First births in Sweden: Self-perceived and objective constraints on childbearing

Work in progress!

Sara Ström and Eva Bernhardt
Stockholm University Demography Unit

Introduction

Most people in childbearing ages in Western societies that have not yet had children wish to have children (Goldstein 2003). However, the transition to parenthood is being postponed throughout Western societies (see e.g. Frejka and Sobotka 2008). Hobcraft and Kiernan (1995) suggest that five factors together form the prerequisites for childbearing in modern societies: partnership, education, employment, housing and security. In general, a stable relationship is a prerequisite for having children. Marriage rates in Sweden have declined from 1968 until today with some variations due to e.g. policy changes. While marriage is traditionally viewed as the more stable form of relationship a majority of firstborn children in Sweden are born within consensual unions.

A strong norm in Western societies is to postpone family formation until education is completed and a stable income is attained. During the 1990s enrolment in higher education dramatically increased in Sweden (Regnér and Öckert 2000). This resulted in a greater proportion of young adults with university education but possibly also postponement of childbearing in the same group.

A majority of fertility research within the social sciences relates to labor market and incomes. Several studies based on Swedish data indicate a strong positive association between income and first-birth propensities (Hoem 1998; Andersson 2000; Duvander and Olsson 2001). Two Swedish studies have also shown that fertility co-varies with unemployment rates (Hoem 2000; Andersson 2000). More women than men have temporary employment in Sweden, while more men than women are unemployed (Bygren et al. 2004).

Leaving the parental home is an important component in gaining independence for a young individual. Hobcraft and Kiernan (1995) argue that the typical Western family is a nuclear family, and that the norm is one such family per housing unit. Thus, is seems reasonable to assume that an independent residence is an important prerequisite for family formation in modern societies. However, the access of housing varies between societies and time periods. For example, individuals from different birth cohorts face different possibilities of acquiring independent housing during an early stage of adult life partly due to variations in demand and supply on the housing market.

Finally, Hobcraft and Kiernan (1995) discuss "security" as a prerequisite for childbearing. By this they refer to whether the individual consider themselves to have sufficient resources to provide for and raise a child from infancy to early adulthood. The individual's own perception of future prospects regarding stable partnership, income and housing is probably interrelated to this. But Hobcraft and Kiernan also refer to "...whether society (through its agent government) will also make provisions for the rising generation of young people" (Hobcraft and Kiernan 1995:27).

Policies regarding labor market, education, family and housing are such contextual factors that may influence the feeling of security. Such policies vary between time periods making a cohort perspective useful.

The aim of this paper is to study how the three factors education, labor market attachment and housing by themselves and combined affect the propensity to have the first child. We study Sweden from the 1970s until the early 2000s and use two different data sources: The Young Adult Panel Study and The Swedish Housing and Life Course Cohort Study. By using these two different data sources we gain access to both the respondents' subjective opinions of whether the educational attainment, income and housing are sufficient enough to enter parenthood, and objective measures of the same three factors based on normative assumptions. To our knowledge, the impact of these three factors on first births has not before been studied together.

Education, labor market and housing

In this study, we will focus on how the three factors educational attainment, establishment on the labor market and housing separately and combined affects the propensity to have the first child. We will not discuss the perhaps most obvious prerequisite for childbearing: partnership. Below we offer a theoretical discussion of the three factors and a review of empirical studies[1].

The Western world has experienced a substantial expansion of higher education during the last decades. In particular, young women have increased their participation in higher education (see e.g. Blossfeld and Huinink 1991). That young men and women stay longer in the educational system is likely to delay family formation. The reasons are several. An individual is normatively considered to be adult and thus ready for parenthood after completed education. To be a student is associated with limited financial resources which may constitute an obstacle to family formation. Higher education is also associated with a labor market career, which in some cases may be a competing ambition in relation to family formation (see e.g. Becker 1981). To be established on the labor market and to have an income sufficient to support a family is also considered to be a normative prerequisite for childbearing. In Sweden, only individuals established on the labor market at least eight months prior to childbirth are eligible for the higher compensation levels in the parental leave insurance. Those with very low or no incomes prior to childbirth are only eligible for a very low compensation level that typically would not be sufficient to support a family with a young child. Thus, establishment on the labor market is intimately related to family formation in Sweden. Regarding housing, the norm in Western societies is one couple only per housing unit. Before starting a family, young individuals are expected to form independent households. Establishment on the labor market is also likely to be a prerequisite for establishment on the housing market. Housing is typically the greatest separate cost in the

[1] This introductory framework is a work in progress and will be both expanded and nuanced.

household budget. Although Sweden has a generous system for financing living costs during higher education, an income from employment is almost always required to be able to pay for housing suited for a family with young children.

In the empirical social science research on childbearing, the vast majority of studies focus on the relationships between childbearing on the one hand and educational attainment and labor market attachment on the other hand. Blossfeld and Huinink (1991) study the impact of women's educational attainment and labor market careers on childbearing in West Germany. They use life-history data for almost 2 200 respondents from three birth cohorts born between 1929 and 1951. They find that female educational participation tend to delay the entry into parenthood. However, high educational attainment is also associated with high first birth rates. Thus, women's increased participation in higher education actually decreases the proportion of women that remains childless. Using data from the German Socioeconomic Panel (GSP) Blossfeld and Jaenichen (1992) again study female participation in higher education and entry into parenthood. Their findings largely verify the findings by Blossfeld and Huinink (1991): highly educated women delay their entry into parenthood rather than abstaining parenthood. Kravdal (1994) use survey data for over 4 000 Norwegian women from six birth cohorts born between 1945 and 1968. Although the results are not clear-cut, he found a positive effect from educational attainment among women in their late 20s irrespective of union status. He interprets this as a "chatching-up phenomenon" where women have their first child after completed education. In addition, childless women with low education make up a more selected group. Tesching (2012) use Swedish register data 1990-2004 to study the impact of education on fertility. She finds that ongoing educational participation has an inhibiting effect on individual level childbearing. However, this effect decreases by age. She also finds a strong association between educational field and first birth rates. Women educated in fields that lead to well defined labor market careers – such as teachers and health care and welfare – have higher first birth rates. An education in the humanities, arts or media seems to be associated with low first birth rates.

Focusing instead on labor market attachment, using individual level register data covering all women in Sweden born 1950 or later, Hoem (2000) studied the impact of individual incomes, individual level unemployment and local unemployment levels. She reports that the higher the woman's income is, the higher is the first birth propensity. While students have the lowest first-birth rates among all groups, unemployed women have somewhat surprisingly a relatively high fertility. On the macro-level, it is found that first-birth rates covariates with local unemployment levels. Using the same data set as Hoem (2000), Andersson (2000) reports that the impact of income are stronger for first births compared to second and third births. Students and women with low incomes from employment have lower propensities to have the first child compared to others. The number of women enrolled in education and the number of women with low incomes increased during the 1990s. This increase is reflected in a lower number of recorded births during

the same period. Kravdal (1994) referred to above also studied the impact of incomes o first births. Annual income data was available for the period 1967 to 1988. The results show that women who have worked for less than a year have very low propensities to have the first child. Up to four years of participation in the labor force the likelihood to have the first child substantially increase. Work life experience of more than six years does not add to the propensity to have the first child. That women with a weak attachment to the labor market have lower first birth propensities is in line with the Swedish results that low incomes are associated with low first birth rates. Studying Finland, Vikat (2004) use longitudinal register data that comprise ten percent of all women in reproductive ages during the years 1988-2000. Individual income levels are found to be positively related to both first and second birth propensities. Unemployment is found to be weakly related to fertility. Thus, these results are also in line with the empirical evidence found for Sweden.

Compared to the body of research focused on the interrelationships between childbearing on the one hand and education and labor market attachment on the other hand there is much less research on childbearing and housing. Mulder and Wagner (2001) study both West Germany and the Netherlands. They use retrospective life course surveys from the 1980s and early 1990s. They find that couples in the Netherlands postpone the birth of the first child subsequent to becoming home-owners. In other words, the acquisition of a home is not necessarily closely followed by the arrival of the first child. For West Germany, the authors find that couples tend to postpone the acquisition of a home until parenthood is close in time. Murphy and Sullivan (1985) use two data sources – The 1977 General Household Survey and The 1976 Family Formation Survey – to study housing and childbearing in Great Britain. They find comparatively strong associations between tenure type and childbearing. Home-owners are older at the time of marriage, postpone the first child longer, and have fewer children compared with tenants. They also found that independent of tenure, couples living in detached one-family dwellings have a higher fertility compared with couples living in apartments. Using longitudinal register data for the period 1987-2000 Kulu and Vikat (2007) find elevated risks of first births among Finnish couples living in terraced or detached houses compared with those living in apartments. In addition, moving regardless of to which type of housing was associated with higher first birth risks. The results remain after controls for demographic factors such as union duration and educational level. Ström (2010) use a combination of register and survey data containing retrospective housing biographies for the three cohorts born in Sweden 1956, 1964 and 1974 (for a detailed description of the data, see The Swedish Housing and Life Course Cohort Study below). She finds that number of rooms in the dwelling is consistently and positively related to first birth propensities. Mulder and Billari (2010) study the relationship between housing and fertility on the macro level for a number of Western countries. As housing indicators they use percent of homeowners, residential mortgage loans as percent of GDP, residential mortgage loans per capita. Their findings suggest that fertility is highest in societies with high levels of homeownership in combination with easy access to

mortgage. Further, fertility is lowest in countries with a high degree of homeownership and difficult access to mortgages. In these countries it is also common that young individuals live in the parental home.

The three factors education, labor market attachment and housing are all interrelated. People typically get an education before they establish themselves on the labor market. A steady and sufficiently high income is a prerequisite for obtaining housing that is perceived as suitable for a family. In the scenario of limited resources childbearing and housing may be competing costs (Courgeau and Lelièvre 1992). Childbearing and labor market career has also been suggested to be competing activities. However, to our knowledge these three factors and their relative impact on first birth propensities have not before been studied together. We study these factors both from a subjective perspective – whether or not respondents themselves assess their circumstances as appropriate for having a child – and from an objective perspective using survey and register data.

The Swedish Housing and Life Course Cohort Study

For the analyses of objective measures The Swedish Life Course and Cohort Study (HOLK) (see Ström et al. forthcoming) is used. The HOLK-data are a combination of survey and register data.[2] The sample consists of 3 600 individuals born in Sweden, and is divided between the three cohorts born in 1956, 1964 and 1974. The cohorts are selected in order to reflect different historical periods in Swedish housing policy and labor market. The data collection was carried out during the spring of 2005 and was administered by Statistics Sweden in Örebro. The method of collection was postal questionnaires with one postal follow-up and subsequent telephone follow-up. The response rate was 62 percent or 2 242 individuals. As a whole, the material presents a clear picture of partner biographies, education and labor market attachment, childbearing and last but not least housing. Register data have been linked for each respondent, legally married partners, and for unmarried cohabitants with common children the child's other parent. The central part of the questionnaire is the housing biographies that never before have been collected to this extent. The housing biographies have been complemented with register data on residential moves including information on year, month and location. Another important component is the partner- and marriage biographies that enables us to determine when individuals are "under risk" of childbearing. These self-reported biographies have been complemented with register data on changes in civil status. Information on education has been gathered from register data for both the respondent and partners (for present partners also through the questionnaire). Extensive

[2] The questionnaire and register extract have been designed by Sara Ström in collaboration with Elizabeth Thomson (Stockholm University and University of Wisconsin-Madison), and Statistics Sweden in Örebro and Stockholm.

register data on incomes and transfers have also been linked. Finally, data on biological and adopted children have been linked. (For a more thorough description of HOLK, see Ström 2010.)

The focus in this study is the transition from the childless state to parenthood over time. The most appropriate way to study this transition is to use intensity regression. The dependent variable used in the empirical analyses is the hazard rate:

$$h(t / X(t)) = \lim_{\Delta t \to 0} \frac{P(t, t + \Delta t \mid T \geq t, X(t))}{\Delta t} , \qquad (1)$$

where T is the time of the birth of the respondent's first child, t is any fixed point in time under risk, while p*(t, t+Δt)* is the probability that the event occurs in the interval [*t, t+Δt)*, and *x(t)* is a vector of covariates, given that the event has not occurred before t. The observation window opens the year the respondent turns 16, and closes either at the time of the first birth, at age 31, or at the time of data collection. Changes in housing status (measured as year and month of registered move), income and education (both measured annually) are treated as time-varying covariates. Only episodes when the respondent is cohabiting or married are included. The year and month of first births has been collected through register data from Statistics Sweden. Adopted children are included in the analyses, but the respondent is censored at the time of the birth and the event is thus not included. Births of twins and triplets are treated as single-child births. Information on gender and age has been collected through register data from Statistics Sweden.

Household *income* is defined as income from employment and includes income from both partners in a union if they are married or otherwise can be linked in the registers. For the other cases the partner's income has been estimated from the respondent's income. Information on income is included from the year of entering shared residence. Information on household income has been collected from Statistics Sweden. Incomes are divided into three categories. The first category consists of incomes below or equal to the norm of economic support (previously social assistance). Historical information about this norm has been complemented with average rents for rental apartments (http://www.scb.se). This first category represents low incomes. The second category contains incomes above the norm of economic support but below incomes that are defined as high incomes in the third category. High incomes – the third and last category – are defined as incomes that are taxed with state income tax. However, state income tax was introduced in 1991. In other words, it is not possible to construct variables comparable over time. Therefore, I have used the breakpoint for state income tax for 2003 to define high incomes for all years. *Educational level* is also grouped into three categories. The first category consists of grade school education or equivalent, the second category upper secondary education and the third and

last category consists of completed university educations.[3] Two different measures of *housing* are included in the analyses. First, establishment on the housing market is defined as either homeownership or firsthand rental contract. Second, the size of the dwelling is included. Dwellings with three or more rooms and kitchen are separated from dwellings with one or two rooms and kitchen. This is in line with the norm that children should have their own room (prop. 1968/87:48; Boverket 2004).

Results: Objective measures

To study the relative impact of education, income and housing on first births we perform the analysis in seven steps or models: (1) education (2) income (3) housing (4) education and income (5) education and housing (6) income and housing (7) education, income and housing. All analyses are cohort specific and control for age and gender.

Table 1. First births, education, income and housing. Cohort 1956, HOLK 1972-2005. Stepwise constant hazardregression. Hazard ratios.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Age							
16-19	REF	REF	REF	REF	REF	REF	REF
20-21	2,36	**2,41*****	**2,02*****	**2,54****	**2,58****	**2,19*****	**2,69****
22-23	2,19	**2,11****	**1,72****	2,31	2,14	**1,81****	**2,22**
24-25	**3,43*****	**2,98*****	**2,30*****	**3,55*****	**3,13*****	**2,40*****	**3,21*****
26-27	**5,56*****	**4,35*****	**3,42*****	**5,83*****	**5.02*****	**3,55*****	**5,18*****
28-29	**5,78*****	**5,00*****	**3,96*****	**5,73*****	**5,09*****	**3,93*****	**5,02*****
30-31	**5,66*****	**4,72*****	**3,68*****	**5,49*****	**4,72*****	**3,57*****	**4,55*****
Sex (woman)	**1,33*****	**1,34*****	**1,31****	**1,35*****	**1,31*****	**1,32*****	**1,33*****
Education							
Compulsory	REF			REF	REF		REF
Upper secondary	0,92			0,94	0,74		0,77
University/college	0,94			0,96	0,80		0,80
Income							
Low		REF		REF		REF	REF
Medium		**1,41*****		1,20		1,29	1,14
High		**1,70****		1,57		1,56	1,49
Housing							
Established (yes)			**1,71****		1,36	1,63	1,35
Housing							
1 room			REF		REF	REF	REF
2 rooms			1,57		1,39	1,56	1,39
3+ rooms			**2,30*****		**2,24*****	**2,27*****	**2,20*****
n (individuals)	513	649	641	513	507	641	507
n (observations)	2709	4342	4270	2694	2663	4255	2648
n (events)	340	484	477	340	333	477	333
-2 LL	-213	-394	-374	-211	-202	-371	-200

** p<0.05. *** p<0.01

[3] Elementary/compulsory school: shorter than 9 years, 9 (10) years or equivalent. Upper secondary education: at most 2 years, more than 2 years but 3 years at most. University/college: shorter than 3 years, 3 years or more, postgraduate education.

In Table 1 the analyses for the cohort born 1956 are depicted. The results indicate that education have no influence on the propensity to have the first child. According to the results, income affects the first birth propensity but only in Model 2 where both education and housing are excluded. The higher the household income is, the greater is the propensity to have the first child. According to Model 3, that exclusively focus on housing, both establishment on the housing market and a dwelling with at least three rooms are positively related to first birth propensities. In the complete model (Model 7) where all three factors are included it is only the size of the dwelling that appears to be related to first birth propensities. Respondents aged 26-29 have consistently higher first birth propensities compared to the youngest respondents (16-19 years). Women are more prone to have the first child compared to men.

Table 2. First births, education, income and housing. Cohort 1964, HOLK 1972-2005. Stepwise constant hazardregression. Hazard ratios.

	Modell 1	Modell 2	Modell 3	Modell 4	Modell 5	Modell 6	Modell 7
Age							
16-19	REF	REF	REF	REF	REF	REF	REF
20-21	1,29	1,71	1,23	1,54	1,10	1,44	1,30
22-23	2,16	**2,44****	1,85	2,20	1,65	1,82	1,70
24-25	**3,92*****	**3,36*****	**2,61*****	**3,80*****	**2,87*****	**2,45****	**2,83*****
26-27	**6,10*****	**4,84*****	**3,74*****	**5,60*****	**4,15*****	**3,38*****	**3,95*****
28-29	**6,26*****	**4,74*****	**3,84*****	**5,30*****	**4,13*****	**3,30*****	**3,72*****
30-31	**8,90*****	**6,77*****	**5,14*****	**7,78*****	**5,71*****	**4,46*****	**5,23*****
Sex (woman)	**1,40*****	**1,54*****	**1,39*****	**1,49*****	**1,36****	**1,45*****	**1,43*****
Education							
Compulsory	REF			REF	REF		REF
Upper secondary	0,98			0,93	0,97		0,92
University/college	0,81			0,72	0,84		0,76
Income							
Low		REF		REF		REF	REF
Medium		**2,02*****		**1,85****		**1,92*****	**1,70****
High		**2,73*****		**2,56*****		**2,32*****	**2,13*****
Housing							
Established (yes)			1,39		1,40	1,36	1,39
Housing							
1 room			REF		REF	REF	REF
2 rooms			**1,83****		**1,78****	**1,76****	1,70
3+ rooms			**3,91*****		**3,53*****	**3,73*****	**3,31*****
n (individuals)	552	584	580	552	548	580	548
n (observations)	3761	4149	4107	3760	3721	4106	3720
n (events)	379	417	413	379	375	413	375
-2 LL	-232	-270	-240	-224	-202	-234	-197

** p<0.05. *** p<0.01

As for the cohort born in 1956, educational attainment does not seem to influence first birth propensities when we study the cohort born in 1964 (Table 2, models 1, 3, 4 and 7). The results however indicate a relationship between income and first birth propensities (models 2, 4, 6 and 7). The higher the household income is, the higher is the first birth propensity. Establishment on the housing market seems to be of no importance but the size of the dwelling is positively related to first birth propensities for the cohort born in 1964. The larger the dwelling is, the greater is the first birth propensity. It is only in the complete model (Model 7) that only a dwelling size of three rooms and kitchen is positively related to first birth propensities. Respondents aged 30-31 are more prone to have their first child, and women have higher first birth propensities compared to men.

Table 3. First births, education, income and housing. Cohort 1974, HOLK 1972-2005. Stepwise constant hazard regression. Hazard ratios.

	Modell 1	Modell 2	Modell 3	Modell 4	Modell 5	Modell 6	Modell 7
Age							
16-19	REF	REF	REF	REF	REF	REF	REF
20-21	0,83	0,79	0,56	0,96	0,66	0,59	0,76
22-23	1,37	1,08	0,81	1,36	0,98	0,75	0,99
24-25	**2,73****	1,98	1,41	**2,48****	1,74	1,24	1,68
26-27	**4,57*****	**2,74****	2,06	**3,76*****	**2,73****	1,66	**2,44****
28-29	**5,89*****	**3,19*****	**2,40****	**4,59*****	**3,28****	1,84	**2,82****
30-31	**4,52*****	-	1,67	-	2,27	-	-
Sex (woman)	**1,32****	1,21	1,17	**1,33****	1,24	1,14	1,23
Education							
Compulsory	REF			REF	REF		REF
Upper secondary	0,96			0,90	0,87		0,80
University/college	**0,64****			**0,55*****	**0,63****		**0,52*****
Income							
Low		REF		REF		REF	REF
Medium		**1,56****		**1,61****		1,40	1,44
High		**1,97*****		**2,06*****		**1,68****	**1,77****
Housing							
Established (yes)			**2,81*****		**2,28****	**2,88*****	**2,92****
Housing							
1 room			REF		REF	REF	REF
2 rooms			**4,31*****		**4,25*****	**4,13*****	**4,04*****
3+ rooms			**10,24*****		**9,96*****	**9,23*****	**8,93*****
n (individuals)	646	628	644	626	642	624	622
n (observations)	5166	4368	5172	4301	5109	4313	4250
n (events)	348	291	342	289	340	285	283
-2 LL	-342	-318	-288	-306	-281	-265	-255

** p<0.05. *** p<0.01

For the cohort born 1974 a different pattern concerning educational attainment and first birth propensities appears compared to the two older cohorts (Table 3, models 1, 4, 5 and 7). Respondents with a university degree have lower first birth propensities. When income is included in the model (Model 2) or when income and education are both included (Model 4) the results indicate relationships between both medium level incomes and high incomes and first birth propensities. The higher the income is, the higher is the propensity to have the first child. The pattern for the cohort born in 1974 also differs from the pattern of the two older cohorts when it comes to housing and first births. Establishment on the housing market has a consistently significant and positive effect on first birth propensities. As for the two older cohorts, the propensity to have the first child is higher the larger the dwelling is. This is the case for both dwellings with two rooms and kitchen, and dwellings with three or more rooms compared to one-room-dwellings. Age seems to be of less importance for first birth propensities for the cohort born in 1974.[4] One pattern is however that respondents aged 28-31 have a higher first birth propensity

[4] The reason that the oldest age group is not represented in the models including education and income is that these variables are lagged one year. The income for 2003 is thus used to measure conditions in 2002, etc. Information on education and income are only available until 2003 which means that the respondents born in 1974 are censored at age 30.

compared to the youngest age group (16-19). Also sex seems to be of less importance for the youngest cohort: women have a higher first birth propensity only in models 1 and 4.

In summary, housing seems to be the factor of the greatest importance for the propensity to have the first child. This is particularly the case for the size of the dwelling. To live in dwelling with at least three rooms and kitchen is associated with a greater propensity to have the first child compared to living in a dwelling with one room and kitchen. This result is found in all models where housing is included and for all cohorts. For the two youngest cohorts there is also a positive effect of living in a dwelling with two rooms and kitchen. In addition, for the cohort born in 1974 there is a clear and positive effect of being established on the housing market for the propensity to have the first child. Income is of greater importance for first birth propensities for the two younger cohorts compared with the oldest cohort. Educational level seems to be of importance only for the youngest cohort: respondents with a university degree have a lower propensity to have the first child compared with those with grade school education or equivalent. It should however be noted that these analyses does not take into account in which order the respondents complete their education and establish themselves on the labor and housing markets. Neither do the analyses reveal how the different factors affect each other.

The Young Adult Panel Study (YAPS)

The Young Adult Panel Study (www.suda.su.se/yaps) is a combination of survey data and register information. Three waves of data collection have been carried out, in 1999, 2003 and 2009. The survey has information on attitude and norms, as well as the work and family situation of the respondents in the first phases of young adult life in Sweden in the beginning of the 21st century. Based on a nationally representative sample, YAPS contains information about approximately 3500 individuals. Four specific birth cohorts are included, namely those born in 1968, 1972, 1976, and 1980. In the present study we will use survey information from the 2003 survey, when the respondents were 22, 26, 30 and 34 years old, combined with register information on births in the six years following the survey.

As many studies of the transition to adulthood have shown, there is a density of transitions in young adulthood (Rindfuss 1991, Corijn & Klijzing 2001, Cook & Furstenberg 2002, Settersten et al 2005): young men and women leave home, pursue education, establish themselves in the labour market, form their first co-residential unions, and become parents. In most cases the majority of these transitions occur within a limited age range, between 18 and 30. In the current Swedish context, 90 percent have left the parental home by age 22, and 85 percent have formed a first co-residential relationship by age 30. However, increasing proportions of women are starting childbearing after age 30, and this is already the case for a majority of men. As for non-

demographic transitions, close to 90 percent of the 30-year olds say they have completed their education (the corresponding figures for 22- and 26-year olds are 28 and 65 percent).
From the YAPS survey (second wave in 2003) we have information about self-perceived constraints on childbearing, based on responses to the question: *Do you think that the following circumstances apply to you right now? a) I live in a good partner relationship, b) I (we) have a dwelling suitable for a child, c) I have completed my education, and d) I (we) have a sufficient income to support a child.* The respondent could answer 'yes' or 'no' to these questions.

In Table 4 we present the percentages that agree that these prerequisites for the transitions to parenthood are fulfilled, by age, for those still childless. About half (51 percent) of the 22-year old respondents reported that they lived in a good (co-residential, either cohabiting or married) relationship. This becomes more frequent among the 26- and 30-year olds, and then decreases somewhat. It is worth remembering, however, that for the 34-year olds more of these relationships are more committed, i.e. Y percent are married, while this is true only for a small percentage among the 22-year olds who live with a partner.

Table 4. Fulfilled prerequisites by age, childless young adults

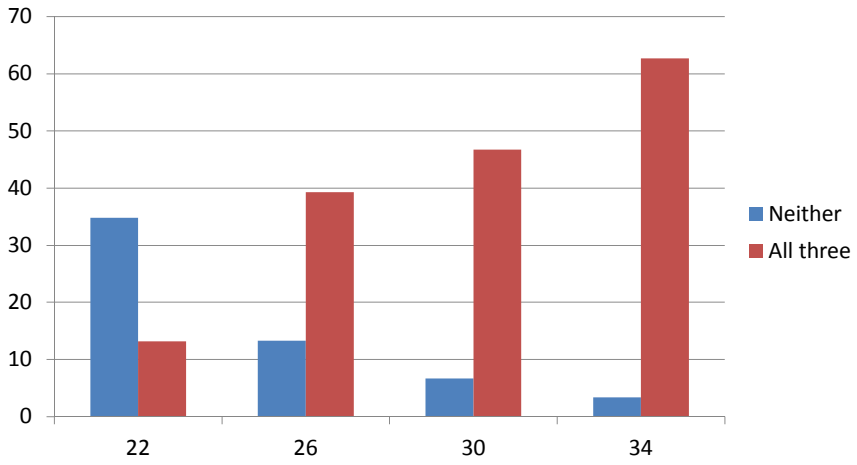
	22	26	30	34	All
Good partner relationship	51	64	59	53	57
Completed education	26	61	76	81	53
Sufficient income	22	50	66	72	44
Suitable housing	24	39	47	57	36

Among the 22-year olds it is much less common to report that they have completed their education (26 percent), have a sufficient income (22 percent) or a suitable housing situation (24 percent). Then there is a big jump between age 22 and age 26, as regards completed education in particular, but also regarding income and housing. Further increases occur between age 26 and age 30, and 4 in 5 of the 34-year olds report having completed their education, 72 percent consider their income sufficient to support a child, and 57 percent think they have a housing situation suitable for a child.

Thus between age 22 and age 34 the constraints on childbearing are gradually lessened, as more and more find themselves in a situation where the above-mentioned four prerequisites are fulfilled, according to their own subjective evaluation. Age is clearly an important factor to take into account in the analysis of the effect of self-perceived constraints on childbearing on the transition to parenthood. In addition to regressions including age as a control variable, we will also run regressions separately for the different age groups (22, 26 and 30+34; the two later will be combined because of the small number of still childless at those ages).

In Figure 1 we can see how different combinations of fulfilled prerequisites vary by age, for those who live with a partner, and thus have fulfilled one of prerequisites for childbearing. We illustrate with the two extremes – none, i.e. neither education, nor income, nor housing, are fulfilled, and at the other end, all of them, that is the respondents have completed their education, have a sufficient income and a suitable housing situation. At age 22, about one-third lack all three of the preconditions, while this category almost disappears for the 34-year olds. On the other hand, having all three of the prerequisites fulfilled increases from about 10 percent at age 22 to over 60 percent among the 34-year olds.

Figure 1. Combinations of prerequisites by age among childless young adults with a partner



The four preconditions – partner, completed education, sufficient income, suitable housing – are to some extent related in some intricate ways. If a person is single and still undergoing education, it is very unlikely that he or she will report having a sufficient income and a suitable housing situation (see Figure 2). As much as 4 in 5 of those single and in education report lacking both income and housing. On the other hand, more than half of those who have completed their education and have a partner consider that both their income and housing situation is adequate for starting a family (Figure 3).

In addition to age (and of course gender), we will therefore in our modeling take into account each one of the three preconditions education, income, and housing separately as well as in different combinations. Our sample will consist of those still childless who have a stable relationship to a partner, thus removing one of the necessary prerequisites according to the Hobcraft-Kiernan model. What is then the importance of having completed one's education, having a sufficient income to support a child, and/or of having a housing situation that is suitable for a child? And do these effects vary by age?

Figure 2. Fulfilled prerequisites depending on partner status, if education is not completed

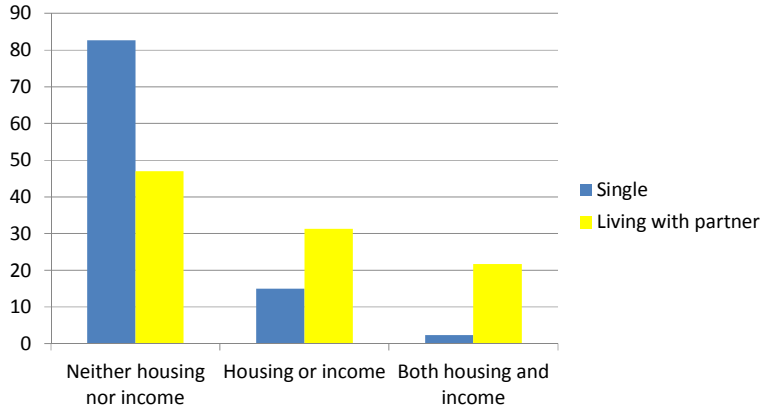
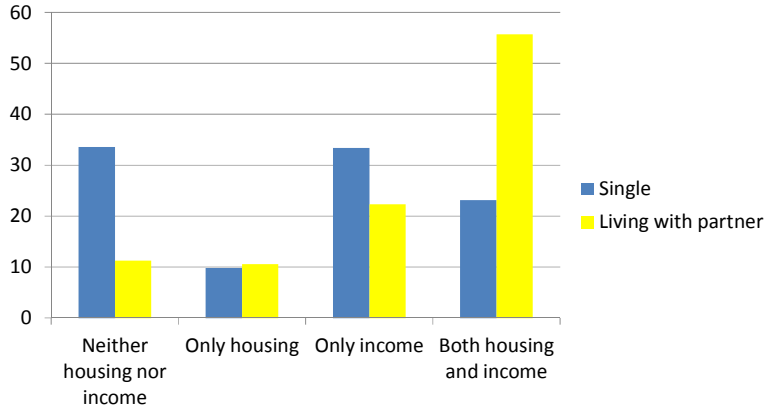


Figure 3. Fulfilled prerequisites depending on partner status, if education is completed



Results: Subjective measures

We use logistic regression to analyze the effect of fulfilled preconditions regarding housing, income and education on the transition to a first birth among a sample of 979 childless young

adults who have a partner, i.e. they have a stable, non-coresidential relationship, are cohabiting or married. In the first panel (panel A) in Table 5, we show the effect of having completed one's education, having a sufficient income, or a suitable housing situation, separately and in different combinations, controlling for age and gender (in later analysis we will also control for type of relationship).

Table 5.	**Logistic regressions of the transition to a first birth.**																	
	Self-perceived constraints of completed education, sufficient income and suitable housing																	
A.	All ages (n=979)																	
		Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**		**Model 6**		**Model 7**				
	Completed education	2,49	***					1,80	***	2,21	***			1,73	**			
	Sufficient income			2,84	***			2,27	***			2,45	***	2,03	***			
	Suitable housing					2,06	***			1,79	***	1,62	**	1,54	**			
B.	Age 22 (n=331)																	
		Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**		**Model 6**		**Model 7**				
	Completed education	3,56	***					2,54	**	3,04	***			2,30	**			
	Sufficient income			3,42	***			2,38	**			2,91	***	2,15	**			
	Suitable housing					2,67	***			2,13	**	2,15	**	1,92	*			
C.	Age 26 (n=376))																	
		Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**		**Model 6**		**Model 7**				
	Completed education	2,53	***					1,75	*	2,28	***			1,69	*			
	Sufficient income			2,97	***			2,36	**			2,71	***	2,24	**			
	Suitable housing					1,78	**			1,45	*	1,34		1,24				
D.	Age 30+34 (n=272)																	
		Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**		**Model 6**		**Model 7**				
	Completed education	1,17						1,02		1,13				1,02				
	Sufficient income			1,57				1,56				1,41		1,40				
	Suitable housing					1,43				1,42		1,29		1,29				
	note: * <0.05, **<0.01, ***<0.001																	

All three of the self-perceived constraints have a strong and significant effect on the transition to parenthood, most of all for having a sufficient income (models 1, 2 and 3). Combining the income effect with the effects of completed education and suitable housing, respectively, weakens the effect of having a sufficient income, but it remains strong and significant (models 4 and 6). When all three factors are combined in one model (model 7), it becomes clear that having a sufficient income is the most important of the three prerequisite, although the effects of having completed one's education and having a suitable housing situation remain substantial (and significant). Running an interaction with gender (not shown), shows that having a sufficient income is significantly more important for men's transition to parenthood than for women's, likely reflecting the pervasive strength of the male provider role ideology in Sweden (in the minds of young men anyway).

From panels B, C, and D, we can draw the conclusion that there are remarkable differences in the effects of the subjective constraints by age. Generally speaking, the effects are strongest for the 22-year olds, weaken for the 26-year olds, and more or less disappear for the 30+34 year olds. From model 7, we can see that having a sufficient income is the most important factor only for the 26-year olds, while the 22-year olds consider the completion of their education as the most important. For those beyond the mean childbearing age, i.e. those 30 and 34 year old – and still childless – other factors than completed education, sufficient income or suitable housing will determine whether they will make the transition to parenthood or not.

In summary, among the three self-perceived constraints to childbearing, having a sufficient income to support a child seems to be the most influential factor, in particular for the young men. But having completed one's education and living in a dwelling suitable for a child (according to the subjective evaluation of the individual) also have positive effects on the transition to parenthood. In general, the younger the age of the individual (within the 22 to 34 age range) the stronger are the effects. In fact for those aged 30 and above, the fulfillment of the prerequisites for childbearing (completed education, sufficient income, suitable housing) is no longer of any importance.

Discussion (to be added later)

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