

# Children of unplanned pregnancies – A challenge for testing fertility parameters?

by Thorsten Schneider

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## Starting point

Micro theories on fertility such as the economic theory of the family frame fertility behavior in industrialized countries as a decision (Becker 1994). Predictions of these theories have been tested in numerous empirical studies (Balbo et al. 2013; Kreyenfeld 2010; Schmitt 2012). This research widely ignores that childbirth may also result from unintended pregnancies (Helfferich et al. 2014; Mosher et al. 2012; Musick et al. 2009).

## Hypotheses on the impact of

### ... education and educational participation

**H1a)** According to the economic theory of the family, highly educated women should have lower intentions to have a planned pregnancy, due to higher opportunity costs (Becker 1994).

**H1b)** Low education correlates with lower self-efficacy. Self-efficacy is important for consistent and effective use of contraceptives (Musick et al. 2009). Low education → higher risk of unplanned pregnancies.

**H1c)** Institution effect (Blossfeld/Huinink 1991): Educational participation and parenthood are normatively (and financially) incompatible → low rates of pregnancies, especially low rates of planned pregnancies.

### ... unemployment

Recent findings on the role of unemployment for the transition to parenthood in Germany are inconsistent (Brose 2008; Gebel/Giesecke 2009; Kreyenfeld 2010; Schmitt 2012).

**H2a)** Women's unemployment reduces opportunity costs and increases the propensity for a planned pregnancy.

**H2b)** Unemployment and self-efficacy (might) correlate negatively (see also H1c) → Unemployment and the risk of having an unplanned pregnancy are positively correlated.

### .. partnership (seriousness and sexual opportunities)

**H3a)** The degree of partnership institutionalization is an indicator of seriousness, and expectations about a long lasting joint future are an important precondition for the transition to a planned parenthood (Kuhnt/Trappe 2016). Transitions to planned parenthood increase in the following order:

single < boyfriend < consensual union < married.

**H3b)** The risk of having an unplanned pregnancy increase with sexual opportunities, but decrease with partnership seriousness due to higher propensity for planned parenthood:

single < boyfriend < consensual union > married.

## Data and methods

Socio-Economic Panel Study 2001 to 2013.

Sample: all women without a previous child, aged 16-47 years.

For those with a first child, answer to the question:

"Was your pregnancy more unplanned or more planned?"

- More unplanned
  - More planned
  - Medically assisted pregnancy (hormone treatment, IVF)"
- (Source: SOEP Mother and Child Questionnaire (newborns)).

Transition rate models with discrete time for **first entry** into motherhood.

## Findings (on first birth)

Contrary to arguments of high opportunity costs (H1a), graduates show an above-average propensity for a planned pregnancy (see Model 1, Table 1). There is no relationship between formal education and unplanned pregnancies

in Germany (H1b) – at least for the transition to the first child. But there are strong hints for the institution effect (H1c). Unemployed women, who should have lower opportunity costs, do not have an increased transition rate to a planned pregnancy (H2a); in contrast their first children are more often unplanned (H2b). More seriousness of partnership increases transitions to a planned pregnancy (H3a). Consensual unions, which are less serious, but offer same sexual opportunities as marriages, have the highest rate of unplanned pregnancies (H3b).

**Tab. 1: Transition to planned and unplanned pregnancies leading to a first birth. Competing risk models**

(for details see Schneider 2016: 17f., Tab. 2)

Model	1	2	
Pregnancy intention	rather planned	rather unplanned	planned=unplanned
<b>Process time</b> (age in years)			
16 to < 20	-2.84**	-3.93**	-2.54**
20 to < 24	-2.23**	-4.34**	-2.69**
24 to < 28	-1.88**	-4.16**	-2.39**
28 to < 32	-1.77**	-3.98**	-2.27**
32 to < 36	-2.18**	-4.84**	-2.73**
36 to < 48	-4.49**	-5.77**	-4.82**
<b>Mother's education</b> (ref: low)			
Intermediate school + VET	0.31+	-0.22	0.15
Upper secondary general qualification	-0.26	-0.57+	-0.37+
Upper sec. general qualification +VET	0.20	-0.40	0.04
University	0.60**	-0.27	0.38*
Missing	0.27	0.30	0.29
<b>Labor force status</b> (ref. full-time)			
In education/training	-0.80**	-0.49*	-0.72**
Part-time	-0.36*	-0.43	-0.37*
Unemployed	-0.03	0.60*	0.12
Nonemployed	-0.66**	0.34	-0.37*
<b>Partner status</b> (ref. married)			
Consensual union	-0.82**	0.61*	-0.63**
Boyfriend	-1.84**	-0.15	-1.59**
Single (incl. a few missings)	-3.36**	-0.70*	-2.59**
Person years (n*)	23566	23566	
Persons (n)	5092	5092	
Number of events	632	191	823
Log-Likelihood – final estimation	-4036.19		-4256.74

Sources: SOEP, DOI:10.5684/soep.v30, own calculations.

Significance level: \* p < 0,10; \*\* p < 0,05; \*\*\* p < 0,01; Abbreviation: ref: reference category.

Note: Competing destination state "missing information on pregnancy intentions" not shown.

Models on transition to motherhood **neglecting differences** between planned and unplanned pregnancies lead to **misleading estimations** (see Model 2 in Table 1, and test results in Table 2).

**Tab. 2: Log-Likelihood-Ratio-Tests with different restrictions**  
(that coefficients for planned and unplanned pregnancies are equal)

(for details see Schneider 2016: 18, Tab. 3)

Restriction	Restriction on other characteristics	chi <sup>2</sup>	d.f.	significance level
Age	no	48.99	6	0.000
	yes	356.36	6	0.000
Education	no	7.80	5	0.167
	yes	323.73	5	0.000
Labour force status	no	8.45	4	0.076
	yes	39.20	4	0.000
Partner status	no	65.24	3	0.000
	yes	114.31	3	0.000
All 4 characteristics (Model 2, Tab. 1)		441.11	18	0.000

Sources: SOEP, DOI:10.5684/soep.v30, own calculations.

## Conclusions

The overall findings make clear that future surveys and empirical research might benefit from taking fertility intentions into account, which would enable more rigorous testing of fertility theories.

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## Contact

Thorsten Schneider  
Institute of Sociology  
Leipzig University  
Beethovenstr. 15  
04107 Leipzig  
Germany

thorsten.schneider@uni-leipzig.de  
http://sozweb.sozphil.uni-leipzig.de

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Thorsten Schneider

Leipzig University  
Beethovenstr. 15  
04107 Leipzig  
Germany

thorsten.schneider@uni-leipzig.de

**poster presentation**

Micro theories on fertility, e.g., the economic theory of family, or assumptions about life course specific sequencing norms frame fertility behaviour in industrialized countries as a decision. Their predictions are tested in numerous empirical studies. Theories and empirical research widely ignore, that giving birth may also result from unintended pregnancies. Some studies have been published for the US in recent years. At least in this context, unplanned pregnancies are no minor phenomenon and having an unplanned pregnancy is highly selective in respect to mother's education, race and parity. We discuss how education, educational and labour market participation, partnership status and gender preferences influence unplanned and planned conception in Germany. To test these hypotheses data from the Socio Economic Panel Study (SOEP), collected between 2001 and 2013, are used. The focus is on the planning status of pregnancies leading to a first birth. The information on pregnancy intentions is collected retrospectively from mothers in the survey wave immediately after the birth. The data are analysed with event history models for competing risks (planned vs. unplanned pregnancy). There are major differences in the transition intensity to both types of pregnancies. Against the argument of lower opportunity costs, unemployed women do not have an increased propensity of a planned conception leading to a first birth; instead they get pregnant unintendedly more often. Highly educated women are more likely to have a planned pregnancy leading to a first birth. Although there are different limitations of this study such as missing information on abortion, the results make clear, that it is necessary to differentiate between planned and unplanned pregnancies to explain and empirically investigate fertility behaviour.

**Key words:** Fertility intentions, births, competing risks, Germany