

EVALUATION OF THE CENSUS ERROR IN SPAIN*

Speed Session 4

Demographic & social statistics

01/06/2016

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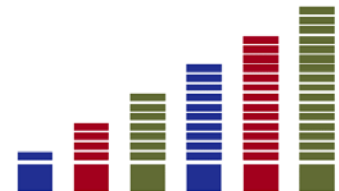
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SCIENTIFIC PROBLEM

- The population and housing census provides data on the main demographic and social aspects, as well as their distribution at any given time.
- The availability of reliable and updated information is crucial to improve the public policies.
- 17th census was carried out in Spain in 2011, according to a model based on administrative records. The demographic and socioeconomic survey of around 12.3% of the population completed the statistical operation.
- This work aims to **assess the statistical error** in the census due to the application of the new methodology and to **compare with previous censuses**.



THEORETICAL FRAMEWORK

Geographic Framework
Units



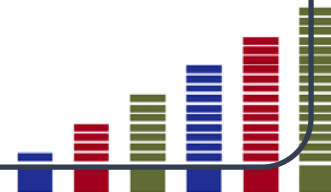
Spain
Autonomous Regions

DATABASES

- **Census 2001 and 2011** ((National Statistics Institute, 2007 and 2014)
- **Municipal register population to the year 2002 and 2012** (National Statistics Institute, 2012)
- **Vegetative balances from the birth and death statistics from 2002 to 2011** (National Statistics Institute, 2016a)
- **Residential variation statistic from 2002 to 2011** (National Statistics Institute, 2016b)

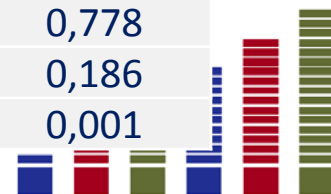
VARIABLES

- **Estimate Population in Census 2011**
- **Population of the municipal register 2012**
- **Theoretical population based on Census 2001**
- **Theoretical population based on Municipal Register 2001**



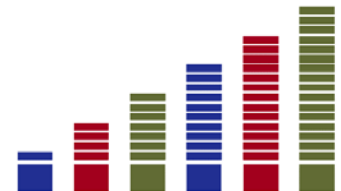
QUATITATIVE ANALYSIS: Results

	Census 2011- M.Register 2012		Census 2011-Census theor. Pop. 2001		Censo 2011-M.Register Theor. Pop. 2002	
	Z value	Error	Z value	Error	Z value	Error
Andalucía	0,44***	0,660	-9,48	0,000	5,75	0,000
Aragón	4,89	0,000	0,84***	0,400	10,18	0,000
Asturias, P. de	5,59	0,000	-1,19***	0,234	6,92	0,000
Balears, Illes	-5,66	0,000	26,83	0,000	-9,08	0,000
Canarias	-7,80	0,000	20,57	0,000	-32,06	0,000
Cantabria	4,02	0,000	4,32	0,000	9,23	0,000
Castilla y León	8,39	0,000	3,69	0,000	17,23	0,000
Castilla - La Mancha	2,31***	0,021	-3,61	0,000	7,88	0,000
Cataluña	5,91	0,000	34,16	0,000	32,42	0,000
C. Valenciana	-23,57	0,000	-16,54	0,000	-35,41	0,000
Extremadura	4,72	0,000	4,11	0,000	10,05	0,000
Galicia	7,86	0,000	-4,51	0,000	3,04***	0,002
Madrid, C.de	-4,48	0,000	-22,82	0,000	-12,91	0,000
Murcia, Región de	1,01***	0,312	-15,08	0,000	-13,91	0,000
Navarra, C. Foral de	1,51***	0,131	6,87	0,000	6,53	0,000
País Vasco	6,47	0,000	-15,40	0,000	-5,19	0,000
Rioja, La	0,80***	0,421	-2,66***	0,008	-0,28***	0,778
Ceuta	0,73***	0,465	8,56	0,000	1,32***	0,186
Melilla	3,22***	0,001	-0,68***	0,495	-3,26***	0,001



QUATITATIVE ANALYSIS: Discussion

- Based on the previous table, we ratify there are more proximity between the estimations of the census 2011 and the municipal register 2012 than between census 2011 and the studied theoretical populations.
- Obviously, this is our first attempt because we don't have the weighting factor employed. Due to that it is not possible to calculate the real estimation errors between the microdata and the census population estimation.



Conclusion

- The previous analysis has demonstrated that the reliability of the general information of the census has improved with the different changes of methodology made by the NSI, beyond reducing costs.
- But the census has lost part of the usefulness as tool of socioeconomic analysis for small areas, such as, small isolated municipalities or marginal zones of big cities.
- *Is the NSI planning tools that replace this function that was fulfilling the census?*
- The future lines of research will be focus on the analysis of the census 2011 microdata, knowing the weighting factors, and the analysis of the existing error between the sample data and estimations, not only of the demographic variables, but also the socioeconomic variables.



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THANK YOU FOR YOUR LISTENING!

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