	81	9.1	87	9.9	91	8.9	97	10.9	89	9.7
CAPI	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	1,077	100.0	986	100.0	1,075	100.0	1,046	100.0	1,046	100.0
- First interview	939	87.2	883	89.6	946	88.0	932	89.1	925	88.4
- Second interview	43	4.0	28	2.8	42	3.9	43	4.1	39	3.7
- Third interview	29	2.7	21	2.1	28	2.6	21	2.0	25	2.4
- Fourth interview	27	2.5	23	2.3	21	2.0	22	2.1	23	2.2
- Fifth interview	25	2.3	17	1.7	19	1.8	11	1.1	18	1.7
- Sixth interview	14	1.3	14	1.4	19	1.8	17	1.6	16	1.5

Chart 4 shows the distribution of the *refusals for the first time*, according to the number of the interview of the human group in which they have occurred. This presents both the total of the refusals for the first time and the breakdown thereof, depending on the collection method used, whether it be CAPI or CATI.

It can be observed that, with CAPI, on average, 90 percent of families that refuse to participate in the survey for the first time, do so in the first interview, with 95 percent of them doing so in one of the first three interviews.

As mentioned previously, the CATI method is used in those dwellings corresponding to the sections which, according to the rotation shift, correspond to the second or subsequent interviews, and therefore, the refusals for the first time that appear in the CATI section of chart 5 in the first interview must correspond to dwellings in which there has been a change in the human group or to dwellings which, in the previous quarter or quarters, were empty, inaccessible or intended for other purposes, or in which the human group was absent.

Chart 4 shows that, with CATI, 32 percent of families that have refused for the first time to participate in the survey have done so in the second interview, with 73 percent of them doing so between the second and the fourth interviews.

If we compare figures for refusals in the first interview of CAPI in chart 4 and in table F.D.1, it can be observed that there is a considerable differences¡ between them. The data in table F.D.1 corresponds to refusals of dwellings in which, due to rotation shift, are in the first interview, whereas in chart 4, refusals for the first time are presented, including those occurring in dwellings that are in both the first interview and subsequent interviews (if the refusal takes place following one or more previous collaborations, absences or unsurveyable or inaccessible dwellings, or if there has been a change in the human group), the figures are therefore not comparable.

4. Refusals for the first time, according to the interview number of the human group. Totals

Interview number	Quarter First		Second		Third		Fourth		Average	
Total	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	2,074	100.0	2,162	100.0	2,195	100.0	2,043	100.0	2,119	100.0
- First interview	1,058	51.0	1,066	49.3	1,010	46.0	1,054	51.6	1,047	49.4
- Second interview	337	16.2	366	16.9	393	17.9	309	15.1	351	16.6
- Third interview	215	10.4	249	11.5	290	13.2	212	10.4	242	11.4
- Fourth interview	208	10.0	207	9.6	226	10.3	205	10.0	212	10.0
- Fifth interview	148	7.1	173	8.0	160	7.3	149	7.3	158	7.4
- Sixth interview	108	5.2	101	4.7	116	5.3	114	5.6	110	5.2
CATI	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	974	100.0	1,043	100.0	1,123	100.0	944	100.0	1,021	100.0
- First interview	102	10.5	94	9.0	50	4.5	75	7.9	80	7.9
- Second interview	274	28.1	308	29.5	351	31.3	270	28.6	301	29.5
- Third interview	192	19.7	219	21.0	267	23.8	187	19.8	216	21.2
- Fourth interview	188	19.3	187	17.9	214	19.1	187	19.8	194	19.0
- Fifth interview	131	13.5	149	14.3	144	12.8	132	14.0	139	13.6
- Sixth interview	87	8.9	86	8.3	97	8.6	93	9.9	91	8.9
CAPI	No.	%	No.	%	No.	%	No.	%	No.	%
Refusals for the first time	1,100	100.0	1,119	100.0	1,072	100.0	1,099	100.0	1,098	100.0
- First interview	956	86.9	972	86.9	960	89.6	979	89.1	967	88.1
- Second interview	63	5.7	58	5.2	42	3.9	39	3.6	51	4.6
- Third interview	23	2.1	30	2.7	23	2.2	25	2.3	25	2.3
- Fourth interview	20	1.8	20	1.8	12	1.1	18	1.6	18	1.6
- Fifth interview	17	1.6	24	2.1	16	1.5	17	1.6	19	1.7
- Sixth interview	21	1.9	15	1.3	19	1.8	21	1.9	19	1.7

Some features of the reference person of the dwellings that refused to participate for the first time in the EAPS are presented in **tables F.D.3.1 to F.D.3.6**. It can be observed that, in general, the percentage of cases in which it was not possible to obtain data from the refusal questionnaire (*no data recorded*) is high, particularly for the characteristics *relationship with economic activity* and *educational level*, for which it stands at 59 and 51 percent, respectively. Such high non-response values subtract validity from any conclusions that can be obtained from these tables; nevertheless, the end of table **F.D.3.3** includes the percentage distribution of family dwellings, according to the relationship with economic activity of the reference person, obtained from EAPS 2009 (average for the four quarters), and by comparing this distribution, which serves as a reference, with that from the quarterly average for refusals, it could be said that first-time refusals are concentrated in dwellings where the reference person is in *another situation* as regards economic activity, in other words, in that s/he is neither *employed* nor *unemployed*.

In the remaining tables, it has not been possible to obtain reference distributions, since they are not readily available among the EAPS information.

5. Refusals for the first time, according to the reason expressed by the person refusing to participate in the interview

Reason	Quarter								
	First		Second		Third		Fourth		Average
Total	No.	%	No.	%	No.	%	No.	%	%
Refusals for the first time	2,074	100.0	2,162	100.0	2,195	100.0	2,043	100.0	
- No reason expressed	564	27.2	617	28.5	663	30.2	581	28.4	28.6
- Lack of interest	508	24.5	504	23.3	550	25.1	463	22.7	23.9
- Too much of a bother	259	12.5	213	9.9	225	10.3	251	12.3	11.2
- Fear or distrust	187	9.0	194	9.0	155	7.1	180	8.8	8.5
- Death or illness	348	16.8	409	18.9	381	17.4	383	18.8	18.0
- Other	208	10.0	225	10.4	221	10.1	185	9.1	9.9
CATI	No.	%	No.	%	No.	%	No.	%	%
Refusals for the first time	974	100.0	1,043	100.0	1,123	100.0	944	100.0	
- No reason expressed	210	21.6	261	25.0	302	26.9	233	24.7	24.5
- Lack of interest	319	32.8	344	33.0	373	33.2	288	30.5	32.4
- Too much of a bother	114	11.7	88	8.4	103	9.2	107	11.3	10.2
- Fear or distrust	130	13.4	130	12.5	112	10.0	131	13.9	12.4
- Death or illness	118	12.1	144	13.8	143	12.7	111	11.8	12.6
- Other	83	8.5	76	7.3	90	8.0	74	7.8	7.9
CAPI	No.	%	No.	%	No.	%	No.	%	%
Refusals for the first time	1,100	100.0	1,119	100.0	1,072	100.0	1,099	100.0	
- No reason expressed	354	32.2	356	31.8	361	33.7	348	31.7	32.3
- Lack of interest	189	17.2	160	14.3	177	16.5	175	15.9	16.0
- Too much of a bother	145	13.2	125	11.2	122	11.4	144	13.1	12.2
- Fear or distrust	57	5.2	64	5.7	43	4.0	49	4.5	4.8
- Death or illness	230	20.9	265	23.7	238	22.2	272	24.8	22.9
- Other	125	11.4	149	13.3	131	12.2	111	10.1	11.8

In turn, **table F.D.3.7** presents the distribution of refusals for the first time in accordance with the number of persons in the dwelling. In the final column of this table, it has been possible to include, as in table F.D.3.3, the percentage distribution of family dwellings, by number of persons, obtained from EAPS 2009 (average for the four quarters). If we compare this distribution with that for the quarterly average of refusals, we may reach the conclusion that refusals for the first time are concentrated primarily in one- and two-person dwellings. Nevertheless, the high percentage of *no data recorded* lowers the reliability of this conclusion.

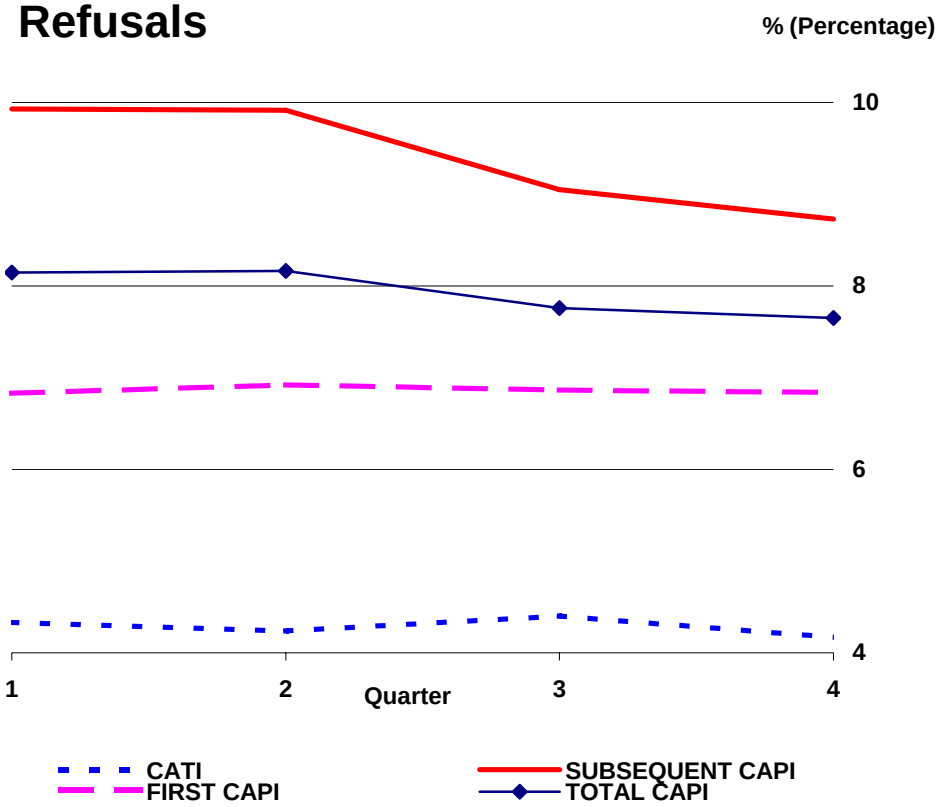
5. Refusals for the first time, according to the reason expressed by the person refusing to participate in the interview

Reason	Quarter								
	First		Second		Third		Fourth		Average
Total	No.	%	No.	%	No.	%	No.	%	%
Refusals for the first time	1,967	100.0	1,865	100.0	2,099	100.0	1,937	100.0	
- No reason expressed	555	28.2	493	26.4	570	27.2	539	27.8	27.4
- Lack of interest	429	21.8	451	24.2	466	22.2	449	23.2	22.8
- Too much of a bother	249	12.7	224	12.0	258	12.3	233	12.0	12.2
- Fear or distrust	143	7.3	136	7.3	162	7.7	146	7.5	7.5
- Death or illness	371	18.9	349	18.7	401	19.1	393	20.3	19.2
- Other	220	11.2	212	11.4	242	11.5	177	9.1	10.8
CATI	No.	%	No.	%	No.	%	No.	%	%
Refusals for the first time	890	100.0	879	100.0	1,024	100.0	891	100.0	
- No reason expressed	216	24.3	215	24.5	261	25.5	243	27.3	25.4
- Lack of interest	269	30.2	276	31.4	307	30.0	260	29.2	30.2
- Too much of a bother	100	11.2	104	11.8	120	11.7	92	10.3	11.3
- Fear or distrust	88	9.9	92	10.5	107	10.5	87	9.8	10.1
- Death or illness	122	13.7	115	13.1	142	13.9	140	15.7	14.1
- Other	95	10.7	77	8.8	87	8.5	69	7.7	8.9
CAPI	No.	%	No.	%	No.	%	No.	%	%
Refusals for the first time	1,077	100.0	986	100.0	1,075	100.0	1,046	100.0	
- No reason expressed	339	31.5	278	28.2	309	28.7	296	28.3	29.2
- Lack of interest	160	14.9	175	17.8	159	14.8	189	18.1	16.4
- Too much of a bother	149	13.8	120	12.2	138	12.8	141	13.5	13.1
- Fear or distrust	55	5.1	44	4.5	55	5.1	59	5.6	5.1
- Death or illness	249	23.1	234	23.7	259	24.1	253	24.2	23.8
- Other	125	11.6	135	13.7	155	14.4	108	10.3	12.5

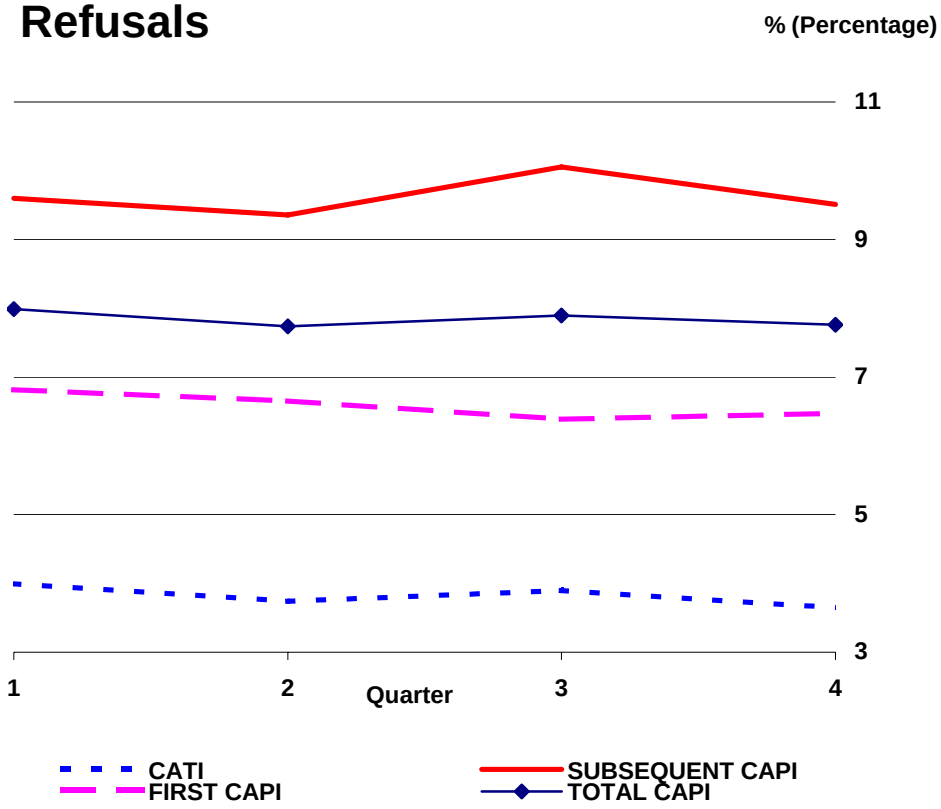
Lastly, **chart 5** presents the distribution of the refusals for the first time, according to the reason expressed by the person refusing the interview, distinguishing between CATI and CAPI. We can observe that, in the dwellings assigned to CATI, the highest percentage of first-time refusals corresponds, with 30.2 percent on average, to *lack of interest*; conversely, in the dwellings assigned to CAPI, the highest percentage corresponds to *no reason given* with 29.2 percent on average, followed by *death or illness*, with 23.8 percent.

Graph 8 represents the percentages of refusals for CATI and for CAPI in the four quarters, with a distinction being made for the latter method between the first and subsequent interviews.

Graph 7
Non-response
Refusals

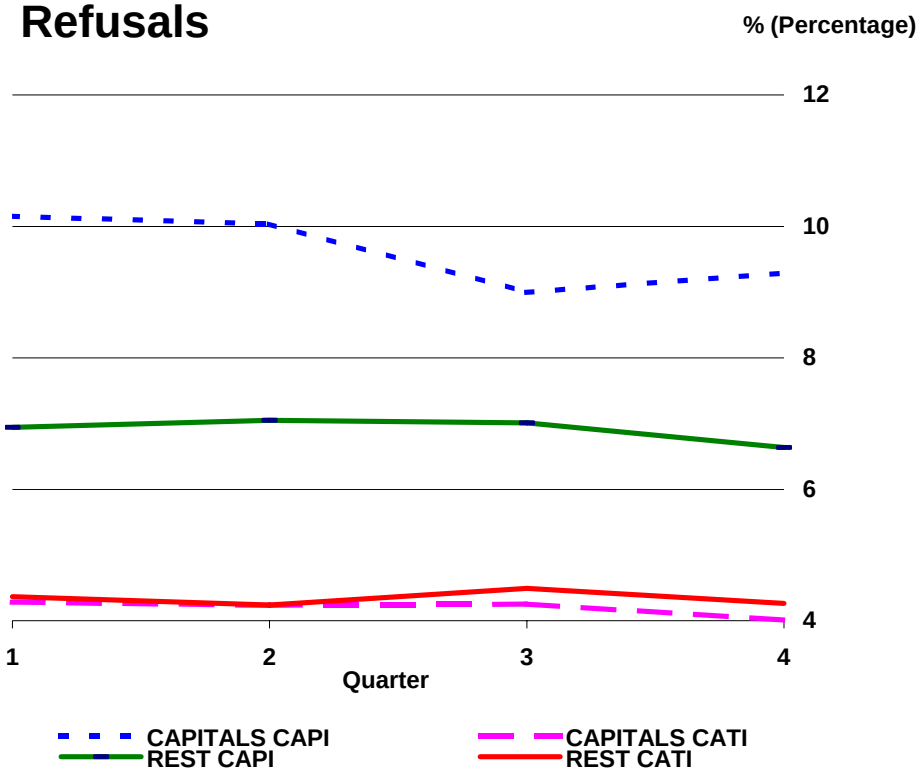


Graph 8
Non-response
Refusals



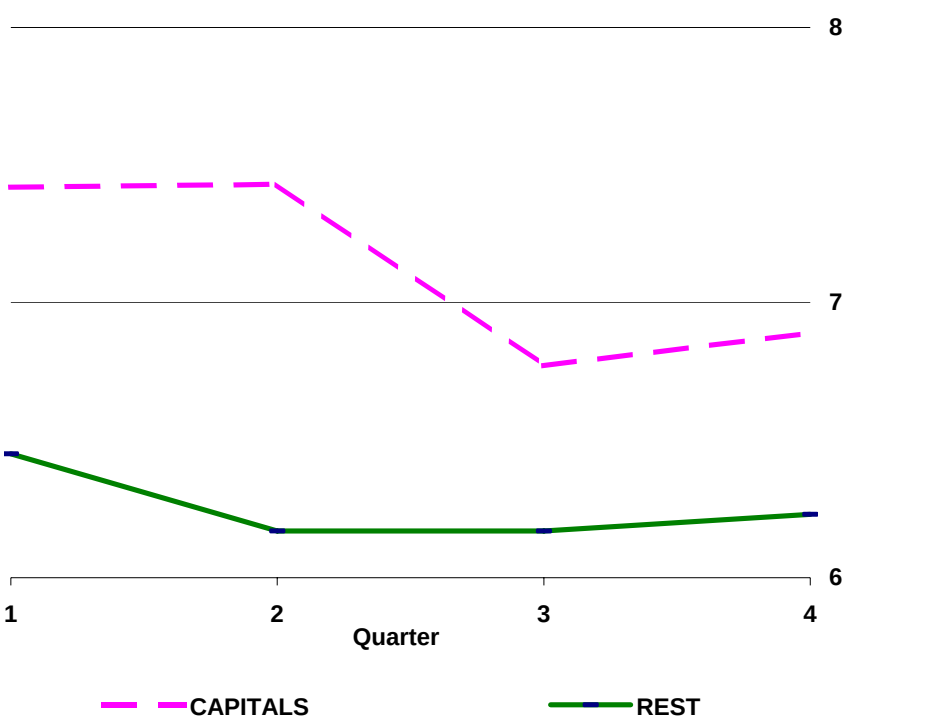
Firstly, please note that the percentages of refusals are significantly higher in CAPI than in CATI, as we have already mentioned. Secondly, and on the subject of CAPI, we can see that refusals are relatively more numerous in the subsequent interviews than in the first interview. This is due to the fact that, as with the empty dwellings, dwellings with refusals are revisited in the remaining participation quarters, in case there are changes, either in the attitude of the human group with regard to the survey, or in the human group itself; therefore, refusals in subsequent interviews are, for the most part, refusals continuing from previous quarters.

Graph 8
Non-response
Refusals



The percentages of refusals, depending on the type of municipality, are represented, for dwellings in CAPI in the first interview, in **graph 9**. We have observed that the percentages of refusals are, in the four quarters, higher in the provincial capitals than in the remaining municipalities, though the differences are quite small, particularly in the third and fourth quarters, where they do not even reach one percentage point.

Graph 9
Non-response
Refusals in CAPI 1st interview



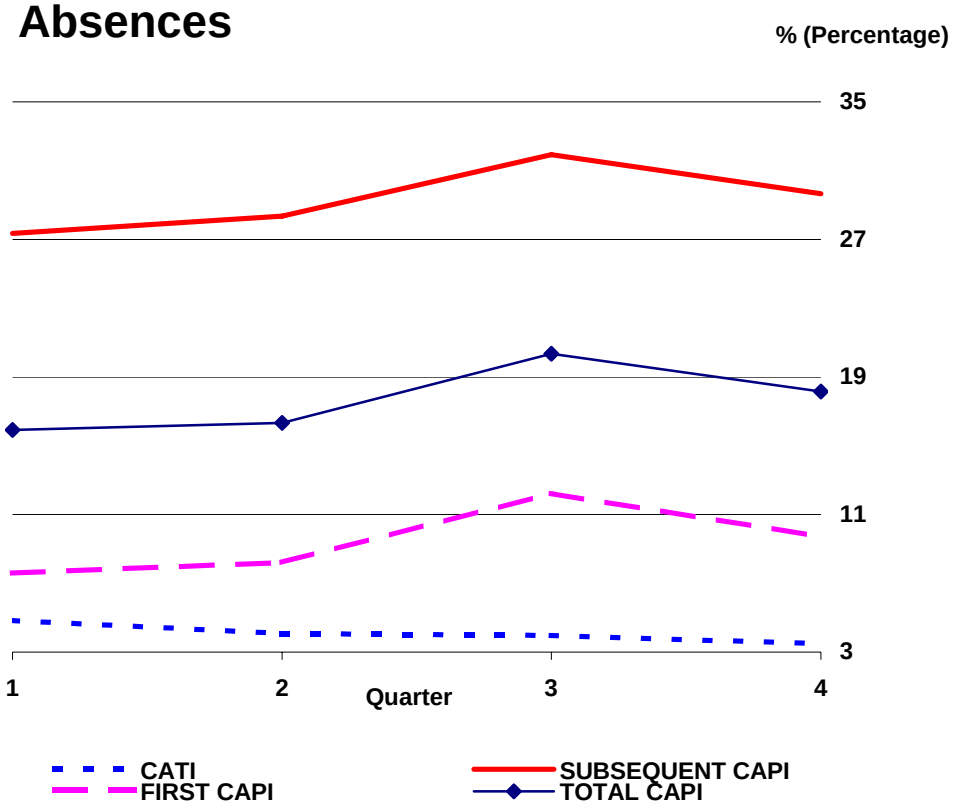
3.3.2. ABSENCES

Absence in a dwelling occurs when no person from the human group occupying it is present, in the subsequent visits that the interviewer makes to the dwelling, during the time remaining in the section.

In case of the temporary absence of the occupants of the dwelling, the interviewer repeats her/his visits or telephone calls in order to try to obtain the information, as long as the working calendar allows. If, despite all attempts, s/he

is unable to contact any of them, the dwelling is then considered to be definitively absent, and s/he again tries to contact it the following quarter.

Graph 10
Non-response Absences



Graph 10 reflects the percentages of absences for CATI and CAPI in the four quarters, distinguishing for the latter method between the first and the subsequent interviews.

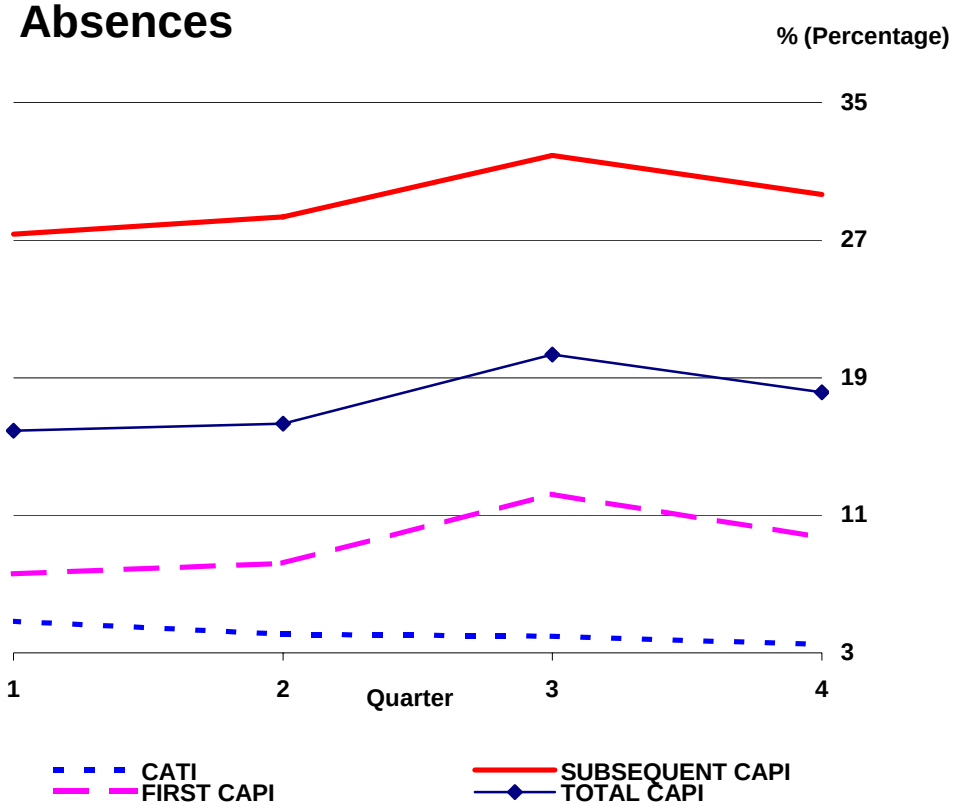
Firstly, the percentages of absences are significantly higher in CAPI than in CATI, as mentioned previously. Secondly, and with reference to CAPI, we can see that the absences are much more numerous, in relative terms, in the subsequent interviews than in the first interview. This is due, firstly, to the fact that, as with the refusals, there are absences continuing from one quarter to the next, and secondly, to the fact that the number of surveyable dwellings is much lower, as compared with the number of selected dwellings, in subsequent interviews than in the first interview.

Lastly, we have observed that, while in CATI, the percentage of absences decreases slightly but progressively from the first quarter to the fourth quarter,

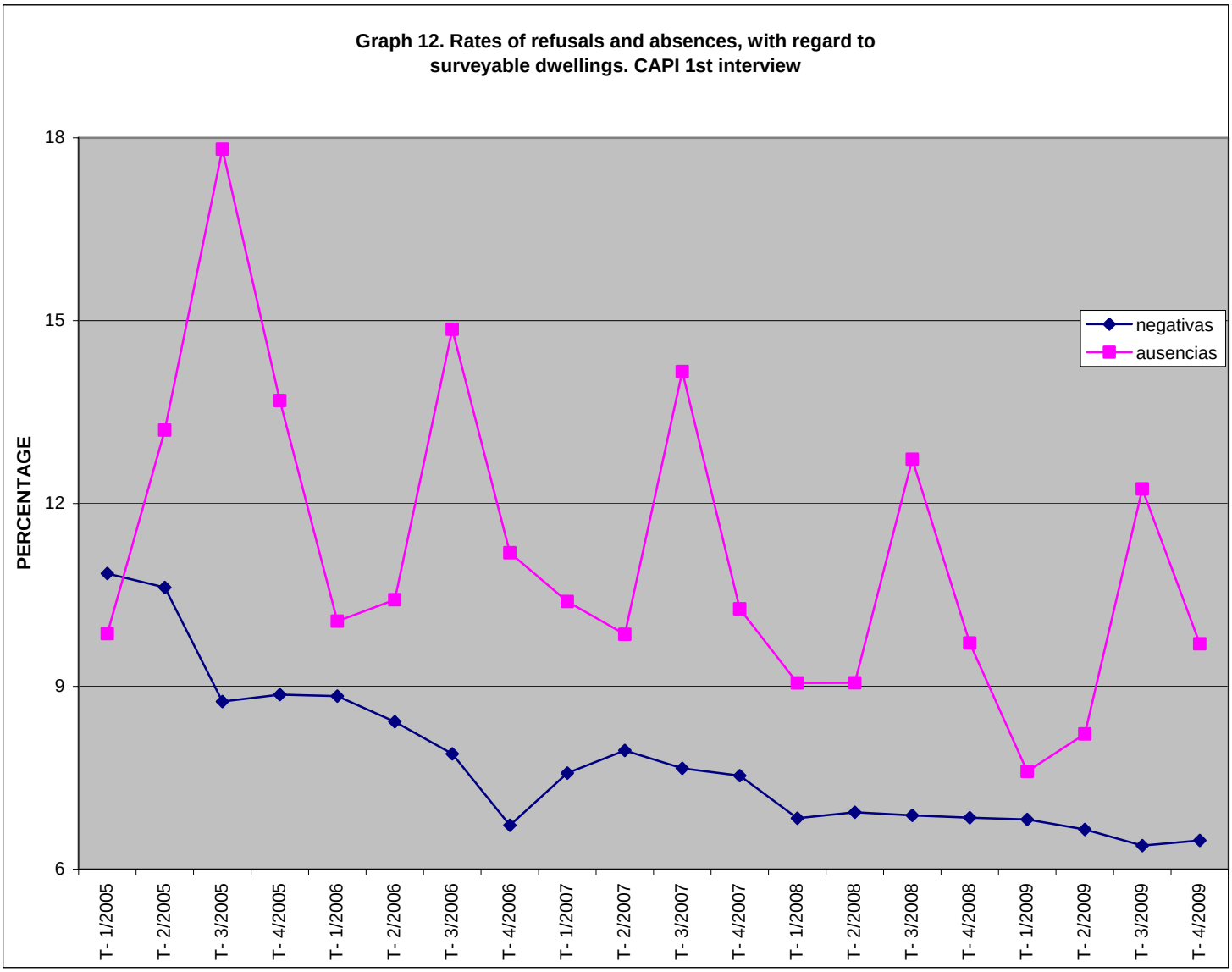
in CAPI, a progressive increase is recorded between the first quarter and the third quarter, to later decrease in the fourth.

The percentages of absences, depending on the type of municipality, are represented, for CATI and for CAPI, in **graph 11**. In CATI, the percentages are quite similar, except in the third quarter, during which they are higher in the provincial capitals. In CAPI, the percentages of absences are always higher in the capitals than in the remaining municipalities, yielding an average difference of almost six percentage points.

Graph 10
Non-response Absences



Graph 12. Rates of refusals and absences, with regard to surveyable dwellings. CAPI 1st interview



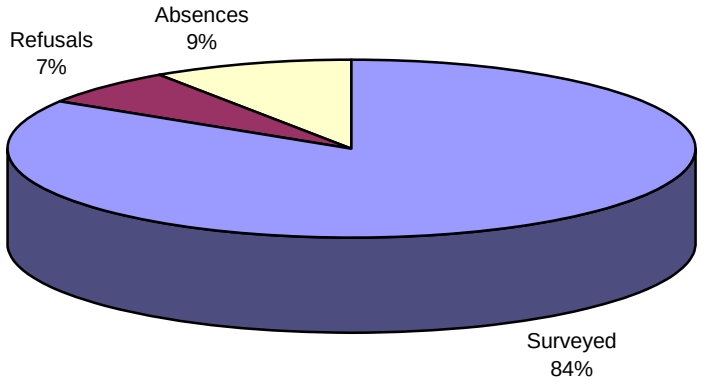
Graph 12 represents the time evolution of the rates of refusals and absences, from the first quarter of 2005 to the fourth quarter of 2009, in the dwellings that have been included in CAPI and that were in their first interview. The reason for considering only these dwellings, excluding those in subsequent interviews, is to obtain more representative results, on not considering the refusals and absences carried over from previous quarters in the latter interviews. In turn, the reason for beginning the graphical representation of the data in the first quarter of 2005

is that it was in this period when the collection, differentiated by CAPI and CATI method, was implemented.

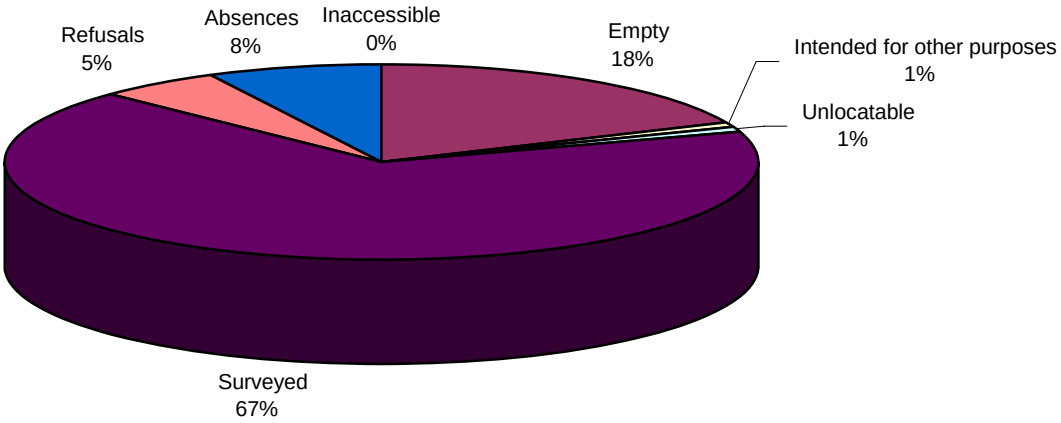
It can be observed that both rates (percentages of refusals and absences, as compared with the surveyable dwellings) have been decreasing over time. In the case of absences, we can see the recoveries that take place in the third quarter of each year, coinciding with the longest family holiday period.

The graphical representation of the percentage distribution of the surveyable dwellings, considering the average of the data of the four quarters of the year, in CAPI and in CATI, may be viewed in **graphs 13 and 14**, respectively.

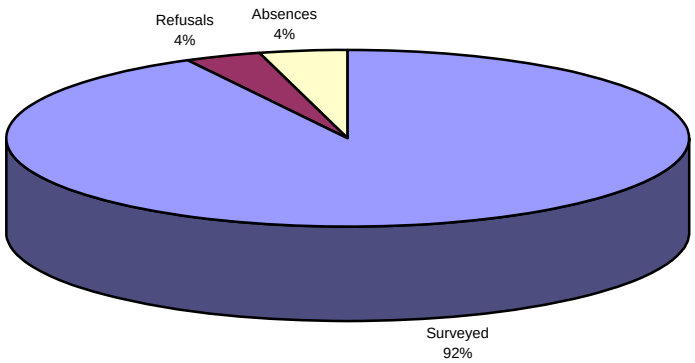
Graph 13.
Distribution of surveyable dwellings.
CAPI first interview.
Quarterly average



Graph 15
Incidences in incumbent dwellings.
CAPI first interview.
Quarterly average

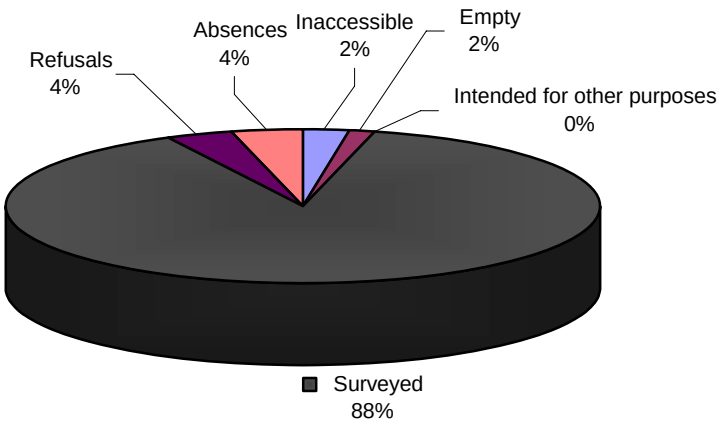


Graph 14
Distribution of surveyable dwellings. CATI
Quarterly average



Lastly, **graphs 15 and 16** have represented the percentage distributions, considering likewise the quarterly average, of the incidences in the incumbent

Graph 16
Incidences in incumbent dwellings in CATI
Quarterly average



dwellings assigned to CAPI (first interview) and to CATI, respectively.

3.4 Incidences in the sample in the different Autonomous Communities

Charts 6.1.1 to 6.4.2 show the incidences registered in the dwellings selected for the four quarters of the year, by Autonomous Community and according to the collection method used. The percentages of surveyed dwellings, refusals and absences have been calculated with regard to the total for surveyable dwellings, instead of regarding the total number of selected dwellings.

Considering the average values of the four quarters, contained in tables 6.5.1 and 6.5.2, in **the dwellings assigned to CAPI** (see **table 6.5.1**) we can see, firstly, that the percentages of unavailable dwellings are very small. In terms of the failure to update the framework, of particular note is Comunidad de Madrid, with 29.5 percent, the Community with the lowest average quarterly percentage for unsurveyable dwellings, whereas at the other extreme, Castilla-La Mancha stands out with an average percentage for unsurveyable dwellings of 51.4 percent. Such high percentages of unsurveyable dwellings are due, as already mentioned, to the fact that the empty dwellings are visited every quarter, in case they become inhabited.

If we then study non-response, including refusals plus absences, we can see that Canarias is the Community with the highest quarterly average, reaching a value of 42 percent. The least non-response corresponds to Cantabria, whose quarterly average stands at 15 percent.

If we break non-response down into its components, we can observe that the highest quarterly average percentage of refusals corresponds to Cataluña, with 12 percent. Among the Communities with fewest refusals, Cantabria, whose quarterly average stands at 0.45 percent, is of particular note.

In terms of absences, Canarias, with almost 33 percent, is the Community with the highest percentage. At the other extreme is Cataluña, with a value of 4.5 percent, the Community with the lowest percentage.

As regards **dwellings** that were **assigned to CATI**, and likewise considering the average values for the four quarters (see **table 6.5.2**), we can observe that the percentages of unavailable dwellings are greater than in CAPI, with Melilla reaching the highest value, at almost 7 percent. This fact is explained by the different meaning of *inaccessible dwelling* in CATI and in CAPI, as already mentioned in sections 3 and 3.1. With regard to unsurveyable dwellings, Cataluña is of particular note, with 0.45 percent, as the Community with the lowest average quarterly percentage. At the opposite end of the spectrum, Comunidad Valenciana stands out with 4.4 percent.

If we study non-response, we can see that Comunidad de Madrid is the Community with the highest quarterly average, standing at 12.6 percent. The least non-response corresponds to Cantabria, whose quarterly average stands at slightly over 5 percent.

If we now analyse the components of non-response, we can see that with regard to refusals, País Vasco stands out with the highest value, 8.3 percent. Among the Communities with the fewest refusals, Cantabria, whose quarterly average stands at 2.4 percent, is of particular note.

In terms of absences, Comunidad de Madrid, with an average of 7.4 percent, is the Community with the highest percentage. At the other extreme is Cantabria, with 2.1 percent, the Community with the lowest relative number of absences.

Lastly, tables 6.1.T to 6.4.T show the incidences occurring in the four quarters of the year, by Autonomous Community, for the complete sample of incumbent selected dwellings (that is, for the whole of CAPI + CATI). Table 6.5.T includes the average values for the four quarters of the year.

Considering the values of this last table, we can observe that, firstly, the percentages of inaccessible dwellings are small, with lowest corresponding to Cantabria (0.9 percent), and the highest corresponding to Baleares, with 3 percent. In terms of the failure to update the framework, of particular note is Comunidad de Madrid, with 9.25 percent, the Community with the lowest average quarterly percentage for unsurveyable dwellings, whereas at the other extreme, Melilla stands out with an average percentage for unsurveyable dwellings of 26.6 percent.

If we then study non-response, including refusals plus absences, we can see that Melilla reaches the highest quarterly average, reaching a value of nearly 22 percent. The least non-response corresponds to Galicia, whose quarterly average stands at 8.8 percent.

If we break non-response down into its components, we can observe that the highest quarterly average percentage of refusals corresponds to País Vasco, with 9.1 percent. Among the Communities with the fewest refusals, Cantabria, whose quarterly average stands at 1.9 percent, is of particular note.

In terms of absences, Melilla, with an average of almost 16 percent, has again recorded the highest percentage. At the opposite extreme are Galicia and Cataluña, with 5.3 percent, the Communities with the lowest percentages.

6.1.1 Incidences in the sample, by Autonomous Community, as a percentage (CAPI)

1st quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inaccessible	Unsurveyable	Surveyable	Total	Surveyed	Refusals	Absences
TOTAL	100.00	0.24	42.85	56.90	100.00	76.09	7.99	15.92
Andalucía	100.00	0.42	39.42	60.16	100.00	84.62	6.95	8.42
Aragón	100.00	0.06	47.14	52.79	100.00	69.37	8.49	22.14
Asturias (Principado de)	100.00	0.21	37.57	62.22	100.00	71.48	4.66	23.86
Balears (Illes)	100.00	2.03	47.81	50.16	100.00	66.52	8.74	24.73
Canarias	100.00	0.11	42.90	56.99	100.00	59.77	10.06	30.17
Cantabria	100.00	0.00	32.44	67.56	100.00	87.99	0.55	11.46
Castilla y León	100.00	0.23	50.59	49.18	100.00	79.53	6.02	14.45
Castilla-La Mancha	100.00	0.07	49.55	50.38	100.00	65.13	12.70	22.17
Cataluña	100.00	0.07	42.02	57.91	100.00	84.18	12.11	3.71
Comunitat Valenciana	100.00	0.36	45.52	54.12	100.00	83.26	7.62	9.12
Extremadura	100.00	0.05	44.79	55.15	100.00	65.68	6.00	28.32
Galicia	100.00	0.09	45.19	54.71	100.00	80.14	7.64	12.22
Madrid (Comunidad de)	100.00	0.29	29.83	69.89	100.00	78.93	7.52	13.54
Murcia (Región de)	100.00	0.00	39.03	60.97	100.00	81.91	6.81	11.28
Navarra (Com. Foral de)	100.00	0.31	41.26	58.44	100.00	69.55	8.14	22.31
País Vasco	100.00	0.21	32.05	67.74	100.00	62.73	12.42	24.84
Rioja (La)	100.00	0.00	44.36	55.64	100.00	67.89	4.79	27.32
Ceuta	100.00	0.00	35.79	64.21	100.00	65.57	14.75	19.67
Melilla	100.00	0.00	36.76	63.24	100.00	69.23	5.98	24.79

6.1.2 Incidences in the sample, by Autonomous Community, as a percentage (CATI)

1st quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences
TOTAL	100.00	2.23	1.70	96.07	100.00	91.15	4.00	4.85
Andalucía	100.00	2.21	1.66	96.13	100.00	94.56	2.65	2.78
Aragón	100.00	1.97	1.11	96.92	100.00	92.80	2.75	4.45
Asturias (Principado de)	100.00	2.14	1.27	96.60	100.00	94.43	2.79	2.79
Balears (Illes)	100.00	3.20	0.71	96.09	100.00	86.96	5.48	7.56
Canarias	100.00	2.33	1.50	96.17	100.00	91.70	2.75	5.55
Cantabria	100.00	2.14	1.33	96.53	100.00	94.83	3.38	1.80
Castilla y León	100.00	1.69	1.89	96.42	100.00	90.86	3.95	5.18
Castilla-La Mancha	100.00	2.44	1.63	95.93	100.00	90.00	4.18	5.82
Cataluña	100.00	2.20	0.29	97.52	100.00	88.20	4.65	7.15
Comunitat Valenciana	100.00	2.60	4.54	92.86	100.00	91.59	3.59	4.82
Extremadura	100.00	2.75	0.81	96.44	100.00	93.01	4.03	2.96
Galicia	100.00	2.00	2.39	95.60	100.00	93.93	2.75	3.29
Madrid (Comunidad de)	100.00	2.62	1.38	96.00	100.00	87.10	5.53	7.37
Murcia (Región de)	100.00	3.35	2.51	94.14	100.00	90.91	3.35	5.74
Navarra (Com. Foral de)	100.00	1.01	1.56	97.42	100.00	90.38	5.05	4.57
País Vasco	100.00	1.34	0.77	97.89	100.00	87.12	9.00	3.87
Rioja (La)	100.00	2.45	1.39	96.16	100.00	88.69	4.43	6.87
Ceuta	100.00	1.74	3.49	94.77	100.00	88.96	3.68	7.36
Melilla	100.00	8.74	1.94	89.32	100.00	92.39	4.35	3.26

6.2.1 Incidences in the sample, by Autonomous Community, as a percentage (CAPI)

2nd quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inaccessible	Unsurveyable	Surveyable	Total	Surveyed	Refusals	Absences
TOTAL	100.00	0.24	43.89	55.87	100.00	75.93	7.74	16.32
Andalucía	100.00	0.53	40.07	59.40	100.00	82.87	7.26	9.87
Aragón	100.00	0.00	50.64	49.36	100.00	66.35	8.04	25.61
Asturias (Principado de)	100.00	0.07	38.22	61.71	100.00	70.77	4.26	24.75
Balears (Illes)	100.00	2.36	49.36	48.29	100.00	71.40	8.20	20.40
Canarias	100.00	0.21	42.29	57.50	100.00	58.62	9.03	32.35
Cantabria	100.00	0.00	33.96	66.04	100.00	86.12	0.28	13.60
Castilla y León	100.00	0.05	50.63	49.32	100.00	79.51	6.39	14.10
Castilla-La Mancha	100.00	0.00	51.82	48.18	100.00	68.82	11.47	19.71
Cataluña	100.00	0.15	42.25	57.61	100.00	84.33	11.94	3.73
Comunitat Valenciana	100.00	0.36	47.26	52.38	100.00	82.08	8.66	9.26
Extremadura	100.00	0.11	47.32	52.57	100.00	61.89	6.48	31.63
Galicia	100.00	0.00	47.04	52.96	100.00	82.08	6.39	11.54
Madrid (Comunidad de)	100.00	0.19	29.25	70.56	100.00	80.16	5.88	13.95
Murcia (Región de)	100.00	0.00	40.76	59.24	100.00	87.32	4.16	8.52
Navarra (Com. Foral de)	100.00	0.32	42.41	57.28	100.00	66.85	8.01	25.14
País Vasco	100.00	0.14	32.25	67.61	100.00	65.24	11.06	23.70
Rioja (La)	100.00	0.00	44.73	55.27	100.00	66.76	8.96	24.28
Ceuta	100.00	0.00	31.91	68.09	100.00	56.25	9.38	34.38
Melilla	100.00	0.00	41.53	58.47	100.00	64.49	8.41	27.10

6.2.2 Incidences in the sample, by Autonomous Community, en porcentaje (CATI)

2nd quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences
TOTAL	100.00	2.56	1.66	95.77	100.00	92.18	3.74	4.08
Andalucía	100.00	2.58	1.48	95.93	100.00	95.15	2.60	2.25
Aragón	100.00	2.53	1.22	96.25	100.00	94.12	2.88	3.00
Asturias (Principado de)	100.00	1.69	1.30	97.01	100.00	94.78	2.69	2.53
Balears (Illes)	100.00	3.55	0.84	95.62	100.00	86.17	5.39	8.44
Canarias	100.00	3.68	1.27	95.06	100.00	95.22	2.62	2.16
Cantabria	100.00	1.83	1.42	96.74	100.00	94.85	2.84	2.31
Castilla y León	100.00	2.05	1.81	96.14	100.00	92.37	3.71	3.92
Castilla-La Mancha	100.00	2.93	1.60	95.47	100.00	90.65	4.01	5.31
Cataluña	100.00	2.79	0.46	96.75	100.00	88.64	4.18	7.16
Comunitat Valenciana	100.00	3.34	4.21	92.46	100.00	93.37	3.21	3.42
Extremadura	100.00	2.23	0.80	96.97	100.00	92.43	4.11	3.45
Galicia	100.00	1.62	2.58	95.81	100.00	94.78	2.63	2.60
Madrid (Comunidad de)	100.00	2.51	1.69	95.80	100.00	87.29	5.38	7.33
Murcia (Región de)	100.00	3.13	2.81	94.06	100.00	91.92	3.60	4.48
Navarra (Com. Foral de)	100.00	1.85	1.38	96.77	100.00	93.56	3.66	2.78
País Vasco	100.00	1.75	0.68	97.57	100.00	88.67	7.90	3.43
Rioja (La)	100.00	2.07	1.31	96.62	100.00	90.86	4.18	4.97
Ceuta	100.00	6.41	1.28	92.31	100.00	93.06	2.78	4.17
Melilla	100.00	3.37	2.25	94.38	100.00	95.24	3.57	1.19

6.3.1 Incidences in the sample, by Autonomous Community, as a percentage (CAPI)

3rd quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences
TOTAL	100.00	0.29	41.11	58.60	100.00	70.80	7.80	21.40
Andalucía	100.00	0.47	38.89	60.64	100.00	77.57	7.53	14.90
Aragón	100.00	0.06	43.91	56.02	100.00	58.73	8.55	32.72
Asturias (Principado de)	100.00	0.15	40.41	59.45	100.00	65.40	3.55	31.05
Balears (Illes)	100.00	3.78	44.85	51.37	100.00	52.76	11.04	36.20
Canarias	100.00	0.11	40.59	59.30	100.00	65.36	9.45	25.18
Cantabria	100.00	0.00	28.13	71.88	100.00	83.40	0.53	16.07
Castilla y León	100.00	0.15	48.19	51.65	100.00	77.06	6.01	16.93
Castilla-La Mancha	100.00	0.15	49.72	50.13	100.00	58.36	11.12	30.52
Cataluña	100.00	0.04	41.82	58.14	100.00	81.60	10.68	7.73
Comunitat Valenciana	100.00	0.26	40.85	58.89	100.00	78.70	7.25	14.05
Extremadura	100.00	0.11	44.36	55.53	100.00	56.08	4.28	39.64
Galicia	100.00	0.09	42.16	57.75	100.00	75.14	8.34	16.52
Madrid (Comunidad de)	100.00	0.29	27.95	71.76	100.00	73.58	3.23	23.18
Murcia (Región de)	100.00	0.00	37.28	62.72	100.00	77.57	5.98	16.45
Navarra (Com. Foral de)	100.00	0.14	38.82	61.04	100.00	66.19	9.22	24.59
País Vasco	100.00	0.20	30.03	69.76	100.00	55.98	15.83	28.19
Rioja (La)	100.00	0.00	39.48	60.52	100.00	55.24	7.86	36.90
Ceuta	100.00	0.00	27.91	72.09	100.00	75.81	9.68	14.52
Melilla	100.00	0.00	30.00	70.00	100.00	62.41	3.01	34.59

6.3.2 Incidences in the sample, by Autonomous Community, as a percentage (CATI)

3rd quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences
TOTAL	100.00	2.09	1.69	96.22	100.00	90.09	0.50	5.41
Andalucía	100.00	1.70	1.59	96.71	100.00	93.25	0.06	3.68
Aragón	100.00	1.28	1.20	97.52	100.00	92.77	0.43	3.81
Asturias (Principado de)	100.00	1.80	0.47	97.73	100.00	91.67	0.24	6.08
Balears (Illes)	100.00	3.78	0.94	95.28	100.00	86.81	0.79	7.39
Canarias	100.00	1.96	1.92	96.13	100.00	92.31	0.66	5.03
Cantabria	100.00	1.58	0.99	97.43	100.00	91.67	0.96	4.37
Castilla y León	100.00	1.90	1.94	96.16	100.00	89.09	0.02	5.89
Castilla-La Mancha	100.00	2.30	1.19	96.50	100.00	88.57	0.05	6.37
Cataluña	100.00	2.57	0.84	96.59	100.00	89.10	0.41	6.50
Comunitat Valenciana	100.00	2.70	3.81	93.49	100.00	91.53	0.24	4.22
Extremadura	100.00	2.44	1.35	96.21	100.00	91.21	0.71	3.07
Galicia	100.00	1.43	3.31	95.27	100.00	92.42	0.06	4.52
Madrid (Comunidad de)	100.00	2.36	1.27	96.36	100.00	83.33	0.23	10.44
Murcia (Región de)	100.00	3.24	2.14	94.61	100.00	92.04	0.09	4.87
Navarra (Com. Foral de)	100.00	1.30	1.39	97.31	100.00	86.52	0.21	4.27
País Vasco	100.00	1.39	0.40	98.22	100.00	84.53	0.76	6.70
Rioja (La)	100.00	1.89	1.22	96.89	100.00	88.99	0.70	6.31
Ceuta	100.00	1.72	4.02	94.25	100.00	91.46	0.05	5.49
Melilla	100.00	5.38	0.00	94.62	100.00	87.50	0.41	9.09

6.4.1 Incidences in the sample, by Autonomous Community as a percentage (CAPI)

4th quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inaccessible	Unsurveyable	Surveyable	Total	Surveyed	Refusals	Absences
TOTAL	100.00	0.25	40.78	58.97	100.00	73.51	7.68	18.81
Andalucía	100.00	0.36	37.82	61.82	100.00	80.62	7.23	12.15
Aragón	100.00	0.13	44.69	55.18	100.00	61.84	9.10	29.05
Asturias (Principado de)	100.00	0.14	38.33	61.52	100.00	68.79	3.42	27.80
Balears (Illes)	100.00	2.52	44.37	53.12	100.00	66.86	6.82	26.33
Canarias	100.00	0.22	41.61	58.17	100.00	57.59	9.24	33.18
Cantabria	100.00	0.00	32.58	67.42	100.00	89.75	0.14	10.11
Castilla y León	100.00	0.13	49.06	50.81	100.00	78.27	6.56	15.17
Castilla-La Mancha	100.00	0.11	48.42	51.47	100.00	61.05	10.39	28.56
Cataluña	100.00	0.04	40.23	59.74	100.00	83.02	11.54	5.44
Comunitat Valenciana	100.00	0.44	41.69	57.87	100.00	81.42	7.16	11.42
Extremadura	100.00	0.00	41.48	58.52	100.00	61.25	5.09	33.66
Galicia	100.00	0.09	41.99	57.92	100.00	78.15	7.10	14.75
Madrid (Comunidad de)	100.00	0.37	27.61	72.02	100.00	78.60	5.73	15.67
Murcia (Región de)	100.00	0.00	36.22	63.78	100.00	78.13	7.94	13.93
Navarra (Com. Foral de)	100.00	0.62	41.91	57.47	100.00	68.90	10.19	20.91
País Vasco	100.00	0.07	29.09	70.84	100.00	61.75	13.82	24.44
Rioja (La)	100.00	0.00	35.69	64.31	100.00	60.79	4.41	34.80
Ceuta	100.00	0.00	37.36	62.64	100.00	75.44	8.77	15.79
Melilla	100.00	0.00	36.96	63.04	100.00	66.38	6.03	27.59

6.4.2 Incidences in the sample, by Autonomous Community, as a percentage (CATI)

4th quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences
TOTAL	100.00	2.32	1.68	96.00	100.00	89.15	0.27	6.58
Andalucía	100.00	2.14	1.76	96.10	100.00	93.99	0.47	3.54
Aragón	100.00	1.89	1.07	97.04	100.00	92.75	0.73	3.52
Asturias (Principado de)	100.00	2.76	0.87	96.37	100.00	93.78	0.45	3.76
Balears (Illes)	100.00	3.56	0.74	95.70	100.00	84.74	0.73	9.53
Canarias	100.00	2.33	1.67	95.99	100.00	90.80	0.15	7.05
Cantabria	100.00	2.24	0.88	96.88	100.00	93.86	0.63	2.52
Castilla y León	100.00	2.17	1.84	95.98	100.00	85.92	0.59	9.49
Castilla-La Mancha	100.00	3.04	1.51	95.46	100.00	85.13	0.50	10.37
Cataluña	100.00	2.12	0.49	97.39	100.00	85.17	0.12	9.71
Comunitat Valenciana	100.00	3.00	4.26	92.74	100.00	92.52	0.61	3.87
Extremadura	100.00	2.63	1.04	96.33	100.00	91.26	0.71	4.03
Galicia	100.00	2.19	2.83	94.97	100.00	93.62	0.76	3.62
Madrid (Comunidad de)	100.00	2.58	1.33	96.09	100.00	80.18	0.16	13.66
Murcia (Región de)	100.00	2.56	2.56	94.89	100.00	92.81	0.32	3.87
Navarra (Com. Foral de)	100.00	1.56	1.48	96.96	100.00	87.62	0.99	5.39
País Vasco	100.00	0.99	0.24	98.77	100.00	86.05	0.42	4.53
Rioja (La)	100.00	0.91	0.91	98.18	100.00	82.87	0.98	12.15
Ceuta	100.00	4.09	4.09	91.81	100.00	87.26	0.18	9.55
Melilla	100.00	5.71	0.95	93.33	100.00	91.84	0.10	3.06

6.5.1 Incidences in the sample, by Autonomous Community, as a percentage (CAPI)

Quarterly average

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings				
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences	Non-response (Refusals + Absences)
TOTAL	100.00	0.24	40.83	58.93	100.00	73.13	7.96	18.91	26.87
Andalucía	100.00	0.40	37.91	61.69	100.00	81.02	7.33	11.65	18.98
Aragón	100.00	0.08	43.78	56.14	100.00	61.41	9.24	29.35	38.59
Asturias (Principado de)	100.00	0.24	39.93	59.83	100.00	68.87	4.06	27.07	31.13
Balears (Illes)	100.00	2.30	44.69	53.01	100.00	58.82	8.33	32.85	41.18
Canarias	100.00	0.12	41.07	58.80	100.00	63.73	9.19	27.07	36.27
Cantabria	100.00	0.00	30.53	69.47	100.00	87.16	0.41	12.42	12.84
Castilla y León	100.00	0.14	47.52	52.34	100.00	77.91	6.43	15.66	22.09
Castilla-La Mancha	100.00	0.15	48.78	51.07	100.00	62.36	10.29	27.36	37.64
Cataluña	100.00	0.03	40.71	59.27	100.00	82.05	11.53	6.42	17.95
Comunitat Valenciana	100.00	0.31	41.27	58.42	100.00	79.68	7.80	12.52	20.32
Extremadura	100.00	0.03	44.93	55.04	100.00	60.83	5.47	33.69	39.17
Galicia	100.00	0.11	41.71	58.18	100.00	73.87	7.44	18.69	26.13
Madrid (Comunidad de)	100.00	0.31	27.87	71.82	100.00	76.07	4.92	19.01	23.93
Murcia (Región de)	100.00	0.00	36.14	63.86	100.00	79.88	5.85	14.27	20.12
Navarra (Com. Foral de)	100.00	0.34	40.81	58.85	100.00	68.25	10.33	21.42	31.75
País Vasco	100.00	0.08	30.31	69.61	100.00	60.39	16.69	22.92	39.61
Rioja (La)	100.00	0.00	40.31	59.69	100.00	60.00	6.91	33.09	40.00
Ceuta	100.00	0.00	33.43	66.57	100.00	73.82	10.73	15.45	26.18
Melilla	100.00	0.00	30.82	69.18	100.00	63.86	4.72	31.42	36.14

6.5.2 Incidences in the sample, by Autonomous Community, as a percentage (CATI)

Quarterly average

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings				
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences	Non-response (Refusals + Absences)
TOTAL	100.00	2.17	1.69	96.14	100.00	90.42	4.38	5.20	9.58
Andalucía	100.00	2.06	1.44	96.51	100.00	93.94	2.80	3.26	6.06
Aragón	100.00	1.64	1.42	96.94	100.00	92.70	3.56	3.74	7.30
Asturias (Principado de)	100.00	2.06	0.66	97.28	100.00	92.67	2.84	4.49	7.33
Balears (Illes)	100.00	3.75	0.82	95.42	100.00	86.49	5.93	7.58	13.51
Canarias	100.00	2.24	1.56	96.19	100.00	92.48	2.44	5.07	7.52
Cantabria	100.00	1.61	1.08	97.31	100.00	93.39	3.67	2.94	6.61
Castilla y León	100.00	1.82	2.15	96.03	100.00	88.81	4.85	6.34	11.19
Castilla-La Mancha	100.00	2.39	1.42	96.19	100.00	89.06	4.39	6.55	10.94
Cataluña	100.00	2.32	0.77	96.91	100.00	88.31	4.54	7.14	11.68
Comunitat Valenciana	100.00	2.74	3.81	93.46	100.00	92.30	3.82	3.89	7.70
Extremadura	100.00	2.45	1.48	96.07	100.00	91.64	5.43	2.94	8.36
Galicia	100.00	1.67	2.91	95.42	100.00	93.54	2.94	3.52	6.46
Madrid (Comunidad de)	100.00	2.31	1.50	96.18	100.00	84.34	6.01	9.65	15.66
Murcia (Región de)	100.00	2.83	2.09	95.08	100.00	92.13	3.60	4.27	7.87
Navarra (Com. Foral de)	100.00	1.63	1.57	96.81	100.00	87.34	8.15	4.52	12.66
País Vasco	100.00	1.31	0.51	98.18	100.00	85.12	9.59	5.28	14.87
Rioja (La)	100.00	2.01	1.23	96.76	100.00	87.53	4.79	7.68	12.47
Ceuta	100.00	3.06	3.35	93.60	100.00	91.60	2.80	5.60	8.40
Melilla	100.00	6.31	0.70	92.99	100.00	91.21	3.77	5.03	8.79

6.1.T Incidences in the sample, by Autonomous Community, as a percentage (CAPI+CATI)

1st quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences
TOTAL	100.00	1.43	18.25	80.31	100.00	86.86	5.13	8.01
Andalucía	100.00	1.43	18.14	80.43	100.00	91.32	4.05	4.62
Aragón	100.00	1.23	18.94	79.83	100.00	86.80	4.22	8.98
Asturias (Principado de)	100.00	1.11	20.66	78.24	100.00	84.68	3.58	11.74
Balears (Illes)	100.00	2.74	19.53	77.74	100.00	81.69	6.32	11.98
Canarias	100.00	1.39	19.08	79.54	100.00	81.99	4.97	13.04
Cantabria	100.00	1.02	17.67	81.32	100.00	91.85	2.14	6.01
Castilla y León	100.00	1.05	23.15	75.80	100.00	87.65	4.54	7.81
Castilla-La Mancha	100.00	1.38	23.09	75.53	100.00	82.57	6.73	10.70
Cataluña	100.00	1.49	14.18	84.33	100.00	87.28	6.36	6.36
Comunitat Valenciana	100.00	1.87	17.79	80.33	100.00	89.77	4.47	5.76
Extremadura	100.00	1.41	22.74	75.85	100.00	83.10	4.74	12.16
Galicia	100.00	1.26	19.16	79.58	100.00	90.21	4.07	5.69
Madrid (Comunidad de)	100.00	1.99	9.06	88.95	100.00	85.37	5.95	8.68
Murcia (Región de)	100.00	2.17	15.35	82.48	100.00	88.57	4.25	7.18
Navarra (Com. Foral de)	100.00	0.78	14.95	84.27	100.00	85.51	5.77	8.72
País Vasco	100.00	0.94	11.82	87.24	100.00	80.43	9.94	9.63
Rioja (La)	100.00	1.46	18.78	79.76	100.00	82.82	4.53	12.65
Ceuta	100.00	1.12	14.98	83.90	100.00	82.59	6.70	10.71
Melilla	100.00	3.13	24.31	72.57	100.00	79.43	5.26	15.31

6.2.T Incidences in the sample, by Autonomous Community, as a percentage (CAPI+CATI)

2nd quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences
TOTAL	100.00	1.64	18.46	79.90	100.00	87.66	4.85	7.48
Andalucía	100.00	1.70	18.06	80.24	100.00	91.24	4.08	4.67
Aragón	100.00	1.57	19.86	78.56	100.00	87.54	4.10	8.36
Asturias (Principado de)	100.00	0.84	20.73	78.44	100.00	84.84	3.34	11.73
Balears (Illes)	100.00	3.08	19.95	76.97	100.00	82.52	6.08	11.40
Canarias	100.00	2.20	18.80	79.01	100.00	83.83	4.61	11.55
Cantabria	100.00	0.88	18.37	80.75	100.00	91.13	1.75	7.12
Castilla y León	100.00	1.17	23.29	75.54	100.00	88.68	4.48	6.84
Castilla-La Mancha	100.00	1.66	23.38	74.96	100.00	84.57	6.09	9.32
Cataluña	100.00	1.93	14.12	83.96	100.00	87.68	5.92	6.39
Comunitat Valenciana	100.00	2.37	18.19	79.44	100.00	90.95	4.37	4.67
Extremadura	100.00	1.20	23.50	75.31	100.00	82.03	4.92	13.05
Galicia	100.00	0.99	19.89	79.13	100.00	91.47	3.61	4.92
Madrid (Comunidad de)	100.00	1.89	9.07	89.04	100.00	85.78	5.49	8.74
Murcia (Región de)	100.00	2.06	15.77	82.17	100.00	90.79	3.74	5.48
Navarra (Com. Foral de)	100.00	1.35	14.80	83.85	100.00	87.59	4.63	7.78
País Vasco	100.00	1.19	11.73	87.08	100.00	82.30	8.76	8.93
Rioja (La)	100.00	1.23	18.92	79.84	100.00	84.09	5.52	10.39
Ceuta	100.00	4.00	12.80	83.20	100.00	81.73	4.81	13.46
Melilla	100.00	1.10	28.68	70.22	100.00	78.01	6.28	15.71

6.3.T Incidences in the sample, by Autonomous Community, as a percentage (CAPI+CATI)

3rd quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences
TOTAL	100.00	1.55	18.48	79.97	100.00	86.48	4.73	8.79
Andalucía	100.00	1.48	18.29	80.23	100.00	88.94	3.81	7.25
Aragón	100.00	1.32	20.72	77.96	100.00	86.62	4.14	9.25
Asturias (Principado de)	100.00	1.14	19.06	79.79	100.00	80.41	3.14	16.45
Balears (Illes)	100.00	3.18	20.77	76.05	100.00	85.17	5.24	9.59
Canarias	100.00	1.48	18.66	79.86	100.00	81.36	4.70	13.94
Cantabria	100.00	0.88	17.78	81.34	100.00	89.19	1.56	9.25
Castilla y León	100.00	1.10	23.15	75.75	100.00	87.52	4.53	7.95
Castilla-La Mancha	100.00	1.57	23.16	75.27	100.00	83.93	5.81	10.26
Cataluña	100.00	2.09	14.57	83.33	100.00	90.71	5.75	3.54
Comunitat Valenciana	100.00	1.91	18.47	79.62	100.00	88.51	4.53	6.96
Extremadura	100.00	1.47	22.59	75.93	100.00	79.70	5.32	14.98
Galicia	100.00	1.10	19.92	78.98	100.00	91.46	3.25	5.29
Madrid (Comunidad de)	100.00	1.97	8.98	89.05	100.00	84.60	4.80	10.60
Murcia (Región de)	100.00	1.95	16.33	81.71	100.00	86.71	4.36	8.93
Navarra (Com. Foral de)	100.00	1.48	14.02	84.49	100.00	86.74	4.72	8.54
País Vasco	100.00	0.91	12.28	86.81	100.00	79.37	8.52	12.11
Rioja (La)	100.00	1.76	17.60	80.64	100.00	84.32	5.98	9.70
Ceuta	100.00	1.85	12.59	85.56	100.00	81.82	5.63	12.55
Melilla	100.00	2.46	27.72	69.82	100.00	78.39	6.03	15.58

6.4.T Incidences in the sample, by Autonomous Community, as a percentage (CAPI+CATI)

4th quarter

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings			
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences
TOTAL	100.00	1.49	18.71	79.80	100.00	87.52	4.63	7.85
Andalucía	100.00	1.46	18.30	80.24	100.00	90.08	3.71	6.21
Aragón	100.00	1.15	21.38	77.47	100.00	86.94	4.19	8.87
Asturias (Principado de)	100.00	0.98	19.15	79.87	100.00	84.33	3.24	12.43
Balears (Illes)	100.00	3.11	20.99	75.90	100.00	84.96	4.48	10.56
Canarias	100.00	1.61	19.36	79.04	100.00	83.35	3.83	12.81
Cantabria	100.00	0.93	18.67	80.40	100.00	90.09	2.13	7.78
Castilla y León	100.00	1.03	22.11	76.85	100.00	86.90	4.19	8.88
Castilla-La Mancha	100.00	1.39	23.78	74.83	100.00	85.42	5.83	8.75
Cataluña	100.00	1.85	14.61	83.54	100.00	89.47	5.63	4.89
Comunitat Valenciana	100.00	1.86	18.65	79.49	100.00	90.89	4.00	5.11
Extremadura	100.00	1.43	24.51	74.06	100.00	82.30	5.00	12.70
Galicia	100.00	0.98	20.25	78.77	100.00	91.53	3.28	5.19
Madrid (Comunidad de)	100.00	1.89	9.89	88.22	100.00	87.61	4.92	7.47
Murcia (Región de)	100.00	2.41	17.38	80.21	100.00	90.02	4.40	5.58
Navarra (Com. Foral de)	100.00	1.17	13.02	85.80	100.00	86.73	5.12	8.15
País Vasco	100.00	1.00	12.31	86.69	100.00	81.31	9.32	9.37
Rioja (La)	100.00	1.47	18.56	79.97	100.00	85.23	5.84	8.85
Ceuta	100.00	3.61	16.25	80.14	100.00	79.28	4.95	15.77
Melilla	100.00	3.51	25.96	70.53	100.00	77.61	5.97	16.42

6.5.T Incidences in the sample, by Autonomous Community, as a percentage (CAPI+CATI)

Quarterly average

Autonomous Communities	Selected dwellings				Incidences in surveyable dwellings				
	Total	Inacces-sible	Unsur-vey-able	Survey-able	Total	Surveyed	Refusals	Absences	Non-response (Refusals + Absences)
TOTAL	100.00	1.53	18.48	80.00	100.00	87.13	4.84	8.03	12.87
Andalucía	100.00	1.52	18.20	80.29	100.00	90.40	3.92	5.69	9.60
Aragón	100.00	1.32	20.22	78.46	100.00	86.97	4.16	8.87	13.03
Asturias (Principado de)	100.00	1.02	19.89	79.10	100.00	83.55	3.32	13.11	16.43
Balears (Illes)	100.00	3.03	20.31	76.66	100.00	83.58	5.53	10.89	16.42
Canarias	100.00	1.67	18.97	79.36	100.00	82.63	4.53	12.84	17.37
Cantabria	100.00	0.93	18.12	80.95	100.00	90.57	1.90	7.54	9.43
Castilla y León	100.00	1.09	22.92	75.99	100.00	87.68	4.43	7.88	12.31
Castilla-La Mancha	100.00	1.50	23.35	75.15	100.00	84.12	6.11	9.76	15.87
Cataluña	100.00	1.84	14.37	83.79	100.00	88.78	5.92	5.30	11.22
Comunitat Valenciana	100.00	2.00	18.27	79.72	100.00	90.03	4.34	5.63	9.97
Extremadura	100.00	1.38	23.33	75.29	100.00	81.78	4.99	13.22	18.22
Galicia	100.00	1.08	19.80	79.12	100.00	91.16	3.55	5.28	8.83
Madrid (Comunidad de)	100.00	1.93	9.25	88.81	100.00	85.84	5.29	8.88	14.16
Murcia (Región de)	100.00	2.15	16.20	81.65	100.00	89.02	4.18	6.80	10.98
Navarra (Com. Foral de)	100.00	1.20	14.20	84.61	100.00	86.64	5.06	8.30	13.36
País Vasco	100.00	1.01	12.04	86.95	100.00	80.85	9.13	10.01	19.15
Rioja (La)	100.00	1.48	18.47	80.05	100.00	84.10	5.46	10.42	15.88
Ceuta	100.00	2.63	14.19	83.18	100.00	81.36	5.54	13.11	18.64
Melilla	100.00	2.57	26.64	70.80	100.00	78.38	5.88	15.75	21.63

4. Assessment survey

The quality assessment survey of the APS, implemented on an experimental basis in 1970, has a two-fold objective:

- To monitor the work of the interviewers who are involved in the APS.

- To assess the quality of the results.

To this end, we have followed a mathematical model compiled by the Census Office of the United States, due to Hansen, Hurwitz and Bershad, based on the *repeated interview*. The operating procedure, very simple, consists of repeating the interviews in a sample of the dwellings selected for the original survey. Subsequently, the data obtained on both occasions is compared, for the purpose of studying the inconsistencies, and quantifying the errors, through the application of different quality indices. The model of Hansen, Hurwitz and Bershad assumes that, in the second interview, or *repeated interview*, we obtain the true values of the characteristics being studied. Although in practice it is difficult to prove whether or not this objective has been reached, the data from the repeated interview, obtained with more means and better-prepared interviewers, is assumed to be of a superior quality than the primitive data, and will enable basing on it all of the calculations of errors and biases.

The comparison of the results obtained from the original interview (O.I.) with those obtained in the repeated interview (R.I.) allows for evaluating two large types of errors other than sampling errors that affect the quality of the results:

a) Coverage errors, produced by the erroneous omission or inclusion of units in the original survey.

b) Content errors, which affect the characteristics studied of the surveyable persons.

The fieldwork is carried out by specialised interviewers who conduct the repeated interview at most fifteen days after the original interview, with the data from both interviews referring to the same period of time.

As is well-known, in the APS the information collection method is different according to whether the dwellings are in a first or successive interviews, with CAPI used in dwellings that are in the first interview and primarily CATI in dwellings that are in the second or subsequent interviews.

Due to the fact that there has been a desire to use the same collection method in the assessment questionnaire as that used in the APS, it was decided to use a CAPI system in the repeat interview, foregoing the CATI system due to its greater implementation complexity. Taking into account this set of circumstances, the sample of sections to be investigated in the assessment survey is selected from among the APS sections in the first interview, and therefore the results of this interview will be applicable to dwellings in the first interview. Nevertheless, it is to be expected that the behaviour of dwellings in the second and successive interviews do not show large differences as compared with those in the first.

The assessment survey is quarterly, in other words, each quarter a sample of sections to investigate is selected. With each quarterly sample, the aim is to inspect work carried out in all Autonomous Communities, except Ceuta y Melilla, investigating, wherever possible, at least a section of each province.

For quarterly selection of the sample, four zones have been created taking all the Autonomous Communities, except Ceuta y Melilla, grouping several Communities into each, such that each Community is included in one, and only one, of these zones. In order to complete up to thirteen (the number of weeks in each quarter), previous zones have been repeated twice, one of them more than once, in other words, one zone is repeated three times.

Lastly, a zone is assigned by means of a random procedure to each week in the quarter, with visits each week to the sections in the provinces of the Autonomous Communities of the zone corresponding to this.

Using this method between 140 and 150 sections are selected each quarter. In these sections the interview is repeated in half of EO holder dwellings, with even- or odd-numbered dwellings selected at random, the number of investigated dwellings thereby standing at between 1,400 and 1,500, representing approximately 12 percent of dwellings from the first APS interview (2 percent of the total APS sample).

In the repeat interview a slightly reduced questionnaire is used (in other words, with a few less questions) as compared with the short APS questionnaire (the one used in interviews 1 to 5).

Despite the quarterly nature of the assessment survey, the results are to be given for the whole year, since, being independent quarterly samples, it is possible to group the data.

Chart 7 deals with the distribution of incidences in dwellings selected for the assessment survey (R.I.) sample.

7. Incidences in the sample of R.I.

Selected dwellings	No.	%
Total	4,228	100.00
Unavailable	2	0.05
Unsurveyable	843	19.94
Surveyable	3,383	80.01
- Surveyed	2,552	60.36
- Non-response	831	19.65

In order to compare non-response (refusals+absences) in R.I. and in O.I., **chart 8** presents its percent distributions in both interviews. O.I. data have been obtained by calculating the average for figures corresponding to CAPI from the first interview in the four quarters of the year. It can be observed that the percentage of non-response is much greater in R.I. than in O.I. (24.6 percent as compared with 17 percent), as is usual, with the aforementioned difference due mainly to absences, which have the greatest incidence in non-response.

8. Percentage distribution of surveyable dwellings in O.I. and in R.I.

Dwellings	O.I.	R.I.
Surveyable	100.00	100.00
-Surveyed	81.15	67.53
-Non-response	18.85	32.47
-Refusals	7.68	9.31
-Absences	11.17	23.17

The difference in percentage of absences between O.I. and R.I. is almost eight points. Regarding this fact, it is appropriate to emphasize that the R.I. agents conduct their interviews with greater time limitations, given that as they do not reside in the province, they spend less time in the section.

8. Percentage distribution of surveyable dwellings in O.I. and in R.I.

Dwellings	O.I.	R.I.
surveyable dwellings	100.00	100.00
- Surveyed	82.99	75.44
- Non-response	17.01	24.56
- Refusals	6.87	6.56
- Absences	10.14	18.00

Chart 9 includes the coincidences and discrepancies in terms of the coverage of dwellings, between O.I. and R.I., in absolute and percent values. From the analysis thereof, it may be concluded that there is a high degree of agreement between both interviews, which is reflected in the gross difference (error percentage indicator), with a value of 0.57 percent.

9. Errors in the coverage of dwellings

	No.	Percentage
Surveyable/unsurveyable dwellings in O.I. and in R.I.	4,226	100.00
Surveyable in O.I. and in R.I.	3,383	80.05
Surveyable in O.I. but not in R.I.(1)	24	0.57
Surveyable in R.I. but not in O.I.(2)	0	0.00
Unsurveyable in both O.I. and R.I.	819	19.38
Net difference (1) - (2)	24	0.57
Gross difference (1) + (2)	24	0.57

In the dwellings surveyed in R.I., it is generally not possible to use all of the information to assess the content errors, given that some of them have not been surveyed in O.I., due to the different causes included in **table 10**.

10. Incidences in O.I. in the dwellings that were only surveyed in R.I.

	Total	Percentage
Selected	4,228	100.00
Surveyed in R.I. and in O.I.	2,547	60.24
Surveyed only in R.I.	5	0.12
- Refusals in O.I.	2	0.05
- Absences in O.I.	3	0.07
- Unavailable in O.I.	0	0.00
-No encuestables en E.O.	0	0.00

The questionnaires that are processed through electronic processes, and which allow for carrying out the analysis of the errors of coverage of persons and of the content errors in the different characteristics of the survey, are only those corresponding to the dwellings that have been interviewed in both the R.I. and the O.I.

10. Incidences in O.I. in the dwellings that were only surveyed in R.I.

	Total	Percentage
Selected	5,533	100.00
Surveyed in both R.I. and O.I.	3,147	56.88
Surveyed only in R.I.	3	0.05
- Refusals in O.I.	1	0.02
- Absences in O.I.	1	0.02
- Unavailable in O.I.	0	0.00
-No encuestables en E.O.	1	0.02

Moving on, the INE is concerned about obtaining data from the best possible source of information. Thus, in the APS, data on persons inhabiting the dwelling is requested from the reference person, and in any case, from an adult residing there, with no information obtained in those dwellings, which do not comply with these requirements.

Table 11 presents the data regarding the identity of the informant, obtained in the dwellings in which the two interviews were conducted. In 66 percent of O.I. dwellings, the data was obtained from the reference person, whereas in R.I. dwellings, this percentage reaches a value of 70 percent. The information was provided by the same person in the two interviews in nearly 83 percent of the cases, this value progressively growing in recent years.

The fact that the number of interviewed dwellings in R.I. and in O.I. that appears in tables 10 and 11 does not coincide in general, is due to the use of different sources for obtaining it. Table 10 is obtained from summarising the report files collected in the field, whereas the data in table 11 is obtained once the R.I. and the O.I. questionnaires have been electronically processed.

11. Identity of the informant in O.I. and in R.I.

Dwellings interviewed in O.I. and in R.I.	No.	%
Total	3,131	100.0
Informant in O.I.		
- Reference person	2,192	70.0
- Another person	939	30.0
Informant in R.I.		
- Reference person	1,969	62.9
- Another person	1,162	37.1
The same informant in O.I. and in R.I.	2,486	79.4

11. Identity of the informant in O.I. and in R.I.

Dwellings interviewed in O.I. and in R.I.	No.	%
Total	2,550	100.0
Informant in O.I.		
- Reference person	1,683	66.0
- Another person	867	34.0
Informant in R.I.		
- Reference person	1,786	70.0
- Another person	764	30.0
The same informant in O.I. and in R.I.	2,111	82.8

5. Coverage of persons

Those persons who reside in dwellings in which it has been possible to conduct an interview, both for the original survey and for the evaluation survey, are classified into one of the three following classes:

- Comparable persons

- Omitted persons

- Persons erroneously included

Comparable persons are those persons that both the O.I. interviewer and the R.I. interviewer have considered surveyable. Therefore, we have information for these persons in O.I. and in R.I..

Omitted persons are those persons whose data has been collected by the R.I. interviewer, on considering them surveyable, but for whom information does not exist in the O.I..

Persons erroneously included are those persons who appear in the questionnaire of the original survey and who the R.I. interviewer has not included in the evaluation survey, on not considering them surveyable.

Both the omissions and the erroneous inclusions are considered errors in the coverage of persons, based on the hypothesis that the information from the repeat interview is of a better quality than that from the original interview.

The evaluation of the coverage of persons is based solely on the occupants of the *surveyable* dwellings in which the O.I. and the R.I. have been conducted, chart 12 shows that such coverage is good.

12. Coverage of persons 16 years old and over

Persons	No.	%
Interviewed in R.I.	5,798	100.00
-Comparable	5,775	99.60
-Omitted in O.I.(1)	23	0.40
Interviewed in O.I.	5,791	99.88
-Comparable	5,775	99.60
-Erroneously included in O.I.(2)	16	0.28
Net difference (2)-(1)	-7	-0.12
Gross difference (2)+(1)	39	0.68

This chart presents the net and gross differences, interpreting the first as an indicator of the distortion, and the second as an indicator of the total errors made.

From the analysis of the data, we conclude that the distortion is small, as it stands, in absolute values, at 0.12 percent, whereas the gross difference stands at 0.68 percent, a figure somewhat lower than those from previous years.

Notwithstanding the small number of persons omitted and erroneously included, tables C.P.1 and C.P.6 of the Annex show the distributions of the same by age, sex, marital status and relationship with economic activity.

6. Content errors

6.1 Presentation of results

Content errors are analysed from the information supplied, in the two interviews, by the persons classified as comparable. The O.I. and R.I. questionnaires for these persons are compared using computer procedures, determining to what extent the two data series differ. To facilitate the analysis, two types of table are compiled: coincidence tables and quality indicator tables.

For a characteristic C with K modalities, the coincidence table responds to the following general format:

O.I. / R.I.	Total persons	M_1	M_2	. . .	M_j	. . .	M_k
Total Persons	n	$n._1$	$n._2$	. . .	$n_{.j}$	. . .	$n_{.k}$
M_1	$n_{1.}$	n_{11}	n_{12}	. . .	n_{1j}	. . .	n_{1k}
M_2	$n_2.$	n_{21}	n_{22}	. . .	n_{2j}	. . .	n_{2k}
. .	. . .	. . .	. .	. . .	. . .	. . .	. . .
. .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
. .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
M_i	$n_{i.}$	n_{i1}	n_{i2}	. . .	n_{ij}	. . .	n_{ik}
. .	. . .	. . .	. .	. . .	. . .	. . .	. . .
. .	. . .	. . .	. .	. . .	. . .	. . .	. . .
. .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
m_k	$n_{k.}$	n_{k1}	n_{k2}	. . .	n_{kj}	. . .	n_{kk}

n_{ij} represents the number of persons classified in modality M_i according to the R.I., which in O.I. had been classified in modality M_j.

The main diagonal includes the number of persons classified in the same position in both interviews in each modality.

These tables allow for studying the transfers of population between modalities, due to content errors.

From the coincidence table, we can extract, for each modality M_i of characteristic C, a dual-entry table as shown below:

R.I. \ O.I.	With Modality M_i	Without Modality M_i	Total
With Modality M_i	a	b	a+ b
Without Modality M_i	c	d	c + d
TOTAL	a + c	b + d	n

where:

n the total persons classified in both interviews, with regard to the reference characteristic.

a the number of persons classified in modality M_i in both interviews.

b the number of persons classified in modality M_i in R.I. and in a different one in O.I.

c the number of persons classified in modality M_i in R.I. and in a different one in R.I.

d the number of persons not classified in M_i in either of the interviews.

Based on this reduced table, the following quality indicators are defined:

a) Percentage classified identically

$$P.I.C.(M_i) = \frac{a}{a+b} \cdot 100$$

Varies from zero to one hundred. This is an indicator of response stability. Its optimum value, one hundred, expresses that all persons belonging, according to R.I., to modality M_i, are classified in the same way in O.I.

b) Net change index

$$I.C.N.(M_i) = \frac{c-b}{a+b} \cdot 100$$

This may be positive (c>b) or negative (c<b). It measures the response bias of the survey, expressed as a percentage of the number of households belonging to M_i, according to R.I. Given that, for its calculation, it does not consider the different weighting of the data in each stratum, this index can only be interpreted as an indicator of the bias, and not as an estimator.

c) Net rate of difference

$$T.D.N.\ (M_i) = \frac{c - b}{n} . 100$$

c) Gross change index

$$I.C.B.\ (M_i) = \frac{c + b}{a + b} . 100$$

It may be non-existent or positive. This is an indicator of the variance of response, expressed as a percentage of the number of households belonging to M_i in the R.I. It serves as a measurement of the errors that have been made in this modality.

e) Gross rate of difference

$$T.D.B.\ (M_i) = \frac{c + b}{n} . 100$$

From the definition of these indicators, we conclude that, if there are no content errors in a modality, the P.I.C. takes on the value of one hundred, and the two indices and the two rates take on the value of zero.

It is also important to note that a small, or non-existent, P.I.C. can co-exist with zero bias. This occurs when errors cancel each other out and b=c. In turn, the I.C.B. can only take on the value of zero if b=c=0, that is, if there is no content error.

The **global consistency index** is used to compare the general quality of the different characteristics assessed, which is defined, for a certain characteristic C, as:

$$I.C.G.\ (C) = \frac{\sum_i n_{ii}}{n} . 100$$

6.2 Analysis of the characteristics assessed

We have obtained coincidence tables for the following characteristics (section 4 of the Annex):

a) For the population aged 16 years old and over

- Age
- Marital status
- Nationality
- Level of training
- relation with the economic activity

b) For the economically active population

- Age and sex
- Marital status
- Level of training
- Professional Status
- Occupation
- Branch of activity

c) For active person employed

- Hours worked in the main activity
- Number of hours worked equal or different to usual
- Reason for working week time different to usual
- Time that they have been working in their current job
- Employees by sex and type of contract or labour relationship
- Employees with a temporary contract by Public or Private Sector and duration thereof.

d) For unemployed persons

- Sex
- Economic sector
- Time that they have been seeking work

As already mentioned, the fact that quarterly samples are independent enables grouping of data obtained in the four quarters. This, together with the fact that the quarterly samples are small, has led to the conclusion that is was preferable to present data for the entire year, rather than separately for the four quarters, in

order to thus obtain more representative data. Therefore data corresponding to the whole of 2009 is presented in the coincidence tables.

Quality indicator tables (section 5 of the Annex) have only been obtained for the characteristics presenting a reduced breakdown:

For the comparable population aged 16 years old or over

- Age
- Marital status
- Nationality
- Level of training
- Relation with the economic activity

b) For the economically active population

- Professional status
- Occupation
- Branch of activity

c) For active person employed

- Hours worked in the main activity
- Number of hours worked equal or different to usual.

6.2.1 AGE, MARITAL STATUS, NATIONALITY AND LEVEL OF TRAINING

The coincidence tables obtained for these characteristics and the corresponding quality indicators are presented in tables C.1 to C.4 and I.1 to I.4 of the Annex, respectively.

The *age* characteristic presents **very high** percentages in all its modalities identically classified (P.I.C.) as has become commonplace, since in all modalities they exceed 98 percent. Net change indices, bias indicators, are fairly small and largely positive, and with regard to indices of gross change, they remain at equally small values, since the highest does not reach 3 percent.

With regard to *marital status,* there seems to be a consolidation of the improvement in the indicators for the modality *separated or divorced,* which, though they are still the worst, they remain at the levels of 2008, their P.I.C. reaching a value of 95 percent. The net change indices are quite small for all of the modalities, and even for that of *separated or divorced*; in the gross change indices, we observe a similar situation, as their values are small, with the highest corresponding to the modality *separated or divorced*, reaching a value of 7.2

percent. Also worth noting is that the modality *separated or divorced* is where the fewest persons are classified, that is, less than 4 percent of the total classified.

In the characteristic *nationality*, the primary modality, into which 95 percent of the total is classified (see table C.3 of the Annex), is *Spanish*. This modality presents the highest P.I.C. (100 percent) and very small net and gross change indices. The other two modalities are, then, a very small minority, particularly *Spanish and other,* therefore their indicators may not be regarded as very significant, with a P.I.C. of 70 percent.

As regards educational level, worth noting, as may be viewed in table C.4 of the Annex, is the scarce number of persons classified in the *Doctorate* modality, implying that its indicators are not very significant.

Table I.4 of the Annex shows, without taking into account indicators of the modality *Doctorate*, in view of their lack of quantitative importance, that the highest P.I.C. corresponds to the modality *Higher education, except doctorate*, which reaches a value of almost 95 percent. The lowest net (N.C.I.) and gross (G.C.I.) change indices correspond, likewise, to this modality.

The remaining modalities present P.I.C.s between almost 85 and 92 percent, and net and gross change indices whose values are not very high.

In order to compare general quality of the four characteristics previously analysed, chart 13 presents the global consistency index (G.C.I.) thereof. We can see that, for the *age*, *marital status* and *nationality* characteristics, the G.C.I. exceeds 99 percent, with the educational level presenting the worst index, with 92.1 percent, a value similar to that registered in 2008, and significantly higher than those corresponding to the previous years.

13. Global consistency indices

Characteristic	G.C.I.
Age	99.39
Marital Status	99.10
Nationality	99.74
Educational level	92.13

If we look at table C.4 of the Annex, we will see that among the different modalities of the characteristic *educational level*, they are, as with the year 2008, much less important than in 2007 and the previous year. Thus, the only transfer of any significance is that taking place between the modalities *Illiterate* and *Primary education*, given that, of the persons who were classified as *illiterate* in

R.I., 15 percent were classified in O.I. in the modality *Primary education* (in the year 2007, this percentage was 36 percent).

The lesser relevance of the transfers of persons among the different modalities of *educational level* is in line with the improvement of the indicators for this characteristic.

In turn, the traditional tendency of persons to heighten their social status by stating a higher educational level in R.I. than in O.I. seems to have disappeared completely, as it has been three consecutive years (2007 to 2009) since said tendency was broken, as may be viewed for 2009 in chart 14.

14. Persons with a different educational level in the two interviews

Educational level	No. of cases
Higher in R.I.	178
Higher in O.I.	275

6.2.2. RELATIONSHIP WITH ECONOMIC ACTIVITY

The results obtained for this characteristic in 2009 are presented in tables C.5 and I.5 for the total population aged 16 years old and over, C.6 for males aged 16 years old and over and C.7 for females aged 16 years old and over.

For the total population aged 16 years old and over, the percentages identically classified for the modalities *active, employed* and *inactive* stand at over 97 percent, with both modalities furthermore presenting small net and gross change indices.

Of the different submodalities of the modality *inactive* it is *another situation* that presents the worst indicators, these also being the least important one quantitatively, since fewest persons are classified in it.

The modality *unemployed* systematically presents one of the lowest P.I.C.s, which has improved progressively in recent years, reaching a value of nearly 88 percent in 2009, the same as in 2008. As regards the distortion, with a negative sign, we can see in table I.5 that it is low, whereas the index of gross change remains at an acceptable value (17 percent).

This modality is traditionally one of the most difficult to collect, since in order to establish the condition of unemployed, it is necessary to respond to an extensive set of questions, which may give rise to discrepancies between the two interviews.

Chart 15 shows the population transfers between the modality *unemployed* and the other two *(employed* and *inactive*), expressed as a percentage of the R.I. total in the former. We can see that those classified as *unemployed* in R.I., scarcely over 1 percent were classified as *employed* and 11 percent as *inactive* in O.I. These figures indicate that these transfers are quantitatively of less significance than those observed in previous years.

15. Percentage distribution of unemployed persons in R.I., by their situation in O.I.

Situation in O.I.	Percentage
Employed persons	1.15
Unemployed persons	87.76
- Seeking first job	6.31
- Have worked previously	81.45
Inactive persons	11.09
- Students	1.72
- Homemakers	5.54
- Other inactive persons	3.82

The global consistency indices for the characteristic *relationship with economic activity* and its main modalities are presented in chart 16.

16. Global consistency indices

Characteristic	G.C.I.
Relationship with economic activity	97.95
- Men	98.68
- Women	97.46
Active persons	99.46
- Men	99.47
- Women	99.67
Inactive persons	96.45
- Men	97.13
- Women	96.14

The global consistency index of the *relationship with economic activity* has been calculated only considering its main modalities (*active* and *inactive)*, reaching a value of practically 98 percent.

The global consistency index is higher in the *active* group than in the *inactive* group, as is customary, undoubtedly due to difficulties arising from classifying persons into groups that are not mutually exclusive within inactive persons, such as disabled persons, retired persons and homemakers. By sex, except in the case of active persons, the G.C.I. corresponding to men is somewhat higher than that corresponding to women.

The transfer of persons among the different modalities of *inactive* persons, within the group in which they are considered as such in both interviews, has ceased to be significant, in contrast to that which occurred in previous years, above all until 2007.

17. Global consistency indices for the economically active population

Characteristic	G.C.I.
Age	99.56
- Men	99.77
- Women	99.84
Marital status	98.91
- Men	99.07
- Women	99.26
Educational level	91.45
- Men	90.71
- Women	93.03
Professional situation	96.39
Occupation	90.24
Branch of activity	94.32

6.2.3. ECONOMICALLY ACTIVE POPULATION

The economically active population is composed of those persons aged 16 years old or more who have a job in the reference week of the survey and those other persons who, without a job, are looking for one or are waiting to start one.

For this group, the following characteristics are studied: *age, sex, marital status, educational level, professional situation, occupation* and *branch of activity*. Results are presented in tables C.8 to C.14 and in tables I.6 to I.8 (the latter correspond to the last three characteristics) of the Annex.

The global consistency indices for the characteristic can be viewed in chart 17.

On comparison of the *educational level* and *marital status* indices with these same characteristics for the population aged 16 years old or over (see chart 13) we can see that they are greater for this population than for the active population. Conversely, the G.C.I. for the characteristic *age* is somewhat larger in the case of the active population.

The global consistency index for the characteristic *professional situation* stands above 96 percent. This is influenced by the good quality of the indices in the modality *wage earners* (see table I.6 from the Annex), which includes approximately 86 percent of persons classified by this characteristic. The remaining modalities, except *businesspersons without wage earners* are quantitatively of little importance, with the worst indicators corresponding to them.

If we look at table C.12 of the Annex, we will see that the most noteworthy transfer between modality is that taking place between *members of cooperatives* and *wage earners*, since, of the total classified in R.I. in the modality *members of cooperatives*, 59 percent are classified in O.I. as *wage earners*. The effect of this transfer is, nonetheless, very small, given the scarce number of persons classified in the modality *members of cooperatives*.

Regarding the *occupation* characteristic, we can see that the global consistency index stands slightly over 90 percent, this value being similar to that obtained in 2008. Nevertheless, its quality indicators (see table I.7) are generally worse than those for other characteristics assessed, due to the actual complexity in its classification.

Table I.7 shows that the lowest P.I.C.s correspond to *Management of companies and Public Administration*, with 74.8 percent, and the highest to *Workers in the services sector*, as is customary, where it reaches a value of 96.5 percent.

Regarding biases, we can see that they are rather small, except in the case corresponding to the modality *Management of companies and Public Administration*, whereas the gross change indices can be considered acceptable, as their highest value, corresponding to this same modality, stands at 31 percent.

For the characteristic *branch of activity* the global consistency index shows a value that slightly exceeds 94 percent, indicating a new improvement with regard to the value from 2008. This fact seems to indicate that the implementation of the new classification of economic activities (CNAE-2009) has had a positive influence on the indicators of this characteristic.

The modality presenting the lowest P.I.C. (see table I.8 in the Annex) is that of the *Supply of electrical energy, gas, steam and air conditioning*, standing at 66.7 percent, whereas two, *Real estate activities* and *Financial and insurance activities*, present P.I.C.s of 100 percent. The net and gross change indices can be considered acceptable, except the G.C.I. of the *modality Supply of electrical energy, gas, steam and air conditioning*, reaching a value of 55.6 percent.

6.2.4. EMPLOYED POPULATION

The employed population is composed of all persons aged 16 years old or over who, during the reference week, had a job working for others or carried out a freelance activity, even if they did not work during the aforementioned week, or only did so partially for some reason. For this group of persons the following characteristics are studied: *hours worked in the main activity*, *number of hours worked the same as or different than usual*, *reasons for working a different number of hours to usual* and *time that they have been working in their current job.* In addition, for employed persons, the characteristic *type of contract* is studied, and for employees with a temporary contract, *its duration by public or private sector*. The results are shown in tables C.15 to C.20 of the Annex.

18. Global consistency indices

Characteristic	G.C.I.
Hours worked in the main job	88.93
No. of hours worked equal to or different than usual	95.87

The global consistency indices of the first two characteristics are shown in chart 18, and it can be verified that both have increased slightly as compared with the indices obtained in 2008..

In the characteristic *hours worked in the main job,* the modality presenting the highest P.I.C. is *No hours*, therein reaching a value of nearly 95 percent (see table I.9 in the Annex). Conversely, the modality with the lowest P.I.C. is *Does not know*, with 56.5 percent, and which also has the worst G.C.I. and the worst bias.

Table C.16 of the Annex includes the *employed persons according to whether they worked the same or a different number of hours than usual*. It can be observed therein that of the employed persons classified by the number of hours worked, 76 percent are classified in R.I. in *worked the same number of hours*. Likewise, where the fewest persons were classified in R.I. was under the heading *worked a greater number of hours*, which did not reach 3 percent.

Table I.10 of Annex shows the quality indicators for this characteristic, the best corresponding to persons who *worked the same number of hours*, with small net and gross change indices and with a P.I.C. standing at 98.5 percent. The worst net and gross change indices correspond to the *heading worked a greater number of hours*.

With regard to *reasons for working a different number of hours than usual* , it is important to emphasise that persons classified as having worked a greater

19. Reasons to work fewer hours than usual (P.I.C.)

Reason	P.I.C.
Holidays, leave, bank holidays	97.91
Maternity leave or extended leave of absence	85.71
Illness, accident or temporary incapacity	100.00
Other reasons	95.56

number hours than usual are so few (see C.17 in the Annex) that they are not worth remarking upon.

As far as those employed persons working fewer hours than usual are concerned, 69 percent were classified in the modality *holiday, leave, public holidays,* with a fairly high P.I.C. corresponding to this (98 percent), as can be seen in chart 19. This chart only shows the four modalities into which a significant number of persons have been classified (see table C.17 of the Annex).

20. Percentage distribution of the situation of the employed persons in O.I., who, according to R.I., worked the same number of hours as usual that week

Situation in O.I.	Percentage
Does not know the number of hours worked	1.52
Worked the same number of hours as usual	97.02
Worked a different number of hours than usual	1.46
- Worked fewer hours than usual	0.73
Holidays, leave, bank holidays	0.28
Maternity leave or extended leave of absence	0.00
Illness, accident or temporary incapacity	0.00
Partial unemployment due to technical or economic reasons	0.00
Labour force adjustment plan	0.00
Strike or labour conflict	0.00
Other reasons	0.39
Does not know	0.06
- Worked more hours than usual	0.73
Variable or flexible work schedule	0.06
Overtime	0.56
Other reasons	0.06
Does not know	0.06

Chart 20 shows the percentage distribution of the situation, according to O.I., of employed persons who, according to R.I., worked the same number of hours as usual during the week. We can see that 97 percent of these were classified in the same way in O.I., in other words, they also worked the same number of hours as usual in R.I. 0.73 percent worked in O.I. fewer hours than usual, in the majority of cases due to *other reasons* or due to *holidays, leave and bank holidays*. Another 0.73 percent worked more hours than usual, most due to *overtime hours*.

With regard to the characteristic *time that they have been working in their current job*, chart 21 shows the percentages of those identically classified. The modality presenting the best P.I.C. (98.4 percent) is *six years or over,* as 54 percent of the total number of those classified by this characteristic are classified therein. The remaining modalities also show relatively high P.I.C.s, since they all exceed 90 percent. The global consistency index stands at 97.2 percent, thereby maintaining, and even slightly improving the level reached in 2008.

21. Employed persons by the time working in the current job (P.I.C.)

Modality	P.I.C.
Less than 3 months	93.06
From 3 months to less than 6 months	96.77
From 6 months to less than 1 year	90.48
From 1 year to less than 2 years	97.40
From 2 years to less than 3 years	96.23
From 3 years to less than 6 years	97.27
6 years or more	98.36

Within employed persons, *employees* are all persons working for a public or private company and receiving remuneration in return, whether in cash or in kind

Tables C.19 and C.20 in the Annex show the results of characteristics *employees by type of contract or labour relationship* and *employees with a temporary contract, by public or private sector, and its duration*. The P.I.C.s for both characteristics are shown in charts 22 and 23, respectively.

22. Type of contract or labour relationship (P.I.C.)

Modality	P.I.C.
Indefinite duration	98.78
- Permanent	99.93
- Discontinuous	96.43
Temporary duration	97.08
- Temporary due to production circumst	78.75
- Apprenticeship, training or internship	100.00
- Seasonal	85.71
- In the trial period	100.00
- Covering the absence of another work	93.33
- From a project or service	89.50
- Another type	52.83
- Does not know	58.33

Within the characteristic *type of contract or labour relationship*, we can see that the modality *indefinite duration* shows a higher P.I.C. than the modality *temporary duration*, continuing the trend of previous years. The submodalities of *indefinite duration* show, in general, higher P.I.C.s than those corresponding to *temporary duration*, even if the latter have, with the exception of *from a project or service* or *temporary due to production circumstances*, little quantitative significance.

The G.C.I. of the characteristic *type of contract or labour relationship* reaches a value of 94.1 percent, thereby again increasing somewhat with regard to the previous year.

As far as the characteristic *duration of the temporary* contract *is concerned, by public or private sector,* the global consistency index stands at 87.7 percent, a value six points higher than that obtained in 2008.

23. Duration of the temporary contract (P.I.C.)

Duration	P.I.C.
Public sector	98.10
- One day	-
- From 2 days to less than 1 month	100.00
- 1 to 3 months	100.00
- 4 to 11 months	100.00
- From 1 year to less than 3 years	92.59
- 3 years or more	50.00
- Does not know, but less than 1 month	-
- Does not know, but more than 1 month	81.48
- Does not know	81.25
Private sector	98.89
- One day	100.00
- From 2 days to less than 1 month	100.00
- 1 to 3 months	95.24
- 4 to 11 months	91.00
- From 1 year to less than 3 years	88.00
- 3 years or more	100.00
- Does not know, but less than 1 month	-
- Does not know, but more than 1 month	85.84
- Does not know	82.46

In the first place, it is necessary to say that there few persons to classify according to this characteristic, the majority of whom (77 percent) are in the modality *private sector,* as is shown in table C.20 in the Annex. Therefore, the modality *public sector* is of very little importance in quantitative terms, and therefore the P.I.C.s of its submodalities, whose values can be seen in chart 23, are of very little significance.

The P.I.C.s for the modality *private sector* are more significant and their values may likewise be seen in chart 23. It may be said generally that they are higher than those corresponding to 2008.

6.2.5. UNEMPLOYED POPULATION

Unemployed persons are considered to be all those persons aged 16 years old or over who, during the reference week, simultaneously meet the following conditions:

- Are not working.
- Are seeking work, or if not, it is because they have already found a job, which they will be starting at a date subsequent to the reference week.
- Are available to work.

From this group of active persons, by the repeat interview procedure, the quality of the characteristics *type of unemployed person* is assessed, distinguishing between men and women, *economic sector* and *time that they have been seeking work* (tables C.21 to C.23 in the Annex).

In *type of unemployed person*, a distinction is made between those applying for their first position of employment and those who have worked previously.

Chart 24 shows the net change indices for unemployed persons by sex and type of unemployed person, and we are able to see that, in the case of women, there is no bias, and that in the case of men, the bias is not very high. In turn, Chart 25 shows that unemployed women have a global consistency index of 100 percent, and the index for men is also very high.

24. Unemployed persons, by sex and type (N.C.I.)

Sex/ type of unemployed person	N.C.I.
Men	
- Total	0.00
- Seeking first job	11.11
- Have worked previously	-0.81
Women	
- Total	0.00
- Seeking first job	0.00
- Have worked previously	0.00

Regarding the *economic sector*, its G.C.I. reaches a value of 76.5 percent (chart 25), thereby experiencing a slight increase as compared with that obtained in 2008.

Lastly, we must highlight the new improvement experienced in the quality of the characteristic *job search time*, whose global consistency index stands at 96 percent, a value much higher than that obtained in the year 2008.

25. Global consistency indices

Characteristic	G.C.I.
Type of unemployed person	99.56
- Men	99.24
- Women	100.00
Economic sector	76.45
Time spent on the job search	96.05

6.2.6 CONCLUSION

On analysing the previous charts, it has been possible to see that, even though there are differences between the different characteristics, the quality of data from the EAPS remains within fairly acceptable limits, with its indicators having improved somewhat, in general, with regard to those obtained in the year 2008. It is worth highlighting that the O.I.-R.I. comparison is performed by computer, once both the O.I. and the R.I. data have been subjected to different filtering and imputation processes. The only difference in processing O.I. and R.I. data stems

from the fact that, while some O.I. data is imputed by means of a random procedure (DAY), in the R.I. data, no random imputation procedure is used.

In turn, any difference between O.I. and R.I. is counted as a content error, although it may be due to lapses of memory or to discrepancies in interpreting the questions, where the informant is not the same in the two interviews. Likewise, in some characteristics whose modalities are not mutually exclusive, classification is difficult to specify in practice.

6.3 Other applications of the assessment survey

6.3.1. STUDY OF THE INFLUENCE OF THE INFORMANT ON THE QUALITY OF THE RESULTS

For the purpose of analysing the possible influence on the quality of the results of the fact that the informant has been the same or different in the two interviews (O.I. and R.I.), the joint O.I.-R.I. information from the four quarters and relating to the population aged 16 years old and over, has been separated into two blocks, one corresponding to the dwellings in which the informant was the same in both interviews, and another corresponding to the dwellings in which the informant was different therein.

In order to study the influence of this variable, the characteristics *relationship with economic activity* and *educational level* have been selected, since they are regarded as being of great interest.

To this end, for each of the aforementioned blocks, corresponding coincidence tables have been prepared for each of said characteristics, and their corresponding quality indicators have been calculated. The results obtained for the *relationship with economic activity* can be seen in charts 26 to 28 and for *educational level* in charts 29 to 31.

26. Persons aged 16 years old and over, according to O.I. and R.I., by relationship with economic activity. Same informant

Classification by O.I. / Classification by R.I.	Total	Active persons					Inactive persons
		Total	Employed persons	Unemployed persons			
				Total	Seeking first job	Have worked previously	
Total personas	**5,396**	2,707	2,365	342	34	308	2,689
Active persons							
Total	2,734	**2,683**	2,355	328	32	296	51
Employed persons	2,374	2,354	**2,349**	5	1	4	20
Unemployed persons							
Total	360	329	6	**323**	31	292	31
Seeking first job	29	28	1	27	**27**	-	1
Have worked previously	331	301	5	296	4	**292**	30
Inactive persons	2,662	24	10	14	2	12	**2,638**

27. Persons aged 16 years old and over, according to O.I. and R.I., by relationship with economic activity. Different informant

Classification by O.I. / Classification by R.I.	Total	Active persons					Inactive persons
		Total	Employed persons	Unemployed persons			
				Total	Seeking first job	Have worked previously	
Total personas	**1,787**	968	847	121	15	106	819
Active persons							
Total	988	**954**	841	113	12	101	34
Employed persons	854	840	**837**	3	-	3	14
Unemployed persons							
Total	134	114	4	**110**	12	98	20
Seeking first job	12	11	-	11	**11**	-	1
Have worked previously	122	103	4	99	1	**98**	19
Inactive persons	799	14	6	8	3	5	**785**

26. Persons aged 16 years old and over according to O.I. and R.I., by relationship with economic activity. Same informant

Classification by O.I. / Classification by R.I.	Total	Active persons					Inactive persons
		Total	Employed persons	Unemployed persons			
				Total	Seeking first job	Have worked previously	
Total persons	4,571	2,294	1,921	373	31	342	2,277
No relationship with economic activ	13	1	-	1	-	1	12
Total classified	**4,558**	2,293	1,921	372	31	341	2,265
Active persons							
Total	2,330	**2,273**	1,911	362	28	334	57
Employed persons	1,929	1,913	**1,907**	6	1	5	16
Unemployed persons							
Total	401	360	4	**356**	27	329	41
Seeking first job	32	25	-	25	**25**	-	7
Have worked previously	369	335	4	331	2	**329**	34
Inactive persons	2,228	20	10	10	3	7	**2,208**

27. Persons aged 16 years old and over according to O.I. and R.I., by relationship with economic activity. Different informant

Classification by O.I. / Classification by R.I.	Total	Active persons					Inactive persons
		Total	Employed persons	Unemployed persons			
				Total	Seeking first job	Have worked previously	
Total persons	1,204	681	570	111	9	102	523
No relationship with economic activ	2	-	-	-	-	-	2
Total classified	**1,202**	681	570	111	9	102	521
Active persons							
Total	692	**666**	561	105	7	98	26
Employed persons	570	561	**559**	2	1	1	9
Unemployed persons							
Total	122	105	2	**103**	6	97	17
Seeking first job	10	6	-	6	**6**	-	4
Have worked previously	112	99	2	97	-	**97**	13
Inactive persons	510	15	9	6	2	4	**495**

With regard to the first of these characteristics (*relationship with economic activity*), in view of the figures in chart 28, it may be said that there are no great differences between the indicators in both cases, since the G.C.I.s and P.I.C.s are fairly similar with both types of informant (the main difference, of somewhat more than four points, is in the P.I.C. for unemployed persons). Regarding the net change indices, we can observe that in all modalities they are similar in both cases, without a clear tendency.

With regard to population transfers between unemployed and inactive persons, these are greater in the case of the different informant, since almost 14 percent of those classified as unemployed in R.I. are classified as inactive in O.I., with this percentage being 10.2 percent in the case of the same informant.

28. Quality indicators. Relationship with economic activity with the same or a different informant

	Percentage of identically classified		Net Change Index		Global Consistency Index	
	Informant		Informant		Informant	
	Same	Different	Same	Different	Same	Different
Relationship with economic activity	-	-	-	-	98.31	96.59
Active persons	97.55	96.24	-1.59	-1.59	-	-
Employed persons	98.86	98.07	-0.41	0.00	-	-
Unemployed persons	88.78	84.43	-7.23	-9.02	-	-
Inactive persons	99.10	97.06	1.66	2.16	-	-

In view of these results, it may be concluded that the fact that the informant is the same or different in the two interviews does not significantly influence classification of the population by relation with economic activity, even though slightly better results are obtained when the informant is the same person in both interviews.

Charts 29 and 30 show the persons classified in O.I. and R.I. by educational level for the same and a different informant.

30. Persons aged 16 years old and over, according to O.I. and R.I., by educational level. Different informant

Classification according to O.I. / Classification according to R.I.	Educational level						
	Total	Illiterate	Primary education	Secondary education		Higher education, except doctorates	Doctorate
				First stage	Second stage		
Total persons	1,787	57	573	522	319	311	5
Does not know educational level	4	-	2	-	2	-	-
Total classified	**1,783**	57	571	522	317	311	5
Illiterate	51	**48**	3	-	-	-	-
Primary education	614	8	**541**	60	4	1	-
Secondary education							
- First stage	485	-	18	**445**	20	2	-
- Second stage	305	-	6	14	**269**	16	-
Higher education, except doctorates	322	1	3	3	24	**291**	-
Doctorate	6	-	-	-	-	1	**5**

29. Persons aged 16 years old and over according to O.I. and R.I., by educational level. Same informant

Classification according to O.I. / Classification according to R.I.	Educational level					
	Total	Illiterate	Primary education	Secondary education		Higher education, except doctorates
				First stage	Second stage	
Total persons	4,571	123	1,769	1,122	758	785
Does not know educational level	16	7	9	-	-	-
Total classified	**4,555**	116	1,760	1,122	758	785
Illiterate	122	**102**	20	-	-	-
Primary education	1,808	13	**1,661**	126	7	1
Secondary education						
- First stage and corresponding training and labour insertion	1,069	1	72	**981**	15	-
- Second stage and corresponding training and labour insertion	761	-	6	11	**706**	37
Higher education, except doctorates	784	-	1	4	30	**747**
Doctorate	11	-	-	-	-	-

30. Persons aged 16 years old and over according to O.I. and R.I., by educational level. Different informant

Classification according to O.I. / Classification according to R.I.	Educational level					
	Total	Illiterate	Primary education	Secondary education		Higher education, except doctorates
				First stage	Second stage	
Total persons	1,204	21	398	315	219	246
Does not know educational level	3	-	-	3	-	-
Total classified	**1,201**	21	398	312	219	246
Illiterate	22	**20**	2	-	-	-
Primary education	418	1	**376**	41	-	-
Secondary education						
- First stage and corresponding training and labour insertion	289	-	15	**264**	9	1
- Second stage and corresponding training and labour insertion	217	-	3	5	**198**	11
Higher education, except doctorates	250	-	2	2	12	**234**
Doctorate	5	-	-	-	-	-

If we analyse the results obtained, observing the indicators shown in chart 31, we can see that, except for the modalities *illiterate* and *doctorate*, they are somewhat better for the case of the same informant.

31. Quality indicators. Educational level with the same or a different informant

	Percentage of identically classified		Net Change Index		Global Consistency Index	
	Informant		Informant		Informant	
	Same	Different	Same	Different	Same	Different
Educational level	-	-	-	-	92.38	91.34
Illiterate	83.61	90.91	-4.92	-4.55	-	-
Primary education	91.87	89.95	-2.65	-4.78	-	-
Secondary education						
- First stage and corresponding training and labour insertion	91.77	91.35	4.96	7.96	-	-
- Second stage and corresponding training and labour insertion	92.77	91.24	-0.39	0.92	-	-
Higher education, except doctorates	95.28	93.60	0.13	-1.60	-	-
Doctorate	100.00	100.00	27.27	0.00	-	-

The modality *doctorate* is the modality in which the fewest persons are classified, and therefore, their indicators are in no way significant.

Regarding population transfers between modalities (see charts 29 y 30), that which the greatest importance due to its effect from a quantitative perspective is that occurring between *primary education* and *secondary education, first stage*. This transfer is more important in the case of a different informant, since almost 10 percent of the persons who are classified in R.I. in *primary education* are classified in O.I. in *secondary education, first stage*, whereas when the informant is the same, this percentage stands at 7 percent.

With these results, we cannot state that the fact that the informant is the same or different in the two interviews has a decisive influence on the classification of the population by educational level attained, but we can confirm that, when the informant is the same person, the results are slightly better.