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OF ECONOMICS

# **Couple socioeconomic gender equality and fertility in selected European countries**

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# Measures of SES and relation to fertility

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## 3. OCCUPATION

- describes job content and prospects, job security, and gender dominance – could determine fertility
- higher childbearing risk among female-dominated occupations and highly male dominated jobs (women); higher risk among male-dominated jobs (men) (Begall and Mills 2013, Andersson and Neyer 2012).

## Couple SES

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- **HOMOLOGY** – female and male SES are equal.
- **HYPERGAMY** – SES of a male partner is higher than SES of a female partner
- **HYPOGAMY** – SES of a male partner is lower than SES of a female partner

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- **Hypergammy** and attachment to the traditional family model could result in higher number of children, especially when the occupational status of a man is high. Otherwise, the occupational insecurity of a man coexisting with small support from a woman could result in a lower number of children.



# Data

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- GGS 1<sup>st</sup> wave data for: Bulgaria (2004), France (2005), Norway (2007-2008) and Poland (2011)
- Sample: only couples with the female partner aged **25-39** (tempo effect; 8889 couples) and **aged 40+ (quantum effect; 18591 couples)**

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- Data on **occupation** given in 1-digit ISCO-88 codes, grouped as:
  - Legislators, senior officials and managers, Professionals (1);
  - Technicians and associate professionals, Clerks (2);
  - Service workers and shop and market sales workers, Craft and related trades workers, Plant and machine operators and assemblers (3);
  - Agricultural, forestry and fishery workers (4);
  - Elementary occupations (5)

# Hurdle Zero-Truncated Poisson Model with Bayesian approach

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$$P(Y_i = y_i | \beta, \gamma) = \begin{cases} p_i, & y_i = 0 \\ \frac{1 - p_i}{1 - \exp(-\lambda_i)} \frac{\lambda_i^k \exp(-\lambda_i)}{k!}, & y_i = 1, 2, \dots \end{cases}$$
$$p_i = \frac{\exp(x_i \beta)}{1 + \exp(x_i \beta)} ; \quad \lambda_i = \exp(w_i \gamma)$$

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## Advantages:

- An adequate approach to fertility: to become parents a „hurdle” (measured by the probability of childlessness) must be crossed first
- Possibility to include different sets of determinants in modelling zero and counts

# Variables

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- **Response variable:** number of couples' children
- **Main explanatory variables:** partners' educational status (pairs of partners' educational levels: LL, MM, HH, LH, MH, LM, HL, HM, ML), educational field of a woman, educational field of a man, occupation of a woman, occupation of a man
- **Control covariates:**
  - a) zero and count states: age of a woman, age of a man, type of settlement, cohabitation, previously married, union duration, significant interactions
  - b) only for parenthood: woman's/ man's children from previous partnerships

# The *a posteriori* expected values of coefficients

Covariate		Probability of childlessness ( $p$ )	Parenthood ( $\lambda$ )	
Educational level W-M	Homo {	LL	-0.183	0.132
		HH	-0.142	-0.112
	Hyper {	LH	-0.133	-0.087
		MH	0.080	0.025
		LM	-0.079	0.053
	Hypo {	HL	0.017	0.090
		HM	-0.107	-0.043
ML	0.010	-0.001		
Educ. field W	Hum+Art	0.207	0.004	
	Soc+Health	-0.292	-0.013	
	Science+Eng	-0.162	-0.024	
Educ. field M	Hum+Art	-0.143	0.029	
	Soc+Health	-0.196	-0.018	
	Science+Eng	0.052	-0.048	
Occupation W	Profesionals	-0.019	-0.176	
	Tech+Clerks	-0.281	-0.189	
	Service+Trade	-0.040	-0.071	
Occupation M	Agri	-0.397	0.065	
	Profesionals	-0.028	-0.096	
	Tech+Clerks	0.004	-0.129	
	Service+Trade	-0.134	-0.066	
Interactions	Agri	0.107	0.003	
	eduHH & FR	x	0.405	
	eduHH & NO	x	0.231	

The reference level is a couple with both partners having medium education, with the field of basic programmes and working in elementary occupations.

## NOTES:

1. Insignificant variables have been marked with grey.
2. Positive values in *zero* ( $p$ ) means higher probability of childlessness.
3. Positive values in *count* ( $\lambda$ ) means higher average no. of kids among parents.
4. Model includes also control covariates.



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...but only in Poland and Bulgaria. In France and Norway the net effect of homogamy in high education is positive

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Hypergamy in education is connected with higher number of children

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Couples with the female partner educated in *Social sc. or Health* have lower probability of childlessness

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Couples in which a man is educated in *Science* or *Engineering* have lower number of children

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Female occupational prestige is negatively connected with fertility.

Couples with a woman working as *Technician/Clerk* are less often childless, but after becoming parents they have also the lowest number of children.

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Male occupational prestige is U-shaped related with couples' fertility

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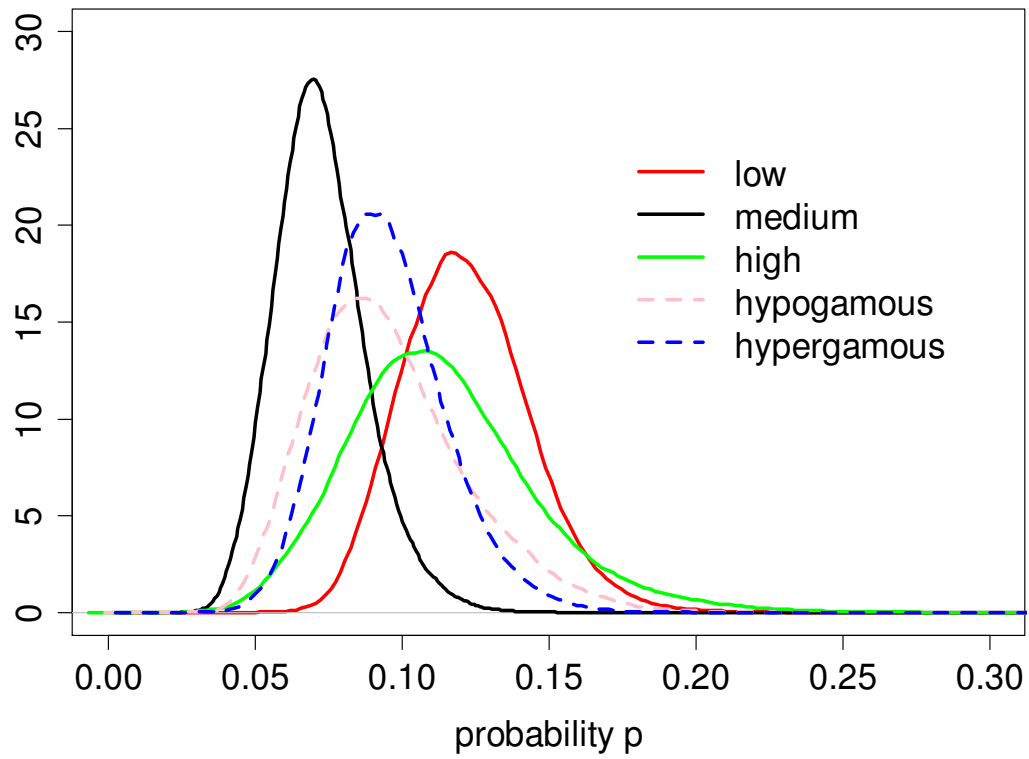
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- **Hypergamous SES** – a woman has lower SES than a man in a couple: a woman as in medium SES, a man as in high SES

# Posterior distributions – quantum effect; age 55

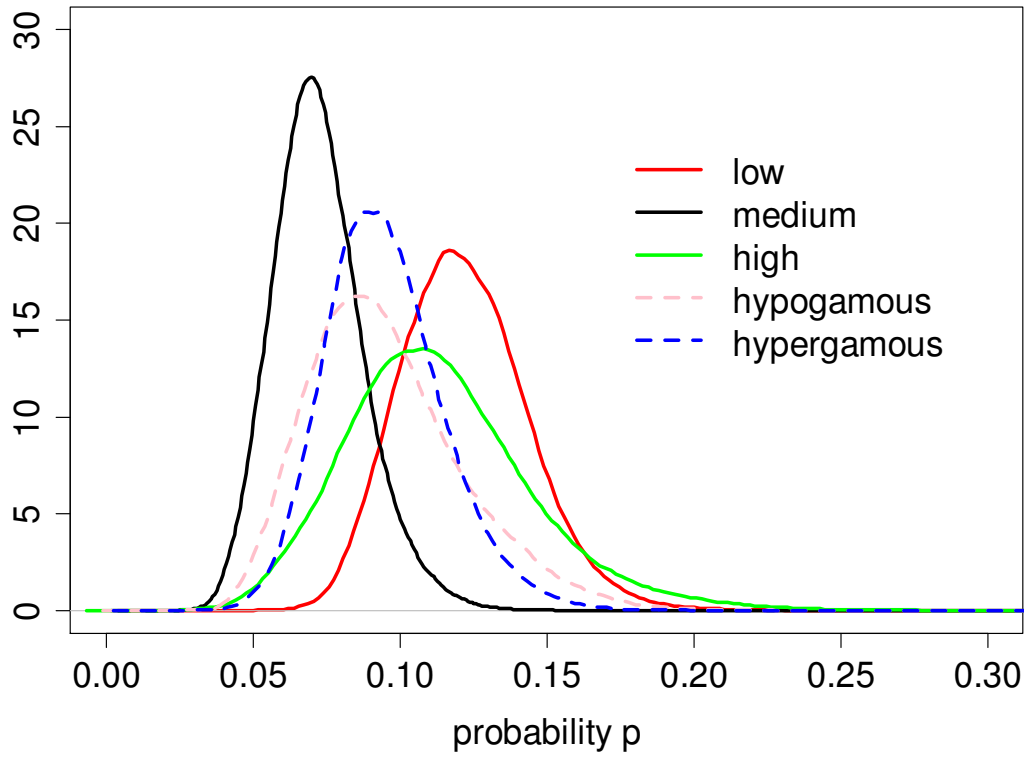
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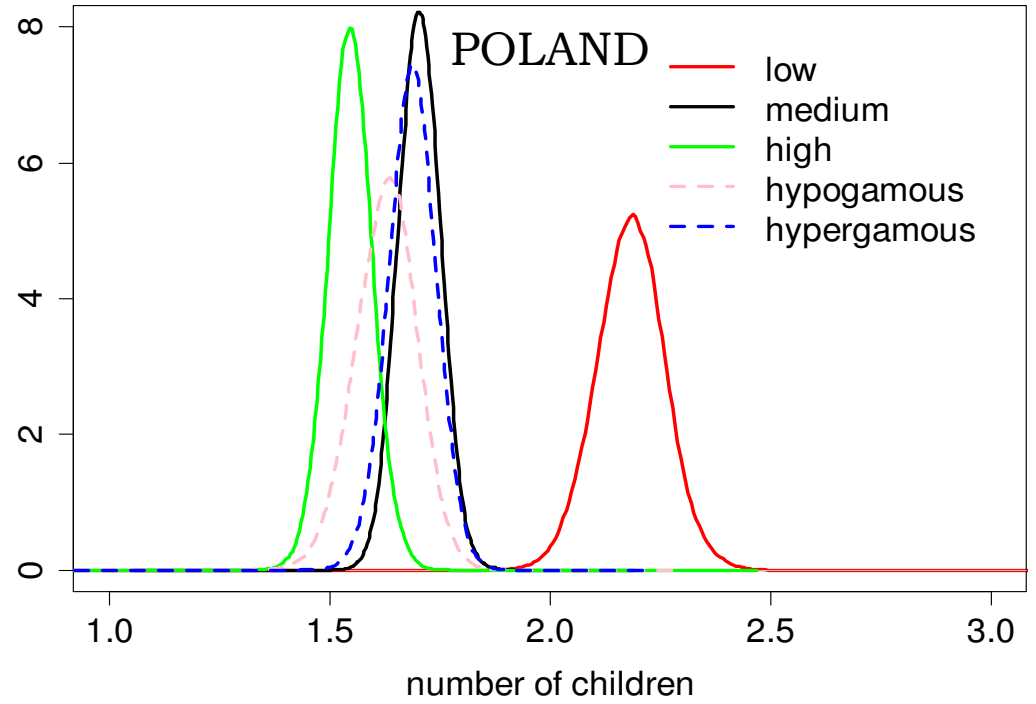
Probability of  
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Expected family size

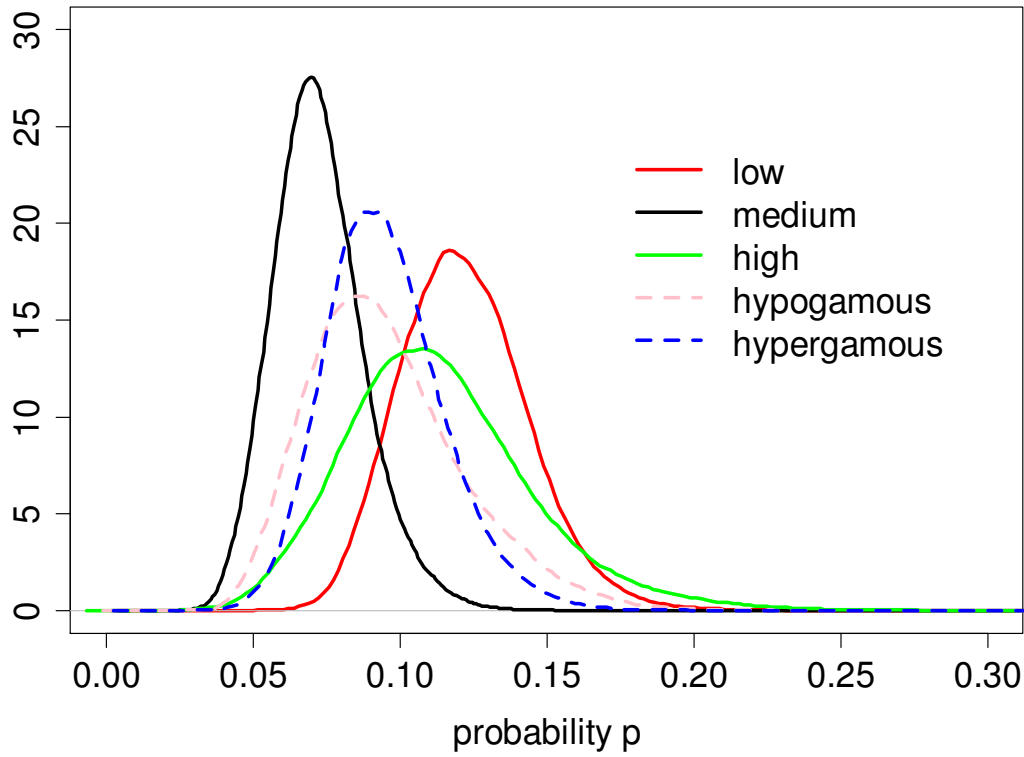


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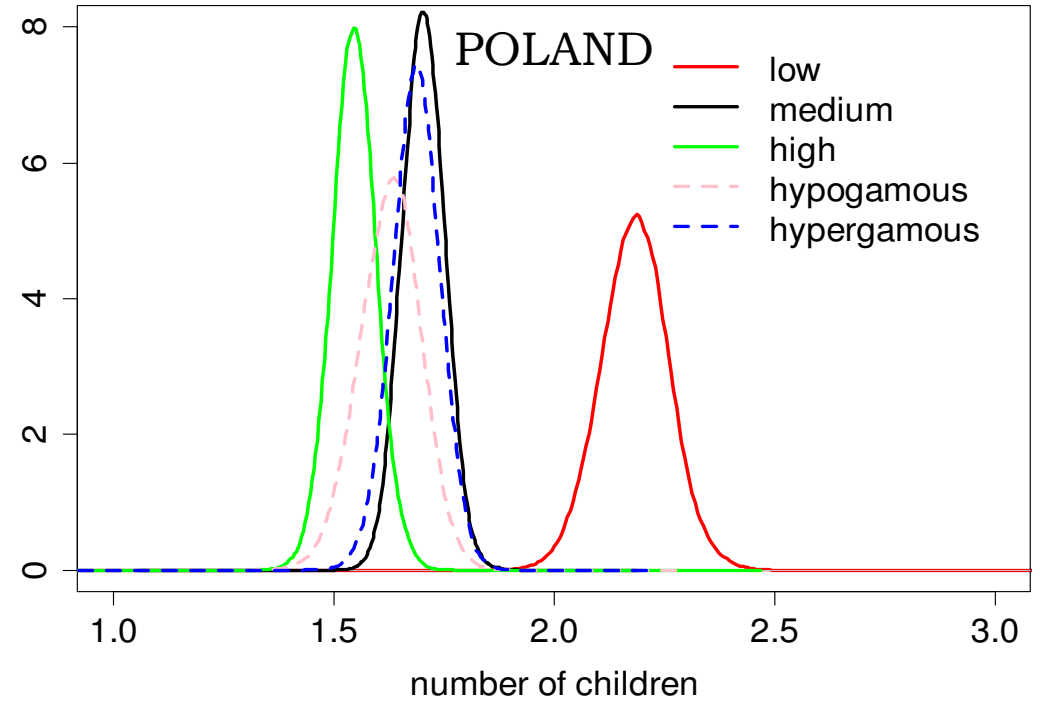


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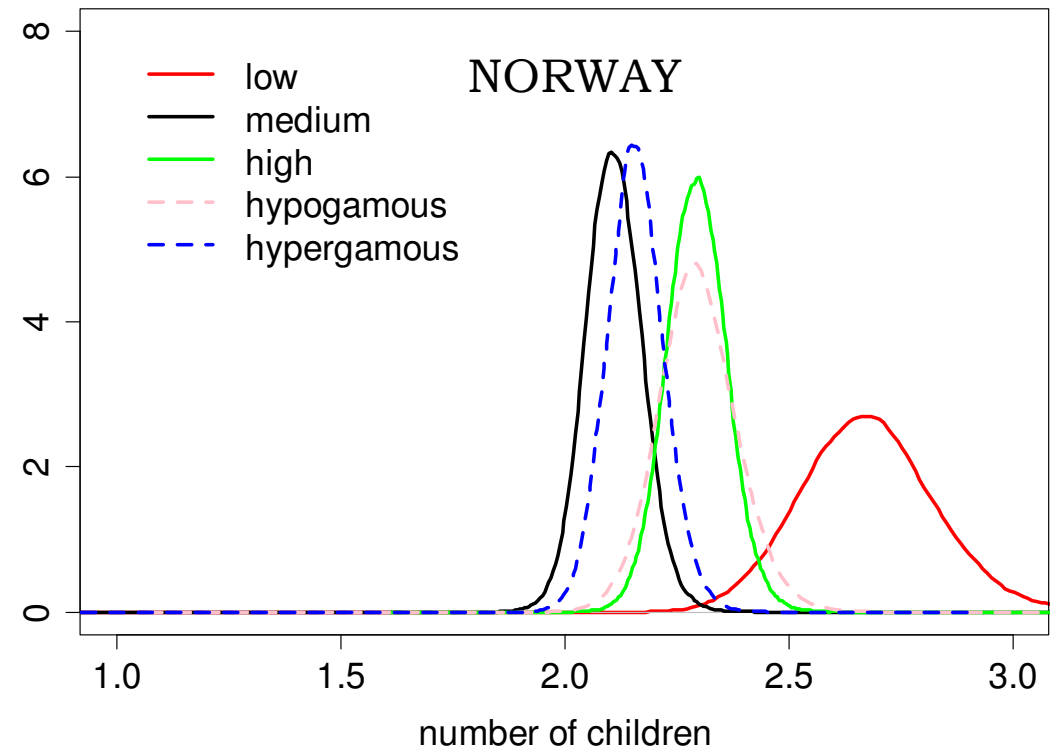
Probability of childlessness



POLAND

- low
- medium
- high
- hypogamous
- hypergamous

number of children



NORWAY

- low
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# Conclusions

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- Although the highest fertility is observed among couples with low SES, at the same time they are characterized by the highest probability of childlessness.
- Hypogamy in SES enhances fertility as compared to homogamous medium SES, but only in Norway and France. Hypergamy (but only type LM) increases the number of couples' children.



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**THANK YOU FOR YOUR ATTENTION!**

Beata Osiewalska

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December 2015