Measure of the Effect of Changes in the Economically Active Population Survey (EPAS) in 2021

Introduction

The entry into force of REGULATION (EU) 2019/1700 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 10 October 2019, which establishes a common framework for household surveys, and the IMPLEMENTING REGULATION (EU) 2019/2240 of December 16, 2019 as well as other Delegated and Implementing Regulations establishing the variables to be analysed, the definitions to be used and the periodicities for each of the variables of the European Labour Force Survey (LFS) have an impact of the information to be provided from the first quarter of 2021 onwards. Since that the Economically Active Population Survey (EPAS) is the operation that collects the information necessary for the variables required in the Labour Force Survey (LFS), the necessary adaptations have been made to respond to the new 2021 information requirements.

Many of the requirements that the new European regulation imposes on a mandatory basis as of 2021 have already been fulfilled in the Economically Active Population Survey (EPAS) for some time. Notable examples include the homogeneous distribution of the quarterly sample both by reference months and weeks and by territories, the use of electronic questionnaires, the general technique used in the question flow to determine the relationship with the activity, and the deadlines for providing the information (ten weeks after the end of the reference period, while in the EPAS, results are obtained after 4 weeks).

A summary of the changes that introduced to the survey in 2021 can be found at https://www.ine.es/inebaseDYN/epa30308/docs/epa_cambios2021.pdf . This document offers an evaluation of the effect these changes have had on the main series of EPA results.

When assessing some of these effects, It is also necessary to take into account the influence of the COVID-19 pandemic on the labour market in Spain and the measures to contain it, in particular those related to the declaration of the state of alarm. At the moment and in these exceptional circumstances, it is impossible to completely isolate the pandemic's impact from the effects of the change in the EPA. In some cases, it was also necessary to anticipate certain modifications, especially those related to field work or correcting for the lack of response, due to the situation caused by COVID-19.

The changes made in the EPA in 2021 whose effect will be evaluated in this document are the following:

1. Definition of Households

2. Total correction for non-responses

3. Population groups with different processing in 2020-2021 in terms of employment. Cases derived from the modification in the processing of long-term employment absences

4. Sample design changes made to the Economically Active Population Survey in the first quarter of 2021. Effects on estimates

5. Characterisation of an active search based on the new manner of formulating search methods. Effects on unemployment measurement

The conclusion is that the aforementioned changes do not cause significant effects on the EPAS series of main results, either because they had to be introduced throughout 2020, or because their impact is not statistically significant.

1 Definition of Households

As of 2021, in the EPAS, households are no longer synonymous with homes, but is rather based on sharing the same budget. There may be more than one household in the same home.

In reality, the number of home with more than one household is not significant. In the first quarter of 2021, the estimated 18,825,500 homes thus give rise to 18,864,300 households; that is, the difference between the old definition of home and the new one was 38,300, or 0.21%.

The amount is insignificant, given that there is a discontinuity in the series of households. On the other hand, its influence on the results of the EPAS relative to people (demographic and labour characteristics, and in particular employment and unemployment) are null.

2 Total correction for non-responses

All questions aimed at determining the activity situation of the interviewees (employment, unemployment, inactivity) must be obtained by direct interview, from the first quarter of 2021 onwards.

This makes it necessary to do away with the process applied to correct the total lack of response (absences, refusals) from the second interview with the families. This consisted of repeting the information obtained directly by interview the previous quarter.

This change does cause any variation in the main variable series. In fact, in the final weeks of the first quarter of 2020 -due to the situation created by the pandemic-, this process was not applied.

3 Population groups with different processing in 2020-2021

The following are distinguished:

- Seasonal workers outside the period of activity: will be considered employed as of 2021 if they continue perform tasks associated with their activity to maintain business in the off-season. Merely administrative tasks are not considered among these activities. This represents a change with respect to 2020, since at that point, seasonal workers outside the activity period were considered not employed.

- People absent from their job due to parental leave for childcare: are considered employed in 2021 as long so long they receive income due to their employment relationship. Otherwise, the criterion for the total duration of the absence will be applied. If this is longer than three months they are considered to be unemployed, and if the duration is up to three months they are employed. Until 2020 they were employed only if the duration of the absence was equal to or less than three months, or they received at least 50% of their salary.
- Persons absent from their job for more than three months due to flexible or similar hours: until 2020 were considered employed if they received at least 50% of their salary, as of 2021 they are not employed, regardless.
- People absent from their job for more than three months due to training: until 2020 were considered employed only if they received at least 50% of their salary, and from 2021 onwards, they were considered employed if the training was work-related[1]. This was considered the case in the calculation of the figures in the following table, which were to be utilised in the case that the impact on the occupation series was greater.
- Family benefits: persons who work without regulated remuneration in a relative's company, with the requirement that they live with said relative until 2020, and without adding this circumstance for 2021.

The following table shows the impact (in absolute figures) of the aforementioned groups on employment, provided it is possible to distinguish between them in 2021.

Groups with different processing in 2020-2021 (thousands of people)	T1-2021	T4-2020	T3-2020	T2-2020	T1-2020
Seasonal workers who carry out tasks outside the season	2,004	4,259	8,567	1,494	3,027
Childcare leave receiving remuneration <50%	-	0,857	0,000	0,000	0,074
Absences for flexible hours or similar of duration + 3 months & <50%	-	0,160	1,057	0,352	0,194
Absence for training duration + 3 months & <50%	-	0,926	0,471	0,087	0,306
Reclassification of family assistance to wage earners					
Family assistants who do not live in the place of residence	-	7,857	8,359	6,445	4,649

[1] This training must meet at least one of the following conditions: a) it must be required by the employer, b) it must be carried out within normal working hours, c) It is related to the work performed and/or paid by the employer or the employee continues to receive compensation from the employer.

4. Sample design changes made to the Economically Active Population Survey in the first quarter of 2021. Effects on estimates

4.1 Main changes made to the Economically Active Population Survey (EAPS) in the first quarter of 2021.

- Sample Allocation

The number of sections per autonomous community and the number of dwellings per section are modified.

The new EAPS regulation establishes new precision criteria are established for the estimates of the unemployment and employment rates of the population aged 15 to 74 years and for the unemployment rate of the same population by NUTS 2 (autonomous communities in the case of Spain).

As a result, we have decided to recalculate the number of sample sections and the number of homes per section, based on these precision criteria and the new cost parameters for the Survey. This has led to an increase in the number of census sections to be investigated and a decrease in the number of homes surveyed per section.

The number of sections has increased from 3,822 to 5,298 and the number of homes per section from 22 to 13. The change in size will be extended gradually over three years, starting in the first quarter of 2021.

In the first quarter of 2021, the number of sections added to the sample due to the change in allocation was 137, while and the number of sections removed was 14.

- **Calibration Procedure**

Those under fifteen years of age have been included in the auxiliary information calibration groups.

- **Stratification**

The stratification criterion has been modified to adapt it to the design used in the rest of the population and household surveys prepared by the INE. The modification consisted of grouping the three strata of municipalities with populations below 10,000 inhabitants into a single stratum, and classifying municipalities with more than 100,000 inhabitants by size and capital, thus removing the concept of self-represented municipalities.

- **Treatment of incidents**

As in the previous case, in order to adapt to the rest of the INE household surveys, the criteria for treating incidents have been modified. Negative responses are thus not substituted in the first interview, and interviews that result in an incidence of empty housing in the first interview are not investigated in successive interviews. In order for the decision not to have an effect on the effective sample size, the number of dwellings in the sample was increased by the equivalent amount.

- **Sampling frame**

Since the third quarter of 2020, the first interview sample is selected from the Georeferenced Addresses Framework, derived from the Municipal Register.

- **Update of section selection probabilities based on the latest available populations**

The update of the selection probabilities was carried prior to the adjustment of sections due to the new allocation. The number of affected sections has been 35. This will be updated over two Survey cycles, or three years.

4.2 Measurement of the effect on estimates due to the change in calibration procedure

Of all the aforementioned changes, it is only understood that an effect on the estimates may have an effect on the estimates due to the modification of the calibration procedure. The rest of the modifications can be included in one of the following groups:

- Changes introduced in 2020 due to the pandemic: this is the case of the new sampling frame.

- These are part of the usual survey methodology: update of the selection probabilities based on the latest available populations.

- These are changes in the sample design, which, by their very nature, only affect the estimate variance. As such, their effect is within the confidence interval for the estimates: changes in the number of sample sections, in the number of homes per section, and in stratification.

- Finally, the effect of the proposed incident processing was measured in 2017 in terms of empty homes: values were 0.04% in occupancy, -0.25% in unemployment and 0.02 % in the number of inactive persons. Regarding negative responses, the current procedure is considered equivalent to the previous one.

As described above, the effect of the changes has been measured by calculating estimations for the sample for the fourth quarter of 2020, applying the old methodology for the calibration procedure.

The effect on the estimates was as follows:

Calibrated		Estimates 4Q 2020		
		Employed persons	Unemployed persons	Inactive
New		19.386,64	3.708,42	16.548,12
Old		19.344,29	3.719,78	16.571,41
% variation		0,13	-0,30	-0,14
Coefficient of variation		0,35	1,39	0,29

As can be seen, the variations were within the confidence interval for the estimates. In fact, they were less than half the variation coefficient in all three cases.

5 Characterisation of an active search based on the new manner of formulating search methods. Effects on unemployment measurement

According to the new regulations of the European Labour Force Survey (LFS)[2], from 2021 onwards, search methods will be inquired using a closed list adjusted to the nine methods established by the International Labour Organization (ILO). The emphasis in the LFS is thus is placed on harmonising the identification of active job searches, rather than on the harmonised collection of active methods themselves (this was the approach in force in the previous regulations).

This new approach modifies the way in which job search methods were addressed Spain in the 2005-2020 period, when the investigation focused on active and non-active search methods. It was first carried out by means of an open question to codify the interviewer. Questions were then asked about the rest of the methods not declared spontaneously by the informant. This was the question:

In what ways have you looked for a job in the last four weeks?
1. By contacting the Public Employment Office
2. By contacting a private employment agency or signing up for an employment exchange
3. By applying directly to the employer or submitting your CV
4. Through friends, relatives or a trade union
5. Through advertisements or job offers, including on the Internet
6. Making arrangements to create your own business
7. Undertaking exams or interviews
8. You have been waiting for the results of a job application or a competition
9. You have been waiting for a call from a Public Employment Office
10. Another way: _____
Doesn't know

Several of the methods led to further questions to inquire in more detail about the methods, and whether or not they were active.

Starting in 2021, the interviewee will be offered a list of the nine current methods, which appear at random. They can answer a maximum of three. The list of methods includes:

In the last four weeks, in order to find work,
1. Have you posted or answered job advertisements?
2. Have you studied job advertisements?
3. Have you posted or updated your curriculum on the Internet?
4. Have you contacted companies or employers directly?
5. Have you asked family or friends?
6. **Have you** contacted a public employment office?
7. Have you contacted a private employment office?
8. Have you taken a test, interview or participated in a selection process?
9. Have you taken steps to create your own business?

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[2] These are, essentially, Regulations 2019/1700 of the European Parliament and of the Council, and 2019/2240 of the Commission.

Over thirteen weeks, between the second and third quarters of 2020 (weeks 23 to 35, inclusive), a pilot study was designed to assess the possible differences in the characterisation of the active job search between the two methods of inquiry, selecting a home from each of the 3822 sections of the EPAS sample. In order to increase the results, given the smaller size of the subsample, a lower level of detail has been used in the calibration variables than that usually used in the quarterly EPA. The calibration variables refer to July 1, 2020 and the following was considered for each autonomous community:

    - Age and sex groups. Three age groups (16-29, 30-49, 50 and over)

    - Households by size: Three groups (1, 2 and 3 or more)

Ceuta and Melilla have been considered together in calculating the factors.

Below are the main magnitudes related to activity for the subsample of the pilot study, and the rest.

Population from 16 to 74 Sample of reference weeks 23 to 35 in which the pilot study was carried out

Sample data

| | | Activity relationship | | | | | | | | Unemployment rate | Activity rate |
| | | Total | | EMPLOYED | | UNEMPLOYED | | INACTIVE | | | |
		Count	% of row N	Count	% of row N	Count	% of row N	Count	% of row N		
Search methods question 2021	Total	108185	100,00%	55897	51,67%	10376	9,59%	41912	38,74%	15,66%	61,26%
	YES	4114	100,00%	2094	50,90%	396	9,63%	1624	39,47%	15,90%	60,53%
	NO	104071	100,00%	53803	51,70%	9980	9,59%	40288	38,71%	15,65%	61,29%

Data Collected

| | | Activity relationship | | | | | | | | Unemployment rate | Activity rate |
| | | Total | | EMPLOYED | | UNEMPLOYED | | INACTIVE | | | |
		Count	% of row N	Count	% of row N	Count	% of row N	Count	% of row N		
Search methods question 2021	Total	35295,0	100,00%	18997,6	53,83%	3637,5	10,31%	12659,9	35,87%	16,07%	64,13%
	YES	1324,2	100,00%	697,9	52,70%	135,9	10,27%	490,3	37,03%	16,30%	62,97%
	NO	33970,8	100,00%	18299,7	53,87%	3501,6	10,31%	12169,5	35,82%	16,06%	64,18%

As can be seen, the differences between the proportions of people classified as unemployed are small. We are talking about four hundredths in the population aged 16 to 74, which is the target population for measuring unemployment. It is noteworthy that the difference of four hundredths goes in one direction in the sample data and in another in the high data, which points to an older age structure in the subsample. This is later corrected in the calibration.

Age structure of the sample

Shows 16-74 years in Reference Weeks 23 to 35

		IDSUB					
		Total		YES		NO	
		Count	% of column N	Count	% of column N	Count	% of column N
Five-year age group	Total	108185	100,00%	4114	100,00%	104071	100,00%
	16-19	6109	5,65%	224	5,44%	5885	5,65%
	20-24	7126	6,59%	288	7,00%	6838	6,57%
	25-29	5874	5,43%	223	5,42%	5651	5,43%
	30-34	6217	5,75%	234	5,69%	5983	5,75%
	35-39	8394	7,76%	296	7,19%	8098	7,78%
	40-44	11139	10,30%	413	10,04%	10726	10,31%
	45-49	11734	10,85%	461	11,21%	11273	10,83%
	50-54	12050	11,14%	428	10,40%	11622	11,17%
	55-59	11648	10,77%	466	11,33%	11182	10,74%
	60-64	10716	9,91%	410	9,97%	10306	9,90%
	65 or older	17178	15,88%	671	16,31%	16507	15,86%

A test of equality of means applied to the proportions of unemployed, employed and inactive in the population of 16-74 year olds (95% confidence and with sample data) has been carried out, which confirms the null hypothesis. The confidence interval is quite centred on the equality of proportions (-0.010, 0.009).

Previously, it has been verified that the hypothesis of equality of variances can be accepted at a significance level of 95%. It can be observed that the unemployment proportion is the same at a p-value of 0.878.

Group statistics

IDSUB		N	Average	Standard deviation	Average standard error
UNEMPLOYED	NO	104071	,0959	,29445	,00091
	YES	4114	,0963	,29498	,00460
EMPLOYED	NO	104071	,5170	,49971	,00155
	YES	4114	,5090	,49998	,00780
INACTIVE	NO	104071	,3871	,48709	,00151
	YES	4114	,3947	,48886	,00762

		Levene's test of quality of variances	
		F	Sig.
UNEMPLOYED	Equal variances are assumed	0,024	0,878
EMPLOYED	Equal variances are assumed	2,434	0,119
INACTIVE	Equal variances are assumed	3,643	0,056

Independent samples test

		t test for equality of means						
							95% confidence interval of the difference	
		t	gl	Sig. (bilateral)	Difference in averages	Standard error difference	Lower	Higher
UNEMPLOYED	Equal variances are assumed	-0,077	108183	0,939	0,000	0,005	-0,010	0,009
EMPLOYED	Equal variances are assumed	1,006	108183	0,314	0,008	0,008	-0,008	0,024
INACTIVE	Equal variances are assumed	-0,985	108183	0,325	-0,008	0,008	-0,023	0,008

The same information with high data confirms the results obtained for the sample data: acceptance of the hypothesis of equality of means (in particular, of the unemployment proportion in both populations). In addition, there is even less difference in the previous test for the equality of variances: there is a p-value of 0.924 for the proportion of unemployment and higher figures of p-value for the proportion of employed and inactive people than in the case of the data. show them. The calibration applied, although very general, conditioned by the size of the subsample, partially corrects the bias of the age structure of the selected subsample.

Group statistics

IDSUB		N	Average	Standard deviation	Average standard error
UNEMPLOYED	NO	33970,8	,1031	,30406	,00165
	YES	1324,2	,1027	,30364	,00834
EMPLOYED	NO	33970,8	,5387	,49851	,00270
	YES	1324,2	,5270	,49946	,01373
INACTIVE	NO	33970,8	,3582	,47949	,00260
	YES	1324,2	,3703	,48307	,01328

		Levene's test of quality of variances	
		F	Sig.
UNEMPLOYED	Equal variances are assumed	0,009	0,924
EMPLOYED	Equal variances are assumed	2,051	0,152
INACTIVE	Equal variances are assumed	2,976	0,084

Independent samples test

		t test for equality of means					95% confidence interval of the difference	
		t	gl	Sig. (bilateral)	Difference in averages	Standard error difference	Lower	Higher
UNEMPLOYED	Equal variances are assumed	0,048	35293,0	0,962	0,000	0,009	-0,016	0,017
EMPLOYED	Equal variances are assumed	0,835	35293,0	0,404	0,012	0,014	-0,016	0,039
INACTIVE	Equal variances are assumed	-0,898	35293,0	0,369	-0,012	0,013	-0,038	0,014

In view of the results, we can conclude that the 2021 EAPS questions on search methods do not show statistically appreciable differences in the characterization of active search in regards to that currently available. Therefore, no significant impact on the search can be expected for the unemployment estimate associated with the introduction of this form of inquiring about job search methods.

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