

Inequality of Opportunity in Spain: New Insights from New Data

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What is Inequality of Opportunity?

Overall inequality is a function of circumstances and efforts: factors **beyond** and **within** the individual's control, respectively.

The first component is considered to be unfair, as the individual is not responsible for it.

Then, from the total population, we generate **types**, which are mutually exclusive groups of individuals who share the same circumstances.

Inequality between those types is what we call "Inequality of Opportunity", this is, IO.

Why Inequality of Opportunity in Spain?

Between 2002 and 2016 Spain has experienced the largest rise on disposable income inequality among European countries. But... Is this actually worrisome?

- IO deals with social justice and efficiency matters.
- Spain has generally been found to show one of the highest IO levels in Europe.

Our analysis:

- Measures Intergenerational Mobility in education and occupation.
- Measures IO in Spain with a new dataset, including some unexplored circumstances.
- Studies two channels of IO transmission: Education and Occupation.

A New Dataset

In our analysis we use the module "Social Inequality and Social Mobility in Spain", carried out during 2017 by the Centro de Investigaciones Sociológicas (CIS).

The database is representative for the Spanish population by age and gender. Our analysis is limited to those between 25 and 60 years old, to avoid part of the life-cycle effects.

Then, up to 1561 observations are used in our study.

We use Household Per Capita Adjusted (Disposable) Income.

Income

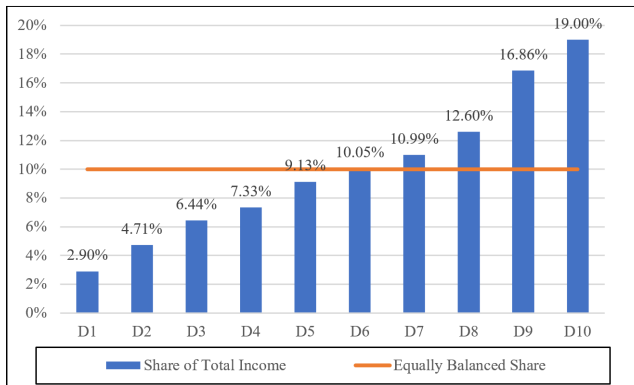


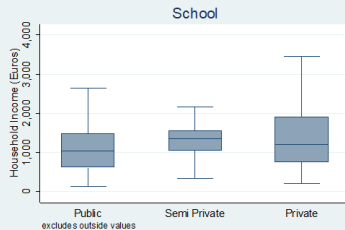
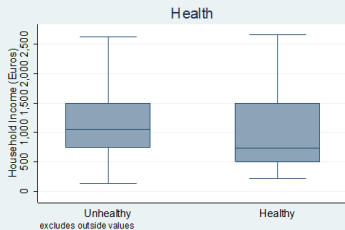
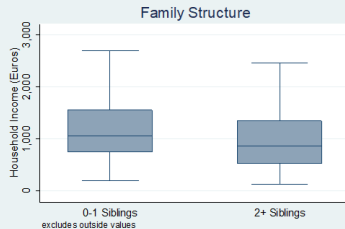
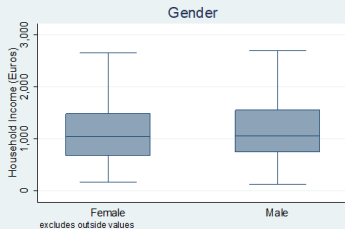
Figure: Income owned by deciles

According to our data, the p90/p10 ratio is around 5.82, while the p90/p50 ratio descends to 1.84. The Gini Index gets up to 0.31.

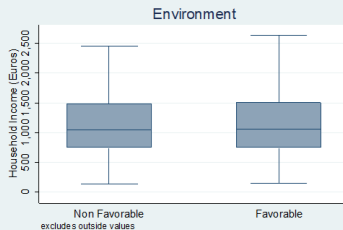
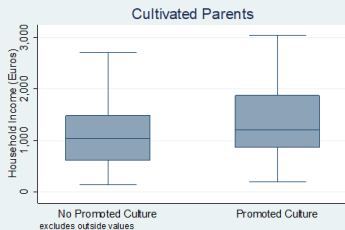
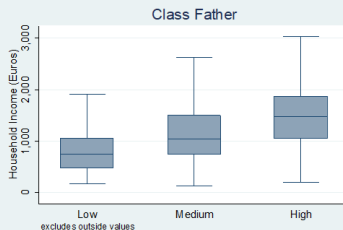
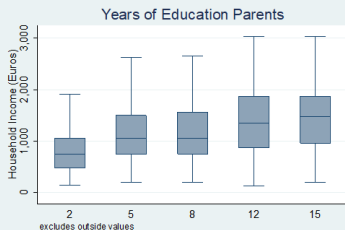
Circumstances

Variable	Mean	Standard Deviation
Gender (Male = 1)	0.50	0.50
Household Structure (2+ siblings=1)	0.35	0.48
Health perception (Healthy = 1)	0.88	0.32
Type of School: Private	0.14	0.34
Type of School: Semi-Private	0.12	0.33
Type of School: Public	0.74	0.44
Highest level of parental education	7.16	4.46
Occupation of the Father (0-1-2)	1.08	0.44
Cultivated Parents	0.27	0.44
Environment	0.75	0.43

Circumstances vs Income (I)



Circumstances vs Income (II)



Intergenerational Mobility in Education

Educational Mobility			Studies of the respondent (4 categories)				Marginal Distribution
			ISCED 0-1	ISCED 2	ISCED 3-4	ISCED 5-8	
Highest studies achieved by any parent	ISCED 0-1	n	328	121	226	132	807
		%	(24,48%)	(9,03%)	(16,87%)	(9,85%)	(60,22%)
	ISCED 2	n	23	33	53	45	154
		%	(1,72%)	(2,46%)	(3,96%)	(3,36%)	(11,49%)
	ISCED 3-4	n	12	30	71	59	172
		%	(0,90%)	(2,24%)	(5,30%)	(4,40%)	(12,84%)
	ISCED 5-8	n	6	11	56	134	207
		%	(0,45%)	(0,82%)	(4,18%)	(10,00%)	(15,45%)
Marginal Distribution		n	369	195	406	370	1340
		%	(27,54%)	(14,55%)	(30,30%)	(27,61%)	(100,00%)

Note: ISCED=0-1: primary education or less; ISCED=2: lower secondary education; ISCED=3-4: upper secondary education and post-secondary non-tertiary education; ISCED=5-8: tertiary education (short-cycle tertiary education, bachelor's, masters and doctoral studies, or equivalent).

High upward mobility (47.46%) and low downward mobility (10.30%). Relative mobility shows worse results: 64.73% reach university when parents had that studies, but only 16.36% when parents only have basic studies.

Intergenerational Mobility in Occupation

Occupational Mobility			Occupation of the Respondent				Marginal Distribution
			ISCO08=9	ISCO08=4-8	ISCO08=3	ISCO08=1-2	
Occupation of the Father	ISCO08=9	n	26	36	7	12	81
		%	(1,94%)	(2,69%)	(0,52%)	(0,90%)	(6,05%)
	ISCO-08=4-8	n	122	559	117	155	953
		%	(9,10%)	(41,72%)	(8,73%)	(11,57%)	(71,12%)
	ISCO-08=3	n	7	55	26	32	120
		%	(0,52%)	(4,10%)	(1,94%)	(2,39%)	(8,96%)
	ISCO-08=1-2	n	8	68	39	71	186
		%	(0,60%)	(5,07%)	(2,91%)	(5,30%)	(13,88%)
	Marginal	n	163	718	189	270	1340
	Distribution	%	(12,16%)	(53,58%)	(14,10%)	(20,15%)	(100%)

Note: ISCO-08=9: no qualified; ISCO-08=4-8: semi-qualified and qualified; ISCO-08=3: technicians, support professionals; ISCO-08=1-2: managers and professionals.

Similar absolute upward (26.79%) and downward (22.31%) mobility. High persistence in the highest social class (38.17%).

Measuring Inequality of Opportunity

To calculate our indexes we use the Ferreira-Guignoux ex-ante parametric approach:

$$\ln(Y_i) = \beta C_i + \epsilon_i \quad (1)$$

After running this regression, we predict a new vector of incomes, now conditioned on the controlled circumstances.

Applying an inequality measure over that vector provides an *absolute measure of IO*. After dividing that value over total inequality, we get our *relative measure of IO*.

Finally we apply a Shapley Decomposition to separate the circumstance's effects.

Inequality of Opportunity in Spain

	IO (Gini)		IO (MLD)	
Index	Absolute	Relative	Absolute	Relative
Standard Deviation	0.14 (0.00)	44.09% (0.88)	0.03 (0.00)	17.68% (0.44)
Shapley Decomposition				
	Relative Contribution		Relative Contribution	
Gender	6.22%		3.91%	
Size Family	26.82%		31.96%	
Health Status	1.25%		1.46%	
Parental Education	28.01%		31.52%	
Class of the Father	12.42%		12.68%	
Type of School	14.47%		12.42%	
Cultivated Parents	9.22%		5.61%	
Environment	1.59%		0.44%	

Note: standard deviations are based on 50 bootstrap replications.

Inequality of Opportunity in Spain - Channels

We are also interested on measuring the channels of transmission of Inequality of Opportunity.

The literature has traditionally proposed the education and the occupation.

How do we do it?

$$\ln(Y_i) = \alpha + \beta Edu_i + \delta Ocu_i \epsilon_i$$

Inequality of Opportunity in Spain (Channeled by education)

Index	IO (Gini)		IO (MLD)	
	Absolute	Relative	Absolute	Relative
Standard Deviation	0.23 (0.02)	75.54% (0.64)	0.05 (0.00)	32.35% (0.08)
Shapley Decomposition				
	Relative Contribution		Relative Contribution	
Gender	1.19%		0.12%	
Size Family	15.52%		15.19%	
Health Status	0.06%		0.02%	
Parental Education	36.78%		45.07%	
Class of the Father	16.62%		16.74%	
Ownership School	14.24%		12.83%	
Cultivated Parents	11.74%		8.80%	
Environment	3.85%		1.23%	

Note: standard deviations calculated based on 50 bootstrap replications.

Inequality of Opportunity in Spain (Channeled by occupation)

Index	IO (Gini)		IO (MLD)	
	Absolute	Relative	Absolute	Relative
Standard Deviation	0.18 (0.01)	56.66% (0.35)	0.03 (0.00)	15.49% (0.19)
Shapley Decomposition				
	Relative Contribution		Relative Contribution	
Gender	8.84%		6.91%	
Size Family	18.20%		19.45%	
Health Status	1.54%		2.25%	
Parental Education	21.06%		19.49%	
Class of the Father	15.55%		19.28%	
Ownership School	21.05%		23.42%	
Cultivated Parents	10.76%		8.37%	
Environment	3.00%		0.83%	

Note: standard deviations calculated based on 50 bootstrap replications.

Conclusions

- High absolute upward educational mobility, but low relative mobility: 64.7% of individuals with university studies have at least one parent with that education. However, only 16.4% reach that educational level when parents have basic studies.
- Up to 44% (Gini) and 18% (MLD) of total inequality can be explained by our circumstances.
- Up to 90% of IO is due to parental education, the father's occupation, the type of school attended during childhood, the gender and the number of siblings.
- IO is channeled through individual's occupation and, particularly, education.

Conclusions

Thank you!!

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