



Gender differences in the effect of education on fertility

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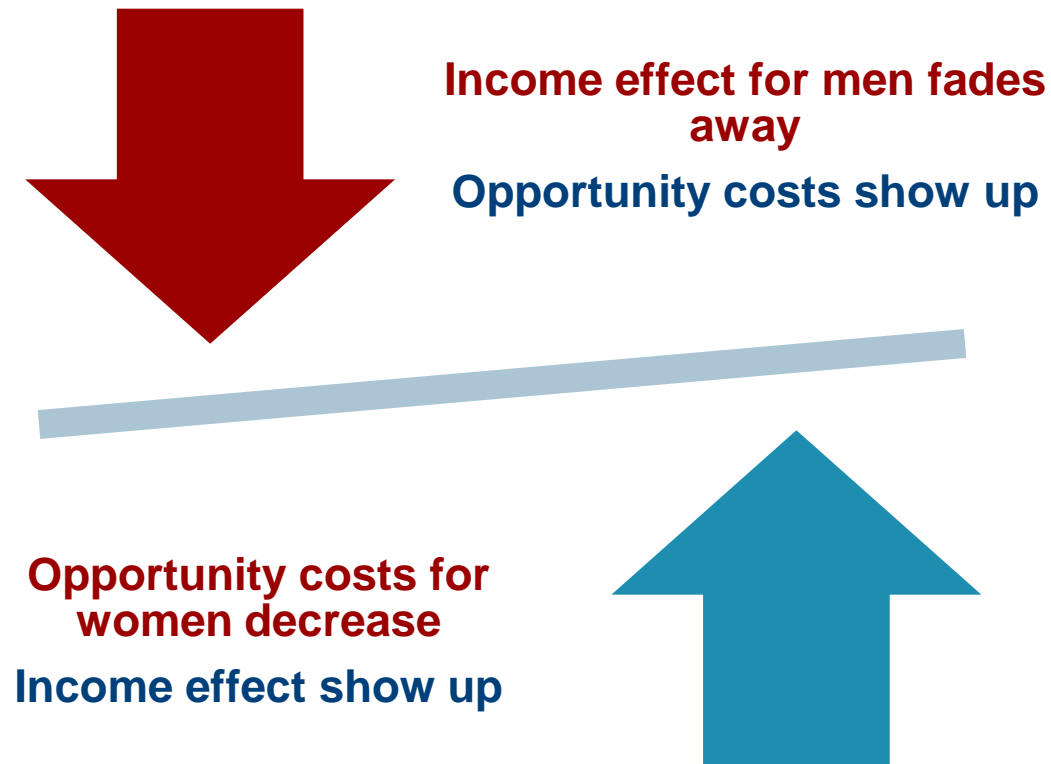
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Jan Van Bavel (KU Leuven)

Education, fertility, gender differences

- Differences in fertility exist among educational groups
- ... and between women and men:
 - Positive relationship (men): income effect
 - Negative relationship (women): opportunity costs
- The Gender Revolution emphasizes the “turnaround and reversals” of the relationship between women’s education and fertility
- Men become more involved in the private sphere

Gender differences in the effect of education on fertility: A zero-sum game?



Gender differences in the effect of education on fertility: A zero-sum game?

- Gender differences in fertility are usually based on the “economic” interpretation of education
- We suggest that looking at the characteristics of field of study may shed lights on the gender differences (if any!)
 - Field of study is good proxy for future earning potential
 - Proxy for a “masculine” vs “feminine” socialization process during education and potential occupation

Expectations:

1. Positive effect of the level of education for men on first, second and third birth
2. Negative effect of the level of education on first birth for women, but not for higher order births
3. Positive effect of earning potential on all birth transition rates for men but a negative effect for women
4. Women graduated in fields of study characterized by higher share of women have higher rate of first-second-third birth
5. Men graduated in fields of study characterized by higher share of women have lower rate of first-second-third birth

Analytical strategy

Two step procedure:

- **First step:**

- Estimation of the earning potential by field of study/country/sex using the European Labour Force Survey
- Calculation of the share of women by field using EUROSTAT 1998-2012

- **Second step:**

- Merge results obtained in first step to GGS data
- Estimating the effect of educational level and characteristics of field of study on the transition to first, second and third birth

Groups of field of study considered

GROUPS OF FIELD OF STUDY: UNESCO GUIDELINES

General/Unspecified field

Humanities & Arts

Education

Social Sciences/Business/Economics/Law

Science & Technology

Agriculture

Health & Welfare

Services

Not applicable (Low educated) ISCED ≤ 2

First step: estimating earning potential by field

- Selected sample: people that declared to be employee, full time working people, 20-64 years old; pooling years 2009-2013
- Linear regression by country/field/sex:

$$Y (\text{income deciles}) = a + b_1(\text{age}) + b_2(\text{age}^2) + \\ + b_3(\text{years since start to work}) + \\ + b_4(\text{educational level}) + \\ + b_5(\text{survey year}) + \varepsilon_i$$

Second step: hazard of first and higher order births

- Generation and Gender Survey of eight countries which collected information about field of study: Austria, Belgium, Bulgaria, Czech Republic, France, Lithuania, Poland and Romania (Norway excluded because no income info with LFS)
- Individuals born between 1950-1987
- No missing information about the level of education
- Observation starts at time of graduation
- We pool all the countries together, overall:
 - ~ 25000 male respondents
 - ~ 28000 female respondents

Method and variables

Method: piecewise linear hazard model – first, second and third birth estimated jointly (Kravdal 2001)

- **Time process first birth:** time since graduation
- **Time process higher order births:** time since last birth

Main independent variables: educational level (low; medium; high); field of study and its characteristics:

- Earning potential in income deciles: deviation from country mean
- Share of women: male (<33%); balanced (33-66%); female (>66%)

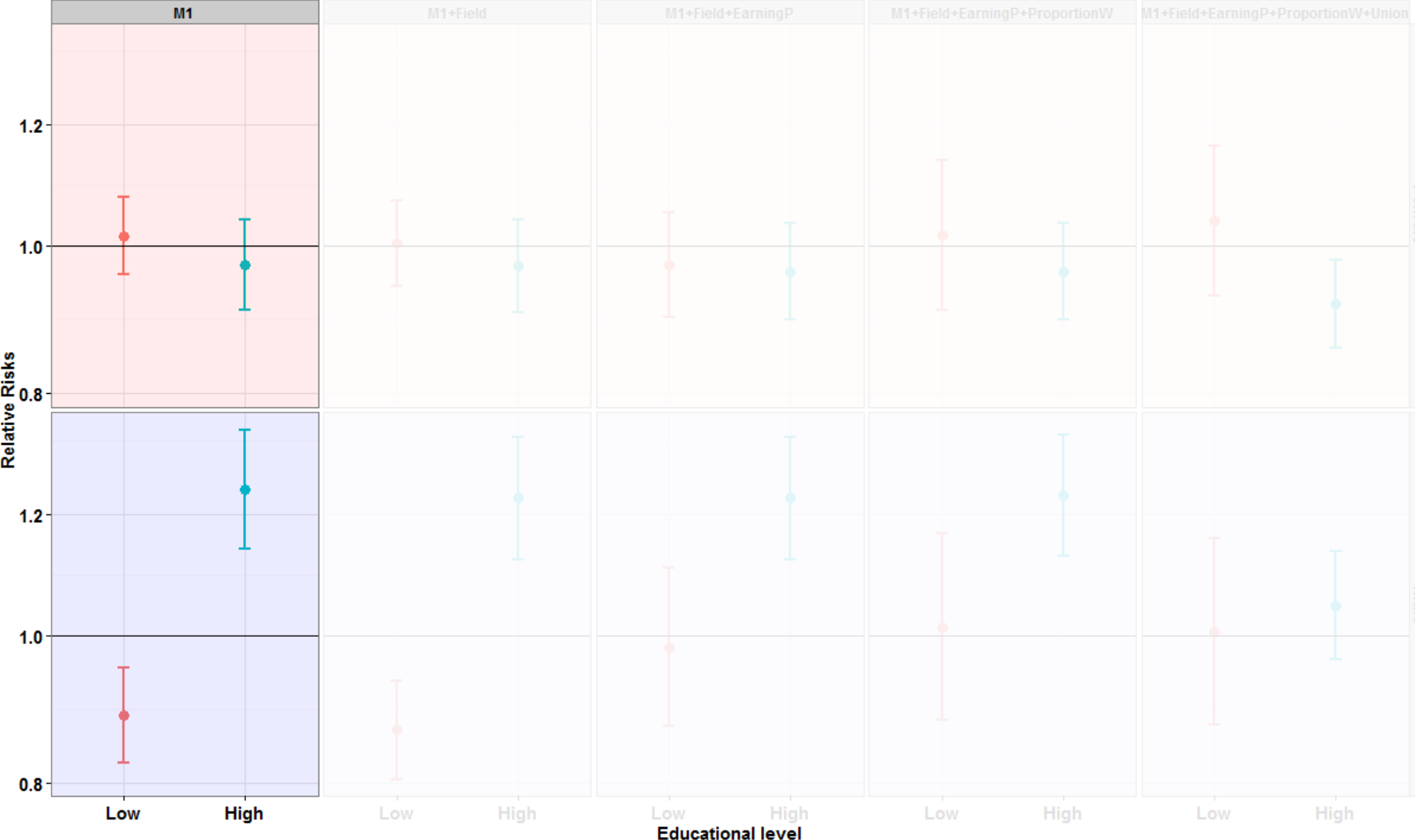
Controls first birth: respondent's age at graduation; cohort; parents' educational level; #siblings; countries dummies; in union

Controls higher order births: respondent's age at first birth + same as first birth

The effect of educational level on the transition to first birth

Reference: medium education

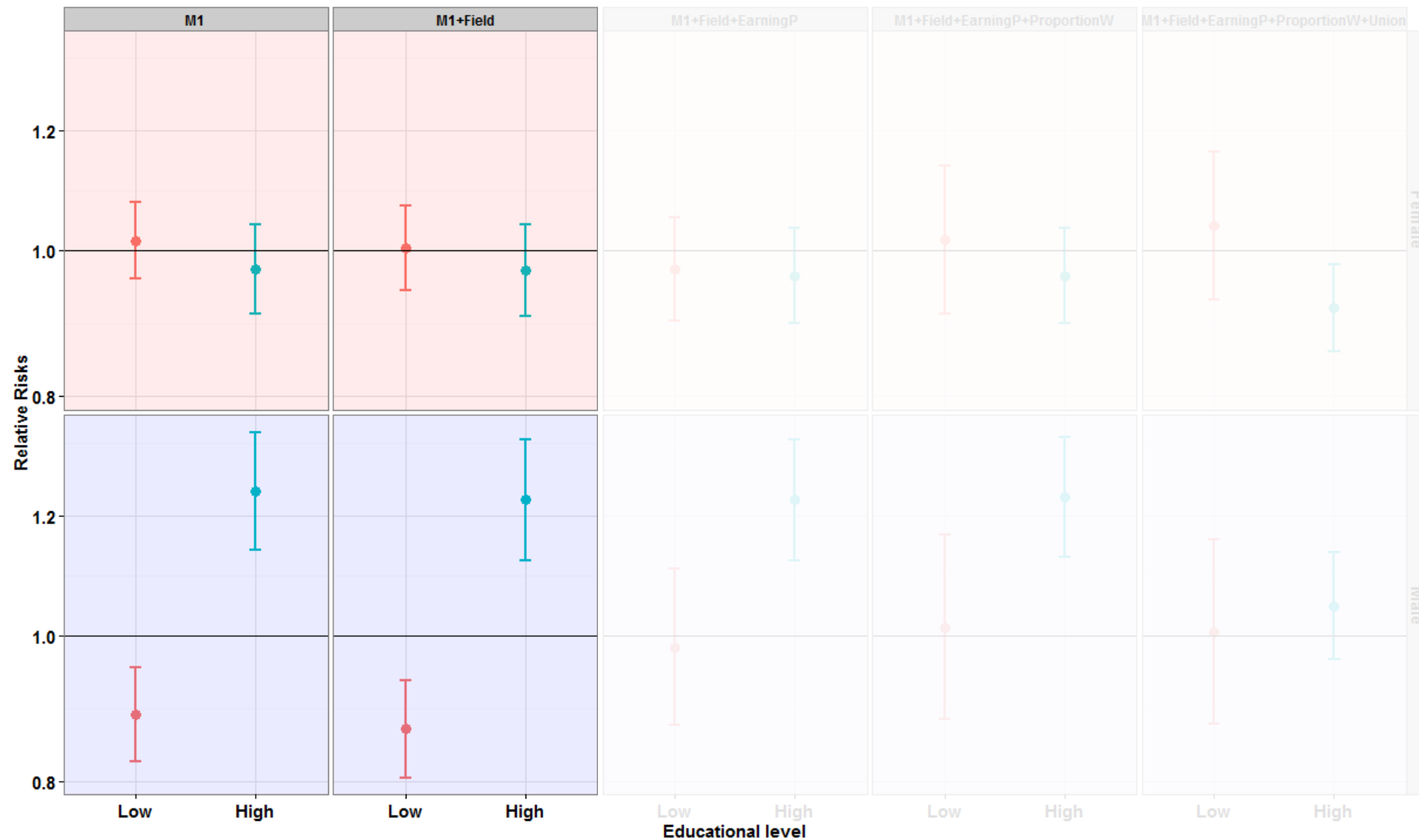
Female Male



The effect of educational level on the transition to first birth

Reference: medium education

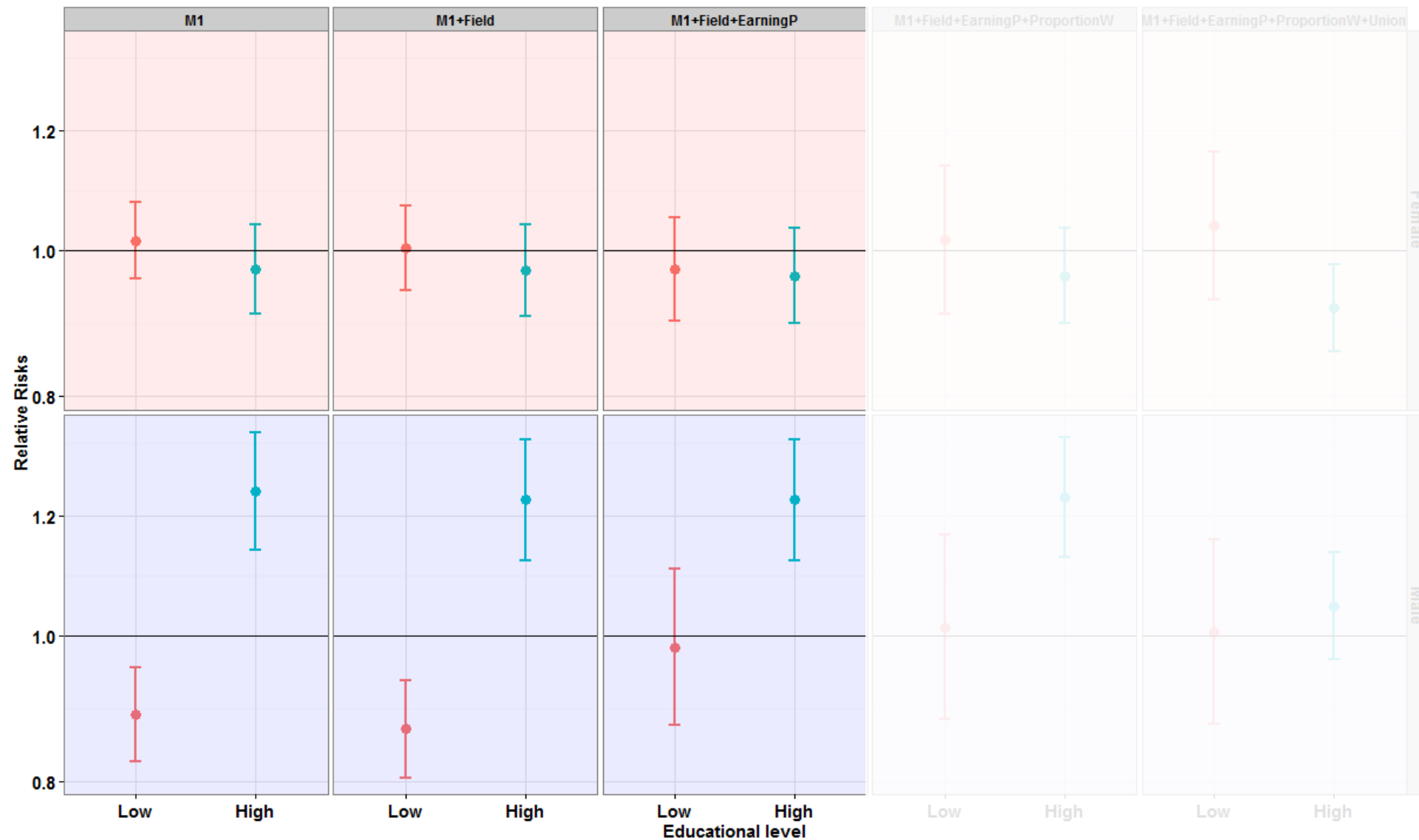
Female Male



The effect of educational level on the transition to first birth

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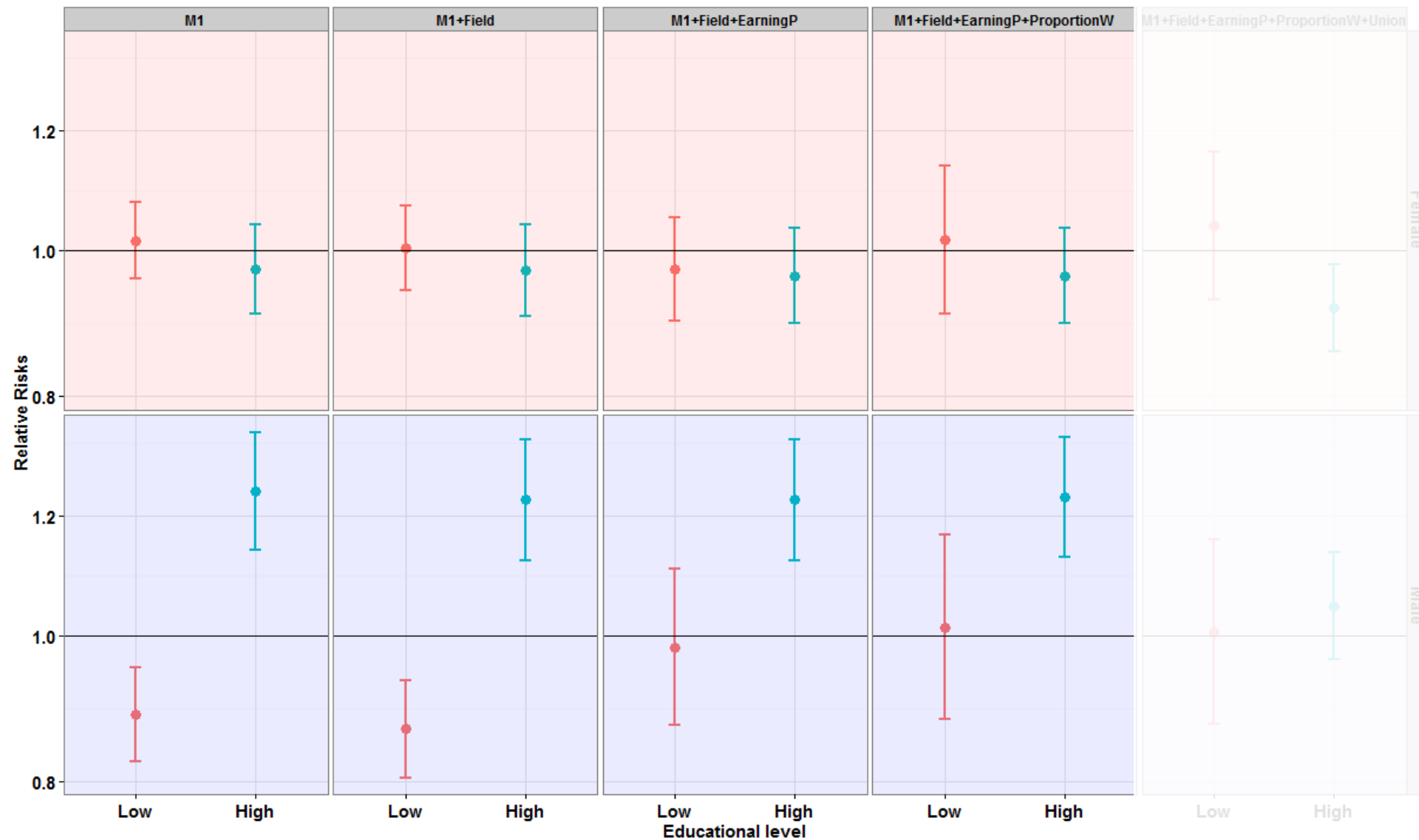
Female Male



The effect of educational level on the transition to first birth

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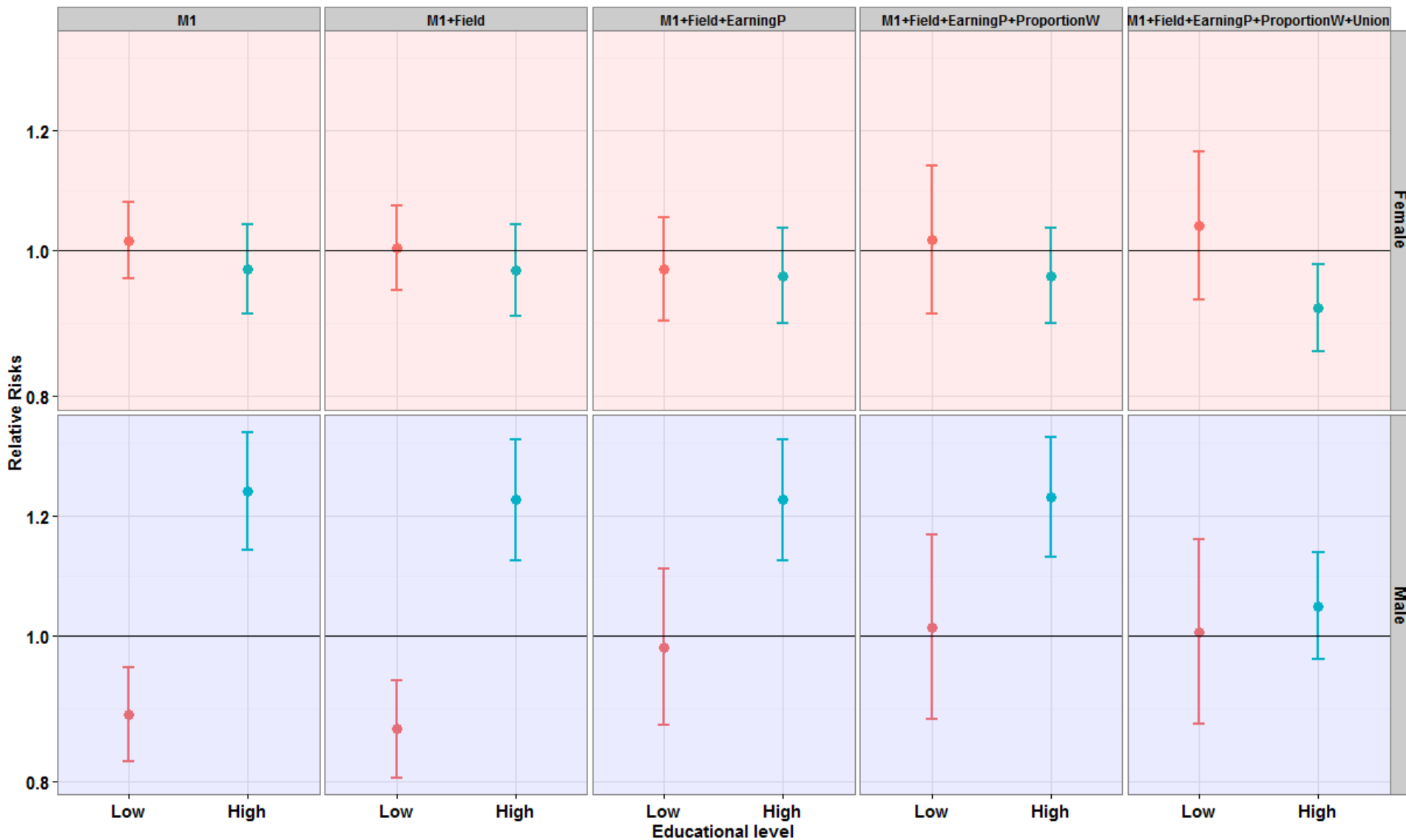
Female Male



The effect of educational level on the transition to first birth

Reference: medium education

Female Male

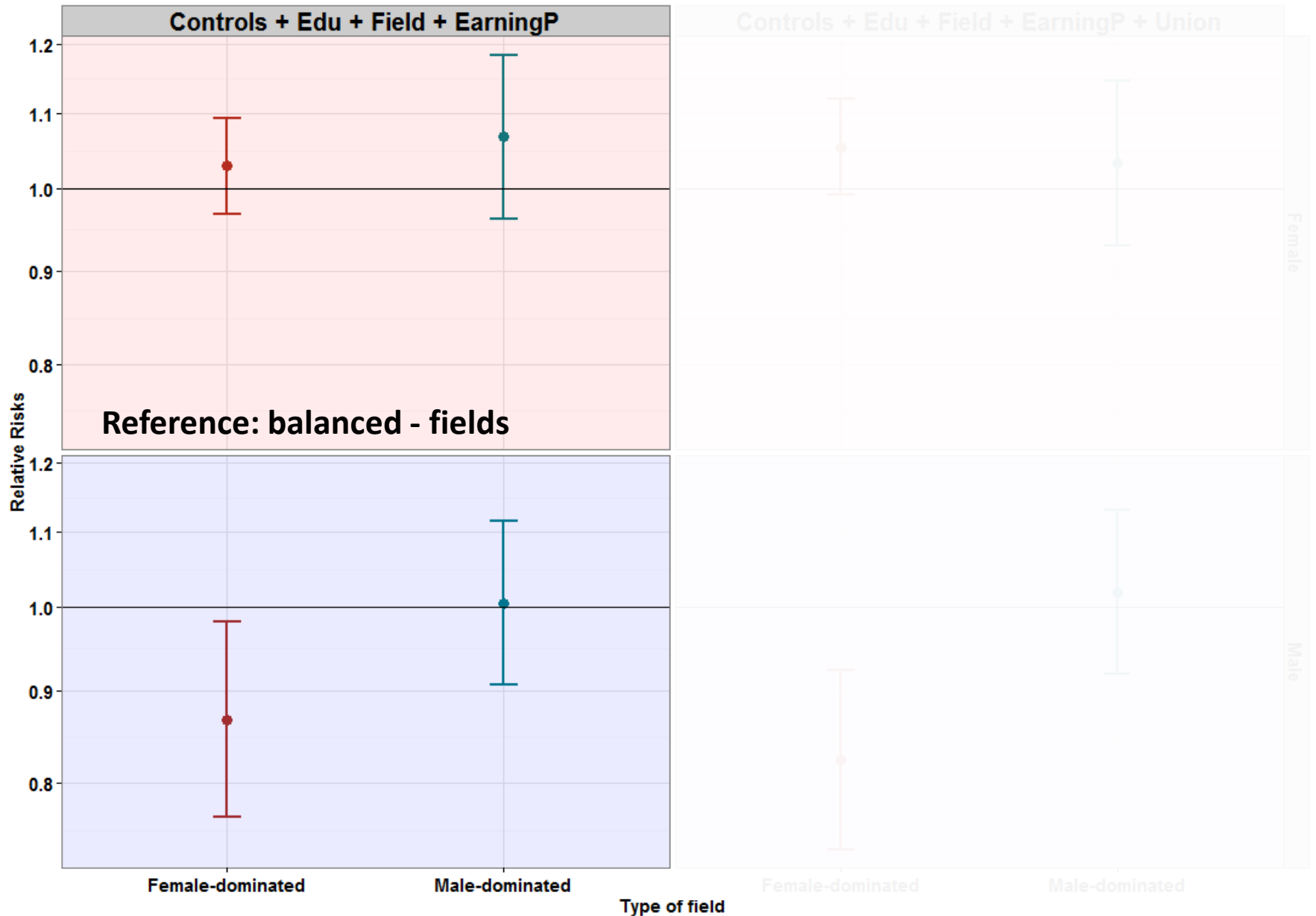


The effect of earning potential by field on first birth (Relative Risks)

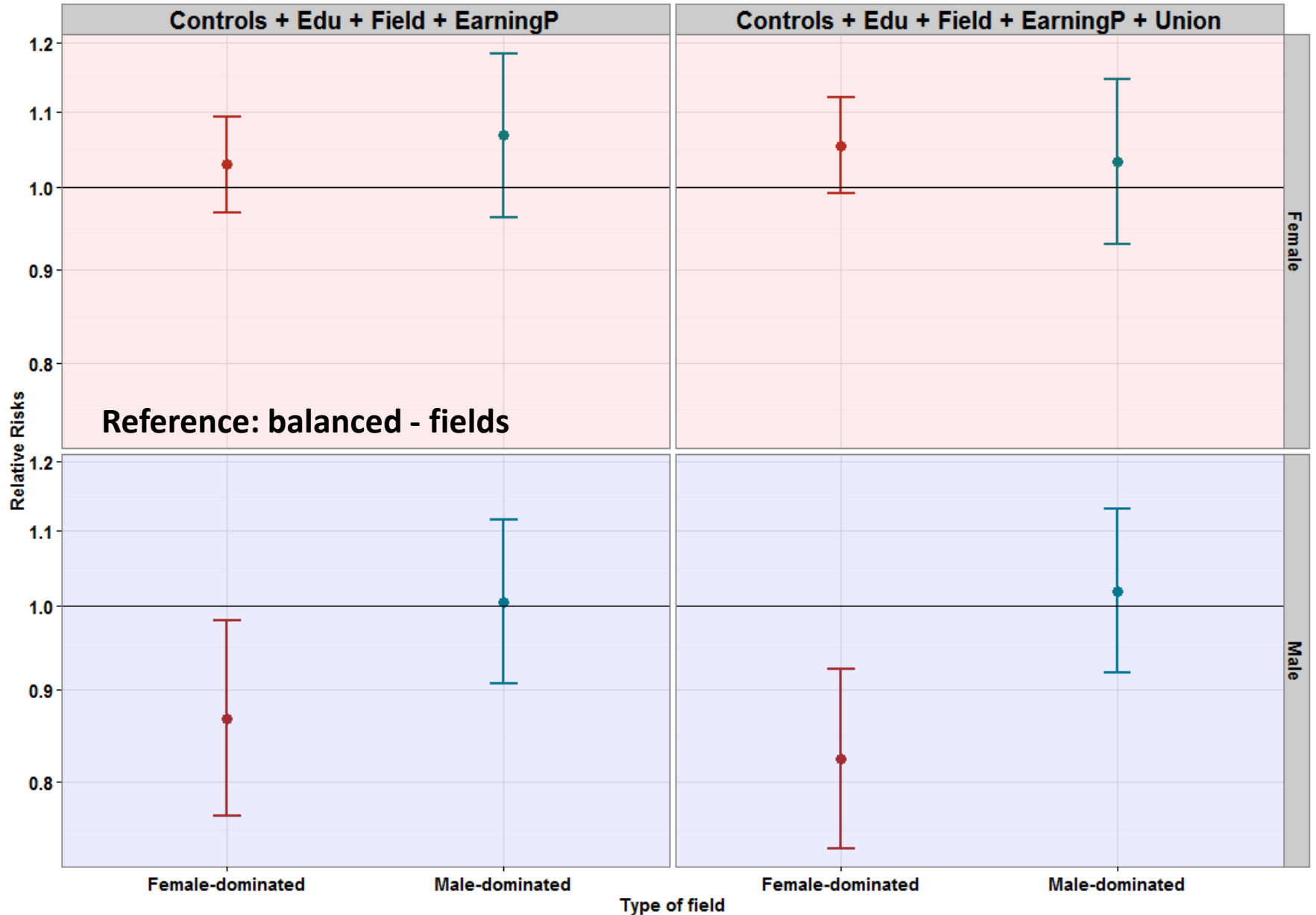
	Controls + Edu + Field	Controls + Edu + Field + ProportionW	Controls + Edu + Field + ProportionW + Union
Women	0,96 [0,91 - 1,01]	0,95 [0,90 - 1,01]	0,95 [0,90 - 1,00]
Men	1,11* [1,03 - 1,21]	1,13* [1,04 - 1,23]	1,04 [0,96 - 1,13]

* $p < .05$; *Note*: models control for splines of time since graduation; respondent's birth cohort; age at graduation and its square; respondent's father and mother educational level; respondent's #siblings, dummies for countries.

The effect of type of field on transition to first birth



The effect of type of field on transition to first birth



Second birth: a summary

- Both highly educated men and women show a higher rate than medium educated
- Women graduated in fields of study with higher earning potential have a lower second birth rate
- Both women and men graduated in a female-dominated field of study have lower second birth rate than women and men graduated in a balanced field

Conclusion & Discussion

- Differences between women and men of the effect of educational level follow our expectations mainly with regard to first birth (positive for men and negative for women)
- As expected for women a **higher earning** potential leads to **lower rate** of higher order births – not so evident for men
- Female-dominated fields of study *are not* so conducive of childbearing...both for men and women
- Future steps:
 - Account for differential in the steepness of the earning potential by level of education
 - Look at cohort changes

Thank you for your attention!

Acknowledgement ERC project

The research leading to these results has received funding from the European Research Council under the European Union's Seventh Framework Programme (FP/2007-2013) / ERC Grant Agreement no. 312290 for the **GENDERBALL** project.



European Research Council

Established by the European Commission