Seminar on Post-transitional fertility in developing countries

An overview of current fertility intentions in the Iberian Countries: two countries with low-fertility facing a severe economical and financial crisis

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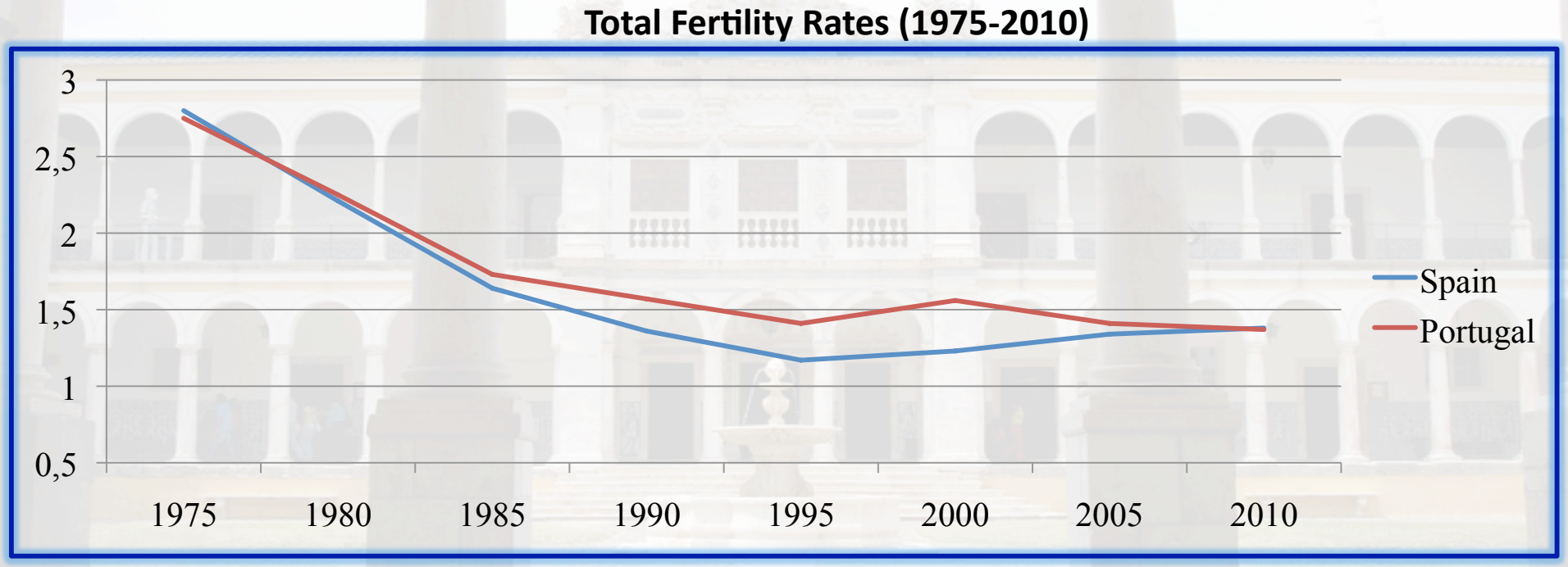
The organization of this presentation follows the scheme:

- A brief overview of fertility in Portugal and Spainß
- Our main goal, methods, hypotheses and the variables used
- The results of univariate analysis and of the logistic model adjusted
- Concluding remarks.

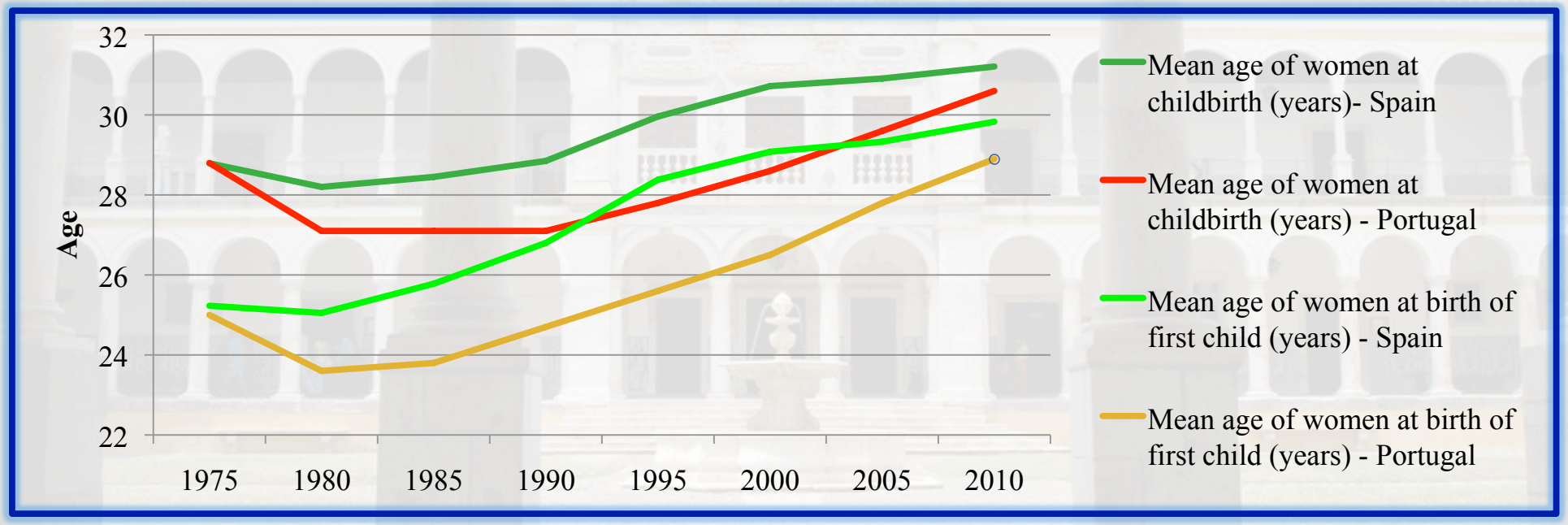
In the 70's and nowadays the Total Fertility Rates are similar in **Portugal** and **Spain**. Currently, both countries register values around 1.3 (Portugal, in 2012; 1.28 and Spain 1.32)



Source: Own elaboration with data from Instituto Nacional de Estadística (Spain); Instituto Nacional de Estatística (Portugal) and Eurostat

Both the mean at the first birth (MAFC) and the mean age at childbearing (MAC) increases. Currently the difference between MAC and MAFC is very narrow. These data suggest that low fertility rates in Iberian Countries are probably a consequence of the decline in the number of births of second order and higher and temporary childlessness.

Mean age of women at childbirth and mean age of women at birth of first child



Source: Own elaboration with data from Instituto Nacional de Estadística (Spain); Instituto Nacional de Estatística (Portugal) and Eurostat

In the literature, we found that several factors that may influence fertility decisions.

Among them, the **age** and the level of **education** (Billari & Philipov 2004; Frejka & Sobotka 2008; Testa 2012; Van de Kaa 1998, 2002), the **conjugal ties** and **parity** (Barber 2001; Berrongton 2004, Oliveira 2012; Schoen et al. 1999, Sobotka 2008, 2009; Toulemon & Testa 2005; Vitali et al. 2009).

Are also relevant factors the level of **religiosity** (Adsera 2006; Billari et al. 2009; Szolt & Balázs 2009), the perceptions of **well-being** as the level of **happiness** (Aassve et al 2012; Billari 2008), the **health status** and **income** (Parr 2010; Sallmén et al. 2,006; Sobotka 2009.,

The ability to **balance work and family** (Billari & Kohler 2009; Mcdonald 2008) and the perceptions about **gender roles** (Hakim 2008; Preston 1986; Puur et al 2008) are often associated to fertility decisions.

Individuals fertility intentions are significant predictors of fertility behaviour (Schoen et al. 1999; Testa 2012).

Main goal: to identify the profile of those who are more likely to plan to have a child, in the next three years, in the Iberian Countries.

Methodology: Logistic Regression Model.

Data: European Social Survey – 2010
(ESS - Round 5) ; data collected in 2011.

According Ajzen's TPB (1991) and following the findings of Schoen and Testa, we assume that intentions are good predictors of future fertility

Adjustment of the logistic regression model with **Response variable** defined as:

0 – **Don't intend** to have a child within the next 3 years (encompasses "definitely not" and "probably not");

1 – **Intend to have a child** within the next 3 years (encompasses "probably yes" and "definitely yes").

Sample: 1555 men and women aged from 15 to 45 years old, residents in Portugal (625) and Spain (930)

Research Hypotheses

- **Hypothesis 1** - we postulate that fertility intentions first increase with age and then decrease.
- **Hypothesis 2** – we assume that to live in a stable union and do not have children at home increase the fertility intentions.
- **Hypothesis 3** - we hypothesized that people with higher education are more likely to have intention.
- **Hypothesis 4** - we conjecture that the fact that people believe to be important to choose a job which allow to combine work and family and still to have a lower family-centred attitude are positively correlated with the intention to have children.
- **Hypothesis 5** (Personal characteristics and perceptions of well-being) - we assume that having a higher level of happiness and religiosity, enjoying good health and to consider their income to be at least suitable contributes to increase intention.

The explanatory variables used were

- **Country**
- **Gender**
- **Religion level:** using the survey question - *how religious would you say you are?*
- **Conciliate,** evaluating the importance of work and family conciliation: *how important is a job which allowed you to combine work and family responsibilities?*
- **Health:** *How is your health in general?*
- **Happiness**: *Taking all things together, how happy you are?*
- **Household's income**: Perception about the own household's income
- **Partner**: If the respondent is living with a partner
- **Young children**: if the respondents are currently living with a son/daughter, including stepchild, adopted and child of partner at home
- **Education**: the highest level of education successfully completed
- **Gender roles, family centered attitude or familiaristic behavior**: *A woman should be prepared to cut down on her paid work for the sake of her family?*
- **Age**

Variables	Categories
Country	1:Portugal ; 2: Spain;
Gender	1:Male; 2: Female
Religion	1:Less; 2: More
Conciliate	1: Not important; 2: Indifferent; 3:Important
Heath	1: Good; 2: Bad
Level of Happiness	1: Low; 2: High
Household's income	1: Living comfortably or coping on present income; 2: Finding it difficult or finding it very difficult on present income
Partner	1: Yes; 2: No
Young children	1: Yes; 2: No
Level of Education	1: Less than tertiary ; 2: Tertiary (completed or in progress)
Family centred attitudes	1: Agree strongly; 2: Agree, Neither agree nor disagree, disagree or disagree strongly
Age	1: 15-26 Years; 2: 27-35 Years; 3: 36-38 Years; 4:39-45 Years

The logistic regression model

1º step - Univariate Analysis

- Individual evaluation of each variable;
- Possible simplifications.

2º step - Multivariate Analysis

- Inclusion of all variables significants in the univariate analysis;
- Remove from the model, one by one, in descending order of *p-values*, variables not significant at the 5% level;
- Check if the no significant variables in the univariate analysis when coupled with others become significant;
- Search significant interactions between variables.

3º step – Evaluating the quality of the model

- Hosmer & Lemeshow goodness of fit test;
- Discrimination capability: ROC curve;
- Perform residual analysis looking for influential observations and / or outliers.

Odds Ratio, Confidence intervals and *p-values* of Univariate Analysis

Variables	Categories	OR	$CI_{95\%}$	*p-value*
Country	Spain *vs* Portugal	0,94	0,73; 1,19	0,590
Gender	Female *vs* Male	0,99	0,78; 1,27	0,975
Religion	More *vs* Less	1,44	0,83; 2,49	0,191
Conciliate	1- Indifferent *vs* Not important 2 – Important *vs* Not important	1,29 1,77	0,48; 3,51 0,74; 4,24	0,611* 0,199
Health	Bad *vs* Good	0,37	0,13; 1,05	0,061
Happiness	Very happy *vs* unhappy/ fairly happy	1,37	1,07; 1,76	0,013*
Household's income	Difficult *vs* Comfortably or coping	0,73	0,55; 0,97	0,033*
Partner	No *vs* Yes	0,43	0,33; 0,55	<0,001***
Young children	No *vs* Yes	2,05	1,58; 2,66	<0,001***
Education	Tertiary *vs* less than tertiary	2,20	1,69; 2,87	<0,001***
Family centred attitudes	Agree/ Neither agree nor disagree/ Disagree *vs* Agree strongly	2,03	1,29; 3,21	<0,002**
Age	1: 27-35 Years *vs* 15-26 Years 2: 36-38 Years *vs* 15-26 Years 3:39-45 Years *vs* 15-26 Years	4,46 2,64 0,69	3,23; 6,15 1,75: 3,97 0,45; 1,03	<0,001*** <0,001*** 0,072*

*significance at 10% level, **significance at 5% level, ***significance at 1% level

Goodness of fitness

- Hosmer & Lemeshow goodness of fit test: p-value = 0.54
- R^2 of Nagelkerque : 32%
- Discrimination capability: AUC = 0.81
  - ✓Sensibility: 75%
  - ✓Specificity: 73%
  - ✓cutting point : 0.202

Coefficients, standard deviation and p-values from logistic model adjusted

Variables	Coefficients	SD	*p* values
(Intercept)	-1.935	1,025	0.059*
Education (tertiary)	0.517	0,164	0,001**
Happy (More)	0.450	0,151	0,002**
Country (Spain)	-0,439	0,150	0,003**
Young children (No)	1,883	0,197	<0,001***
Partner (No)	-1.508	0,622	0.015*
Family centred attitudes (others)	0,596	0,804	0.459
Age (27-35)	-0.036	0,705	0.960
Age (36-38)	-0.758	0,825	0.359
Age (39-45)	-3.302	0,809	<0,001***
Family centred attitudes (others): partner (No)	-1.194	0,555	0.031*
Age (27-35):partner (No)	0,734	0,408	0.072*
Age (36-38):partner (No)	0.944	0,532	0.076*
Age (39-45):partner (No)	1.909	0,495	0.001***

Adjusted Logistic Model

Odds Ratio, Confidence Intervals and *p-values* of variables without interactions

Variables	Categories	OR	$CI_{95\%}$
Education	Tertiary education *Vs* no tertiary education	1,7	1,2; 2,3
Happy	Very happy *vs* unhappy/ fairly happy	1,6	1,2; 2,1
Country	Portugal *vs* Spain	1,6	1,2; 2,1
Youngest children	No *vs* Yes	6,6	4,5; 9,6

*significance at 10% level, **significance at 5% level, ***significance at 1% level

Odds Ratio, Confidence Intervals and *p-values* of interaction variables age*partner

Ages	Partner (Yes)		Partner (No)	
	OR	CI 95%	**OR**	CI 95%
27 -35 *vs* <27	**0,96**	0,3; 3,8	**2**	1,01; 3,7
36 -38 *vs* <27	**0,47**	0,1; 2,4	**1,2**	0,61; 2,4
39 -45 *vs* <27	**0,04**	0,01; 0,2	**0,25**	1,9; 8,3

- **If we assume that intentions are a good predictor of fertility behavior then, in a first conclusion, we can argue that these results point to a very narrow possibility of recuperation of postponed births from the ages of 39 years old and further.**

- **It also seems that even these possibilities after 35 years old will be very limited.**

Possibilities of intending to have a child in the next three years, living with a partner vs. not living, according to age and family centred attitudes

living with partner vs. partner not living				
Age	Family centred attitudes			
	Agree strongly		Others	
	OR	CI 95%	OR	CI 95%
Under 27 years	**4,5**	1,3; 15,3	**15**	7,5; 29,7
27 -35 Years	**2,2**	0,7; 6,9	**7,2**	4,4; 11,6
36 -38 Years	**1,8**	0,5; 6,5	**5,8**	2,5; 13,3
39 -45 Years	**0,67**	0,2; 2,3	**2,2**	1,1; 4,6

- **In the Iberian Countries a stable conjugal relationship remains an essential condition to have a child**

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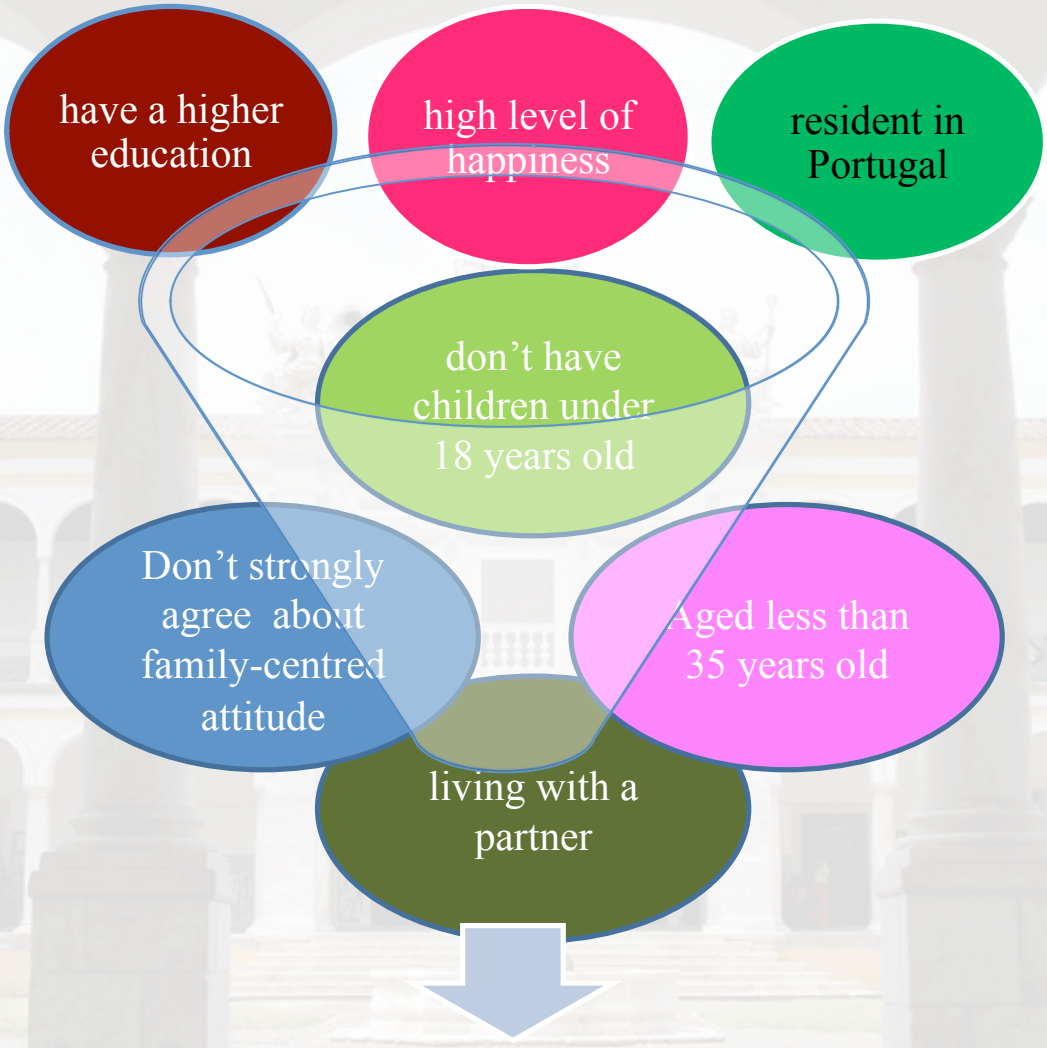

More likely to intend to have a child in the next three years

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Concluding Remarks

- ✓ Nowadays, Portugal and Spain face a severe economic recession with high unemployment rates.
- ✓ We can't expect for a recuperation of postponed births in the later ages.
- ✓ Postponement hasn't stopped yet in Portugal.
- ✓ Fertility will be constrained to the first-order births being the transition to the second birth even more difficult.
- ✓ If the level of happiness contributes positively to intention, the recent pessimistic forecasts for the Iberian Countries, probably may imply a even more deep decline of TFR in the near future.

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Thank you for your attention! Your comments and suggestions are welcome!

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