The links among living arrangements and fertility in Germany. The role of Living Apart Together (LAT) on fertility intentions and realized fertility.

A study based on six waves from the Panel Analysis of Intimate Relationships and Family Dynamics (PAIRFAM)
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Background and aim : In Germany, there are couples who are neither married nor living together. They are called "Living Apart Together (LAT)". LAT are characterized by high degree of instability and of low fertility. This study extends prior researches on the links among LAT and realized fertility.

Hypothesis:

H1) *LAT* is more common among young people with liberal attitudes, among highly educated people and among who lived previous broken relationship's episodes.

H2) The *"leap of faith"* needed for moving from a LAT relationship to a cohabiting one is greater than the one needed to transition from cohabitation to marriage

H3) There is a negative correlation between lat relationships and Desire of a(nother) child

H4) LAT relationships have a negative impact on realized fertility also in the short term

Material and methods : This study uses data collected by the German Family Panel Pairfam ("Panel Analysis of Intimate Relationships and Family Dynamics") .The survey data are collected annually on a national level, in 6 waves (until now) from 2008-09 to 2013-14. People who have a partner, who are heterosexuals, who answered to be not infertile, were selected for the analysis. Since the Pairfam study has interviewed also the partners of the research persons, a merge between the data bases of anchor persons (Pairfam and Demodiff were appended together) and their partners were created in order to investigate the agreements between partners. Descriptive analysis show the main results. The cohort 1991-1993 has been omitted for the analysis of relationships. Dummy and categorical variables were generated for GLM (with the software R) that, because of its flexibility to incorporate multiple quantitative and qualitative independent variables, is an useful method to investigate the interactions among LAT (536 units in the wave1), desired and realized fertility. Backforward elimination method has been employed to obtain the minimal adjusted models for each GLM.

Results :
Fig.1: The process of decision making to define LAT relationships and who is gladly, regretfully or undecidely apart is showed in Fig.1.

Fig.2: The percentage of LAT relationship (yellow numbers) is very high in the cohort 1991-93 from 19 to 22 years old, because of young people who still live at home with parents. Because of it, the cohort has been omitted from the analysis.

Graf.1: Partners in LAT relationship have the less percentage of disagreement about having a(nother) child within 2 years (only the 18.5% against the 24.9% of cohabiting and 37.7% of married) . They agree about negative agreements for the 57% of couples, a percentage very higher than the couples who cohabit or who are married (H3 supported). Positive agreements is higher for who cohabits. Who is married have the less negative agreement, it is 20.1%.

Graf.2: 48% of LAT for cohort 71-73 are gladly apart against the 23% of younger's cohort. This means that older people choose lat relationship more consciously.

Tab.1: The leap of faith needed to change from LAT to cohabiting is lower (49%) than the one needed to change from cohabiting to married (54,7%) (H2 supported). After 6 years the 23.6% of the people in LAT who are with the same partner are still LAT.

Tab.2: The coefficients of regressions of GLM on 4 models (desire of parenthood, continuation of relationship, realized fertility and characteristics of people in LAT) were calculated for each wave (or merged waves). They show the interaction between several categorical variables, in particular "relationship status " and desire of fertility and fertility realized. To reduce as minimum as possible the covariates of the models, a backforward method has been implemented for each model. After that, the results are shown in the left figures.

Fig.3: Being in a LAT relationship is positively correlated with independent attitude e previous broken relationships. Also the cohort 1981-83 is positively correlated with it (H1 supported)

Fig.4: Desire of fertility is positive correlated with traditional attitude and negatively with gladly apart (H3 supported)

Fig.5: Realized fertility is positively correlated with desire of parenthood and negatively correlated with LAT relationship. (H4 supported)

Discuss and conclusions: The link among LAT relationships and fertility intentions is already clear from the descriptive analysis and confirmed by the regression models. Taking a look of the agreements, LAT pretty agree about not having a(nother) child within two years. Besides, LAT seems to be a kind of relationship per se more than a transitional status and a consistent part of them keeps being LAT after 6 years, especially if they are gladly apart. Being gladly apart is negative correlated with the desire of fertility and desire predicts very well the realized fertility. So there is a negatively correlation between being LAT and fertility and because LAT realtionship are growing in some Western Country like Germany, it's extremely important to take in account this kind of relationship in the present and future studies about fertility.

Fig.1: Framework of decision making process for LAT's definition and its cathegories
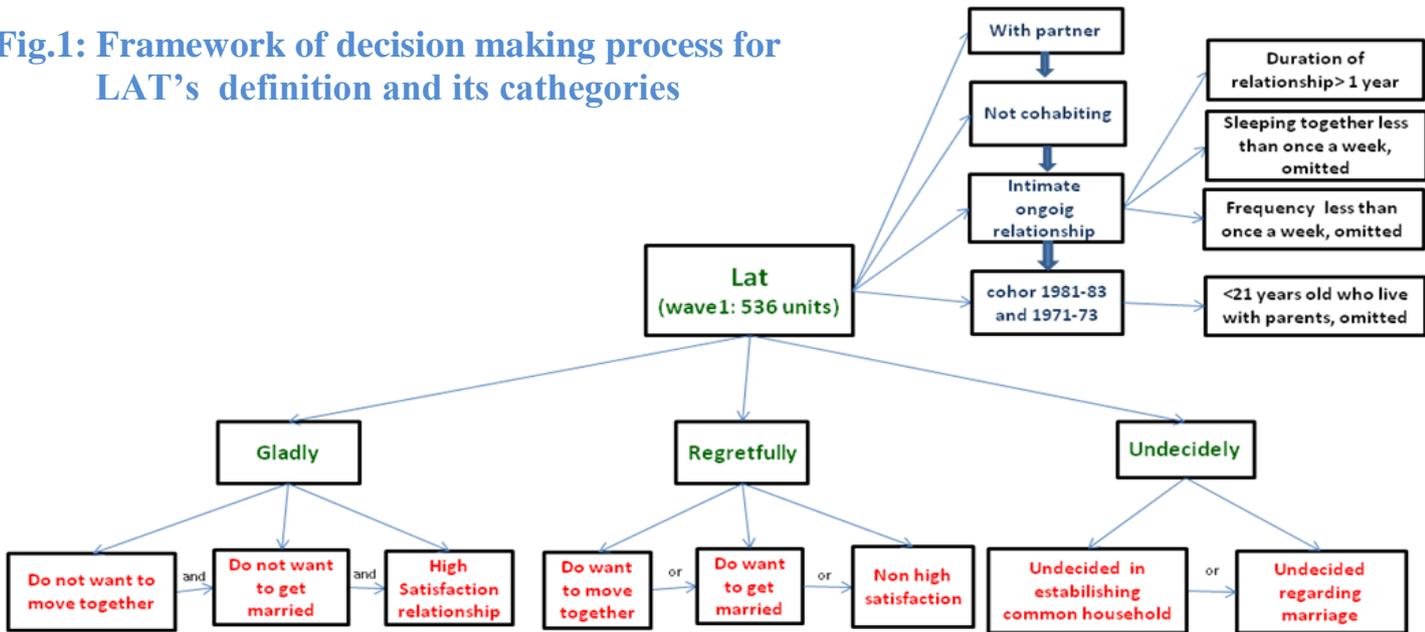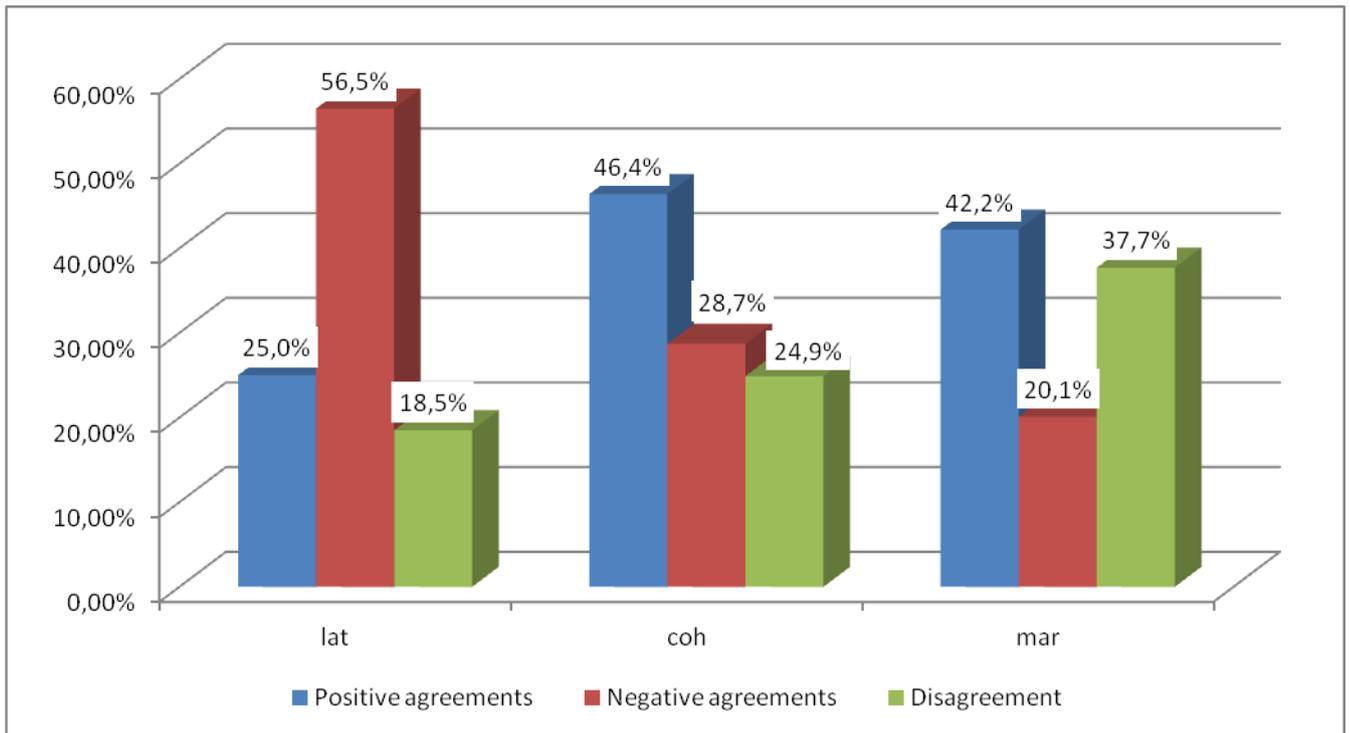

Analyses are based on data from the first six waves of the German Family Panel (pairfam), release 6.0 (Brüderl et al. 2015).

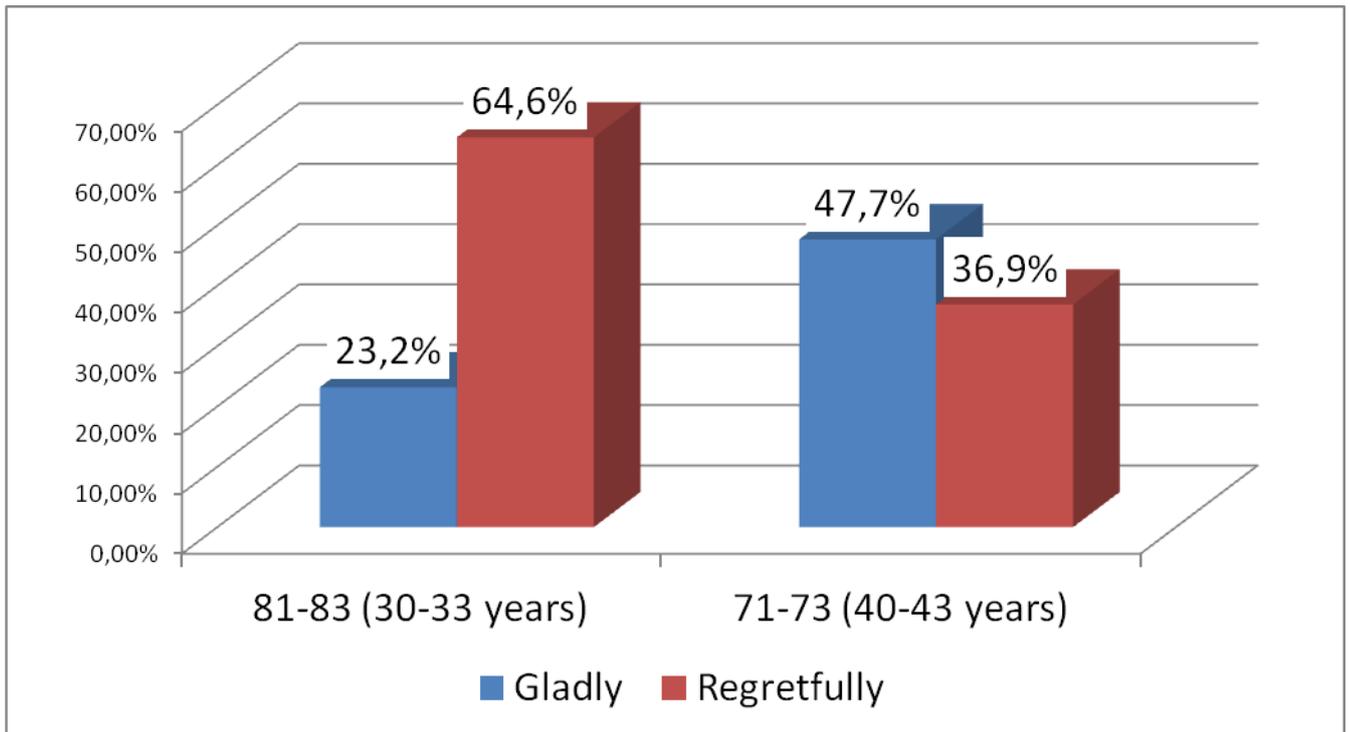# Fig.2: Percentage of lat on all relationships, by wave, cohort, age and sex
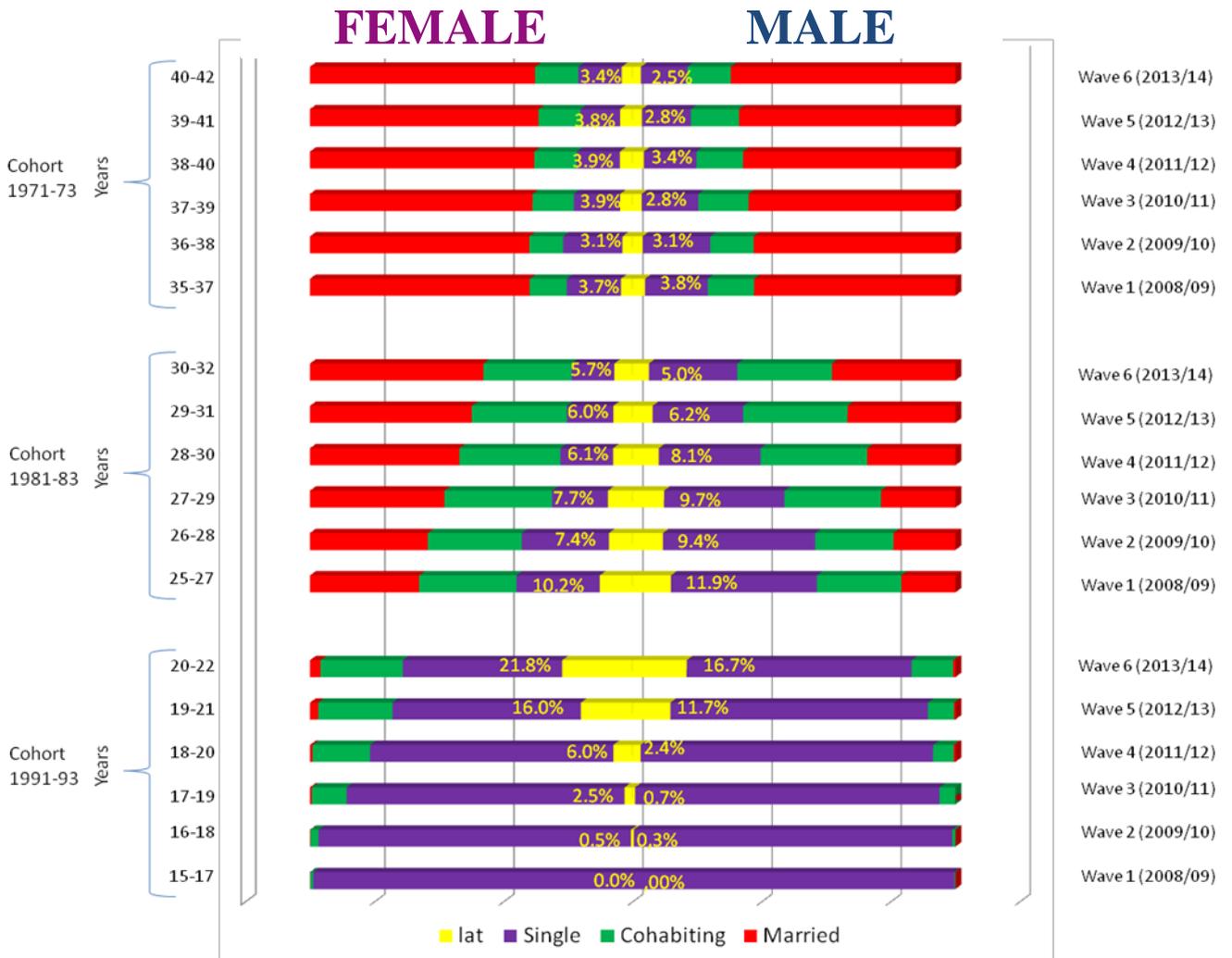
Graf.1: Agreements and disagreements in having a(nother) child between partners, by status of relationship (wave 1)

			Tab.1: Continuity (with the Same partner) of relationships between wave 1-6 and changes on types of living arrangements (the "leap of faith")		
	LAT	**Cohabiting**	**Married**
LAT	**23.6%**	49.0%	35.5%
Cohabiting	1.2%	**44.1%**	54.7%
Married	1.1%	1.2%	**97.7%**

Graf.2: Percentage of lat by type, cohort and year (wave 1)

Graph showing percentages for two cohorts:

- 81-83 (30-33 years): Gladly 23,2%, Regretfully 64,6%
- 71-73 (40-43 years): Gladly 47,7%, Regretfully 36,9%

Legend: ■ Gladly ■ Regretfully

| Categorical Variables	Tab.2: Coefficients of GLM models and relative categorical variables (every model for every wave or every merge)			
Categorical Variables	**Model 1 (Desire)**	**Model 2 (Continuity 1_6)**	**Model 3 (Realized)**	**Model 4 (Beeing Glad)**
Sex (Ref.: Male, omitted)				
Female	–	–	–	-1.05* (wave 5) -0.84˙ (wave4)
Cohort (Ref.: 1991-93, omitted)				
1981-83	–	2.27 ***	2.09 (waves 3-5) 0.94˙ (waves 2-4) 0.98 * (waves 4-6)	–
1971-73	–	3.31***	2.10 (waves 3-5)	–
Type of relationship (Ref.: Married, omitted)				
lat (gladly)	Always negative and statistically significant from -0.91˙ (wave 5) to -2.03 ** (wave 4)	-1.2**	-1.41* (waves 4-6)	–
Cohabiting	–	–	-0.60* (waves 4-6)	–
Education (Ref.: other levels of education, omitted)				
High education	Always negative but not statistically significant for all the waves	–	-0.36˙ (waves 1-3)	0.57* (wave1)
Job				
full-time (Ref.: part-time, omitted)	1.36*** (wave 1)	–	–	–
Both work (Ref.: non both work, omitted)	1.1*** (wave1)	–	–	–
Unemployed (Ref.: employed, omitted)	–	–	–	-1.41˙ (waves 1)
Income (Ref.: medium income, omitted)				
<1,000 €	-0.9*** (wave 2) -1.30*** (wave 3) -2.08*** (wave 4)	–	-0.62* (waves 1-6)	-2.38*** (wave 2) -1.53** (wave 3) -1.93*** (wave 4)
>3,000 €	1.65˙ (wave 2)	0.62*	0.38˙ (waves 1-6) 0.52* (waves 1-3)	
Parity (Ref.: childless, omitted)				
1 Child	1.15** (wave 2)	-0.65˙	0.71* (waves 3-5)	1.68* (wave 5)
2 Children	-1.16* (wave 1) -1.92˙ (wave5)	–	–	–
Realized				
Yes (Ref.: No, omitted)	1.50** (Wave1)	0.99***	–	–
Desire				
Yes (Ref.: No, omitted)	–	0.52*	Always positive and statistically significant from 0.65** (wave 3-5) to 1.72*** (waves1-3)	Always negative and statistically significant from -0.8˙ (wave 5) to -1.78***(waves 2)

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Tab.2: Coefficients of GLM models and relative categorical variables (every model for every wave or every merge)

| Categorical Variables	Categorical Variables	Categorical Variables	Categorical Variables	Categorical Variables
Individual/Social				
Religion (Re.: no religion, omitted)	–	0.58**	–	-1.1** (wave1)
Previous relationship (Ref.: no previous relationship)	0.85***(wave1)	-0.37˙	–	–
Traditional attitude of marriage (Ref.: no traditional, omitted)	1.38* (wave1)	0.47*	–	-1.11* (wave 1)
Bigger family size (Ref.: no bigger, omitted)			0.56* (waves 1-6)	
Satisfation of relationship				
Yes (Ref.: No, omitted)	–	–	0.83*** (waves 1-3)	–
Domains of life (Ref.: it is not the most important one)				
Having a(nother) child	Positive and statistically significant for waves 1-2-3-4, from 1.13˙(wave 1) to 2.73** (wave4)	–	0.84˙ (wave 3-5)	–
My carreer	-0.70	–	-1.16* (waves 3-5)	1.36** (wave 2)
My hobbies and interests	–	–	–	1.89* (wave 6)
My partnership	1.01** (wave 5)	–	–	–
Continuity of relationship (Ref.: no more with the same partner)				
Same partner	-0.74*	–	1.00*** (waves 1-6)	-0.90**(waves 1-6)
Agreements				
Positive agreements on desire	–	Everybody is with the same partner	1,97*** (waves1-6)	–
Negative agreements on desire	–	Everybody is with the same partner	-0.76*** (waves 1-6)	1.04*** (wave 1)
Disagreement desire	–	Everybody is with the same partner	0.66* (wave 1-6)	1.32*** (wave 1)
Region (Ref.:EASTERN, omitted)				
WESTERN	-0.52* (wave1) -0.93***(wave 6)	–	–	–

Fig.3: Model 4, Being lat
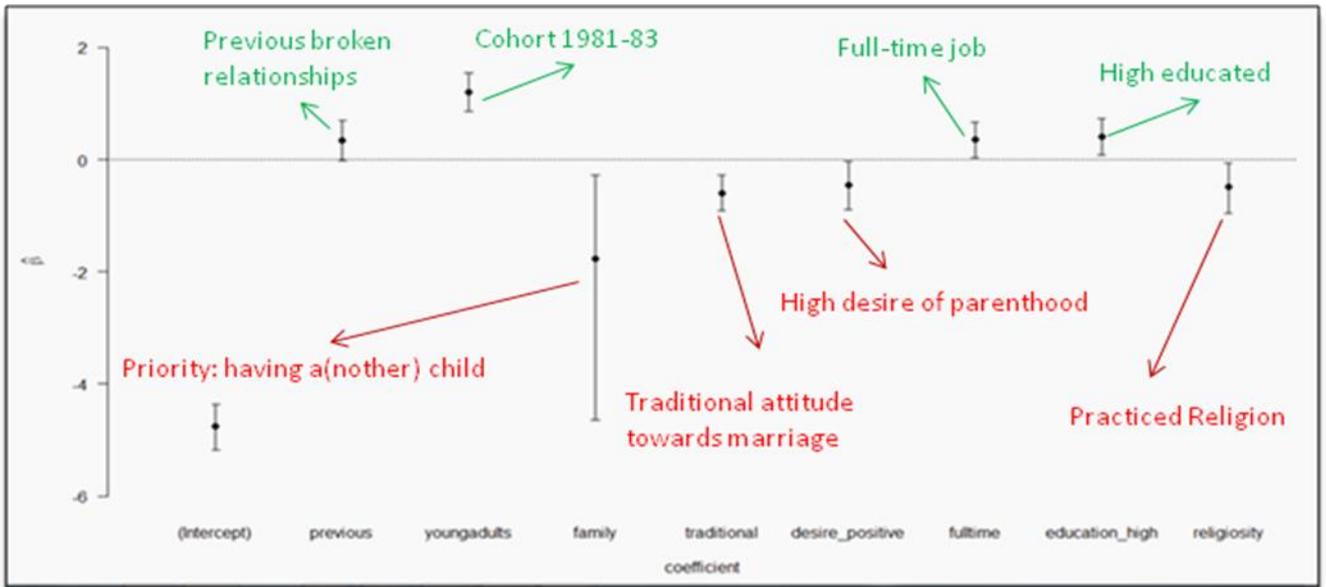
Fig.4: Model 1, Desire of fertility
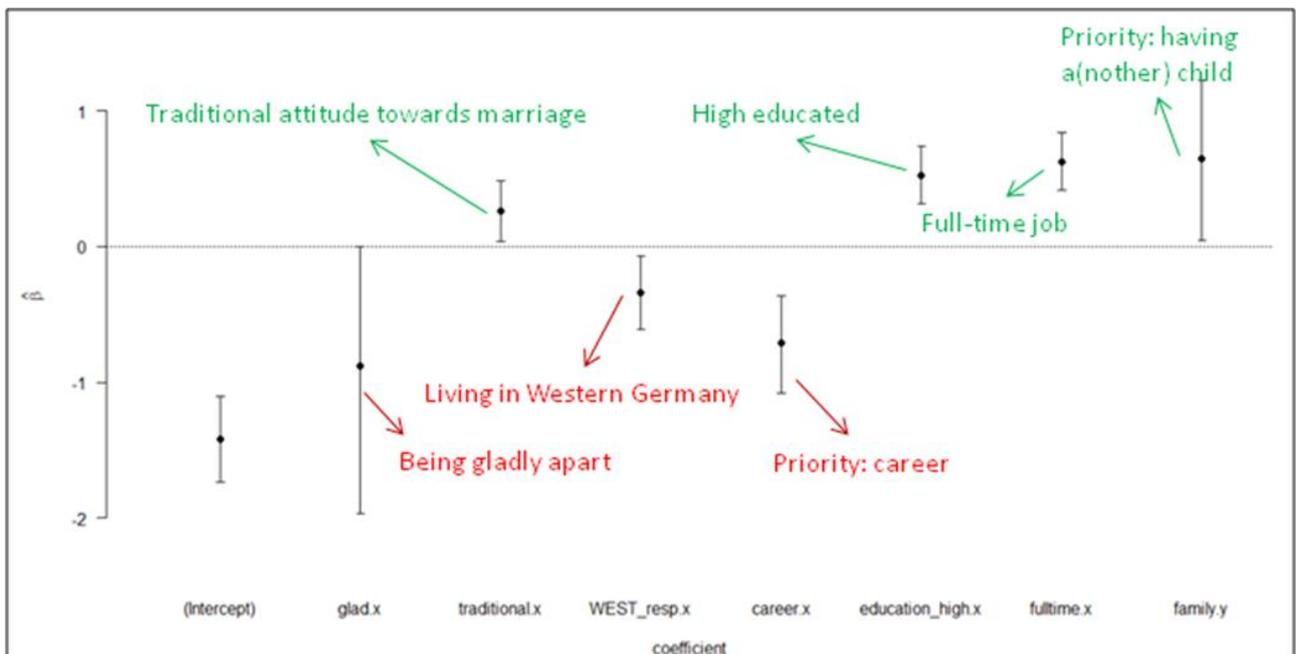
Fig.5: Model 3, Realized fertility
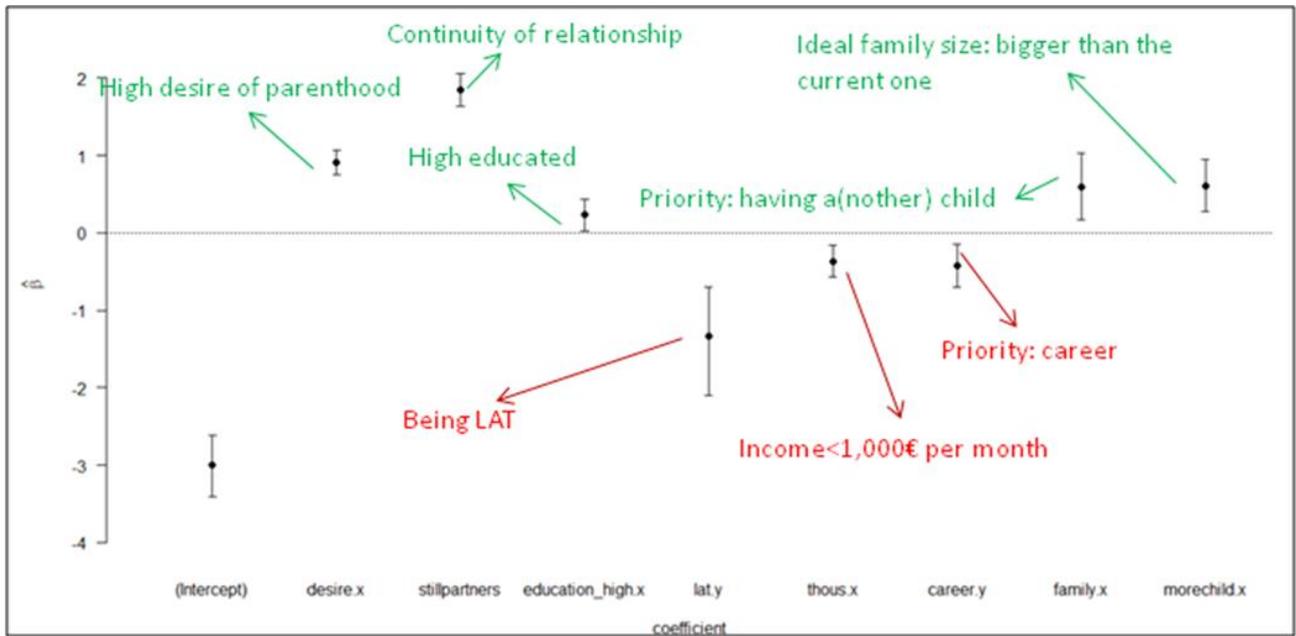
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