

## **Indvandreres opholdsgrundlag**

Med migrationen følger også et behov for viden om, hvilke baggrunde der er for forskellige befolkningsgruppers ind- og udvandring. Danmarks Statistik har dannet en ny variabel for indvandrere og efterkommere, der beskriver personernes opholdsgrundlag enten som flygtninge-status eller som andet grundlag. Der findes ikke fuldt dækkende data om opholdsgrundlag for indvandrere på personniveau, og Danmarks Statistik har derfor dannet variabelen ved hjælp af forskellige kilder. Den nye variabel spiller en vigtig rolle i forhold til at nuancere den statistiske belysning af bl.a. uddannelses- og arbejdsmarkedsforhold særligt blandt ikke-vestlige indvandrere og efterkommere. Datagrundlaget for den nye variabel er en kombination af individoplysninger om opholdsgrundlag og vurderinger om flygtningestatus ud fra forskellige datakilder, der ikke er individbaserede.

Papiret giver en beskrivelse af mulighederne for at erstatte en manglende individbaseret oplysning med brug af andre kilder. Problemerne, usikkerhederne men også mulighederne i en sådan fremgangsmåde belyses.

Annemette Lindhardt Olsen  
Danmarks Statistik

## Migration trends in late working life - analysis of Swedish register data

Emma Lundholm and Gunnar Malmberg  
Centre for Population Studies  
Department of Social and Economic Geography

One possible consequence of increasing longevity is the stretching out of life-courses. If people live longer and are healthier in high ages, we may expect certain life events to be postponed and certain age-specific behaviour be maintained into higher age. In focus of this study are the trends and social differentiation of interregional labour migration and work-place mobility in late working life. We are investigating if people in late working life are becoming more mobile and if there is a difference by level of education.

In the current times of population ageing, a general prolongation of working life is often seen as a necessity. And even if rewards from mobility may be higher for the young, job moves may be increasingly profitable also in late working life. People approaching retirement age may well gain on moving to new jobs, although the costs and rewards may differ substantially between professions and people with different level of education.

The presented study is part of a project on the short and long-term impacts of different kinds of mobility on the socio-economic and health situation people in pre- and post-retirement age. Drawing from Swedish register data, included in the so-called Linnaeus-database, the aim is to analyse the trends of labour market migration among different cohorts of young-old (aged 50-70) and to search for socio-economic variation in mobility trends. The study addresses the following research questions:

- Has the age specific mobility intensity changed over time?
- Is there a trend towards socially polarised mobility patterns in later working life?
- To what extent is job mobility a determinant of duration of employment?

The paper presents the background, data, analyses and preliminary results from the study.

## NDS 2010 migration paper - abstract

Factors connected with the internal rural migration of population aged 30 to 34, 1992-2007

## 1. Introduction

Persons around the age of 30 have moved most actively to the rural areas proper (core and peripheral areas) within rural areas (Nivalainen 2008). In 2006, persons aged 30 to 34 migrated second most actively from the urban areas around small universities to core rural areas where their destinations were especially areas in which the net migration tendency of (adult) persons over the aged of 25 was below the median. However, in the areas where the net migration tendency of the adult population has been under the median, population between the ages of 30 and 34 have moved very actively from there to areas where the net migration tendency of the adult population has been above the median (Saari 2008). The most developed rural areas in the countryside have also had the most developed industrial structure, thus sustaining the polarisation in the 2000s (Aro 2007) but perhaps not in the 1990s. In addition, the migration of the 30 to 34-year-old population has, on the average, influenced most the magnitude of the net migration tendency among the population aged 25 and over in core rural areas. Because migration to rural areas has been studied very little, especially by age group, this study set out to investigate regional factors connected with the rural internal migration flows of the population aged 30 to 34 in two different decades.

## 2. Theoretical framework

At the transition stage to the global economy in the 1990s, economic growth was clearly faster in urban areas than in rural areas, especially due to the expansion of the ICT sector. At that time unemployment affected badly rural areas where the number of employed persons kept falling almost throughout the 1990s (Saari 2007), so that there were presumably no possibilities for imbalanced rural internal migration flows for the population aged 30 to 34. In the first decade of the 2000s, economic growth has been faster in rural areas than in urban areas (Saari 2010) because industries with activities closely connected with rural areas have grown fastest. Rural areas have often received growth impulses that have increased local and other production, as well as the demand of labour there. This is connected with the fact that in the past few years of economic boom young population's migration tendency from rural to urban areas has failed to reach the level of the 1990s and the migration of the population aged 30 to 39 from urban to rural areas has been clearly livelier than in the peak years of the 1990s. However, the development in rural areas has been polarised in the past few years (Aro 2007).

In the same way as migration from rural to urban areas increased imbalance in the urbanisation stage, migration from the core rural areas where growth is negative or minimal to core rural areas with clear growth has now increased imbalance. The migration of the population aged 30 to 34 to core rural areas with positive growth from core rural areas with negative growth can presumably be largely explained with the same models that were used to explain migration from rural to urban areas. The aim of the study is to examine the out-migration tendency among the 30 to 34-year-old population in the core rural areas with poorest growth to other rural areas and the connected regional factors in 1992-2007. Thus, the study uses the regional push and pull theory.

The unemployment rate in the out-migration area has been usually found to connected with the migration rate of adult persons in Finland in the 1980s (Ritsilä and Ovaskainen 2001; Ritsilä and Tervo 2001). In these studies persons were moving mostly in the 1980s from rural areas and small towns to central areas.

Nivalainen (2004b) did not find a connection between the unemployment rate and probability to move from rural areas to other rural areas in 1996-99. Nivalainen (2002) did not find either a connection between the area unemployment rate and probability to move to rural areas in 1996-97. A clear majority of migrants was leaving from rural areas in her study. When the life cycle of the person has passed its first stages, the probability to move seems to become bigger in the unemployment situation. Nivalainen (2004a) found a positive connection between the unemployment rate and the probability to move in studying long distance moves of persons having a spouse in 1994. Saari (2008) studied in-migration from core rural areas to core rural areas with migration gain in 2002-2006 when migrants' age was 30 to 39 years and move happened from homogenous migration area to another. He found a positive connection between the area unemployment rate of the out-migration area and in-migration rate.

The economic development in agriculture in the origin area has been often found to be in connection to lively moving in the 1980s and 1990s in many studies (Ritsilä and Ovaskainen 2001; Hämäläinen and Böckerman 2004). Nivalainen (2004a) did not find a positive connection between the share of employed persons in agriculture in the origin area and the probability to move in studying long distance moves of persons having a spouse in 1994. Also the economic development in agriculture in the destination area has been sometimes studied from the point of view whether it has had a positive connection to in-migration rate in 1988-97 (Hämäläinen and Böckerman 2004). In this research no connection could be observed. Saari (2008) found a positive connection in 2002-2006 between the amount of employed persons in the agricultural sector in the destination area and age-specific in-migration rate to core rural areas with migration gain (see the text above).

A value added in service sector in the origin area was not in connection to lively moving in 1988-1997 in a study (Hämäläinen and Böckerman 2004). The development of service and industrial sector are correlated strongly in Finnish economic regions and so researcher has had to choose only the other one into their research data in time series analysis. Nivalainen (2004a) did not find a positive connection between the share of employed persons in industry in the origin area and the probability to move in studying long distance moves of persons having spouse in 1994. Her analysis was not a time series analysis, however. Saari (2008) found a positive connection in 2002-2006 between the proportion of value added in the service sector in the origin area and age-specific in-migration rate to core rural areas with migration gain (see the text above).

The economic development in service sector in the destination area has been found to be in the connection to lively moving in the 1980s in a study (Ritsilä and Ovaskainen 2001. Hämäläinen and Böckerman (2004) did not find any connection between in-migration rate and value added in the service sector 1988-1997. Saari (2008) did not find a positive connection in 2002-2006 between the value added in the service sector in the destination area and age-specific in-migration rate to core rural areas with migration gain (see the text above).

Education is not only regularly in positive connection to probability to move on the individual level but the connection is very clear also on the area level. Hämäläinen and Böckerman (2004) found very clear connection between out-migration rate and the share of persons with primary education or less among adults in 1988-97. Pekkala (2001) can be seen to get results that out-migration rate was negatively correlated with the proportion of highly educated persons among adults at the first half of the 1980s and the 1990s. She studied net migration rate but the out-migration rate can be estimated to be big in areas where net migration is small and proportion of highly educated persons among adults small.

The share of recently retired persons among the working age population increases the number of open vacancies in the area luring persons to come there and so the factor is positively correlated with in-migration rate (f. ex. Ervardsson & alia 2000). Hämäläinen and Böckerman (2004) got that kind of results that partly supported the hypothesis. They found rather clear connection between in-migration rate and the share of persons aged 55 to 114 years among population in 1988-1997. Saari (2008) found also a positive connection in 2002-2006 between the proportion of persons aged 55 to 64 years in the destination area and age-specific in-migration rate to core rural areas with migration gain (see the text above).

### 3. The data

We study two periods of upward economic fluctuation. The first period is 1992-2001 and the second is 2003-2007. The first year of the period to be looked at in this study has been chosen based on changes in net migration in urban regions because the net migration of urban regions has fluctuated according to the economic fluctuations. The first study year of a certain phase is the following year when the net migration of urban regions developed downward for the last time generally. The last year of a certain period is the previous year when the net migration of urban regions developed downward for the first time. The upward developing phases of economic fluctuation considered in this study were the time periods of 1992-2001 and 2002-2007.

I have formed for the analysis of migration a classification of districts (170) according to which a district contains 1-10 municipalities locating with each other and having the mean in-migration rate on the same level in 1998-2005. The only exceptions are travel-to-work-areas of cities for classification of which I have used the urban region classification of population statistics of Statistics Finland. I study the zone of core rural area and I have classified the districts to zones according to the municipality with biggest population using in the countryside the three-class-classification of ministry of internal affairs of Finland (Maaseudun kehittämisohjelma 2006 2006). The rural municipalities belong to three different groups according to classification. The types are peripheral rural areas, core rural areas and near-town rural areas. The urban zones in the data are those, which can be found in the study by Antikainen (20001), who classified Finnish urban regions according to the developmental level at the end of the 1990s on the basis of economic and social structures.

The researcher has had data of value added (GDP) by industry from every district from 1975 to 2007 and we have compiled the relative growth of GDP from the year of 2003 to 2005 and from the year of 1999 to 2001 to every district. Each district is also called homogenous migration area. I have chosen to the research districts in the first period in the core rural area those districts where the economic growth of the district has been from the year of 1999 to 2001 smaller than the median district has had in the core rural area. To the research districts in the second period districts has been chosen in the respective way.

We have data of persons' migration between municipalities from 1992 to 2007 and the data contains information of age, in- and out-migration municipality. I have taken to every record information of the zone and district of the in- and out-migration municipality and information of economic growth in two periods. I have produced migration flow data of research districts so that I have picked only moves in which mover is a person aged 30 to 34 and he has moved to the district of core rural area where the economic growth has been higher than the median. Then I have chosen in each year the biggest migration flow of every research district and formed a data set of variables of the persons' migration data. The variables are year, out-migration district, out-migration zone, age, economic growth in the first period, economic growth in the second period, in-migration district and in-migration zone.

The population data by age groups, mean population data of persons aged 30 to 34, proportion of highly educated persons of adults and GDP data by industry were linked to the migration data with the help of the code of out-migration district. Then I have formed the dependent variable by dividing the amount of migrants aged 30 to 34 by mean population aged 30 to 34 and multiplying the figure with the figure of 1 000. There are also in the data set information of employed persons by industry from every year and every out-migration district and also information of unemployed persons. I have taken in my data the economic variables so that the value of the economic variable was a year earlier than the value of the migration variable. Economic variables are not presented in their original form but I have compiled index of every

economic variable. There are in every record in the data set same economic and educational variables describing in-migration district that I use to describe the characteristics of out-migration districts.

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# Who uses most parental leave?

## Attitudes to gender equality and child orientation as determinants of the division of parental leave in Sweden.

Ann-Zofie Duvander

Department of Sociology, Demography unit

Stockholm University

SE-106 91 Stockholm

*Preliminary incomplete draft! Do not quote!*

### Abstract

A more equal division of parental leave use between parents is often seen as a sign of increased gender equality and especially for fathers, increased child orientation. However, the correlation between the division of parental leave and gender equality and child orientation is to the most part assumed and without evidence. In this study we investigate the determinants of men's and women's parental leave use with focus on attitudes towards gender equality and child orientation. The results will contribute with insights to how well attitudes and gender equal behaviour, given that parental leave use is defined as an indicator of gender equality, correspond with each other. We use the Young Adult Panel Study (YAPS) with surveys conducted in 1999, 2003 and 2009. Data contain information on attitudes and norms towards for example family and work as well as information on work and family situation and other individual characteristics from the surveys and registers for the period 1990 to 2009. YAPS includes approximately 3500 respondents in the ages 20 to 40 years old. We measure attitudes before parental leave use to be sure of the casual order. We expect to find that parental leave use will be determined by attitudes towards gender equality and child orientation, but to different degrees among men and women.

### Introduction

A more equal division of parental leave use between parents has been a major political goal in Sweden for a long time as it is assumed to lead to gender equality in the labour market as well as in the home. The introduction of the parental leave insurance in 1974 was a crucial step towards making the combination of work and family possible. The parental leave insurance allows for paid time off with job security to care for children and in so doing, it made it possible for women to keep their jobs also after becoming parents. In addition to the goal of gender equality, the division of parental leave as motivated by children's right to both parents, something that is stressed increasingly often. Fathers' participation in early childcare is seen as important for the

contact during the whole upbringing. Although the policy has been gender neutral since 1974, women – not surprisingly – use the overwhelming majority of the parental leave days. However, men’s share of leave days has slowly increased from less than 1 percent in the 1970s to just over 20 percent of the days used in 2009. However, with the present rate of increase, an equal division will not be reached within the next decades. In addition, when investigating the pattern of leave use it is obvious that the variation of parental leave use among fathers is increasing (Swedish Social Insurance Agency, 2008, Annual report). After the first daddy month was introduced in 1995 a homogenous pattern of one month of fathers’ leave became a relatively stable norm, but recently more diversity seem to have followed. Today, an increasing share of fathers share the leave equally with the mother, but there is also a large group who use no leave at all during the first years. The diversity in leave sharing and changes in pattern of use raises the need for updated studies on determinants of parental leave use among fathers and mothers. A natural starting point is factors related to gender equality and child orientation.

The often assumed correlation between gender equality and parental leave sharing between parents has many aspects but has only in part been investigated. Parents rarely motivate the leave with the desire to behave gender equal, but sometimes with a strong child orientaton (Duvander and Berggren 2003). In this study we investigate the determinants of men’s and women’s parental leave use with focus on attitudes towards gender equality and children. We can make the distinction of causal order in time as we measure attitudes before the parental leave is used. The results will contribute with knowledge about the impact of attitudes towards gender equality and children on the practice of sharing the parental leave. It will give insights to how well attitudes and behaviour, given that parental leave use is defined as an indicator of gender equality, correspond with each other.

The paper will start with a brief description of parental leave use in Sweden as well as a review of earlier studies on the determinants of parental leave use. Thereafter the correlation between gender equality and parental leave use is discussed. The data and research design are presented before the results are presented and discussed.

## **Swedish parental leave**

When introduced in 1974 the parental leave was 6 months, entitling parents to share the leave as the preferred. The earnings-related benefit was 90 percent of earlier income, a level that in the 1990s went down to 80 percent. In practice a very small fraction of total leave days were at that time used by fathers, starting at less than one percent of all leave days. From the beginning and still today the parental leave is taken up by practically all women giving birth.

In the 1980s leave rights were extended to a full year contributing to fathers' increased leave use. The leave was also extended with 3 months paid at a low flat rate. In 1995 the leave rights were individualized but all except one month were still transferrable between parents. The months reserved for each parent, often called daddy-month and mummy-month, increased the share of fathers using the leave dramatically. Before 1995 about half of all fathers used any leave, but from 1995 about 85 percent use any leave. The reserved months to each parent were in 2002 extended to two months and the leave was extended to 16 months. The leave period is however often prolonged by accepting a lower replacement and children often start day care when they are older than 1,5 years. This is possible by generous flexibility in absence from work in relation to parenting. It is for example possible to save part of the leave to extend summer vacations or reduce work hours during the child's preschool years.

Men and women who do not meet the requirement of having worked for 6 months before using the leave will receive a flat rate benefit that today is SEK 180 but remained at SEK 60 during the whole 1990s.

Earlier studies on determinants of parental leave use are of both qualitative and quantitative design. It seems that the impact of various factors vary in strength between studies, notably regarding income and education. Reasons to the variations between studies, except the study-design, may be parents' changing pattern of leave use over time, as well as the changes in policy regarding both length of leave and level of income replacement. The ongoing process of reforms and changing patterns of usage makes it crucial with new studies on parental leave use.

There are a number of studies that have investigated the determinants of fathers' share of leave. Fathers with weak attachments to the labour market, who are unemployed, receive welfare benefits, or have low earnings, are over-represented among those who use no leave (Nyman and

Pettersson 2002). The fathers who use more leave are those with high income, although the income ceiling discourages longer leaves (Nyman and Pettersson 2002; Sundström and Duvander 2002). This is increasingly not the case, however, as the income ceiling has been raised and now affects few parents. In addition, the relative income of the mother and the father are also of importance (Sundström and Duvander, 2002). Higher education of both parents indicate that the father will use more leave (Sundström and Duvander 2002). Studies have also found that contextual factors, particularly the situation in the workplace, are important for the division of leave between parents (Bygren and Duvander 2004; Haas, Allard and Hwang 2002; Näsman 1992). These studies are either cross-sectional surveys or longitudinal register data.

There is very little evidence on determinants of mothers' leave use, and only to some extent may fathers' and mothers' use be seen as a zero-sum game. As it is possible to use the leave differently, for example by saving days or extending leave with lower replacement, the completed parental leave length may vary considerably between families (Eklund 2004).

### **The relationship between gender equality, child orientation and parental leave**

There is scattered and primarily qualitative evidence that attitudes to gender equality affect the division of leave (see for example Bekkengen 2002). This relationship is crucial, because parental leave is assumed to be connected to gender equality in both the labour market and in the household. Even if fathers' use of parental leave rarely amounts to shares that can be seen as indicating gender equality, fathers' lengths of leave are often discussed as an indicator of gender equality (see for example Olah 2003, Duvander and Andersson 2006). Nevertheless, when fathers are asked about the reasons for how they used the parental leave, the answers are rarely related to gender equality (Björnberg 1998, Lammi-Taskula 2007, Brandth and Kvande 2001). This is not necessary a contradiction, but can be seen as a motive to investigate the correlation between attitudes towards gender equality and parental leave use. The attitude towards children, or child orientation, are even less investigated, and the correlation taken for granted. At the same time, there are numerous examples of the suspicion that fathers use the generous parental leave for other purposes than childcare, such as hobbies, hunting or practical work around the house (ref to come). This is possible if childcare is arranged in other ways or if the mother is still at home.

The relationship between gender role attitudes and parental leave use is, however, difficult to test because the causal order is often unclear in cross-sectional data. Will parents who divide the parental leave more equally become more egalitarian in their attitudes or do parents with egalitarian attitudes use more parental leave? It is likely that both processes are operating. Hence, longitudinal surveys that investigate attitudes at different points in time are needed to establish the relationships between attitudes and parents' division of the parental leave. In this study we ask whether parents with gender egalitarian attitudes are more likely to share the parental leave more equally. A further question is whether child-oriented parents are likely to take longer parental leave. Child orientation may have effects in different ways; for example by increasing the completed parental leave length (of mother and father together) or by extending the individual leave, regardless of the other parents' leave length.

### **Research design**

In this study we will use the Young Adult Panel Study (YAPS) which is a panel study with surveys conducted in 1999, 2003 and 2009. Data contain information on attitudes and norms towards for example family and work. It also contains information on work and family situation, individual characteristics such as income and education, at the times of the surveys, but also by registers for the period 1990 to 2009. YAPS include about 3500 respondents in the ages 20 to 40 years old (see [www.suda.su.se/YAPS/](http://www.suda.su.se/YAPS/)).

The sub-sample of YAPS in this study will be the respondents who participated in surveys in 2003 and 2009 and who had a child in the period between the surveys. The attitudes of interest (and the control variables) will be measured in 2003 and information on parental leave use will be collected from the 2009 survey. We will use the respondents' answers on length of leave use in 2009 for the first child (if more than one child is born). We will consider the same procedure for respondents that can be followed from 1999 to 2003 or 2009 in the next step.

Control variables that will be used are primarily age, earlier children, education and income as well as partner's characteristics. The questionnaire includes a number of statements on gender equality and child orientation and the degree of agreement with these will be used. Our preliminary choice of statements is the following.

### Gender equality

*A society where men and women are equal is a good society*

*Parents should share the parental leave equally*

*The woman should take the main responsibility for housework*

*The man should take the main responsibility for support*

### Child orientation

*To have children is part of what gives life meaning*

*Something is missing if a couple never has children*

*To have children is important in life (1-6)*

*I enjoy children*

*I think I can be satisfied with my life if I am a good parent*

*Spending time with the family is more rewarding than work*

*It is my duty to society and/or to my (extended) family to have children*

The responses will be added up to indexes and also tested in other accurate ways.

We will start by investigating determinants of a) fathers' leave length, b) mothers' leave length, c) total leave length, and d) fathers' proportion of total leave length. We will start with simple OLS regressions and use other appropriate methods when called for.

### **Expected results**

We expect that attitudes towards gender equality and child orientation are correlated with parental leave use. We expect that the correlation between gender equality and parental leave is stronger for women than men as gender equality still often is seen as a woman's issue. Child orientation are expected to be stronger correlated with parental leave for men as their starting point is no or very short parental leave. Men will thus gain more in child contact than women whose starting point is a relatively long leave.

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## **Does he work less when she works more? Men's adaptation to women's enhanced market work**

*Ragni Hege Kitterød and Marit Rønsen, Research Department, Statistics Norway*

An aging population implies a great demand for labour in Norway, particularly in many female dominated occupations, and potential sources of unutilised labour are widely discussed. As Norwegian women have one of the highest part-time rates in Europe, it is important to explore the potential labour supply among part-time working women, as well as the rather small group of women who are not employed. The Norwegian work-family policies facilitate the reconciliation of work and family for both women and men and also aim at promoting an equal division of paid and unpaid work in families. However, most women still work considerably less than their partner. Men continue to have a strong identity as main breadwinners; they seldom work part time and often have long hours. Accordingly, a soft version of gender equality ("gender equality light") is the dominating pattern in Norway, and it is an intriguing question how this can be changed. In this paper we investigate how men respond to an increase in their partner's working hours. Particularly we ask whether full-time work and long hours for a woman is met by a reduction in her partner's hours so that the family's time crunch is eased. At the international level, studies indicate that men increase their housework hours somewhat in response to their partner's increased paid hours, but to our knowledge, there are few studies of the mutual accommodations of partners' paid working hours. Existing theories imply diverging predictions concerning how men adapt to their partners' enhanced market work. Some foretell that men will work more, others that they will work less, and still others that their hours will be unaffected. Our empirical analysis is based on panel data from EU-SILC 2003-2008. The outcome of an increase in women's labour supply may diverge between different groups of couples, for instance depending on their educational level, income and type of job, and also of course on the women's initial hours and how much she increases her hours. Hence, we look at men's adaptation to their partner's enhanced hours for different types of couples and for various increments in the woman's hours.

Abstract

## **Religion, religiosity, and gender equality at home.**

Randi Kjeldstad

Statistics Norway's regional gender equality index, which has been published every year since early 1990s, reveals fairly stable geographical differences as regards gender equality, with the central eastern part of the country including Oslo ranging at the top, and the southernmost part ranging at the bottom. The stable low level of gender equality in the south has mainly been interpreted in a cultural, religious context, as these provinces constitute what may be called the Norwegian Bible Belt. Religiosity and gender equality are frequently, at least in the Norwegian context, regarded as contrasting phenomena. My paper will examine the relationship between individual religiosity, the extent of individual active participation in religious gatherings and congregations, and the reported division of household tasks and responsibilities among married and cohabiting couples. The analysis will apply a gender perspective. Main attention will be put on the significance of religious beliefs and practices at the individual level. But the significance of various regional cultural and religious environments will also be discussed. As eighty percent of Norwegians are members of the Protestant Norwegian Church, the significance of religious denomination will be given somewhat less attention. The analysis will be based on the Norwegian Generations and Gender survey (GGS) – a large representative survey that captures a lot of information on peoples' attitudes and beliefs, and on people's life course and daily life activities.

Randi Kjeldstad  
Head of research  
Division for Social and Demographic Research  
Statistics Norway

## **Gender, Gender Role Attitudes and Migration Motives -Sweden 1999-2009**

**Maria Brandén**

A wide range of research indicate that it is less common for women to gain economically from internal migration than men, and that traditional gender roles have some explanatory power in this equation. Despite Sweden's role as a forerunner regarding gender equality, as well as the magnitude of studies made on how gender roles affect other aspects of life, this pattern has so far been neglected in Swedish research. This study addresses this gap, and examines how gender, gender role attitudes and power structures within couples affect migration motives and migration propensities for Swedish men and women, 1999-2009. The data used is the Young Adult Panel Study (YAPS) which is a panel study based on surveys conducted in 1999, 2003 and 2009. One main aim of YAPS is to collect data on the way young people in Sweden form their lives, their attitudes on children and work, and how they combine work and family. It also contains questions on gender attitudes, as well as a question on date and motives of last long distance move, which, together with its longitudinal character, make YAPS very useful for this study. The first descriptive results indicate both effects from gender on migration motives, as well as associations between gender role attitudes and migration motives. Men who move more often do this due to career reasons compared to women. Egalitarian women more often state career reasons compared to other women. Women who move more often claim they moved for the sake of their partner compared to men. Egalitarian men are more common to state the partner as the main reason of the move than other men, whereas egalitarian women are less common to do this, compared to other women.

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Lisbeth B. Knudsen, Professor  
Department of Sociology, Social Work and Organization, Aalborg University  
Kroghstraede 5, DK-9220 Aalborg Oest, Denmark  
Email: [lbk@socsci.aau.dk](mailto:lbk@socsci.aau.dk), phone: +45 9940 7296

Abstract

## **Who are the young women who have induced abortion. First results from a study on Denmark in 2009**

Lisbeth B. Knudsen

This paper reports from a hospital-based questionnaire study conducted in Denmark from April 1<sup>st</sup> to November 30<sup>th</sup>, 2009. The study population consists of a total of 1,216 women aged 15-24, living in Denmark and requesting interruption within the 12 weeks limit, as defined by the Act on pregnancy interruption on demand.

The project was initiated by the national Board of Health with the aim of improving knowledge about and for targeting of preventive activities in relation to induced abortion among young women. One of the foci was a socio-demographic description of these young women's situation as regards relationship status – form and quality if any-, age of previous children if any, educational achievement and country of origin.

Previous studies in Denmark have documented, that young women who choose abortion instead of giving birth often report that they are single, or are having problems with their partner, undergoing education or feeling too young to establish a family with child. Further it has been shown that women who's life situation reminds the situation of those who plan to give birth, are more prone to choose to have the child in case of unintended pregnancy. In the current study the aim is to further investigate the situation of the young women by elucidating, among other topics, whether and how 1) the acceptance of a sexual behaviour where the actual sexual partner may not be a steady boyfriend, and 2) the quality and commitment in a steady relationship are related to the decision on pregnancy interruption.

The study population will be compared with the total population of women of same age in Denmark for the characteristics where this is possible.

## Having children or not? Women's and men's attitudes towards having children, the case of Sweden

The fertility in Sweden fluctuates significantly over time and has increased during the last decade. In 2008 the total fertility rate was 1.9 children per woman, an increase from 1.5 in 1999. The long observed increase in age at first birth seems to have leveled off during the last few years and the percent women remaining childless may decrease somewhat for the cohorts born in the 1970s compared to those born in the 1960s. To get better knowledge about how women and men regard childbearing and forming families Statistics Sweden conducted a survey during the spring 2009. The sample contained 7 000 women aged 20-40 and men aged 20-44 that were either childless at the end of 2008 or that had their first or second child during 2006.

### *Composition of the sample and response rate*

Women				Men			
<b>Childless 2008-12-31</b>				<b>Childless 2008-12-31</b>			
Age	Sample	Responses	Response rate (%)	Age	Sample	Responses	Response rate (%)
20-24	196	97	49	20-26	198	72	36
25-27	194	90	46	27-29	194	74	38
28-30	194	99	51	30-32	194	71	37
31-33	194	105	54	33-35	194	65	34
34-36	194	92	47	36-38	194	67	35
37-40	194	87	45	39-44	194	66	34
<b>Total</b>	<b>1 166</b>	<b>570</b>	<b>49</b>	<b>Total</b>	<b>1 168</b>	<b>415</b>	<b>36</b>
<b>Had first child in 2006</b>				<b>Had first child in 2006</b>			
Age at first birth	Sample	Responses	Response rate (%)	Age at first birth	Sample	Responses	Response rate (%)
20-24	195	102	52	20-26	196	73	37
25-27	194	113	58	27-29	194	110	57
28-30	194	146	75	30-32	194	109	56
31-33	194	130	67	33-35	194	111	57
34-36	194	125	64	36-38	194	98	51
37-40	196	137	70	39-44	194	87	45
<b>Total</b>	<b>1 167</b>	<b>753</b>	<b>65</b>	<b>Total</b>	<b>1 166</b>	<b>588</b>	<b>50</b>
<b>Had second child in 2006</b>				<b>Had second child in 2006</b>			
Age at second birth	Sample	Responses	Response rate (%)	Age at second birth	Sample	Responses	Response rate (%)
20-24	195	86	44	20-26	196	77	39
25-27	194	95	49	27-29	194	87	45
28-30	194	113	58	30-32	194	97	50
31-33	194	130	67	33-35	194	96	49
34-36	194	135	70	36-38	194	92	47
37-40	196	142	72	39-44	194	103	53
<b>Total</b>	<b>1 167</b>	<b>701</b>	<b>60</b>	<b>Total</b>	<b>1 166</b>	<b>552</b>	<b>47</b>
<b>All women</b>	<b>3 500</b>	<b>2 024</b>	<b>58</b>	<b>All men</b>	<b>3 500</b>	<b>1 555</b>	<b>44</b>

Forecast Institute  
Karin Linnea Lundström

[karin.lundstrom@scb.se](mailto:karin.lundstrom@scb.se)

+46 (8) 506 94 187

Box 24 300  
104 51 Stockholm

Most of those that have not yet had children want to have children in the future. There does not seem to have been any reduction in the percentage of those who think they will one day have children. This applies despite that the questionnaire was answered during an economic recession. Compared to a similar survey from 2000, there is roughly as large a percentage answering yes or maybe to the question of whether they think they will ever have children.

*Do you think you will have children in the future? Percent*

<b>Childless women and men living with a partner</b>							Total	Number of respondents
	Yes	Maybe	Probably not	No	No reply			
<b>Women</b>								
Age 20-27	87±8	8±6	5±5	1±2	-	100	85	
Age 28-33	75±10	21±9	3±4	2±2	-	100	84	
Age 34-40	33±10	34±10	15±8	16±8	2	100	88	
<b>Men</b>								
Age 20-29	89±7	6±7	-	-	4	100	51	
Age 30-35	74±10	16±8	6±5	3±4	1	100	72	
Age 36-44	38±15	17±11	12±10	29±14	4	100	48	

<b>Childless women and men <i>not</i> living with a partner</b>							Total	Number of respondents
	Yes	Maybe	Probably not	No	No reply			
<b>Women</b>								
Age 20-27	68±10	16±9	10±7	3±4	3	100	84	
Age 28-33	50±11	35±11	7±6	4±5	4	100	82	
Age 34-40	14±8	42±12	20±10	20±9	5	100	65	
<b>Men</b>								
Age 20-29	74±10	14±8	3±4	6±5	4	100	81	
Age 30-35	58±15	27±14	10±10	2±5	2	100	40	
Age 36-44	12±8	46±12	23±11	17±9	2	100	69	

The most common reasons for not yet having had children is that they wanted to do other things first or did not feel mature enough. Among women and men without partners, the lack of a partner was the most common reason why they were childless. This applies especially to older people. Many also named the time it takes to find the right partner, a large percentage of childless women and men have previously had one or more cohabitational relationships.

For a long time it has been most common to have two children. This pattern also appears to be holding strong into the foreseeable future. Even presently many childless people state that they would like to have two children. In the younger age groups it is more common to want three or more children whereas the older women and men more often state that they would like to have one child.

Forecast Institute  
Karin Linnea Lundström

[karin.lundstrom@scb.se](mailto:karin.lundstrom@scb.se)

+46 (8) 506 94 187

Box 24 300  
104 51 Stockholm

*How many children would you like to have? Percent*

<b>Childless women and men living with a partner</b>									
	None	One	Two	Three	Four or more	Not sure	No reply	Total	Number of respondents
<b>Women</b>									
Age 20-27	-	6±6	48±12	26±10	2±4	14±8	4	100	83
Age 28-33	-	10±7	52±11	16±8	3±4	17±8	1	100	81
Age 34-40	-	22±10	49±12	8±7	-	15±9	6	100	72
<b>Men</b>									
Age 20-29	-	3±4	32±15	31±15	6±9	22±14	6	100	51
Age 30-35	-	7±6	63±12	8±7	2±3	14±9	7	100	69
Age 36-44	3±7	19±15	43±15	8±9	-	21±14	6	100	39

<b>Childless women and men <i>not</i> living with a partner</b>									
	None	One	Two	Three	Four or more	Not sure	No reply	Total	Number of respondents
<b>Women</b>									
Age 20-27	1±2	2±4	38±12	26±11	8±7	18±9	6	100	76
Age 28-33	-	10±7	39±12	14±8	5±5	28±11	4	100	76
Age 34-40	6±7	13±10	37±14	13±10	4±6	19±11	8	100	52
<b>Men</b>									
Age 20-29	2±4	2±2	51±13	17±10	4±5	15±9	10	100	77
Age 30-35	-	18±12	39±16	26±14	5±7	12±10	-	100	39
Age 36-44	4±5	16±10	54±14	5±6	9±8	8±8	5	100	50

The survey results also show that many have problems getting pregnant, when they postpone having children to higher ages. Among the older childless women a large proportion have tried but not succeeded in getting pregnant. Many of these have sought help from for example ovulation testing and artificial insemination in order to have children.

Questions about the ideal age of childbearing and expectations of how having children would influence different aspects of life, such as the opportunities on the workplace, the relationship with one's partner and the possibilities to what one wants, are also included in the survey.

## **Trend reversal in childlessness in Sweden**

### **Abstract**

In the calculations of the future fertility rates for Sweden a cohort approach is used. For every year estimates of cohort fertility rates for the first, second, third and fourth(+) child are calculated. Fertility rates of the first child are based on assumptions on ultimate levels of childlessness for each cohort.

The proportion of childless among women who just completed their fertile period is about 14 percent. This proportion is lowest for cohorts born in the mid 1940s, around 12 percent. So far, we have believed in a continued increase in childlessness due to the postponement of childbearing. Since fecundity declines with age one may expect such a development.

Data from the very last years, though, suggest a quite remarkable fertility recuperation. Cohorts born in the 1970s have not only managed to catch up with the first birth fertility levels of the 1960s cohorts, but also passed them, and we are now seeing a trend reversal in childlessness.

This study examines whether the trend reversal is visible in different socioeconomic groups with special focus on education. In the study some possible explanations of the trend reversal are also explored such as changes in attitudes and norms, and the increasing numbers of fertility treatments since the 1990s.

The patterns of decreasing levels of childlessness are especially interesting because Sweden is a country that often has been regarded as a forerunner in demographic behaviour.

## *Migration and the labour market*

### Abstract

The study assesses how regional mobility has developed and changed over time. It examines internal migration and migration by area, and analyses the effects from migration, births and deaths on the size and structure of population by area. Groups of migrants are studied from the demographic, educational and economic activity perspectives. At the same time the study examines how migration correlates with start and completion of studies, becoming employed and starting a family, improvement of housing conditions, and retirement.

Migration increases educational differences between areas as young, educated labour force moves to areas of strong growth in jobs. Migrating improves employment opportunities for both unemployed people and students. Likewise, immigrants who are mainly young adults, have a clear importance on the labour markets of growth centres. The prevalent direction of commuting is from low employment areas to high employment ones where it shows as grown supply of labour. Quite often, most of the employed people living in municipalities adjacent to regional centres go to work in the regional centres and migration into them is thus replaced by commuting.

Migration moves young adults from migration loss municipalities to migration gain municipalities, either for studies or work. Some municipalities suffering from migration loss can achieve slight gain in pensioners but lose population in all other age groups. The impact from the loss of young adult population multiplies because it also diminishes the future age cohorts of children. Apart from a few municipalities with exceptionally high birth rates in North Ostrobothnia, numbers of children are falling continuously in migration loss areas. Migration brings some gain to all regions. However, quite often the migrants who come to migration loss regions move on from there to large urban centres.

However, migration has the greatest impact on the populations of municipalities and sub-regional units in the age group of 18 to 22, in other words at the stage when studying is started. This is when major area centres receive large migration gains from all other municipalities. A lower migration peak occurs in the 25-30 age group, when completers of education find permanent jobs and start a family. At this stage, municipalities adjacent to area centres receive migration gains from young families with children. The main weight in the age structure of the population today falls on the oldest groups of working age. For this reason, retention of at least the current size of the employed population would require continuously rising employment rates and migration gains. In future, the numbers of employed people will fall in migration loss areas, even if their rates of employment were to rise.

## ABSTRACT

### **Undervurdering af udvandring**

Det er et velkendt problem, at udvandring er vanskelige at måle nøjagtigt. Mange udvandrere har en baggrund som indvandrere, og der er mange, som blot forlader landet uden at give myndighederne besked. Indtil deres udvandring er registreret vil de fortsat blive talt med i befolkningen, og der kan i nogle tilfælde gå flere år, før myndighederne finder ud af, at en person er udvandret. De offentliggjorte tal for udvandring fra Danmark i et givent år, som normalt allerede opgøres en måned efter udløbet af året, vil derfor undervurdere antallet af udvandring.

Med Danmarks Statistiks personstatistiske database er det muligt at undersøge problemets omfang ud fra erfaringer fra tidligere år, da databasen indeholder oplysninger om både hændelsesdatoen og den dato hændelsen blev registreret. Det vises, at en opgørelse af udvandring for årene 2004 til 2006 samlet set er 11 pct. højere, når udvandring opgøres 3 år senere end opgørelsestidspunktet for de offentliggjorte tal. Undervurderingen af udvandring er et problem for både personer med dansk oprindelse og indvandrere, men problemets omfang er størst for indvandrere og større for ikke-vestlige indvandrere end vestlige indvandrere.

## ENGLISH

### **Underestimation of emigrations**

It is a well known problem that emigrations are difficult to measure correctly. Many emigrants have a background as immigrants and some of them leave the country without telling the authorities. Until their emigrations are registered they are considered as part of the population, and in some cases it can take years before the authorities find out that a person has emigrated. The published figures for emigrations from Denmark in a given year, which is processed already one month after the year in question ends, therefore underestimate the real number of emigrations.

The personal statistical database in Statistics Denmark makes it possible to examine the extent of the problem using information about the date of occurrence and the date the occurrence was registered. It is shown that the number of emigrations in the years 2004-2006 is 11 percent higher when emigrations registered up until three years after the date the published figures was processed are included. The underestimation of emigrations is a problem for people of Danish origin as well as immigrants. However the extent of the problem is larger for immigrants and it is larger for immigrants of non-Western origin than Western.

## Occupation, gender and internal migration -Sweden 1998-2008

**Maria Brandén and Sara Ström**

### **Introduction**

A wide range of research indicates that women don't benefit economically from internal migration to the same extent as men do (Nilsson 2001; Mulder and van Ham 2005; Åström and Westerlund 2007) and that when women benefit, it is mainly single women who does so (Jacobsen and Levin 2000; Nilsson 2001). This pattern is often interpreted as if women adapt to their male partners' migrational wishes, and hence take migration actions that don't benefit themselves but their partners.

Lately, increased attention has however been drawn to the fact that studies like these needs to be connected more explicitly to the differences between men's and women's labor market situations, to capture the real effect from gender, and not only effects from labor market structures as such (see e.g. Halfacree 1995). This is important, because in all welfare societies, regardless of the level of gender equality, the labor market is highly sex segregated. Men and women are crowded in different kinds of occupations, which in turn should imply different expectations from, gains of, and motives for, migration. Therefore, studies on gender aspects of internal migration needs to have a more structural approach than they have had so far, focusing more on the gender aspects of the labor market as such, and the connection between these gender aspects and internal migration.

In this study, we address the structural approach on couples' internal migration in a new innovative way: by examining whether couples respond similarly to men's and women's potential monetary benefits from migration. By studying potential gains rather than actual outcomes, we aim at capturing expectations and intentions of the couple, instead of being left with an outcome that perhaps was not the aim with the migration in the first place. To be able to get a measure of whether men and women migrate because they can assume to benefit monetary from the migration, we initially define in what occupations men and women in general gain economically from migration, by comparing the income development between 1998 and 2000 for migrants of a certain gender in an occupation with non-migrants of the same gender in the same occupation. We then study migration propensities for partnered men and women in these occupations between 2001 and 2008, to see if previous gains from migration affect migration propensities positively, and whether the effect is contingent on gender.

### **Data and methods**

The data used is the Sweden in Time: Activities and Relations (STAR) database. The STAR database is a collection of register data extracted from several Swedish official registers. It includes information on e.g. migration, civil status (as well as links between partners), children, income, occupation and unemployment for the whole Swedish population. The data stretches between 1968 and 2007 at the most. We will use data between 1998 and 2008 to get comparable estimates of the different variables<sup>1</sup>. Initially we will use data 1998-2000 to study in what occupations men and women gain

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<sup>1</sup> Because some municipality borders were redefined in 1997, and because information on occupational branch only exists from this year, this was a necessary limitation.

economically from internal migration. We then study how the man's and woman's occupation affects couples' internal migration propensities 2001-2008. To use the STAR database will both ensure a large sample, and give the possibility to include the whole couples' characteristics, which is of great importance when studying tied moving.

### ***Measuring economic gains from migration, 1998-2000***

To define in what occupations men and women in general gain from internal migration (and hence in the future can expect to gain from migration), we use data between 1998 and 2000.

The variable of greatest importance for the analyses is the variable measuring occupation. It is based on the SSYK (Standard for Swedish Occupational Characterization) codes from the Swedish earnings structure statistics. The SSYK codes categorize occupations both due to type of work being performed, and due to the qualifications which are normally needed for the occupation. This makes the measure independent of what education a person actually has. Only the qualifications assumed to be needed for the occupation, and the occupational characteristics are included. All in all, the SSYK codes separate between >300 occupations. For this study, we have categorized them into 40 broader categories.

Migration is defined as a change in local labor market between December 1998 and December 1999. We separate between moves to four different region types: (1) urban regions, (2) large regional centers, (3) small regional centers, and (4) small regions.

We perform OLS regressions separate by occupation and gender. Having 40 different occupations and 2 genders, we hence perform 80 OLS regressions. Changing employer almost always implies renegotiating wages. This might give movers higher wages compared to stayers, by the change in employer a move implies. To eliminate this bias, we control for employer change between 1998 and 2000. Further, we control for type of region 1998, by the same division as the region types in the migration variable. By this, we intend to eliminate income effects that are due to general income differences between region types. We hence aim at capturing the real migration effect on the income development. The logarithmic income in 2000 is estimated (separately for each combination of occupation and gender) as a function of the logarithmic income in 1998, region type in 1998, age, age<sup>2</sup>, whether a change of employer has occurred between 1998 and 2000, and, most importantly whether (and to where) a move has occurred during 1999.

### ***Measuring couples' migration propensities, 2001-2008***

To study the effect occupation has on couples' migration propensities, we use a sample consisting of all cohabiting or married couples with at least one common child, and where both partners are aged between 16 and 65 during the year in question, 2001-2008 (i.e. later years than the OLS regression described above). The reason for the focus on couples is because this is an essential aspect of internal migration, and if we only look at individuals' occupations, we don't know whether the mobility in this occupation is because certain kinds of selection in mating or if it is a true occupation effect. The sample procedure is repeated each year. Both partners must be registered as working at the point in time when occupation is measured for the individual's sector the year of interest (mostly September for the private and the national public sector, and November for the local and regional public sector). This however doesn't exclude the possibility that they may have been unemployed at some other point in time during the year. Respondents with more than one occupation are excluded.

We perform multinomial logistic models, and we model couples' migration propensities as a consequence of the two partner's occupations, present region type, the age of the man, the age of the woman, and the age of oldest common child. Migration is defined the same way as described above, and hence separate between 5 outcomes. (0) Stay in the same region, (1) move to an urban region, (2) move to a large regional centre, (3) move to a small regional centre, and (4) move to a small region. Migration is measured in December each year between 2001 and 2008, using the Swedish total population register. If the home municipality has changed between December year t-1 and December year t, and the new municipality is in a new local labor market, a migration has taken place.

## **Results and discussion**

The general pattern is that the way to gain from internal migration is to move to one of the three urban regions Stockholm, Gothenburg or Malmö. To move to smaller regions might even be associated with a lower income development than it would have been if the individual stayed at the origin.

There is no clear connection between the potential gains or losses for an individual in a certain occupation to move, and couple's migration propensities if someone is working in the occupation. It is not only the occupations where it is gainful to move that are the most geographically mobile occupations. This somewhat oppose theories on migration decisions as a utility maximizing process. It might reflect the couple aspect of migration decisions, such as matching difficulties for couples, or changes of migration motives when a child is born. It might also indicate that couples' migration decisions aren't as much a utility maximizing process as we like to think, either by lack of information on potential gains, or by couples giving a higher value to other aspects than monetary in migration decisions.

The pattern that can be found, seems to be that many of the most mobile occupations are occupations that demand high education, and that could be categorized as "career oriented". Examples of this are legislators or senior government officials, managers, physicists, and medical doctors. These occupations are among the top ten regionally mobile both to urban regions and to large regional centers. Our findings indicate that the pattern is regardless of whether it's the man or the woman who is working in such an occupation<sup>2</sup>. It might indicate that migration indeed is a utility maximizing process, but that it responds more to long term benefits than immediate gains from the migration. Whether the mobility actually is due to the possibilities for career advancement is something that needs to be studied further. The high mobility in these kinds of occupations might also be a consequence of that individuals in these kinds of occupations already have quite high income, and that these kinds of couples therefore can afford a move, and/or that these kinds of occupations demand more mobility than others (see e.g. Lee 1966 for a discussion on how obstacles such as economic restrictions might prevent an otherwise beneficial move).

The pattern of high mobility in occupations that demand specialist competence is quite gender neutral. However, for occupations that don't demand specialist competence, or that only demand a

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<sup>2</sup> Note that because we perform the analyses couple wise we don't compare the effect of being in an occupation for a man to the effect of being in an occupation for a woman.

lower level of university education, there are substantial gender differences, indicating that individuals in gender atypical occupations are more mobile than others. The pattern seems to be that individuals in gender atypical occupations are more mobile than others. For instance, men are only mobile in less career oriented occupations if they work as health and nursing associate professionals or as life science technicians. Further, women are mobile when working as police officers etc., or assemblers or manufacturing laborers. This is an interesting pattern that needs to be studied further. One possible reason for the pattern is that individuals who have done a gender atypical choice of occupation have made a more active choice of occupation than other individuals. They might therefore be more willing to take opportunities of advancement in other regions. This might also explain why individuals in career oriented occupations are more mobile than others; that they have made an active choice of occupation and hence are more likely to change environment for the sake of their occupation.

Our results leads us to address a greater focus on different sorts of mating on the gender aspect of couples' internal mobility. For instance, our results indicate that female health and nursing associate professionals move to large regional centers even though that they are likely to face a lower income development after the move, compared to their staying counterparts. What is the effect of mating patterns on this? Are there any patterns in what partners these women are living with, and do this have any effect on their mobility? Even if we do control for the partners occupation here, there are probably interactions like this that are important to keep in mind, and that would be interesting to look deeper into. The same would be interesting connected to the high mobility of women in high status career oriented occupations. Who are these women mated with, and what effect does this have on their possibilities to move, compared to their male counterparts? Questions on mating are also bound to have effect on the possibility for men and women to reconcile children with regional mobility and the possible career advancement a move might imply, and is a task for future research to dig into.

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# The determinants of the choice of location among young adults – evidence from Sweden

Peter Berck  
Department of Agricultural and Resource Economics and Policy  
University of California, Berkeley

Sofia Tano\*  
Department of Economics,  
Umeå University, Umeå

Olle Westerlund<sup>‡</sup>  
Department of Economics,  
Umeå University, Umeå

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## Abstract

The age structure of the population has important implications for economic development and planning. Internal migration affects the age structure of regional populations and, therefore, the regional tax bases and public expenditures. Because migration rates are highest among young adults, the location choice of this group is most influential in this context. We study the choice of location among individuals born in 1974 and 1976, using the detailed micro information available in the Linnaeus data base directly and by characterizing locations by aggregation of available micro data.

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\*E-mail: [sofia.tano@econ.umu.se](mailto:sofia.tano@econ.umu.se) Phone: +46 (0)90786 5631. Fax +46 (0)90 772302.  
‡E-mail: [olle.westerlund@econ.umu.se](mailto:olle.westerlund@econ.umu.se) Phone: +46 (0)90786 6148. Fax +46 (0)90 772302.

## Religiosity in Finland:

### the Effect of Laestadianism on Local Demographic Trends Emma Terama<sup>1,2</sup>

<sup>1</sup>University of Amsterdam, Amsterdam Institute for Social Science Research (AISSR), Nieuwe Prinsengracht 130, 1018 VZ Amsterdam, The Netherlands

<sup>2</sup>Finnish Environment Institute, POB 140, 00251 Helsinki, Finland

Laestadianism, a conservative revival movement inside the Lutheran church, has an estimated 100 000 followers in Finland, in addition to some 70–110 thousand more in mainly Northern Sweden, Norway and North America. Statistics on religious beliefs and activities are far apart and difficult to find, if not non-existent, as in many countries' census data. This makes it difficult to research whether denomination might partially explain some regional differences in demographic trends. Although data on religions is accessible in Finland, the revivalist movements inside the church are generally not handled separately. In the Laestadian case there are marked differences compared to the followers of the mainstream state church, in areas such as religious activity, geographical concentration, fertility and family planning, but these are generally not quantified due to lack of easily accessible data. Based on municipality level population data and surveys [on religion](#), this study aims to shed some light on the importance of a religious movement for the local, often rural communities, their development and survival in the age of urbanization, economic turbulence and secularization. The research brings a numeric, quantified element into the discussion, using statistical tools to study the correlations between such variables as religious density and number of children born in a municipality. The geographical concentration of religiousness is also considered, and the subsequent, potential effect on population structure is discussed.

## Legal Advances and Demographic Developments of Same-sex Unions in Scandinavia

Gunnar Andersson\* and Turid Noack\*\*

### Abstract:

In 2009, Norway and Sweden completed their process of granting same-sex couples the same rights to marriage as those granted to couples of opposite sexes. Following the introduction of a specific civil status for couples of the same sex, the registered partnership, in 1993 and 1995, both countries adopted fully gender-neutral marriage legislation in 2009. In the present contribution, we describe the road to gender-neutral marriage in Scandinavia and map out some of the demographic developments of same-sex partnerships and marriages. We demonstrate a recent switch to higher female than male same-sex union formation, and also a higher level of female than male same-sex marriage dissolution. These demographic patterns are similar across all countries of Scandinavia: Denmark, Norway, and Sweden.

\* Stockholm University Demography Unit, 106 91 Stockholm, Sweden

\*\* Statistics Norway, Postboks 8131 Dep, 0033 Oslo, Norway

## **Childbearing behavior in the light of different housing regimes – Sweden 1975-2004**

Sara Ström

Department of Sociology, Demography Unit

Stockholm University

### **Abstract**

Given that the balance between supply and demand on the housing market is imperfect, certain groups will experience greater difficulties in acquiring an independent housing or housing suitable for a family with children: for example those with weak labor market attachment or low incomes, low educational attainment and single parents. Further, different birth cohorts will experience different conditions on the housing and labor markets, and possibly also different policy regimes. The aim of this study is to explore the association between housing and childbearing during different housing regimes in Sweden 1975-2005. During this period, Swedish housing policies and housing market have undergone dramatic transformations. The material used is the Swedish Housing and Life Course Cohort Study (HOLK), a unique combination of survey and register data collected in 2005. Three birth cohorts are included in this material: 1956, 1964 and 1974. Preliminary results indicate an interaction effect between period and number of rooms on first-birth propensities, while no interaction effects are found for housing type or tenure.

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Sweden has extremely high rates of non-marital childbearing and divorce in comparison to other affluent countries (Andersson 2002a; 2002b). The vast majority of children born out of marriage, however, are born to cohabiting couples, i.e., they begin life in a two-parent family (Andersson 2002; Kennedy and Thomson 2009.) Although children born to cohabiting parents are more likely than those born in marriage to experience their parents' separation, the difference is lower in Sweden than in any other country (Andersson 2002; Heuveline, Timberlake & Furstenberg 2003).

To date, most information about Swedish children's experience of parental separation comes from surveys with retrospective information on respondents' births, cohabitation and marriage. Administrative registers are the source of statistics on non-marital births and cross-sectional descriptions of children's family types but they have not been used for longitudinal analysis. In this paper, we extend the use of administrative registers to create childhood histories of parental coresidence from birth to age 18. Using a new database, Sweden in Time: Activities and Relations (STAR), we link children to each of their birth parents then determine whether the parents are or are not living at the same address.

The first part of the analysis focuses on the quality of our coresidence indicator. In Swedish population registers, each building or building complex, known as a *fastighet*, has a unique number, but separate dwelling units (apartments) are not uniquely identified.<sup>1</sup> Because it is possible for the parents of a common child to live in different apartments in the same building, our estimates of coresidence may be upwardly biased. In addition, parents may not immediately report new addresses when they move together or move apart. We use ancillary information (household censuses in 1970, 1975, 1980, 1985 and 1990; children's birth month; parents' marriage and/or divorce month) to identify possible sources, size and direction of such errors. We also compare results from the registers to estimates of parental coresidence based on retrospective birth and partnership histories in sample surveys. Differences between the two types of information may arise from errors in survey response, register reports, or both.

The second part of the analysis focuses on our new estimates of birth families and experience of parental separation for children born between 1968 and 2007, the earliest and latest years for which data are currently available. For each birth cohort (in single years), we estimate the proportion of children born out of marriage and out of union (i.e., parents living apart at birth). We further estimate cohort experience of parental separation for those born to cohabiting or married parents, for cohorts we can observe to age 3, 6, 9 and 15. Finally, we produce annual estimates of the risk of parental separation using life tables and intensity regression models. We focus in

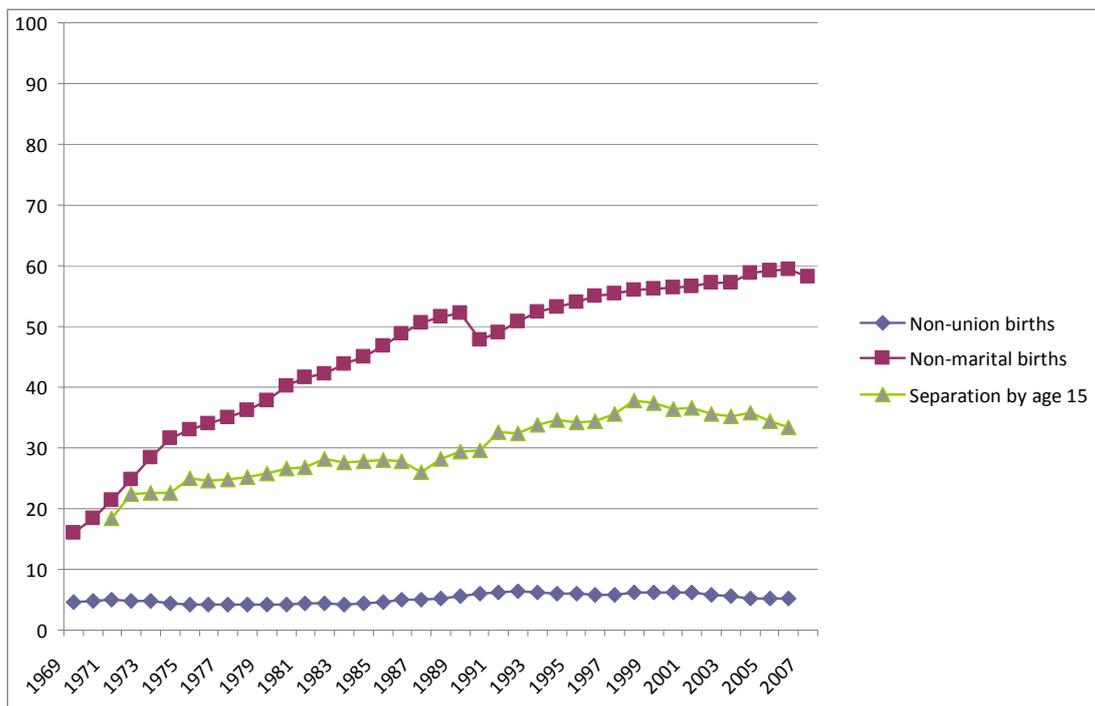
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<sup>1</sup> Denmark and Finland have had dwelling-unit identifiers in the annual population register since the late 1980s. Norway added dwelling-unit identifiers to annual registers in 2001. Sweden is expected to have such information from 2012.

particular on changes changes in separation rates by child's age and parents' marital status at birth.

Figure 1 provides preliminary estimates of three key indicators of Swedish family change: (1) percent of children born out of marriage; (2) percent of children born out of union (parents not living together at birth); and (3) percent of children whose parents separate by age 15. The first two indicators are observed for each year of birth; the third is a life-table estimate for each calendar year.

Figure 1: Swedish children's birth families and experience of parental separation, 1968-2007



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Umeå University

January 2010

Glenn Sandström, PhD Student in history

Centre for Population Studies

Umeå University

SE - 901 87 UMEÅ

SWEDEN

Phone: +46-(0)90-7865975

E-mail: glenn.sandstrom@ddb.umu.se

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Session-organizer: **Gunnar Andersson**

### Introduction

The sharp decrease in marital stability during the 20<sup>th</sup> century has often been interpreted as a consequence of industrialization and the establishment of a market society. A rising standard of living and more general market participation by both men and women have caused intertwined economic and cultural processes that have transformed marriage into a contingent relationship, which is negotiated by the involved parties themselves, rather than being an institution with fixed rules. Explanations to rising divorce rates based on changes in the economic structure emphasize the decreasing economic dependence between spouses, caused by raising female educational levels and increased female wage-labor. In these histories divorce have been viewed as a consumer good that can be acquired to the extent it is affordable. In other words, divorce is available as an option when enough affluence has been reached.<sup>1</sup>

However, studies of how socio-economic conditions within families effect the stability of marriage have almost exclusively been conducted on couples that have divorced since the 1970s. At this point in time. Sweden had already reached the high divorce rate regime of today.<sup>2</sup> Therefore these studies cannot tell us anything about the relative importance of economic determinants for divorce during the long period of increasing divorce rates stretching back to the early 20<sup>th</sup> century. The rising divorce rates in the Western world during the last century must be regarded as a result of changes in both economic constraints and cultural value systems. The changes in these structures are of course fundamentally interconnected and it is important to stress that individual decision-making to a high degree is determined by normative constraints that are culturally produced.

This study however focused on the connections between the socio-economic conditions within families and divorce risks. Changes in the normative structures will thus only be addressed indirectly. The overarching question is how the likelihood of experiencing a divorce among Swedish males in different occupations during the 1920s and 1930s, was influenced

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<sup>1</sup> For an overview of this research see William J. Goode, *World changes in divorce patterns* (New Haven, Connecticut: Yale University Press, 1993), 26; Roderick Phillips, *Untying the Knot: A Short History of Divorce* (Cambridge University Press, 1991), 224-229; Lynn K. White, "Determinants of Divorce: A Review of Research in the Eighties," *Journal of Marriage and the Family* 52, no. 4 (November 1990): 904-912.

<sup>2</sup> Glenn Sandström, "Time-Space Trends in Swedish Divorce Behavior 1911-1974," in *From Past Patterns of Divorces to Present: Time-Space Trends, Causes and Consequences* (presented at the World Economic History Congress, Utrecht, Netherlands, 2009).

by the socio-economic conditions experienced by the individuals in these occupations. Four hypothesis derived from the theoretical presuppositions presented above will be tested.

1. The divorce rate among males in an occupation is positively associated with the degree of workforce participation of their wives. Separate incomes for the husband and wife will result in decreased economic interdependence between spouses and thus reduce economic constraints to divorce.
2. The divorce rate among males in an occupation is positively associated with their mean income. If divorce can be regarded as a good that can be bought in the extent that it can be afforded, the divorce rate will be higher among the more affluent groups in society.
3. The mean number of minor children in households is negatively associated with the divorce rate. The economic strain of providing for small children will increase interdependence between spouses and thus decrease the propensity for divorce.
4. Couples living in urban municipalities exhibit higher divorce risks than the couples living in rural municipalities. That urban environments are conducive of divorce has been firmly established in previous research.<sup>3</sup> Theoretical explanations of this relationship are centered on lower degree of social control in urban environments but also that female workforce participation tends to be higher in urban areas than in rural areas.<sup>4</sup>

### Data and method

Quantitative analysis of divorces in Sweden that occurred before the 1970s is somewhat of a challenge due to the lack of workable micro-data sources.<sup>5</sup> However, Statistics Sweden have collected court data on divorces since the beginning of the 20<sup>th</sup> century and have aggregated this information in annual reports. This study combines archive material from the censuses conducted in 1920 and 1930 and the aggregated data on divorces in different professions during the same time period. The combination of these sources makes it possible to do inferential statistics on some of the variables implicated in the theoretical discussion on the development towards a high divorce rate regime during the 20<sup>th</sup> century. Using these sources, 130 occupational groups were identified covering 95,7 % of the married male population in 1920 and 40,1 % in 1930. The dataset was then analyzed with a Poisson regression model suited for the modeling of rare events.

### Results

The inferences of this model are reported in Table 1 which displays the effect of group differences on the divorce risks as measured by the four variables: relative female workforce participation, mean yearly income, mean number of minor children and urban or rural living area. The first hypothesis that higher levels of female workforce participation should lead to higher divorce rates was confirmed by the regression analysis. Research on divorce has argued that an important explanation for the decreasing stability in marriages is the development of market society during the 20<sup>th</sup> century. The transformation of western societies into modern market economies has resulted in increased levels of education and workforce participation among women as well as a development from a single- to a dual provider family

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<sup>3</sup> Sandström, "Time-Space Trends in Swedish Divorce Behavior 1911-1974," 10-15; Marja Taussi Sjöberg, *Skiljas: trolovning, äktenskap och skilsmässa i Norrland på 1800-talet* (Stockholm: Författarförlaget, 1988).

<sup>4</sup> White, "Determinants of Divorce," 905; Taussi Sjöberg, *Skiljas*, 72; Norval D. Glenn and Beth Ann Shelton, "Regional Difference in Divorce in the United States.," *Journal of Marriage and the Family* 47, no. 3 (1985): 641-52; Koen Matthijs, Anneleen Baerts, and Bart Van de Putte, "Determinants of Divorce in Nineteenth-Century Flanders," *Journal of Family History* 33, no. 3 (July 1, 2008): 239-261.

<sup>5</sup> If at all possible micro-data on separate individuals would have to be composed from a number of different archive sources such as court, church and taxation registers. Such an endeavor would be extremely time consuming due to the difficulties in linking the individuals in these extensive written sources.

model. Gøsta Esping-Andersen argues that the Nordic countries are the most “de-familized” societies in the world due to a particularly accentuated trend towards a decreased role of the family in providing security of subsistence needs.<sup>6</sup> In these histories, the fact that increased proportions of married men and women have gained access to individually based incomes, has reduced the economic interdependence between spouses which in turn has reduced the economic constraints against divorce.<sup>7</sup> The regression analysis presented in Table 1 supports this assumption and suggests that the propensity for divorce in a male occupational group is positively related to the proportion of wives engaged in gainful employment in that group. The sample range is 26 percent and the estimated effect in the model amounts to a 5 percent increase in the divorce rate for a 1 percent increase in female workforce participation.

The second hypothesis, stating that professions with higher mean incomes should exhibit higher divorce rates than groups with lower income levels, is also confirmed. Theoretically this hypothesis tests the idea that divorce can be regarded as a consumer good that can be acquired to the extent it is affordable. In other words, divorce becomes available as an option when enough affluence has been reached.<sup>8</sup> If this is true we would expect higher divorce rates among occupational groups with relatively high incomes as compared to those living under less affluent conditions. The regression analysis supports this hypothesis and shows a large positive relationship between the mean income in an occupation and the corresponding divorce rate. The multiplicative effect amounts to a 13 percent increase in the divorce rate for an income difference of 1000 Swedish kroner. In terms of the effect on the dependent variable income differences is the most influential variable of the four covariates in the model. During the 1920s and 1930s, the divorce rate was thus considerably higher in the affluent stratas as compared to low-income groups. This suggests that more permissive attitudes toward divorce developed in the affluent stratas of society and then successively spread to the middle and lower classes during the course of the 20<sup>th</sup> century as divorce rates continued to increase in the following decades.

The third hypothesis anticipating a negative relationship between the mean number of minor children and divorce risks is confirmed by the data. Children can be regarded, as an economic as well as an emotional investment in the marriage for both the wife and husband alike. These shared investments would normally increase the ties between spouses and decrease divorce risks. Also the shared responsibility for minor children imposes added subsistence needs that constrain the self-sufficiency of the parent, which in turn will increase the degree of economic interdependence and raise the relative cost of divorce. The effect on the outcome is clearly significant at the 95% level but explains a smaller amount of the variability than female employment and income does.

The fourth hypothesis tested the more or less universal conclusion in previous research that urban environments are more conducive to divorce than rural areas.<sup>9</sup> This empirical relationship is also found in this study. Occupational groups residing in urban municipalities exhibit twice as high divorce rates as groups residing in rural municipalities when controlling for the other variables in the model. Why urbanization matters is not perfectly clear as it has a multi-

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<sup>6</sup> Gøsta Esping-Andersen, *Social foundations of postindustrial economies* (New York: Oxford University Press, 1999), 50-72.

<sup>7</sup> Gary Becker, Elisabeth Landes, and Robert Michael, “An Economic Analysis of Marital Instability,” *Journal of Political Economy* 85, no. 6 (1977): 1141-1188; Phillips, *Untying the Knot*, 227; Ulrich Beck and Elisabeth Beck-Gernsheim, *The normal chaos of love* (London: Polity Press, 1995), 144-145; Anthony Giddens, *The transformation of intimacy: sexuality, love and eroticism in modern societies* (Cambridge: Polity Press, 1992), 44-50.

<sup>8</sup> Goode, *World changes in divorce patterns*, 26-30.

<sup>9</sup> White, “Determinants of Divorce,” 905; Matthijs, Baerts, and Van de Putte, “Determinants of Divorce in Nineteenth-Century Flanders”; Glenn and Shelton, “Regional Difference in Divorce in the United States.”; Taussi Sjöberg, *Skiljas*, 72; Sandström, “Time-Space Trends in Swedish Divorce Behavior 1911-1974.”

tude of ways of affecting divorce rates. Scholars have suggested several theoretical explanations for this tendency but most of them emphasized the role of a reduced social integration as compared to rural areas. Sociologist Göran Therborn expresses this reoccurring view in family history when he argues that urbanization “challenged traditional authorities of all kind, including patriarchy, by its display of heterogeneity, its offers of option, and its escapes from social control.”<sup>10</sup> In such an interpretation urbanization is thought to influence the divorce rates mainly through facilitating cultural change in a direction that reduces the normative constraints experienced by individuals contemplating divorce. Indirectly, however, this process is of course also the result of the economic transformation of society from an agrarian based economy to an industrial. The fact that the expansion of employment opportunities for women during the first half of the 20<sup>th</sup> century was highly concentrated to urban areas should further have worked to reduce the alternative cost for females seeking divorce in such settings as compared to those women living in the countryside. The manner in which urban environments facilitate divorce and the validity of these two alternative mechanisms cannot be distinguished from one another through a study of this type. The interaction between socio-economic conditions within families and attitudes to family relations during this early period of the 20<sup>th</sup> century is an interesting field that could contribute valuable results for our understanding the history of divorce. The results presented in this study suggest that the degree of economical interdependence between spouses was an important determinant of relative divorce risks during the early 20<sup>th</sup> century in Sweden. The empirical connection between divorce and the degree economic self-sufficiency of spouses observed in research on late 20<sup>th</sup> century data, seems thus to be of importance already during the early phase of the transformation towards a high divorce rate regime.

**Table 1: Poisson regressions for divorce rates among Swedish males in different occupations 1920-1922 and 1930-1932. N= 130 occupations.**

		Poisson Regression <sup>A</sup>
<b>Intercept</b>	<i>Exp(B) in parenthesis</i>	<b>-5.392 (.005)</b>
	<i>Standard error</i>	.5223
	<i>p-value</i>	.000
<b>Female employment</b>	<i>Exp(B) in parenthesis</i>	<b>.049 (1.050)</b>
	<i>Standard error</i>	.012
	<i>p-value</i>	.000
<b>Mean income kkr</b>	<i>Exp(B) in parenthesis</i>	<b>.122 (1.130)</b>
	<i>Standard error</i>	.020
	<i>p-value</i>	.000
<b>Mean number children</b>	<i>Exp(B) in parenthesis</i>	<b>-.675 (.509)</b>
	<i>Standard error</i>	.020
	<i>p-value</i>	.016
<b>Urban</b>	<i>Exp(B) in parenthesis</i>	<b>.713 (2.040)</b>
	<i>Standard error</i>	.163
	<i>p-value</i>	.000
<i>Deviance</i>		1884
<i>Deviance/df</i>		15.075
<i>Pseudo R<sup>2</sup></i>		.440 <sup>B</sup>

<sup>A</sup> Errors estimated with overdispersion parameter. The outcome is in transformed metric in the form of the natural logarithm of the number of divorces occurring in the group.

<sup>B</sup> Pseudo R<sup>2</sup> is calculated for the standard Poisson model with unscaled deviance. It is reported here for the purpose of comparison only as it formally cannot be applied on a model with a overdispersion parameter.

<sup>10</sup> Göran Therborn, *Between sex and power: family in the world, 1900-2000*, International library of sociology (London: Routledge, 2004), 22.

## Parental divorce and gender equality in Sweden

### *Authors:*

Michael Gähler (Inst. for Social Research, Stockholm Univ.)

Livia Sz. Oláh (Dept. of Sociology, Stockholm Univ., e-mail: livia.olah@sociology.su.se)

Frances Goldscheider (Dept. of Family Science, Univ. of Maryland, USA)

Eva Bernhardt (Dept. of Sociology, Stockholm Univ.)

*Corresponding author:* Livia Sz. Oláh (Dept. of Sociology, Stockholm Univ., tel: 08 – 16 28 76;

e-mail: livia.olah@sociology.su.se)

### **Theoretical background**

During recent decades the proportion of children experiencing a parental divorce or separation has increased dramatically. Recent estimates for Sweden show that only 60 percent of all 16-year old Swedish children live with both their biological parents (Statistics Sweden, 2007, Table 4:2b). This is mainly due to family dissolution; as very few children were born into a single-parent family or experienced parental death. This development is viewed as problematic, because there is much evidence that parental divorce is linked with negative short- and long-term outcomes for children, e.g. psychological adjustment, social relations, marital quality, own divorce, and educational attainment (Amato & Keith, 1991a, 1991b; see Amato, 2001 for meta-analyses; Jonsson & Gähler, 1997; Gähler, 1998).

Much more rarely discussed or studied, however, is how parental divorce might affect children's views on gender equality, as well as their actual gender-related behaviour. This is surprising, given that there are theoretical reasons to assume such a link. According to social learning theory, children acquire sex-typed behaviour by imitating role models (Stevenson & Black, 1996). One salient model is the same-sex parent. Children, then, learn that mothers and fathers perform different tasks. Consequently, when these children grow up and form couples they "tend to replicate the families that they experienced as children" (Goldscheider & Waite, 1991:114).

Two theories suggest why this might be. According to "role-restructuring" theory, specialization by gender is more difficult in single-parent families, as parents must perform a wide range of tasks, including ones that are non-traditional for their gender. Hence, children in one-parent families, irrespective of parent's gender, should be less likely than children in two-parent families to "learn" to distribute household chores by gender. According to the "father-absence" theory, in contrast, the impact of growing up in a single-parent family depends on the parent's gender. Fathers are more likely than mothers to stress conformity to traditional gender roles. Hence, the single father family should instil more traditional gender attitudes and behaviour in children than growing up with a single mother, with children from intact families in an intermediate position (Kiecolt & Acock, 1988).

There are few empirical studies of the association between childhood family structure and gender attitudes: Kiecolt & Acock (1988) find that whereas men and women who grew up with divorced single mothers have more liberal attitudes toward women in politics than their counterparts growing up in intact families, no difference is found when attitudes toward female employment and views on 'proper' gender role behaviour among boys and girls are considered.

A more recent study finds no childhood family structure difference in gender attitudes for men (Wright & Young, 1998). For women, however, differences according to family structure are substantial. Women growing up with single mothers report significantly less traditional gender attitudes than women from intact families whereas women growing up with single fathers report significantly more traditional gender attitudes. These findings, for women, support the father-absence hypothesis. Wright and Young also find support for the role-restructuring hypothesis, because having grown up with an employed mother, i.e. a non-traditional female role model, reinforces gender equal attitudes, in particular for men and women who grew up in single mother families.

## **Data**

In this paper, we analyze data extracted from the second wave of the Swedish Young Adult Panel Study (YAPS) conducted in 2003, combined with some background information from the first wave in 1999. YAPS is a mail questionnaire survey with the Survey Unit of Statistics Sweden in charge of all field work. The study is augmented with register data on vital events, currently up to the end of 2006. A third wave was conducted in the spring 2009, and further register data will be added to the study.

With an overall response rate of 70 per cent, the second round provides information on 2816 persons, 1588 women and 1228 men born in Sweden in 1968, 1972, 1976 and 1980, including a small sample of young women and men (347 respondents) with at least one parent born in either Poland or Turkey. YAPS has been designed to enable studies, like ours, of the complex relationship between attitudes and demographic behavior. It provides information on plans, expectations and attitudes regarding family and working life, including gender-role orientation, histories of childbearing and partnerships, as well as information about current situation and background characteristics, especially childhood family situation.

## ***Measures***

In our models we have used three dependent variables, namely: (i) gender equality in the public sphere, (ii) gender equality in the private sphere, i.e. the family, and (iii) a combined-sphere indicator addressing the ideal situation regarding the division of tasks among the parents, vis-à-vis economic provision and care for families with pre-school children.

The first two indices have been created based on the results of factor analysis. We have analyzed responses of agreement/disagreement recorded on the five-grade Likert scale (where 1 corresponds to strong disagreement, 5 to strong agreement, and don't know responses were recoded to 3) with the following statements:

- a) A society where men and women are equal is a good society
- b) Men can do as well as women in caring jobs
- c) Women can do as well as men in technical jobs
- d) It is as important for a woman as for a man to support herself
- e) The woman should take the main responsibility for housework
- f) The man should be the main supporter of the family

Given the high level of support for equal gender roles in Sweden, the public-sphere index is based on strong agreement or else regarding statements *a-d*. Those who strongly agreed with all four statements are considered as 'egalitarian', with any other responses coded '0'. The private-sphere index is built on items *e* and *f*. Those who strongly disagreed with the statements are considered as 'egalitarian', with other responses coded '0'.

The combined-sphere indicator addresses ideal situation regarding the division of provider and domestic responsibilities between parents with young children, based on the question:

**What do you think would be the best arrangement for a family with preschool children?**

- Only the man works and the woman takes the main responsibility for home and children
- Both work, but the woman works part-time and takes the main responsibility for home and children
- Both work, but the man works part-time and takes the main responsibility for home and children
- Both parents work roughly the same hours and share the responsibility for home and children equally

Those choosing either of the last two statements are considered as 'egalitarian', with other responses coded '0'.

Thus, our three outcome variables are dichotomous distinguishing between (semi-)traditional and egalitarian attitudes.

Our two main explanatory variables are *childhood family structure* and *maternal employment*. For childhood family structure, we distinguish between growing up with: both parents, mother only, father primary parent (including father only, and father & stepmother), mother & stepfather, 'equally both', other (including neither, missing and other). We have also run the models using all the nine categories for childhood family structure, and the results were very robust.

For the maternal employment variable, we have created a dummy variable: 'full-time' (if the mother worked full time either during the pre-school years or school years of the respondent), 'otherwise' (for all other cases).

Further independent variables included in the models are: *gender*, *cohort* (1968, 1972, 1976 and 1980), *ethnicity* (Swedish-, Polish-, and Turkish-origin), *partnership status* in 2003 (single, cohabiting, married), *parental status* (having a child living in the household, or not), *own education*, *economic activity* and *income*. The models are fitted both separately for women and men, and jointly (including gender and tests for gender interactions). The analytical tool used is binary logit.

## Preliminary results

Overall, our results seem to support the 'role restructuring' theory with greater egalitarianism among those who grew up in any of the non-2biological parents households. However, the results differ depending on sphere and on gender. Also, they are not consistently stronger for a given sphere for either men or women.

Some specific findings: those who grew up with a single mother, or who spent time equally with each parent after the parents' break-up, are consistently the most egalitarian. Also, significant gender differences appear for those who grew up with a father as primary parent or with mother and stepfather. For the former family structure, young men are egalitarian in all spheres, but young women are only egalitarian in the private sphere. For the latter family structure, young women are more egalitarian than young men for both the public and the private sphere measures.

The gender differences seem to indicate that gender dynamics within non-traditional households have consequences for the young men and women who grow up in them. Perhaps the 'father absent' theory only works for women?

We will explore our indices more fully, and refine some other measurements to better understand the mechanisms at work.

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# Does Partnership Exogamy Increase the Risk of Separation? The Impact of Cultural Dissimilarity on Partnership Dissolutions in Sweden 1990-2005

[Martin Dribe](#)

Dept of Economic History

Lund University

[Christer Lundh](#)

Dept of Economic History

Gothenburg University

## **Abstract:**

In this paper the connection between exogamy and partnership dissolution is analyzed using individual level register data for natives and immigrants moving to Sweden after 1968. We study both formally married and cohabiting unions, from the birth of the first child until dissolution of the partnership. Using event history models we study the impact of type of union (endogamous, exogamous with a native, exogamous with another immigrant) and cultural dissimilarity between the spouses (based on country of origin specific information on value system and majority religion) on dissolution, controlling for standard human capital and demographic characteristics of the spouses. Our main hypotheses are that exogamy increases dissolution risks, and that this effect increases with a greater cultural dissimilarity between the spouses. The results have implications not only for our understanding of union dissolution but also for the societal integration of immigrants in Western societies, and the role of union formation and partner selection in this process.

## **Divorce risks of immigrants in Sweden**

Gunnar Andersson, Kirk Scott

### **Abstract**

Migration is a stressful life event that may be related to subsequent marital instability. However, while the demographic dynamics related to the fertility and mortality of migrants have been studied in great detail, we still lack accurate analyses of divorce risks of immigrants in Europe. The present study improves on this situation by investigating the divorce risks of immigrants in Sweden. It focuses on immigrants who married subsequent to migration to Sweden and tests the relative importance of cultural background and socio-economic status in explaining the divorce behavior of immigrants. Both factors turn out to be important. For groups for which divorce risks are elevated, this can often be explained by immigrants' relatively poor labor-market status. Other groups of immigrants rather have depressed divorce risks. Our study is based on population register data on the resident population of Sweden and covers the fifteen most common immigrant groups in this country.

## **Extended abstract**

### **Introduction and summary**

Migration is a stressful life event that may be related to subsequent marital instability (e.g., Boyle et al. 2008). This holds for international migration in particular, and crude divorce statistics sometimes reveal elevated levels of union disruption for different groups of immigrants in developed countries. However, while the demographic dynamics related to the fertility and mortality of migrants have been studied in great detail, we still lack accurate analyses of divorce risks of immigrants in Europe and developed countries in other parts of the world. This is partly due data constraints: census data do not allow for much longitudinal analysis and most survey data contain too few immigrants to allow the study of migrants as separate categories. The present study improves on this situation by drawing on population-register data to investigate the divorce risks of immigrants in Sweden. It focuses on immigrants who married subsequent to migration to Sweden and tests the relative importance of cultural background and the socio-economic success in Sweden in explaining the divorce behavior of immigrants. Both factors turn out to be important. For the immigrant groups for which divorce risks are elevated, they can often be explained by these groups' relatively poor labor-market status. However, other groups of immigrants rather have depressed divorce risks, regardless of their socio-economic success or non-success. Our study is based on population register data on the resident population of Sweden. It covers the fifteen most common immigrant groups in this country, with geographical origins from almost every corner of the world. It is an extension of previous research of the authors that studied the interrelation between international migration and the childbearing dynamics of migrants to Sweden (Andersson and Scott 2005, 2007).

### **Divorce behavior in Sweden**

In terms of family demographic context, Sweden is a country where divorce is easy to achieve; divorce is more frequent than in most other European countries, but less frequent than in the US (Andersson 2002). Immigrants to Sweden come from a variety of countries, with very different family demographic and social contexts. By means of longitudinal analyses of the divorce behavior of immigrant women and men

who have married in Sweden, we study how their divorce risks are related to the country of origin of the migrant and his/her spouse, and their socio-demographic characteristics. This allows us to test hypotheses on the role of (i) childhood socialization in country of origin; (ii) disruption in family life due to the migration event; (iii) adaptation of family demographic behavior to that prevalent in the country of destination; and (iv) the socio-economic characteristics of immigrants – in order to explain divorce dynamics and differences in behavior across migrant groups.

### **Data and methods**

The study is based on data from the Swedish Longitudinal Immigrant database, a register-based panel containing longitudinal information on vital events from Swedish population registers, coupled to earnings and social-security data from the country's tax registers. The database we use contains information on socio-demographic life histories of residents in Sweden during 1980-2001. It contains data on immigrant women and men stemming from fifteen countries, and any spouses in Sweden to these migrants, as well as a random sample of Swedish-born residents. In total, the database contains information on the life histories in Sweden of some 550,000 immigrants and natives. The initial database contained a sample of 110,000 individuals, which was expanded through the inclusion of spouses, cohabitants with which an individual had a child, and their children in order to provide data on complete families of migrants.

In our data and analysis of divorce risks, we need to distinguish between two types of married migrants: those that were married at migration to Sweden and those that married in Sweden subsequent to immigration. The situation in terms of union dynamics is different for these categories and the variables we can apply differ, too. In particular, we lack data on marriage formation for those who were already married upon migration to Sweden. Swedish registers only contain information on dates of marriage formation for marriages that are contracted in Sweden. In our study, we focus on the family dynamics of migrants who have married in Sweden. We focus on the relative importance of country of origin, whether the marriage consists of spouses from different national origins, and the role of couples' demographic and socio-economic characteristics in divorce behavior. Of particular interest is the role which labor market success or failure has for the union stability of different types of

migrants. Other variables we consider are the ages of spouses, and the presence of children in the household.

Our analyses are done by means of event-history analyses of the divorce risks by time since marriage formation in Sweden. As a reference, we estimate divorce risks for the native Swedish-born population as well.

### **Immigrants in Sweden**

The fifteen immigrant groups that we cover in our divorce study are as follows.

Immigrants from Finland comprise by far the largest single foreign-born group in Sweden. The reasons for this are partially historical, partially geographical, and partially economic. Due to a shared national history up to the early nineteenth century, some six percent of the Finnish population is Swedish-speaking and Swedish is an official language in Finland. For a long time Finland lagged behind Sweden economically before finally catching up during the 1980s. These facts, plus the existence of a free Nordic labor market, led to a large flow of labor migrants from Finland to Sweden, which slowed down only during the late 1970s to early 1980s due to the equalization in living standards between the two countries. Due to a long intertwined migration history, many Finnish-born women have settled down with Swedish-born men.

*Danes* and *Norwegians* are two other immigrant groups with a substantial and longstanding presence in Sweden. As with the Finns, geographic proximity, shared culture and the existence of a free Nordic labor market have helped ease integration into Swedish society. In the case of these two countries, the similarities to Sweden are even more pronounced than for Finns, as spoken Danish, Norwegian and Swedish are not much more different than dialects of the same language.

Immigrants from *Germany* mostly come from previous West Germany. While Germany had an early tradition as a labor exporting country immediately following the Second World War, and has consistently sent economic migrants to Sweden since then, very high fractions of German women and men have migrated to Sweden as tied movers, married to or cohabiting with Swedish-born partners.

immigrants in Sweden arrived for a variety of reasons. Some came as refugees from the communist regime, either for political reasons or as members of the persecuted Jewish minority, while others came as tied movers, either to previously

migrated Poles or to Swedes – largely Swedish men – who were their spouses. As with Finland, geographic proximity to Poland simplified migration, while in many ways the existence of a communist regime until the late 1980s worked against it.

*Czechoslovakian* immigrants are classified in our data according to the old country borders. The vast majority of Czechs and Slovaks living in Sweden arrived during the unrest of the late 1960s. While migration continued after this, it did so at a quite low level.

With the same logic we treat immigrants from the former *Yugoslavia* as a single group. Following the dissolution of Yugoslavia, new immigrants were registered as coming from the different new FYRs, but those arriving previously were not automatically reregistered. Yugoslavian immigrants are split into two primary groups: labor migrants arriving during the 1960s, and the refugee migrants arriving in conjunction with the Balkan wars of the 1990s.

Immigrants from *Greece* came largely as labor migrants during the 1960s, and later as family members following these early migrants, but there were also a number of refugees who came after the 1967 military coup. The refugees tended to return to Greece, however, leaving the majority of the remaining population as labor immigrants.

*Turkey* has a varied history of migration to Sweden. During the 1960s, Turks arrived as labor migrants, but later there was a shift in character towards refugee immigration – largely dominated by ethnic Kurds. During the entire period we can also identify large-scale tied immigration: Most Turkish women came to Sweden as wives to previously immigrated Turkish men.

The few *Iranian* immigrants that came to Sweden prior to the 1979 Islamic revolution arrived as students. The real upsurge in numbers of Iranians came with the refugees arriving during the mid- to late 1980s. It was during this time that Iranians proceeded to become one of Sweden's largest immigrant nationalities.

*Iraqi* immigrants first began arriving in Sweden in connection with the Iran-Iraq War during the 1980s and increased again during the First Gulf War of the early 1990s. The real increase in migration occurred in connection to the 2003 US invasion of Iraq.

Increased migration to Sweden from Ethiopia and Eritrea in the 1980s, with a large fraction coming from Eritrea. Eritreans and

Ethiopians in Sweden have exhibited very high levels of homogamy, with very few cases of marriage outside their East African group.

Following the fall of Saigon in 1975, and stretching through the 1980s and 1990s, *Vietnamese* immigrants have been arriving in Sweden as both refugees and as tied movers related to refugees. The refugees are largely ethnic Chinese.

*Chilean* immigration to Sweden started on a fairly large scale following the overthrow of the Allende government in 1973. The mid- to late 1970s saw a large number of Chileans entering Sweden as refugees. These numbers soon switched to tied movers during the 1980s, as relatives to the early refugees arrived. There was a renewed increase in the numbers of refugees arriving in the late 1980s, just prior to democratization.

Migrants from the *United States* have arrived throughout the post-world war period. While some came for employment reasons, most arrived as students or as tied movers through relationships with Swedes. This is evident in the high rates of intermarriage between immigrants from the U.S. and native Swedes.

Finally, we have included a category *other*, which accounts for immigrants from any other nationality than those specified above.

### **Variable descriptions**

In our study we focus on *country of origin* as a marker of cultural background and the *labor-market position* in Sweden as a marker for socio-economic success in Sweden. By means of a step-wise modeling we aim at disentangling what separate roles socio-economic and cultural factors may have upon the divorce risks of immigrants.

Our main country variable refers to the recorded country of birth of the woman in a marriage. The baseline is for women married with a man from the same country as her. Additional binary variables show the effect on divorce risks of being married to a husband of different national origin or a husband born in Sweden. In addition, since Swedish *citizenship* indicates a more permanent legal status in Sweden it can be assumed to ease a divorce decision. Therefore we include a dummy for citizenship status for each partner in the union.

Our socio-economic variable is defined by eight mutually exclusive labor-market states. We use the information on the registered annual earned income and on

public transfer received during a year. We classify each spouse and grant of the following categories of non-earned income during the year. Practically all students in Sweden receive public financial support.

*Unemployed* – receiving unemployment assistance or allowances from labor-market retraining programs as the primary source of non-earned income during the year.

*Welfare recipient* – having social-welfare transfers as the primary source of non-earned income during the year. Social welfare is paid to people who cannot support themselves by other means. It includes, for example, an introductory allowance for refugees who have received a residence permit for Sweden. It is one of the few social-security benefits in Sweden that is not entirely individual-based but calculated instead on a household basis.

Actively engaged in the labor force and earning a *low income* – earning between 35,700 and 107,100 SEK (in 1995 prices) during the year from work, and not being a student, unemployed, or a welfare recipient according to the definitions above.

Earning a *medium income* – earning between 107,100 and 178,500 SEK from work.

Earning a *high income* – earning between 178,500 and 267,750 SEK from work.

Earning a *top income* from work – more than 267,750 SEK during the year. Very few women but not so few men earn that amount. Top-income earners were entitled to less generous income replacement during periods of unemployment, sickness, or parental leave.

*Non-participant* – not falling into any of the categories mentioned above. This category can, for example, comprise house wives, persons living in households where someone else receives family-based social-welfare transfers, other dependent adults, or, in the case of migrants, persons who have emigrated from Sweden without having notified this to the Swedish authorities.

Additionally, we include a variable which indicates whether an individual receives full or partial pension of some kind. Since pensions may be received while still working, this is not an exclusive category, and we depict it with a binary dummy variable.

Furthermore, we control for the effects of the age of the two spouses on divorce risks. Finally, since the existence of young children in a household also has a strong impact of divorce propensities we include an indicator of whether the household includes a child aged 0-7.

### **Preliminary results**

Table 1 shows the preliminary results of a step-wise modeling where we first present divorce risks by country of origin of the woman in an immigrant couple, then control for further demographic factors, and finally for the role of the labor-market status in Sweden of the two spouses.

### **Conclusions**

Our analysis reveals a very strong impact of both country of origin and labor-market status on the divorce risks of immigrants in Sweden. Divorce risks differ a lot between different country groups. Some nationalities have markedly higher divorce risks than native-Swedish couples; some have much lower risks. Socio-economic success or rather lack of success matters too. When we control for the effect of the relatively poor labor-market status of immigrants we find that this explains practically all of the excess risks of the groups that first displayed higher divorce risks than Swedish-born couples.

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**Table 1:** Divorce risks of couples in Sweden who married in Sweden, 1980-2001, by country of origin, migrant status, and demographic and socio-economic status

	Model 1	Model 2	Model 3
<i>Swedish citizenship</i>			
Husband citizen		0.81***	0.90***
wife citizen		0.95*	1
<i>Country Heterogamy</i>			
both Swedish	1	1	1
Husband Swedish		1.01	1.21***
wife Swedish	1.12***	1.05*	0.96
diff. migrant origin		1.18***	1.17***
<i>Wife's birth country</i>			
Denmark	0.86**	0.89	0.75***
Finland	0.99	0.92*	0.79***
Norway	0.84***	0.87*	0.71***
Germany	0.48***	0.50***	0.46***
Poland	1.56***	1.59***	1.22***
Czech	0.91	0.99	0.85*
Yugoslavia	1.06	1.02	0.84***
Greece	0.50***	0.49***	0.47***
Turkey	0.52***	0.48***	0.36***
Iraq	0.84**	0.85**	0.49***
Iran	1.27***	1.23***	0.87**
Vietnam	0.71***	0.67***	0.52***
Ethiopia	1.53***	1.57***	1.07
Chile	1.53***	1.42***	1.03
USA	0.70***	0.73***	0.69***
Other country	0.99	0.88**	0.68***
<i>Age status</i>			
Husband's age		0.99***	0.99***
wife's age		0.99***	0.99***
child less than 7 yrs		0.52***	0.53***
<i>Husband's SE status</i>			
Student			1.02
Welfare			1.24***
Unemployed			1.17***
non-participant			1.14***
Pension			1.07
low earnings			1.05
Medium earnings			1
high earnings			0.70***
top earnings			0.59***
<i>Wife's SE status</i>			
Student			1.51***
Welfare			2.49***
Unemployed			1.34***
non-participant			0.86***
Pension			1.24***
low earnings			0.81***
Medium earnings			1
high earnings			1.14***
top earnings			1.24***

# Nordic Demographic Symposium 2010

Paper proposal

**Leen Rahnu**

PhD student

EDSD / Tallinn University

Leen.Rahnu@ekh.lu.se

## Timing of cohabitation among native and foreign-origin women in Estonia

### Abstract

The pattern of partnership formation has drastically changed in European countries since the 1960s. One of the central issues of this change has been the rising importance of unmarried cohabitation. The moment when cohabitation becomes a dominant form of entering into first union may be treated as an indication of a shift in the pattern of partnership formation. It has been discussed extensively what could be the conditions, external and internal factors, that facilitate this shift. The explanations have been sought from the sphere of economic conditions, social relations, institutional setting and value orientations.

This paper addresses the emergence of cohabitation as a form of entering into first union in Estonia over the period of 1960-2004. The data is derived from Estonian Gender and Generations Survey 2004-2005, only female population is analysed. The sample includes 3543 native women and 1473 women of foreign-origin who have moved to the country during the post-war period mainly from Russian Federation and its hinterland. This proportion corresponds to the overall share of native and foreign-origin population in Estonian society, where post-war migrants and their decedents are forming around one third of the total population.

Among native population in Estonia the shift from direct marriage to cohabitation took place already at the first half of 1970s, and followed a trajectory close to Scandinavian countries. Among the population of foreign origin the same shift was experienced 20 years later - quite similarly to the trend reported in case of Russia. This finding suggests that the influence of a country of origin on demographic behaviour of immigrant population is maintained over generations. It also reveals that institutional context, which was shared by both groups, couldn't be a dominant cause of the observed change. Similarly the political-economical change in the 1990s may be ruled out. The study seeks to understand what other mechanisms could play a role in the behavioural change of immigrant population.

26 February 2010

Nordisk demografisk symposium 2010  
Call for papers

Abstract

*Projecting the population of Norway by age, sex, immigration status, country of origin and duration of stay*

Helge Brunborg and Inger Texmon

Statistics Norway has for forty years projected the population of Norway by age and sex for each municipality (currently 430). In 2005 we established a separate model for projecting the *total* immigrant population, i.e. immigrants and their children born in Norway. We have also plans for developing a model for projecting the immigrant population for *regions* of Norway with high numbers of immigrants, taking into account that [the pattern of internal migration](#) is different for [immigrants](#) and [the](#) rest of the population. There is, however, also a great need for a model that projects the *total* population of Norway by immigration status, including persons with no immigration background. One important purpose of such a model would be to study the effects on the Norwegian economy of migration, including welfare expenditures. This model should also include the period of stay in Norway, which has been absent in the models so far, and which is of great importance for behaviour in areas such as fertility, outmigration and labour force participation. The new model will distinguish between immigrants from two groups of countries, basically EU/EFTA countries and other countries. It will also include several categories of descendants of immigrants, such as Norwegian-born children of immigrants.

The exact formulation of the model is currently being discussed and some choices still have to be made. Too much detail will make it difficult to estimate and use the model, whereas too little detail will reduce the value for the users. The results will be published on 14 June 2010, just a few days before the Symposium.

## Extended Abstract – Distribution of sexes by education and profession 1990-2030

Post secondary education in Sweden is dominated by women and the imbalance increases. Considerably more women than men engage in post secondary education and even greater is the female predominance among those who also graduate. The Forecast Institute at Statistics Sweden has studied the future gender balance in 45 education groups. The study can be downloaded (in Swedish) at: [http://www.scb.se/statistik/\\_publikationer/UF0521\\_1990I30\\_BR\\_A40BR1001.pdf](http://www.scb.se/statistik/_publikationer/UF0521_1990I30_BR_A40BR1001.pdf)

### Issues that are highlighted

- How has the distribution of the sexes by education and profession changed since 1990 up until today, and how will the distribution of sexes developed up until 2030?
- In what educational groups will the female or male dominance of today/yesterday continue.
- In what educational groups will there be a shift from the dominance of one sex to the other.

### Findings in brief

Our forecast up until the year 2030 shows that women continue to enhance their presence in traditionally male-dominated educational groups at post secondary level. Our calculations also show that men not to the same extent increase their share in educational groups traditionally dominated by women. In turn, men retain and even strengthen their position among the technical and industrial educational programmes at the upper secondary level.

The changes in the gender structure of education are already being observed on the labour market. For most professions, a change has occurred. Men are in majority in the oldest age group and women in the youngest. This is particularly apparent in occupations that require post secondary education.

These findings are presented for a total of 45 educational groups, 9 at secondary level and 36 at post secondary level.

### Data used

The results are based on a register study of all persons aged 20–64 with information collected from Statistics Sweden's educational register. The estimations on the future supply of educated persons are described in Statistics Sweden's publication Trends and Forecasts 2008. Information on occupations has been gathered from Statistics Sweden's occupational register. The estimates are based on the Forecast Institute's long-term impact estimates of today's dimensioning of the educational system.

### Educational levels are projected to rise until 2030...

In 2007, 34 percent of those aged 20-64 had some form of post secondary education and by 2030 this proportion is estimated to have risen to around 44 percent. These figures can be compared with 1990 when 21 percent of those aged 20-64 were educated at post secondary level. This is the result of the expansion in higher education that we have seen over the past two decades. The result is that far more enter the labour market with post secondary education than leave it. There are exceptions; biomedical analysts, pharmaceutical assistant, dentists and vocational teachers are educational groups in which fewer will enter the labour market than leaving it.

No major changes are expected to occur in the proportion of those with secondary education as their highest education up until 2030. In 1990, 47 percent of those aged 20-64 had some form of secondary education as their highest education. In 2030, this share is calculated to be approximately 45 percent.

A clear downward trend is noticed for those with compulsory education (primary education or equivalent) as their highest education. In 1990, 31 percent of the population aged 20-64 had compulsory education as their highest education. In 2030 this share is projected to have fallen to approximately 10 percent.

**... especially for women**

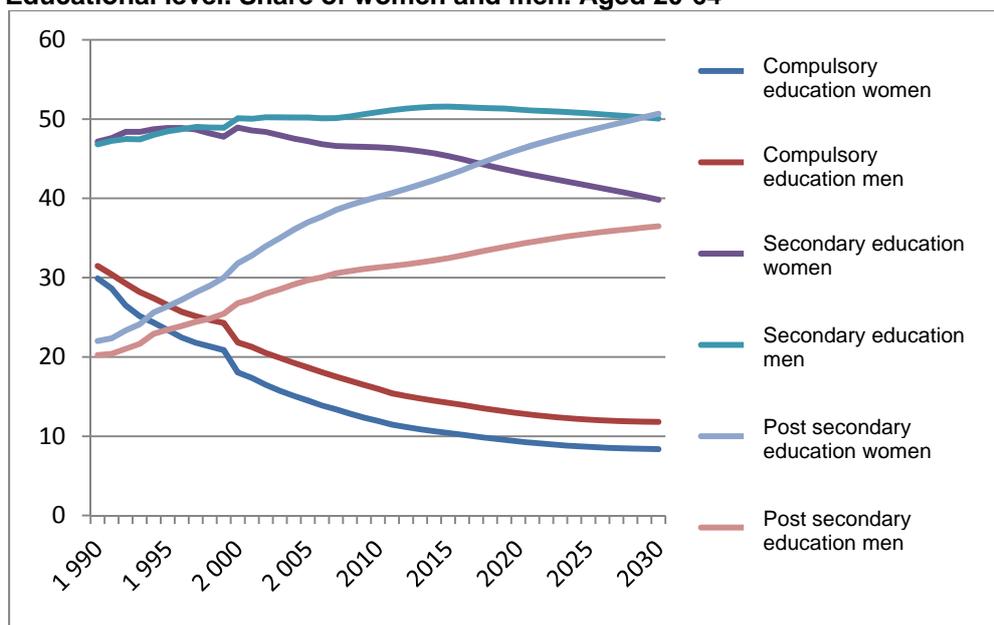
It is primarily among women the education level has risen, and if current patterns continue, will continue to rise. In 2030, about 51 percent of women are projected to have a post secondary education compared to 39 percent in 2007 and 22 percent in 1990. The equivalent for men is around 36, 31 and 20 percent.

Among men aged 20-64 a slightly larger proportion are expected to have some form of secondary education as their highest education compared to 1990, The corresponding percentage decreases, however, among women. In 1990, the proportion of men with secondary education as their highest level of education were 47 percent compared with 2030 when the proportion is projected to rise to around 50 percent. The equivalent for women is 47 percent in 1990 and 40 percent in 2030.

The share of those with a compulsory education as their highest education level by 2030 is estimated to drop at a slightly faster pace for women than for men. In 1990, the proportion of men with compulsory education as their highest level of education was 31 percent and for women 30 percent. Up until 2030 the share of men with compulsory education as their highest education is projected to drop to 12 percent while the corresponding figure for women is approximately 8 percent.

That the educational level of women increases versus men may partly be explained by the fact that women more tend to select post secondary preparatory education at secondary school, while men more often acquire their professional training already in secondary school. In 1990, 35 percent of women had a secondary school education that may be classified as vocational education as their highest education. In 2030, this proportion is projected to drop to around 20 percent. Among men, it is estimated that approximately 35 percent will have some form of vocational education at secondary level in 2030, compared to 38 percent in 1990.

**Educational level. Share of women and men. Aged 20-64**



## Women enhance their presence in traditionally male-dominated educational groups...

The results that, women to a greater extent than men, raise their educational level can be seen in the forecast of the future gender structure of various education groups. It is quite clear that women enhance their presence in traditionally male-dominated educational groups at post secondary level. On the other hand the calculations do not show that men to the same extent increase their share in some of the educational groups traditionally dominated by women. In the educational groups where the proportion of males was low in 2007, the proportion of men is expected to remain low in 2030. There are some educational areas where the share of men is expected to increase slightly such as in nursing.

## ... while men continue to dominate in engineering and manufacturing

In turn, men retain and even strengthen their position among the technical and industrial educational programmes at secondary level. Men also maintain a clear dominance of engineering education at post secondary level, although the proportion of women is expected to rise. The exception in education areas of technology and manufacturing are architects in which women are assumed to be in majority in 2030. The male dominance among those with an educational background in computer programming and systems analysis is expected to grow.

### All educational programmes where the share of women will increase 1990–2030

	1990	2007	2030
Agronomists, horticulturists	29	49	74
Pharmacists	57	70	76
Architects	31	45	61
Master of Science in Engineering	11	21	26
Economists	31	47	56
Compulsory school teachers (upper level), upper secondary school teachers	55	61	65
Compulsory school teachers (lower level)	80	84	87
Bachelor of Science in Engineering, upper secondary school engineers	8	11	21
Journalists	51	64	75
Jurists	31	49	62
Fine and applied arts	48	55	58
Doctors	34	44	52
Natural scientists	31	42	53
Police	12	22	37
Social- and behavioural scientists	46	57	72
Higher education in forestry	7	17	24
Social work professionals	80	84	88
Special needs teachers	78	86	94
Dentists	42	52	68
Theologians	26	41	53
Transport education, post-upper secondary	6	16	29
Veterinarians	40	64	78

## **The change of distribution of sexes by education is already noticed on the labour market**

That the share of women has increased in many educational groups is clearly apparent on the labour market. For most professions, a change has occurred in the gender composition when comparing the oldest age group (those aged 50-64) with the youngest (those aged 20-34). In many professions men dominate the oldest group and women the youngest. This is particularly apparent within occupations that require post secondary qualifications.

- Among agronomists, architects, economists, jurists, natural scientists and theologians, who are employed in occupations with a clear link to their respective education, men clearly dominate the oldest age group. Around 70 percent are men. In the youngest age group the relationship is almost the opposite for jurists and architects. Among agronomists 80 percent are women in the youngest age group. The gender distribution is more even in the youngest group of theologians and economists, with women in a slight majority. For natural scientists the distribution between sexes, in the youngest group, is balanced.
- Among journalists, social- and behavioural scientists, dentists and veterinarians, the gender distribution in the oldest age group was fairly even in 2007. In the youngest age group the women are in a vast majority, around 70 percent. Among veterinarians nearly nine out of ten are women.
- The men in the youngest age group are still in majority, but not as great as in the oldest group, among engineers, police officers and computer programmers and systems analysts.

In professions requiring post secondary qualifications and where women dominate in the oldest age group the pattern looks roughly the same in the youngest group. On the other hand, the proportion of men in the youngest age group increase compared with the oldest in some female-dominated occupations that do not require post secondary qualifications. Examples are occupations clearly linked with the business and administration programme, the child and recreation programme as well as the hotel and restaurant programme at secondary level.

In total, roughly 4 million people aged 20-64 were gainfully employed in 2007. In this study, we seize a total of about 1.5 million of them, namely those that satisfy our criterion to be employed in an occupation considered to be clearly linked to their respective education.

[christian.skarman@scb.se](mailto:christian.skarman@scb.se)

+46 (8) 506 94 283

Box 24 300  
104 51 Stockholm

### **Model to forecast the re-immigration of Swedish-born persons**

The aim of the study is to model the re-immigration of Swedish born persons as an input in Statistic Sweden's forecast model.

During the 1990s, emigration of Swedish-born doubled, from around 10 000 persons per year in the 1970s and 1980s to more than 20 000 persons in 1998. The increased emigration resulted in a corresponding increase in the re-immigration. Persons born in Sweden is today one of the largest immigrant groups. Unlike other immigrant groups, there is greater ability to construct a mathematical model to forecast immigration of Sweden born. The framework of how many persons that can re-immigrate is set by the number of persons emigrating, which in turn can be estimated based on emigration risks.

In order to estimate the return immigration of Swedish-born persons, a model has been developed in which information on immigration and emigration for 1851-2007 has been used to build up a population of Swedish-born persons abroad. For each year, Swedish-born persons who have emigrated have been added to the Swedish population abroad, re-immigrants have been subtracted and the expatriate Swedish population has been reduced with the same death risks that applied to Swedes living in Sweden. An estimation of immigration based only on emigration rates does not follow the observed development particularly well. However, a linear regression where immigration created by re-immigration rates is combined with information on emigration three years earlier gives quite good fit.

When applied as a module in the Statistic Sweden's forecast model the results show that re-immigration of Swedish-born is expected to increase in the future. At the beginning of the forecast period, it is assumed that the number of Swedish-born abroad increases rather sharply, and then stabilizes at a level just under 400 000 at the end of the forecast period year 2060. During the forecast period, it is assumed that the re-immigration increase from about 15 000 to just under 20 000 at the end of the forecast period.

**Title:** Marriage timing and joint home purchase  
**Author:** Jennifer A. Holland  
**Contact:** jholland@ssc.wisc.edu  
**Address:** Department of Sociology  
University of Wisconsin—Madison  
1180 Observatory Drive  
Madison, WI 53706  
USA

### **Abstract**

This paper evaluates the extent to which the purchase of a jointly-owned home is a catalyst for marriage among Swedish cohabiting couples. Joint home ownership may provide an indicator for commitment and relationship, economic and residential stability. Data for this analysis come from the Swedish Housing and Life Course Cohort Study (N = 1,984 couples; 2,831 cohabiting spells). I measure the joint home purchase event with an indicator for purchase in the past 6 months (lag) or the following 6 months (lead). I consider time-varying characteristics of housing, including rental versus owned properties and indicators for which partner holds the rental contract or ownership rights. Preliminary results suggest an elevated risk of marriage in the twelve month period surrounding a joint home purchase. Additionally, both living in an owned property (vs. rented) and having a joint contract (either rental or ownership) at any time during a cohabitation are independently positively associated with marriage.

### **Extended Abstract**

Major changes have occurred in the way families are organized in the United States and Europe over the past 30 years. Increasingly marriage is preceded by cohabitation and occurs at later ages. Both cohabiting and married couples face a higher risk of union dissolution. Fewer children are born, and these children are more likely to be born to cohabiting parents or parents not romantically involved rather than to married parents (Lesthaeghe and van de Kaa 1986). Collectively these trends are often referred to as the Second Demographic Transition and they are accompanied by broad shifts in values toward individualism and gender egalitarianism. Despite these dramatic changes, marriage continues to thrive as the preferred type of long-term union. Even in the Nordic countries where cohabitation is common, legally recognized and a socially acceptable union for bearing children, the vast majority of people across socioeconomic and demographic characteristics aspire to marriage and do eventually marry (Tucker 2000; Goldstein and Kenney 2001; Bernhardt 2004; Wiik 2008). Family scholars are only beginning to develop an understanding of what people are trying to achieve through marriage and we continue to develop theories about what life-course phenomena trigger the marriage decision for couples within a Second Demographic Transition context.

Attitudinal data and longitudinal research conducted with cohabiting couples in the United States and Europe suggest that marriage is associated with particular economic conditions and there is an expectation of meeting certain economic prerequisites before couples will marry (Bernhardt 2004; Duvander 1999; Edin and Kefalas 2005; Holland 2008; Waite and Gallagher 2000). An essential component of economic stability is the accumulation and maintenance of assets. In the United States, asset building is associated with a “Middle Class Ideal,” whereby, in tandem with marriage, couples expect to jointly acquire “symbols of success,” such as a home (Edin and Kefalas 2005). Evidence for an expectation of an owner-occupied, independent home is also found in Anglo-Saxon, Southern European and in some Western European countries (Mulder 2006). Indeed, studies in both the United States and Europe find that married couples experience the highest rates of transition into owner-occupied homes (Lauster and Fransson 2006). Joint home ownership may be a proxy for the level of commitment within a couple and

thus may be linked to other life-course processes associated with high relationship commitment, such as marriage or childbearing. Furthermore, home ownership is associated with economic and residential stability, often considered prerequisites for family building. Expectations of joint asset building for economic stability suggest strong incentives and norms that acquisition of joint assets should be conditioned on marriage.

This paper evaluates the extent to which the purchase of a jointly-owned home is a catalyst for marriage among Swedish cohabiting couples. I test whether there is an elevated risk of marriage in the 6 months prior to and following joint home purchase. I also consider time-varying characteristics of a couple's housing, including first-hand rentals versus second-hand rentals or owned properties<sup>1</sup>, and which partner holds the rental contract or ownership rights. If the purchase of a jointly-owned home is indeed a trigger for marriage, I expect an elevated risk of marriage in the 12-month window surrounding the purchase of a home. Additionally I expect that periods when the couple is living in more stable housing should be associated with a higher risk of marriage. I expect that home ownership will be associated with the highest rates of marriage, as it is likely an indicator of more assets (having resources for a down payment, higher income tests for bank loans, etc). First-hand rental contracts should be associated with higher rates of marriage when compared with second-hand rental contracts, although likely a lower risk than ownership. Finally, I expect that having a jointly held rental or ownership contract should also be associated with higher rates of marriage as compared with periods when rental or ownership contracts are held by either the respondent or partner.

It is possible that there is also a reverse causal relationship, whereby marriage increases the risk of home purchase. Marriage may increase the security of joint investments in common assets. Additionally, it is often be bureaucratically easier for married couples to jointly purchase a home. Indeed, policy and legal constraints in nearly all Western countries support a standard which privileges marriage with regard to the acquisition and joint ownership of assets (Waldijk 2005). Even in Sweden, where cohabiting couples are granted the same rights and responsibilities as married couples in nearly all areas of life, regulations regarding joint assets privilege marriage (Ytterberg and Waldijk 2005). However, if marriage causes the joint purchase of a home it is unlikely that the effects would be anticipatory: the additional security of joint investments and the favorable policy context would only occur one the marriage was formalized. Any effects of high quality, stable housing or a joint investment previous to or concurrent with marriage are more likely to indicate housing's effect on marriage, rather than the reverse relationship.

A final possibility is that marriage and home purchase are part of the same transition to stability. In such a case, characteristics of the couple, such as economic status, relationship quality or commitment, may simultaneously increase the risk of both marriage and home purchase. To evaluate this potential link, it is important to disentangle these characteristics and other life course processes that may jointly determine both events and thus may confound the relationship of interest (Lillard and Panis 2003). These confounders may include demographic processes, such as childbearing, and socio-economic events, such as the completion of education, employment and earnings trajectories.

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<sup>1</sup> First-hand rentals in Sweden are a very stable form of housing. First-hand rental contracts are long-term leases and contract holders have a "right to rent" the property. Rents are controlled by the government and renters cannot be easily evicted from the property. Second-hand leases are shorter-term, less-stable and in some cases riskier, as they are illegal if not approved by the building association or rental authority.

Data for this analysis come from the Swedish Housing and Life Course Cohort Study (HOLK) (Ström and Brandén 2009; Ström, Brandén and Thomson 2008). HOLK is the first survey in Sweden to include both detailed housing histories and rich life-history data. The survey consists of a random sample of all individuals born in Sweden in 1956, 1964 and 1974. The survey includes information on 2,242 individuals and had a response rate of 62%. The survey data, collected through postal questionnaires, are matched to extensive register data for the period 1972-2005. The HOLK data include housing biographies for up to 11 residences, with information on type of dwelling, dwelling size and quality, and ownership. The survey also includes detailed partnership biographies, including year and month of cohabitation, marriage and separation for all partnerships lasting six months or more. These data are matched to respondent and partner register data records on birth, civil status changes, occupation, income, government transfers, education and residential moves.

Sweden is a particularly appropriate context for studying the relationship between marriage and home acquisition. Despite high rates of premarital cohabitation and non-marital births, marriage continues to be a central institution of family life in Sweden. The vast majority of Swedes will eventually marry: in 2001 83% and 75% of 50-year-old Swedish women and men, respectively, had been married at least once (Bernhardt 2004). Since the late 1990s, there is evidence of increasing marriage rates, particularly among women over the age of 28 (Ohlsson 2009). It is common for young adults to form independent households before marriage. Men and women leave home at an early age and in 2003, 61% of men and 55% of women between the ages of 18 and 34 lived independently, alone or in couples (Statistics Sweden 2008; Mandic 2007). With respect to housing context, the Swedish housing market is flexible, homeownership is common and mortgages are relatively easy to obtain (Mulder 2006).

I build longitudinal, monthly duration records for each unmarried individual over the age of 20 who has never been married and is living in a cohabiting union. I limit the analysis to cohabitators because almost no marriages occur without prior cohabitation in the Swedish context. Furthermore, as to not confound the process of leaving the parental home and marriage, I only follow cohabitations from the age of 20. Cases with cohabitations that begin before age 20 are left truncated; truncation does not affect the measure of cohabitation duration, but the case does not contribute observations until the respondent's 20th birthday. Spells are censored in December 2004. Finally, I have eliminated a small number of cohabitation spells where respondents did not report a spell start date. Analysis records include the duration of cohabiting unions, timing of childbearing, duration of all education spells, annual earnings and income, and demographic characteristics.

In order to distinguish whether joint home purchase acts as a catalyst for marriage or if the relationship between home purchase and marriage is jointly demined by the couple's underlying relationship characteristics, stage in the life course and/or socio-economic status, I intend to use continuous simultaneous hazards models (Lillard 1993). This will allow me to jointly model the risk of home purchase and marriage, allowing for the potential interdependence of each process. However, for preliminary analyses, I consider a simpler, single-direction model, estimating continuous-time proportional hazards models predicting the risk of marriage. First I consider how the joint home purchase event and characteristics of current housing are associated with the timing of marriage (Table 3, Models 1, 2 and 3). I build subsequent models, incorporating demographic characteristics and young family life course processes (Model 4: gender, cohort, age, and number of children), and education and economic trajectories (Model 5: highest grade completed and logged annual income from the previous year).

Preliminary results suggest that in the twelve month period surrounding the joint purchase of a home, the risk of marriage is elevated by a factor of 1.31, taking account housing,

demographic, life-course, education and economic characteristics (Model 5). I also considered models where the 6 months previous to a joint home purchase and the 6 months after a joint home purchase were specified separately (results not shown). A stronger association between marriage and joint home purchase in the months previous to purchase might provide some evidence that marriage a prerequisite for a joint home purchase by increasing union stability or through policy constraints on inheritance or marriage. On the other hand, a stronger association between marriage and joint home purchase in the months following a joint purchase may provide evidence that a home purchase may indeed be a catalyst for marriage, suggesting the couple has reached economic or social status necessary to transition to marriage. Contrary to these two hypotheses, I find little difference in the magnitude or significance levels of the coefficients for months previous to or post a joint home purchase event. Neither effect seems to dominate, suggesting the third hypothesis: marriage and joint home purchase may be part of the same transition to stability. I will further explore this hypothesis in the forthcoming simultaneous hazards models, taking into account couples' underlying risk of joint home purchase.

Particular types of housing are strongly linked to marriage. When living in an owned home, there is a 1.26 higher risk of marriage relative to when a couple has a first-hand rental contract. During person-months when a rental contract or ownership rights are held jointly, couples are 1.34 times more likely to marry as compared to periods when the right is held by the man only. Two additional housing characteristics appear to be associated with an increased risk of marriage: those who fail to report either own vs. rent status or who is the owner or contractee; and those who are cohabiting, but do not report having left the parental home. These groups may be anomalous, however, as each constitute less than <2% of at-risk analysis time, respectively.

The relationship between marriage and the demographic and life-course characteristics are as expected. Marriage risks are highest among individuals of earlier cohort and among individuals aged between 25 and 34. Interestingly, marriage risks are marginally higher likely among couples with one child and marginally lower among those with three or more children. A caveat, I am only able to identify children of the respondent, so it is not possible to identify the number of step-children in the union. There is little variation across education categories, with one exception: couples where the respondent has completed tertiary education (or more) are 1.23 times more likely to marry, relative to those respondents who have only completed secondary education. There is also an increased risk among those individuals with spells before (pre-1985) or after (post-2003) data were collected for the education register. This category is dominated by individuals from the earliest birth cohort, thus it is unsurprising that we find a higher risk of marriage for this group. Finally, the previous year's logged annual income is positively associated with marriage. I considered the possibility that this relationship might be non-linear, however after testing several different spline specifications, I concluded that allowing for non-linearity did not improve the fit of the marriage equation (results not shown).

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<b>Table 1: Analytic Sample</b>	
Cohabiting Spells	N
Total	3,149
Never cohabit	218
Marry before age 20	44
No cohabitations after age 20	30
Union Starts after Dec 2004	18
Missing cohabitation start date	8
Sample (cohabiting spells)	2,831
Individuals (Clustering)	1,984
Person- months observed	190,867
Marriages	1,101
Source: HOLK. Author's Calculations	

<b>Table 2a: Sample Descriptive Statistics: Fixed Covariates</b>			
		%	N
Spell (Unmarried Cohabitation) Duration (Months)			
Mean		70	
25th-percentile		25	
50th-percentile		49	
75th-percentile		93	
Marriage			
% of Cohabiting Spells ending in marriage		38.9	1,101
Sex of Respondent (% of cohabiting spells)			
Male		42.3	1,198
Female		57.7	1,633
Cohort of Respondent (% of cohabiting spells)			
1956		36.1	1,022
1964		32.9	931
1974		31.0	878
Sample (cohabiting spells)			2,831
Individuals (Clustering)			1,984
Person- months observed			190,867
Marriages			1,101
Source: HOLK. Author's Calculations			

<b>Table 2b: Sample Descriptive Statistics: Time-varying Housing Covaria</b>		
	%*	N*
Purchase joint home in 6+/- months <sup>a</sup>	7.2	13,966
Purchase joint home in following 6 months <sup>a</sup>	3.8	7,251
Purchase joint home in previous 6 months <sup>a</sup>	3.5	6,715
Purchase joint home in 12+/- months <sup>a</sup>	13.2	25,246
Purchase joint home in following 12 months <sup>a</sup>	7.0	13,300
Purchase joint home in previous 12 months <sup>a</sup>	6.3	11,946
Type of Housing <sup>b</sup>		
Own (vs. Rent)		
Rent 1st Hand	39.0	74,371
Rent 2nd Hand	2.6	4,991
Own	52.4	99,929
Other Housing	2.6	4,928
Missing Disp, Ownr/Cntrct	1.8	3,461
Previous to First Housing	1.7	3,187
Owner/Contractee		
Man	23.0	43,886
Woman	18.4	35,040
Joint	50.4	96,163
Other	2.2	4,202
Other Housing	2.6	4,928
Missing Disp, Ownr/Cntrct	1.8	3,461
Previous to First Housing	1.7	3,187
Sample (cohabiting spells)		2,831
Individuals (Clustering)		1,984
Person- months observed		190,867
Marriages		1,101
Source: HOLK. Author's Calculations		
* Percent/N of analysis time (months).		
<sup>a</sup> Relationship between housing event (joint home purchase) and marriage; 12-month observation window around joint home purchase (time-varying).		
<sup>b</sup> Baseline relationship between housing type and marriage.		

<b>Table 2c: Sample Descriptive Statistics: Other Time-varying Covariate</b>		
	%*	N*
Age of respondent		
20 to <25	25.4	48,408
25 to <30	31.2	59,592
30 to <35	17.3	33,074
35+	26.1	49,793
Own		
Number of children		
0	48.73	93,004
1	21.82	41,654
2	21.1	40,279
3+	8.35	15,930
Education (highest grade completed)		
Less than secondary	9.4	17,931
Secondary	43.2	82,451
Some tertiary	5.8	11,026
Tertiary or more	18.9	36,053
Missing: valid register, coding error	0.1	106
Missing: valid register, missing	1.1	2,093
Missing: no register (pre-1985, post-2003)	21.6	41,207
Previous year's income (lag)		
	SEK	
Mean	171,579	
25th-percentile	114,700	
50th-percentile	165,228	
75th-percentile	215,303	
Sample (cohabiting spells)		2,831
Individuals (Clustering)		1,984
Person- months observed		190,867
Marriages		1,101
Source: HOLK. Author's Calculations		
* Percent/N of analysis time (months).		

Table 3: Models Predicting Hazard of Marriage (Cox Hazards Regression)					
	Model 1	Model 2	Model 3	Model 4	Model 5
	Joint Purchase	Housing	All Housing	M3 +	M4 + Education
	Event	Characteristics	Characteristics	Demographic	and Income
Purchase Joint Home in 6+/- Months <sup>b</sup>	1.61 *** (0.15)	-	1.39 *** (0.14)	1.33 ** (0.13)	1.31 ** (0.13)
Type of Housing <sup>a</sup>					
Own (vs. Rent) <sup>a</sup>					
Rent 1st Hand	-	-	-	-	-
Rent 2nd Hand	-	0.81 (0.20)	0.81 (0.20)	0.85 (0.22)	0.88 (0.22)
Own	-	1.27 *** (0.09)	1.23 ** (0.09)	1.28 *** (0.09)	1.26 *** (0.09)
Owner/Contractee <sup>a</sup>					
Man	-	-	-	-	-
Woman	-	0.90 (0.10)	0.89 (0.09)	0.89 (0.10)	0.90 (0.10)
Joint	-	1.44 *** (0.11)	1.39 *** (0.11)	1.36 *** (0.11)	1.34 *** (0.11)
Other	-	1.11 (0.30)	1.09 (0.30)	1.10 (0.32)	1.12 (0.33)
Other Housing	-	0.57 + (0.17)	0.56 + (0.17)	0.56 + (0.17)	0.58 + (0.17)
Missing Disp, Ownr/Cntrct	-	2.29 *** (0.42)	2.25 *** (0.41)	2.07 *** (0.39)	2.01 *** (0.38)
Previous to First Housing	-	1.54 + (0.35)	1.53 + (0.35)	1.57 * (0.35)	1.62 * (0.36)
Demographic Characterisitcs					
Female	-	-	-	1.09 (0.07)	1.10 (0.07)
Birth Cohort					
1956	-	-	-	-	-
1964	-	-	-	0.81 *** (0.05)	0.92 (0.07)
1974	-	-	-	0.57 *** (0.05)	0.64 *** (0.06)

<b>Table 3 Cont. Models Predicting Hazard of Marriage (Cox Hazards Regression)</b>						
	Model 1	Model 2	Model 3	Model 4	Model 5	
	Joint Purchase	Housing	All Housing	M3 +	M4 + Education	
	Event	Characteristics	Characteristics	Demographic	and Income	
<b>Age</b>						
20 - 24 years	-	-	-	-	-	
25 - 29 years	-	-	-	1.56 *** (0.13)	1.51 *** (0.13)	
30 - 34 years	-	-	-	1.59 *** (0.17)	1.61 *** (0.18)	
35 + years	-	-	-	0.55 *** (0.08)	0.55 *** (0.08)	
<b>Number of Children</b>						
0	-	-	-	-	-	
1	-	-	-	1.13 (0.09)	1.15 + (0.09)	
2	-	-	-	0.92 (0.09)	0.95 (0.10)	
3+	-	-	-	0.67 * (0.12)	0.72 + (0.13)	
<b>Education</b>						
Less than Secondary	-	-	-		0.94 (0.12)	
Secondary	-	-	-	-	-	
Some Tertiary	-	-	-		0.89 (0.13)	
Tertiary or more	-	-	-		1.23 * (0.11)	
Missing: Valid Reg, Coding Error	-	-	-		1.05 (0.56)	
Missing: Valid Reg, Missing	-	-	-		1.36 (0.34)	
Missing: No Reg (pre-1985, post-200	-	-	-		1.33 ** (0.13)	
<b>Lagged Logged Total Income (n-1)</b>						
Continuous	-	-	-	-	1.08 * (0.03)	

<b>Table 3 Cont. Models Predicting Hazard of Marriage (Cox Hazards Regression)</b>					
	Model 1	Model 2	Model 3	Model 4	Model 5
	Joint Purchase	Housing	All Housing	M3 +	M4 + Education
	Event	Characteristics	Characteristics	Demographic	and Income
Observations (CM at risk)	190867	190867	190867	190867	190867
Subjects	2831	2831	2831	2831	2831
Clusters (Individuals)	1984	1984	1984	1984	1984
Failures (events)	1101	1101	1101	1101	1101
ll (null)	-7869.294	-7869.294	-7869.294	-7869.294	-7869.294
ll (model)	-7857.699	-7828.758	-7823.313	-7733.007	-7720.842
df	1	8	9	18	25
AIC	15717.4	15673.52	15664.63	15502.01	15491.68
BIC	15727.56	15754.79	15756.06	15684.88	15745.67
*** p<0.001 ** p<0.01 * p<0.05 † p<0.1					
Source: HOLK. Author's Calculations					
<sup>a</sup> Baseline relationship between housing type and marriage.					
<sup>b</sup> Relationship between housing event (joint home purchase) and marriage.					

## Abstract

Family Histories in a Life Course Perspective - A Socio-Demographic Analysis of the Family Formation Process in Young Adulthood within a Danish Birth Cohort.

*Lene Tølbøll Blenstrup, sociologist, PhD-student, Department of Sociology, Social Work and Organization, Aalborg University, Denmark. lenetb@socsci.aau.dk*

This paper analyses family formation patterns within the adult population in Denmark and aims to determine whether one can speak of 'a common, stabile sequence' as opposed to more 'turbulent' family formation patterns.

Analyses are based on information in Danish public registers in the years from 1980 to 2003, with focus on family histories as they progress for 89.000 men and women born in 1962. The paper thus describes a period in life where a number of important aspects of the family formation process usually take place and three aspects of the history are in focus: Leaving the parental home, partnership formation and dissolution as well as childbearing.

Analysis shows a large variety in the family formation patterns. Three main groups are identified. First, a fairly large group of men and women with a family formation pattern which can be characterised as 'normal' and stabile. These family histories are characterised by one exit from the parental home and include both time living without a partner and in a cohabiting union. The majority of these men and women enter a first marriage; a marriage preserved throughout the remainder of the study period. Childbearing is equally common before and after the entry into marriage and primarily related to living in a union. Second group consists of men and women that have unique family histories, shared, if by any, only few. They also experience all of the events in focus, but multiple times. Their family histories are thus to a larger degree turbulent and characterised by leaving and returning into the parental home multiple times and by them entering several co-residential unions. The last group experience none or only few family related events. The majority of these men and women live alone throughout the study period just as they rarely have children.

# **FROM MARRIAGE TO COHABITATION: FAMILY FORMATION AND PARENTHOOD IN DENMARK**

**Siddhartha Baviskar, Mette Deding, Vibeke Jakobsen and Mette Lausten**  
**SFI – The Danish National Centre for Social Research**

**Extended abstract January, 2010**

## **Purpose**

The purpose of this paper is to analyse the changing relationship in Denmark between family status and parenthood across cohorts. The norm from ‘the good old days’ of getting married before having children has almost vanished in favour of having children before getting married – 46 % of children in Denmark today are born outside of marriage. We analyse the changing relationship over three birth cohorts: 1954, 1966, and 1978, and analyse the changing relationship over time using event history analysis.

## **1. Motivation/background**

In Denmark, like in other Western countries, there is an ongoing public debate about fertility levels made topical by the challenges of an aging society. Denmark, however, has been quite successful in maintaining a relatively high level of fertility – the total average fertility rate was 1.9 in 2008. Part of the explanation for this fact is the existence of high-quality day care that makes it possible for Danish mothers to combine family and work. Other Western countries have much lower fertility rates and also lower female labour force participation rates.

Looking at the past decades, fertility patterns in Denmark have changed dramatically. The average age of first-time mothers has increased from 27 years in 1960 to 30.5 years in 2008 (Statistics Denmark). For men, the development has been similar and the average age at which men become first-time fathers increased from 30 years in 1980 to 33 years in 2006 (Statistics Denmark). So far however, this increase in the age of parents has not implied that fewer children are born, but rather that parenthood is postponed. This postponement of childbirths is identical to what is observed in many other countries.

The share of women and men having children at different ages is depicted in Figure 1a and 1b for three birth cohorts: 1954, 1966 and 1978. At age 40, 86 % of the women born in 1954 and 1966 have children, while 76 % of the men born in 1954 and 1966 have children. For the cohort born in 1978, we cannot yet determine the

share having children at age 40. However, it is clear that the postponement continues for this generation as fewer women and men have had a child by age 30 compared to the older cohorts.

In addition to the development in fertility patterns, another remarkable change has taken place in Denmark – the change from marriage to cohabitation among Danish parents. Since 1960, the average age at first marriage has increased by 10 years for women and 9 years for men, implying that average age at first marriage is now higher than average age at first child for both women and men, see Figure 2. A consequence of this is that while 8 % of Danish children were born outside marriage in 1960, this share had increased to 46 % in 2008 (Statistics Denmark).

The dramatic change in family patterns over time is evident from Table 1, where we depict the family status at age 30 for the three birth cohorts: 1954, 1966 and 1978. There is a particularly large change between the two youngest cohorts in the marriage share. For the 1966 cohort, 63 percent of the women and 57 percent of the men were married by the age 30; but for the 1978 cohort these figures have dropped to 29 percent for women and 16 percent for men. The change has not only been large, but has also happened very fast, and is due to an increase in the share of singles as well as an increase in the share of cohabiting couples.

Our knowledge about these changes in family status and the relationship between family status and parenthood is very limited and, hence, the purpose of this paper is to study this relationship in the Danish context. The analyses use data for three birth cohorts: 1954, 1966 and 1978, described in the next section. An outline for the analyses that will be part of the paper is found in section 3.

## **2. Data**

The data used for this paper are from Danish administrative registers. We have information on three birth cohorts: all men and women born in Denmark in 1954, 1966 and 1978. Immigrants are not included in the sample. We only include Danes that are continuously present in Denmark as we do not have information about events taking place outside of Denmark.

We have access to detailed information on family characteristics and socio-economic factors from 1980-2007. The family characteristics include family type (marital status), number of adults and children in the household (own children and/or stepchildren), and region of residence. The socio-economic factors include education (length and type), labour market status, occupation, work experience and income. We have this information for all individuals in the sample (i.e. all individuals born in one of the three years) as well as for any spouse they have had during the period 1980-2007 (whether married or cohabitating). In addition, we

have detailed information on fertility so that we are able to identify all births of women in the sample as well as births where men in the sample are registered as the father.

### **3. Analyses**

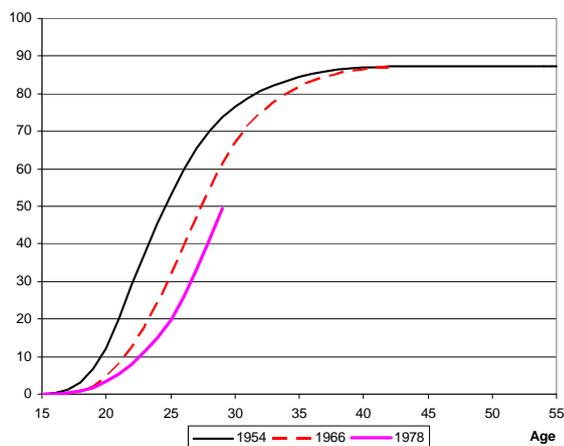
The demographic development in Denmark during the past few decades suggests that the pathways from being single to marriage and parenthood have changed dramatically and the empirical analyses of the paper will look into this in more detail.

The starting point of the analyses is to map the relationship between family status (marriage versus cohabitation) at the birth of children for women and men from the three cohorts. In this analysis, we distinguish between the birth of the first child and the birth of succeeding children. This mapping will provide a much-needed overview of the changing patterns from the perspective of children being born.

Next, we analyse changes across the three cohorts in the pathways to family formation and parenthood. For this analysis, we apply event history analysis. In the first part of the analysis, we focus on the transition from being single to being a couple. We apply a competing risks duration model where the two transitions modelled are to marriage and cohabitation, respectively. In the second part of the analysis, we focus on the transition to parenthood also applying a duration model. This analysis is limited to couples and we let the probability of having a first child differ between married and cohabitating couples. For some cohabitating couples, having the first child is preceded by marriage which will also be taken into account in the modelling. Both nonparametric and parametric models, which include important explanatory variables such as education and labour market status, will be estimated. We will estimate the models separately for each of the three birth cohort because we want to focus on changes in the pathways over time.

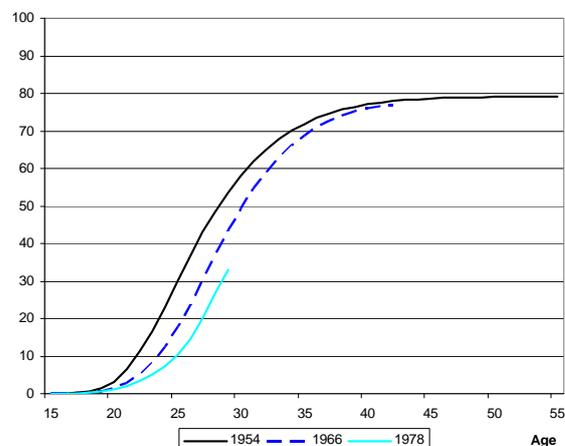
## Figures and tables

**Figure 1a. Share of Danish women from three birth cohorts (1954, 1966 and 1978) having children**



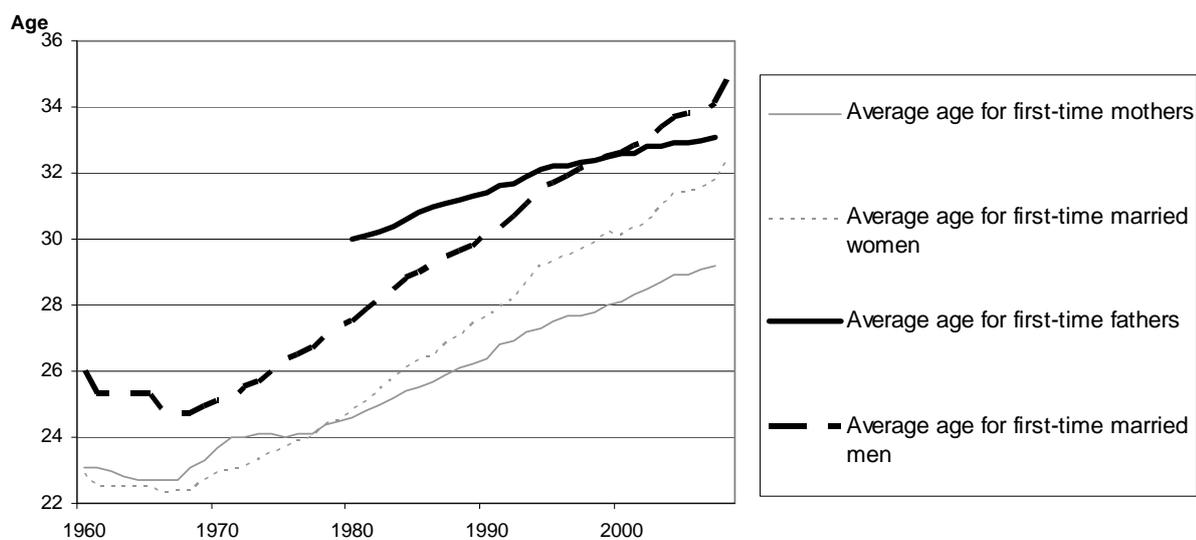
Source: own calculations

**Figure 1b. Share of Danish men from three birth cohorts (1954, 1966 and 1978) having children**



Source: own calculations

**Figure 2. Average age at first marriage and first childbirth 1960-2008**



Source: Statistics Denmark

**Table 1. Family status by age 30, women and men**

	1954 cohort		1966 cohort		1978 cohort	
	Women	Men	Women	Men	Women	Men
Single	7.7	14.9	13.9	23.6	29.8	44.1
Cohabiting	5.1	5.5	10.5	10.0	39.0	38.7
Married	67.9	64.9	62.6	57.0	28.9	16.3
Divorced	16.3	13.5	12.5	9.3	2.3	0.9
Widowed	3.0	1.2	0.5	0.2	0.0	0.0

# **Family structure and emotional well-being among Swedish adolescents 2000-2003**

Jani Turunen

Stockholm University

The paper studies child well-being in Swedish stepfamilies. It focuses on adolescents' experience of emotional well-being and their self-reported psychological and psychosomatic complaints.

Both Swedish and international literature on children's psychological well-being show an association between low well-being and living in single-parent and stepfamily households. The reasons for children's well-being in stepfamilies may however differ from those in single-parent households. In this paper I will examine two of the main theoretical explanations behind children's low well-being in these family types; economic deprivation and parenting/socialization. Since it has been argued that the relationship between low well-being and family structure may be spuriously produced and due to pre-existing parental characteristics I will also control for characteristics that might influence the selection of people into single-parenthood and stepfamily formation.

The economic deprivation theory highlights the importance of family income for children's well-being. If stepfamily formation is associated with increased family income, due to another income-earning adult in the household, this theory predicts that it also is associated with higher emotional well-being for the child compared to living with a single parent. It also predicts that family structure should have a lesser effect on well-being in welfare states like Sweden with a high income redistribution compared to liberal welfare states like the US.

The socialization theory highlights the importance of parenting for understanding children's emotional well-being. It predicts that stepfamily formation improves child well-being since a new adult in the household can take over responsibilities and help the parent with everyday tasks thus giving the parent more time to interact with the child. It can however also be argued that a new adult in the household may produce

stress for the child and competition for the parent's affection and attention thus reducing the emotional well-being of the child.

**Data:** The data for this study comes from the child supplement to the Swedish Level of Living survey (LNU) from 2000 and the Surveys of Living Conditions from 2001, 2002 and 2003. Both children and their parents have been interviewed in these surveys providing unusually rich data from two perspectives. The children were between 10 and 18 years of age and the interviews with them were conducted by having them fill in a self administered questionnaire while listening to the interview questions on headphones but the children's parents

**Modeling and method:** The method used is OLS-regression. The two dependent variables are scales of psychological- and psycho-somatic complaints reported by the child itself. The independent variable family structure includes original two-parent family as reference category and single mother-, single father-, mother/stepfather- and father/stepmother households.

To test the economic deprivation theory I have controlled for the parent's cash margin, or his/her ability to quickly raise 12,000 Swedish crowns (roughly \$1,700. To test the parenting/socialization theory I have used two variables; one for whether the child thinks the parent has time for him/her and one for whether the child talks to his/her parent when feeling worried or anxious. In order to account for other parental characteristics that might affect child well-being or the selection into divorce or stepfamily formation I have controlled for the household's socioeconomic status, parents' health status, drinking behavior and employment status.

**Results:** In the accordance with earlier research the results show a significant increase in the relative risk of both psychological and psycho-somatic complaints for children living in single mother- and stepfamily households. Children living in single father households have no, or a small, increased risk but this is non-significant. Girls have higher risk of both kinds of complaints compared to boys and remain unaffected when adding new control variables.

For single mother households the risk of child psychological and psycho-somatic complaints are reduced when we control for parents' cash margin but remain significantly higher than for children in original two-parent families. Controlling for parenting behavior reduces the risk of both psychological and psycho-somatic complaints for stepfamily households but remain on the same level for single parent households.

Controlling for household socio-economic status, parents' health status, drinking behavior and employment status does not change the relative risk of psychological or psychosomatic complaints.

Thus we can conclude that even though some factors influencing children's well-being remain unobserved there are no socio-economic differences when it comes to children's psychological well-being in single-mother and stepfamily households in Sweden. We also see that economic factors account for a larger part of the children's complaints in single mother families than in stepfamilies where economic factors only affect the relative risk marginally but parenting behavior is more important.

***Age difference between spouses and the impact on their longevity:  
Analysis based on historical population in Utah***

*Ines Wlosnewski<sup>1, 2, 3, \*</sup>; Ken R. Smith<sup>4</sup>*

*<sup>1</sup> Lund University  
Centre for Economic Demography  
Box 7083  
220 07 Lund  
Sweden*

*<sup>4</sup> University of Utah  
Department of Family and Consumer Studies  
Alfred Emery Bldg 228  
225 S. 1400 E. Salt Lake City  
UT 84112  
USA*

*<sup>1</sup> NIDI fellow, European Doctoral School of Demography at Lund University, Sweden*

*<sup>2</sup> University of Rostock, Germany*

*<sup>3</sup> the research was in part undertaken at University of Utah, Salt Lake City, UT, USA*

*<sup>4</sup> University of Utah, Salt Lake City, UT, USA*

*\*Corresponding author; Email: [ines.wlosnewski@ekh.lu.se](mailto:ines.wlosnewski@ekh.lu.se)*

It has been well established that marital status and number and timing of children are closely related to women's postreproductive life, especially regarding the impact to their health and mortality. However, the problem of age heterogamy between marital partners and possible effects on their longevity has not yet been well investigated. The purpose of the present study is to investigate the relationship between spouses' age difference and their longevity.

Age heterogamy in marriages is common in many societies with a clear difference: the husband is a few years older on average than his wife. But, does a greater age difference between the spouses have effects on the longevity of one or both spouses? And is the effect in the same direction and with the same strength? Marriages between an older husband and a younger wife are the focus of the analysis although all marriages are under consideration. The analysis examines female and male survival separately as a function of age differences between them. This analysis relies on data from the Utah Population Database (UPDB) a large and unique database spanning the last two centuries which includes deep multigenerational data. Approximately 50,000 monogamous married couples, who lived in the 19<sup>th</sup> to 20<sup>th</sup> century in Utah, USA, are selected and form the basis of the analysis.

The analyses are based on the appropriate Cox Regression models. The survival of the wives and husbands is investigated separately, adjusted by several variables including number of children, age at last and at first birth, religious affiliation, and occupation of the husband. Preliminary results show that a wife having a husband who is at least 12 years older has the highest mortality hazard rate. Furthermore, all estimated risks due to spouses' age differences are much weaker for the husbands than for the wives.

*Keywords: age difference, spouses, fertility, longevity, Utah*

## **Mortality during the periods of stagnation, recession and growth: cohort and period mortality analysis in Latvia**

Juris Krumins – Department of Statistics and Demography, University of Latvia, Raina Blv.19, Riga LV-1586, Latvia, [Juris.Krumins@lu.lv](mailto:Juris.Krumins@lu.lv)

Gaida Pettere – Department of Engineering Mathematics, Riga Technical University, Kalku iela 1, Riga, Latvia, [gaida@latnet.lv](mailto:gaida@latnet.lv)

During the last fifty years summary measures of mortality in Latvia has not changed significantly. Male life expectancy at birth in 2008 exceeded the level of 1958-1959 by 2.0 years (3.1%), but female life expectancy – by 5.5 years (7.6%). However socio-economic changes affected age-specific mortality essentially different during periods of stagnation, recession and growth. Changes of period mortality has been still mostly analyzed in Latvia (Eglite, Gosa, Krumins, Pettere, Usackis, Zvidrins). A need for a cohort mortality data is growing for purposes of life insurance, pension insurance and mortality forecasts.

A goal of this research is to analyze cohort mortality trends and to determine impact of changes in socio-economic environment to different cohorts. Cohort mortality rates are graduated by Tchebyshev's polynomials. For various cohorts different number of polynomials are used for better approximation.

Comparisons of different cohort and period age-specific mortality rates are performed during the period of stagnation of people's health (from mid 1960s to mid 1980s), time of socio-economic reforms and national revival (second half of 1980s), recession at the beginning of 1990s, and economic upswing in the time of market oriented reforms, raise of retirement age and integration into the European Union (a decade from mid 1990s till 2004). Particular attention is paid to the recent period of economic downturn with signs of deceleration in decline of mortality. Changes in cohort mortality often do not coincide with calendar years mortality. Female population adopt oneself to fast socio-economic changes more successfully than males.

# Effective retirement age in the Nordic countries

## Introduction

The traditional ways of measuring retirement age, arithmetic mean and median, are not well-suited to measuring changes over time. The average age of those who will retire in the next 10 years will increase in many countries, even though the retirement risk for each age group does not change at all. The reason for this is the age structure of the population. In the next few years the post-war baby-boomers will retire. In many countries the post-war baby-boomers usually constitute exceptionally large age groups compared to the age groups that were born after them, although there are differences between countries.

The method of measuring the effective retirement age has been devised through Nordic cooperation<sup>1</sup>. The work has been directed by the working group Nordiskt Utvärderarmöte, with representatives of the central bodies responsible for or acting as coordinators of pension provision in Finland, Iceland, Norway and Sweden.

A common indicator, the expected effective retirement age, is used in this survey. The indicator is calculated in the same way in all the countries concerned. The data for the different countries has been obtained from the employment data of each country's statistics office, and include the statutory pensions for persons resident in that country. The survey is carried out for the years 1996–2007.

## 1 Effective retirement age and expected effective retirement age

The expected effective retirement age is calculated on the basis of the retirement risk.

Certain basic requirements are set for the indicator for effective retirement age:

- The indicator reacts in a correct way to changes in retirement risk. It decreases when the retirement risk increases in some age group younger than the retirement age, and increases when the retirement risk decreases.
- The indicator reacts only to changes in retirement risk. It must not be affected by demographic phenomena such as the age structure of the population.
- The indicator reacts immediately to changes in retirement risk.
- The statistical data needed for the calculation of the indicator is available.

The expected effective retirement age meets these four basic criteria quite well. A further criterion could be for instance international comparability, but obtaining comparable data may be problematic. However, this paper shows that using this kind of indicator is possible also in international comparisons.

In Finland, Sweden and Norway a corresponding indicator is in use nationally. The expected effective retirement age presented in this paper differs slightly from the national indicators<sup>2</sup>, because concepts and background data differ. However, the results show a similar development. National reports on the expected effective retirement age have previously been published in Finland, Norway and Sweden. The expected effective retirement age (expectancy) describes the average effective retirement age for insured persons of a specific age on the assumption that the age-specific retirement risk and mortality rate for each age group remain at the level of the year of observation.

<sup>1</sup> Finnish Centre for Pensions, Statistical Report 2/2008: Expected effective retirement age in the Nordic countries.

<sup>2</sup> Finnish Centre for Pensions, Statistical Report 2/2009: Effective retirement age in the Finnish earnings-related pension scheme.

The expected effective retirement age is calculated primarily for 30-year-olds and 50-year-olds. The expectancy for 30-year-olds is used as a general indicator and it describes the retirement of the whole population. Since the pension systems of different countries clearly differ from each other, there is reason to calculate the effective retirement age for 30-year-olds, as they have achieved a stable status in the labour market. However, only a small proportion of those who retire are aged under 50. For them, the illnesses and handicaps are often such that staying on in the labour market is no longer possible. One reason for calculating the expectancy for 50-year-olds is actually that the inclination to retire among persons who have reached the age of 50 can be affected also by pension policy.

### **Mode of calculating the Nordic expected effective retirement age**

The expected effective retirement age is calculated by first calculating the insured persons' mortality rate and retirement risk for each age group during the year of observation. Using these proportions, it is possible to calculate how many individuals in a group of insured of a certain size and age (for instance 100,000 30-year-olds) would retire within one year. The number of insured which remains at a one year higher age is obtained by subtracting from the original number those who have retired and the number of deceased calculated from the mortality rates. Continuing in this way, age by age until the retirement age for an old-age pension (or some other agreed age), is reached, the calculated numbers of those retiring are obtained for each age group. The average age calculated from these assumed retirements is the expected effective retirement age.

The data used is the employment statistics of each country's statistics office. The data is uniform, since the Nordic statistics offices co-operated in defining the concepts used. The data is based on the population resident in the country at the end of the year. The statistics describe the distribution of the population at the end of the statistical year between different statuses (e.g. numbers of retired persons and number of economically active persons). Since the statistics describe the situation at the end of the year, the number of persons who have retired has to be estimated through the population changes and changes in the number of pension recipients for two consecutive years for each cohort.

Since the statistics of the statistics offices in the different Nordic countries are produced on different dates, the data for this publication is available considerably later than the national data of the different countries. This indicator also does not replace the national indicators for the effective retirement age, but supplements them by providing an international dimension.

## **2 Expected effective retirement age in the Nordic countries**

Comparison of the development in different countries is made more difficult by the differences in the pension schemes: the pension schemes have been reformed at different times, and these changes have effects on the effective retirement age in different years. As a general observation it can be said that the objective of the Nordic pension reforms is to postpone retirement, and on the basis of the last few years this is also what seems to be happening.

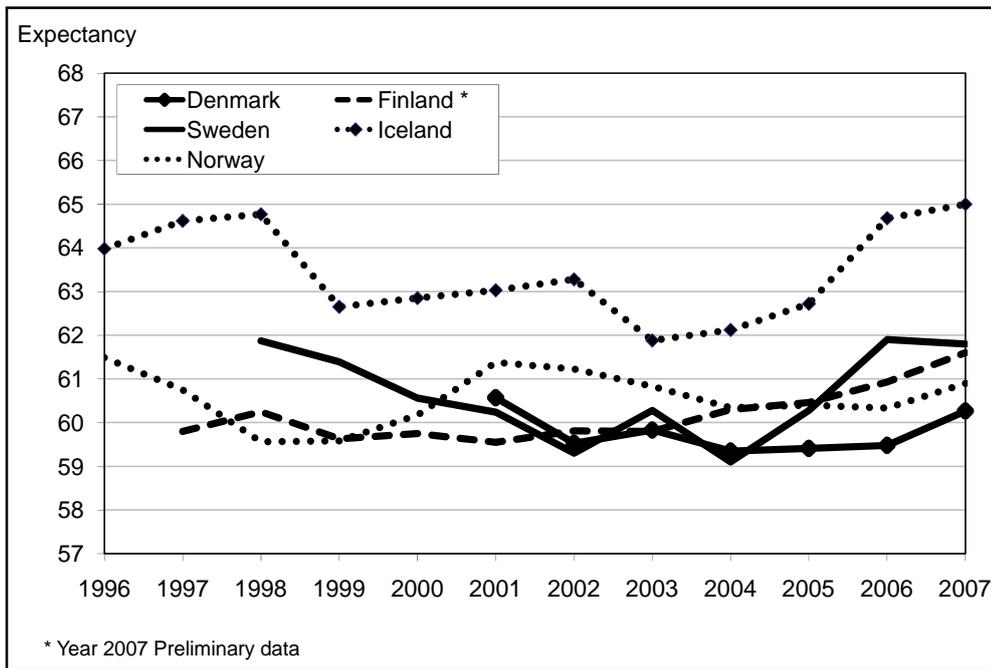
Even though this paper uses different data and the method is also slightly different from that of the national calculations, the results are very similar. The levels differ somewhat from the countries' national figures. However, the development described in this paper corresponds quite well to the situation in the different countries and provides further information for international comparisons.

### **Expected effective retirement age for 30-year-olds**

Figure 1 shows the development of the effective retirement age for 30-year-olds in the Nordic countries between 1996 and 2007. In Iceland people retire clearly later than in the other Nordic countries. In 2007 the expected

effective retirement age for 30-year-olds in Iceland was 65 years. In the other Nordic countries it varied between 60.3 and 61.8 years.

The development over time has also differed. In Finland, the effective retirement age was relatively stable in the first few years of the 2000s. At the same time a slight trend-like decrease in effective retirement age could be observed in the other Nordic countries, which stopped in about 2005. At that time it seems the effective retirement age took a turn upwards. In Norway, however, the effective retirement age has decreased almost to the level at the end of the 1990s even though it had risen in between. In Sweden, the expectancy has started to increase in 2005 after several years of decrease. In Denmark, the effective retirement age has decreased slightly in 2000-2004. In the latest year observed in Figure 1, Iceland is at its own level of effective retirement age, while Finland and Sweden are at the same level, ahead of Norway and Denmark.

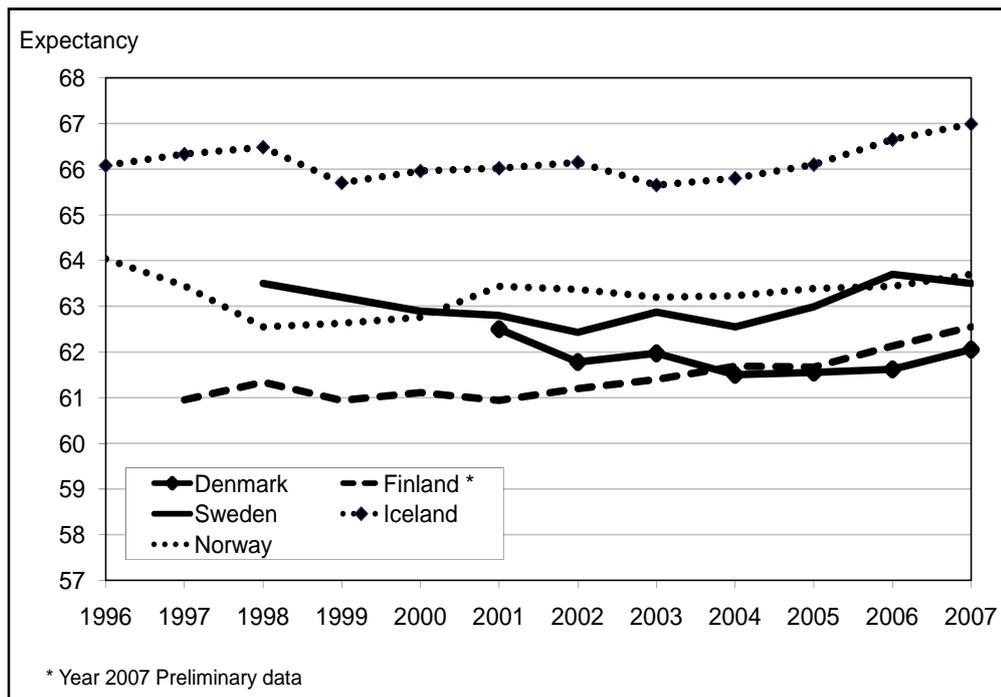


**Figure 1.** Expected effective retirement age for 30-year-olds in the Nordic countries in 1996–2007

### Expected effective retirement age for 50-year-olds

Similarly to the effective retirement age for 30-year-olds, there are also differences in the effective retirement age for 50-year-olds between the Nordic countries (see Figure 2). The differences here are even larger. The expected effective retirement age for 50-year-olds is also clearly highest in Iceland. In 2007 it was 67 years. The reason for this higher level (about three years more than the expectancy for 30-year-olds) is probably the higher legislated retirement age in Iceland (70 years) and especially men's late retirement. In Denmark the expected effective retirement age for 50-year-olds was the lowest (62 years), in Finland slightly higher, and in Norway and Sweden approximately 63.5 years.

The observed changes in effective retirement age for 50-year-olds are pretty small. If anything, Iceland has increased its lead to Denmark, Norway and Sweden. Also in Finland, the expectancy has increased from the Nordic laggard ahead of Denmark. Norway has in recent years stayed at the same level. In Denmark, the expectancy for 50-year-olds has actually decreased from 2001, although the last few years show a small trend upwards.



**Figure 2.** Expected effective retirement age for 50-year-olds in the Nordic countries in 1996–2006

## Summary

There are some differences in effective retirement age between the Nordic countries. In Iceland the effective retirement age is exceptionally high compared to the other countries. In addition the difference in effective retirement age between men and women is clearly larger than in the other Nordic countries.

In Sweden the effective retirement age has started increasing after 2004. At the same time the difference between men and women seems to narrow. In Norway the effective retirement age has varied more than in the other Nordic countries. In the early 2000s the expectancy decreased, but turned slowly to increase after that, especially in 2007. In Denmark, the effective retirement age has decreased slightly in the early 2000s. This trend seems to have come to a halt, however.

A joint Nordic phenomenon seems to be the development in recent years. The effective retirement age has started to increase as of late, or at least the decreasing trend no longer continues. This has surely been affected by favorable economic and labour market developments and the changes to the pension legislation that have been carried out in the Nordic countries.

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[christian.skarman@scb.se](mailto:christian.skarman@scb.se)

+46 (8) 506 94 283

Box 24 300  
104 51 Stockholm

## **Second generation immigrants cross border migration**

The aim of the study is to examine the cross border migration of the second generation immigrants, as an input in Statistic Sweden's forecast model.

Statistic Sweden's forecast model is based on emigration and re-immigration risks for the Swedish born population. There is an increasing proportion of the Swedish born population that has one or two parents that are born abroad. In order to determine the migration behavior of the future Swedish born population it is therefore of interest to examine if the second generation immigrants has a significantly different migration behavior that could have an increasing impact on the future emigration and re-immigration risks for the total Swedish born population. Because the forecast only aims to estimate the number of persons that is officially in Sweden, this study do not take into account unregistered migrations.

The preliminary results show that the emigration risks for adult Swedish born persons with two foreign born parents is more than three times larger than for those with two Swedish born parents, while those with one foreign born parent have about twice as high emigration risks. It is more common to migrate to the parent's country of birth if it is a western country with high income levels, while it is less common among those whose parents comes from poor countries. The proportion of the registered migrants that are going abroad to study is quite small and therefore it could be assumed that it is mostly career opportunities that are the driving force behind the registered emigration.

The re-immigration risks are highest for the Swedish born persons with two Swedish born parents and lowest for those with two Swedish born parents. The re-immigration varies with the economic cycle and in recession the re-immigration risks are lower for all groups of Swedish born. Of those who emigrated in the year 1998 about 70 percent of those with two Swedish born parents had re-immigrated to Sweden after exactly 10 years, about 60 percent of those with one foreign born parent and about 45 percent of those with two foreign born parents.

Second Generation Immigrants and Age at Motherhood. A Longitudinal Study of The Impact of Intergenerational Transmission of Fertility Behavior.

Maria Stanfors & Kirk Scott

Center for Economic Demography and Department of Economic History

Lund University, Sweden

[Maria.Stanfors@ekh.lu.se](mailto:Maria.Stanfors@ekh.lu.se)

[Kirk.Scott@ekh.lu.se](mailto:Kirk.Scott@ekh.lu.se)

Extended abstract

This paper makes use of a newly-created multigenerational register to examine the fertility integration of the second generation of immigrants in light of the fertility history of their mothers, their background group, and the native population. The main question answered is to what extent the children of immigrants have assimilated to host-country norms in terms of age at entrance into motherhood. This study will focus upon the role of labor market status of the individual as well as parental characteristics on the process of becoming mothers for groups from varying national backgrounds and native Swedes. Using register data comprising the entire Swedish population, we are able to study the process of becoming parents for second-generation immigrants while controlling for the entire reproductive and labor market history of the parental generation. The underlying hypothesis is that intergenerational reproduction of age at motherhood should be lower for immigrants than natives if integration is occurring over the generations.

With an increasing share of foreign-born residents in Sweden, the issue of immigrant integration has become a pressing social concern. A large body of research has addressed the issue from different angles with somewhat mixed results. On the one hand, evidence suggests that assimilation is occurring in various areas of life, such as education, socioeconomic status, position, and intermarriage. On the other hand, a number of studies show differences with respect to immigrant experience and nationality and argue that modern day immigrants face challenges that complicate their prospects for assimilation and lead to segmented assimilation among immigrants (cf. Portes & Rumbaut, 1996; Portes & Rumbaut, 2001; Portes & Zhou, 1993; Zhou, 1997). This segmentation is not only problematic for first-generation immigrants but also for their children, since it may hinder upward mobility for subsequent generations or even lead to downward socioeconomic mobility across generations. While integration and assimilation has been extensively examined for first-generation immigrants, much less attention has been paid to the question of second generation migrants' integration into society, neither in comparison to the integration of their parents' generation nor to native Swedish-born of the same age.

Since we believe that the true story cannot be understood without taking an intergenerational approach, this paper will take us one step further when it comes to understanding immigrant fertility and assimilation in Sweden by investigating the childbearing behavior of a number of groups of second generation women in relation to otherwise comparable native women with Swedish-born parents during the period 1981–2005. We examine the propensity of childless women to enter motherhood in order to detect differences in patterns between second generation immigrants with differing origins but also between them and the native Swedish-born. We use register-based information on the individual's education and labor market experience together with information on their parents' origin and fertility behavior to examine to what extent different economic activities and social experiences affect the transition to parenthood. The results make a contribution to our understanding of demographic effects of integration and indicate in what way nationality, family norms and differing immigrant experiences affect fertility behavior.

The fertility patterns of immigrants is a topic that is now extensively covered in a very rich literature (see e.g. Abbasi-Shavazi & McDonald, 2000 on Australia; Andersson, 2004; Andersson & Scott, 2005, 2007, on Sweden; Bean, Swicegood & Berg, 2000; Blau, 1992; Fischer & Marcum, 1984; Ford, 1990; Forste & Tienda, 1996; Glusker, 2003; Lindstrom & Saucedo, 2002; Ng & Nault, 1997; Stephen & Bean, 1992 on North America, notably the United States). The core issue in all of these studies has been whether immigrants adapt to life in their new country and the mechanisms through which this adaptation may occur. Related to this issue is in what way duration of residence in a new country is associated with assimilation and what the determinants of fertility are among different ethnic groups.

In the case of Sweden today, the childbearing patterns of women born in the Nordic and EU countries are very similar to that of Swedish-born women. The variation between different nationalities is little. Obviously, there is not only adaptation to Swedish childbearing norms, but a gradual assimilation process going on, indicated by the fact that the youngest cohort is the most similar to Swedish-born women when it comes to the propensity to have a child. Immigrant women born outside of Europe have higher fertility than the Swedish-born and women coming from less developed countries have the highest fertility. Change is occurring, although not equally among all nationalities, depending on the country of origin. Women from more developed countries are adapting somewhat more and quicker than women from less developed countries, who deviate the most from the childbearing pattern of the Swedish-born. Duration of residence in Sweden as a new country is associated with assimilation, and the propensity to have a child, irrespective of parity, is clearly higher among those who have arrived recently, especially from less developed countries from which many refugees come. The general picture is, however, an adaptation among immigrant women to the fertility pattern of the Swedish-born. When it comes to the determinants of fertility among different ethnic groups, Andersson (2004) shows that period trends in childbearing during the last decades have been quite similar for immigrant and Swedish-born women in a way that suggests that both groups have been affected quite

similarly by changes in economic and social factors that together make up the general climate of childbearing. In a thorough study of labor market status and economic independence, Andersson & Scott (2005) find further support for this in that the effects of earned income, various forms of participation and non-participation in the labor market do not vary much between immigrants and the Swedish-born. The similarity in patterns across national groups supports the notion that various institutional factors affecting all subgroups of society are crucial in influencing childbearing behavior.

Our previous study (Scott & Stanfors 2009) examined the fertility behavior of the second generation itself, with the only aspect of intergenerational transfer being the origin countries of the parents. This study examined the extent to which the daughters of immigrants of different nationality have integrated to Swedish fertility norms, and confirms that the second generation manifests fertility adaptation and that the children of immigrants also appear to be affected by policies working through economic incentives. The fact that the category social assistance is no longer significantly different from being employed for the second generation, while it had a significant depressing impact on fertility for the first generation, may indicate integration not only in fertility patterns but also in reliance on and belief in the welfare state. While this may not be an optimal outcome of integration, it is indicative that the second generation behaves more like natives than their parental generation. Differences between the groups arise largely from timing and the effects of education, suggesting that there may actually be a process of segmented integration occurring, with some groups investing more in careers and education, while others may see family formation as an alternative to less than desirable labor market prospects. Clearly, the most important aspect of immigrant integration, both for first generation and their descendants, is the working through the labor market

The current study takes this one step further. Integration can be seen at both the macro level as well as the micro level. The previous study can be seen as a more macro approach, despite using register data on individuals. We examined merely the mean fertility decisions of various groups of women, with no consideration of their families' fertility patterns. The only intergenerational aspect considered in that study was national origin of the parents. While the fertility integration of groups is obviously of importance, we are also interested in how fertility behavior of daughters differs from that of their parents.

To this end, we now exploit a fairly recent data opportunity found in the Swedish Multigenerational Register (*Flergenerationsregistret*). The data used come from the Swedish population registers maintained by Statistics Sweden, and information on biological and adopted children to all index persons in the sampling frame. From this dataset consisting of all individuals in the birth cohorts 1942–1989 who resided in Sweden at any time from 1961 onwards, we select all childless women contingent upon having a mother in the database as well. We follow individuals beginning in 1989, to woman's age 45, the birth of a first child, emigration, or death, or the end of the study period in 2005. Given the special construction of the Swedish registers, the focus will be upon the woman's situation, since partners in non-marital

unions are impossible to identify in the absence of joint children. For each individual we have linked register-based information on place of residence, income, education (level and field), branch of employment, as well as demographic events (deaths, external migration, and changes in civil status).

This register allows us to follow the childbearing careers of two generations of women in Sweden, and thereby identify differences or similarities in fertility between generations while controlling for within-family norms. This study takes two approaches to examining entrance into motherhood. The first is a fairly uncomplicated model where the entire Swedish population is observed, and we control for individual characteristics of both the daughter and the mother (during her fertile period). The second approach uses a subsample of the population consisting of families with two daughters. This portion of the study will allow us to better examine the impact of family norms on fertility through the use of a sibling approach with family fixed-effects. As mentioned above, a difference in the prevalence of intergenerational transmission of fertility behavior with second-generation immigrants being less similar to their mothers than Swedes is interpreted as a continuing integration process through the generations.

This study differs from earlier studies where the intergenerational transmission of fertility behavior is analyzed. First, we are not looking at completed fertility but rather at factors influencing the timing of the birth of a first child. A second, and more important difference, is that most studies (c.f. Blau & Kahn 2007, Blau et al 2008; Fernandez & Fogli 2009 for recent examples within the economics literature) measure intergenerational transmission using the characteristics of the parental immigrant generation as a whole, due to understandable data restrictions. We, however, are able to identify the parents in the population registers dating back to the late 1960s, and are thus able to use actual data regarding the parents' situation prior to birth, at the time of birth, and up to their death, emigration or the closing of our sampling frame. Using actual parental information, combined with information of the immigrant group as a whole, we come closer to disentangling the impact of "ethnic capital" from the impact of parental norms.

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## **Educational and labour market outcomes of second generation immigrants in Sweden**

Immigration to Sweden is a post-war phenomenon. Today Sweden's population is characterized of an increasing part of persons with foreign background. In the 1960 and early 1970s most of the immigration to Sweden consisted of labour market immigrants from the other Nordic countries, particularly from Finland, and countries in southern Europe. In the 1970s immigration to Sweden started to take on a somewhat different character and since then refugee immigrants and their relatives have been dominating the immigration to Sweden. The children of the labour market immigrants of the 1960s and 1970s and the early refugee immigrants are today reaching the ages 30 and above, ages when the majority of individuals have completed their studies and begin to establish themselves in the labour market.

The study gives a descriptive overview of educational and labour market outcomes of second generation immigrants in Sweden. Special attention is on the group of second generation immigrants in the ages around 30. We will distinguish between persons born in Sweden with one or two foreign born parents. Results based on the birth country of the parents are also presented.

Results of employment rate, occupational orientation, educational attainment and educational orientation will be presented for different groups of second generation immigrants. We will also focus on the role of parent's education.

Preliminary results show that the employment rate of second generation immigrants (aged 20-64) are in line with that of persons with two Swedish born parents. But there are differences in both educational attainment and employment rate when controlling for parent's birth region. For second generation immigrants who was 30 years of age in 2007 the education level was higher for individuals whose parents were of non-European origin compared with those with Nordic born parents. In the labour market (individuals aged 20-64), however, the employment rate is high for those with parents born in either Nordic or EU countries. For those with parents of non-European origin the employment rate is quite similar to the group born abroad.

The results are derived from register based employment and educational statistics at Statistics Sweden.

# **Ethnic School Segregation and Second Generation Immigrants' Human Capital\***

by

Martin Nordin<sup>†</sup>

## **Abstract**

Recent research report that there is a substantial skill difference in Sweden between natives and second-generation immigrants. The objective of this study is to find out whether there exists a relationship between attending an ethnically segregated school and the individuals' human capital and the extent to which such an ethnic school effect helps to explain the skill deficits of second generation immigrants.

The variation in ethnic concentration rate between cohorts *within a school* is generally not affecting the individual's human capital outcome. However, when estimating separate ethnic segregation effects for natives and second generation immigrants we find a positive ethnic externality, on second generation immigrants' cognitive test score and educational attainment, of having a large share of schoolmates with a foreign background. The interaction with fellow second generation immigrants do on the other hand seem to affect their Swedish skills negatively.

Part from the ethnic cognitive test score gap our analysis has managed to explain the human capital gaps versus natives. In explaining the Swedish skill gap ethnic school segregation does seem to matter.

**JEL classification:** J24, I21

**Key words:** Segregation, test score gap, educational attainment, school effect

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<sup>†</sup> Department of Economics, Lund University, P.O. Box 7082, 220 07 LUND, Sweden. Phone +46-46-222 46 69, e-mail: Martin.Nordin@nek.lu.se.

## 1. Introduction

Nordin and Rooth (2009) found substantial cognitive skill differences in Sweden between male natives and male second-generation immigrants with a background in Southern Europe or outside Europe. Furthermore, they were able to explain almost the entire native-second generation immigrant income gap with the results on the (cognitive) Swedish Military Enlistment test. This is in line with the influential study by Neal and Johnson (1996), which explains the wage gap between whites and blacks in the US with the skill differences between the groups,

These results raise the important question what lies behind the observed gaps. Recent studies have found the skill gap between whites and blacks in the US to be partly caused by racial segregation. Hanushek et al. (2009) explain parts of the black-white achievement gap with the share of black schoolmates. Cook and Evans (2000) attribute the substantial narrowing of the black-white achievement gap that has occurred since 1970 to changes within schools. They show that only 25% of the convergence can be attributed to changes in family background and changes in differences in school quality between schools. Card and Rothstein (2007) find a negative association between black test scores and neighborhood segregation (but not school segregation) in the US.<sup>1</sup>

Since Nordin and Rooth (2009) show that the skill gap between natives and second generation immigrants in Sweden is not a reflection of the socioeconomic position (income and education) of the parents, it appears vital to study if school- and neighborhood segregation in Sweden creates obstacles to acquiring productive skills for these groups of immigrants. Since the Swedish metropolitan areas have developed, and are continuing to develop, an ethnic and socio-economic segregation, any negative school- and neighbourhood effects on skill formation risk further increasing already established skill differences between the groups.

Against this background the objective of this study is to find out whether, in metropolitan Sweden,<sup>2</sup> there exists a relationship between attending an ethnically

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<sup>1</sup> Other studies focusing on ethnic segregation are for example Borjas (1995) and Cutler and Gleaser (1997).

<sup>2</sup> Because some schools change name and/or identification number during the time period that we study, it is difficult to follow a particular school, in the data, over time. Therefore, to get a manageable number of schools it is necessary to restrict the sample in some way. A convenient restriction is to choose the metropolitan areas in Sweden, i.e. Stockholm (and some of its suburbs), Gothenburg and Malmö, since the *Commission on Metropolitan Areas in Sweden* argues that these areas contain the most socially disadvantaged areas in Sweden. The Commission is a drafting body in the Government Offices whose task is to monitor and evaluate national metropolitan policy.

segregated school and the individuals' human capital and the extent to which such an ethnic school effect helps to explain the skill deficits of second generation immigrants. The aim is also to find out whether attending an ethnically segregated school affects second generation immigrants differently from native Swedes, that is if the ethnic school effect differs for natives and second generation immigrants. A special feature of our study is that we are able to analyze and compare several different measures of human capital or skills, namely cognitive ability, educational attainment and compulsory school grades.

Contrary to the US case where neighbourhoods often can be classified as white, black, hispanic etc., the socioeconomically segregated schools and neighbourhoods in Sweden are very ethnically mixed.<sup>3</sup> Therefore, to calculate an ethnic school segregation measure we use the share of first and second generation immigrants among pupils graduating from a particular school.<sup>4</sup>

The effect of attending an ethnically segregated school might be overestimated if there are unobserved family factors affecting both the child's human capital and the choice of school district. Residential location and school district is not random and selection is known to take place. Observed family factors, such as parents' education level and earnings, obviously affect the residential decision. Hence, if there is selection that we cannot control for the school effect might be overestimated.<sup>5</sup>

To handle selection we use an empirical strategy proposed by Hoxby (2000). She argues that one should use the variation between cohorts *within a grade within a (public) school* as a source of idiosyncratic variation.<sup>6</sup> The cohort change in the share of first and second generation immigrants graduating from a particular school (at age 16) is likely to be uncorrelated with unobserved family characteristics. On the other hand, cohort variation in children's human capital outcome within a school may be caused by a time trend in family characteristics (within a school district). But by controlling for family income and parental education this potential time trend is addressed.

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<sup>3</sup> In our sample of second generation immigrants alone, there is a mixture of 127 nationalities living more or less evenly distributed over the neighbourhoods.

<sup>4</sup> Here it is graduation at age sixteen from nine years of compulsory schooling.

<sup>5</sup> Selection and measurement errors could obviously also result in an underestimated school effect. But when studying school- and neighbourhood effects in segregated neighbourhoods it is commonly assumed that the bias results in an overestimation of the school/neighbourhood effect.

<sup>6</sup> Peer variation between schools and peer variation between classrooms within a school, is according to Hoxby, not a satisfactory type of variation. See Hoxby (2000) for a further discussion.

There are few similar studies performed on Swedish data. Dryler (2001), Szulkin and Jonsson (2004) and Szulkin (2006) primarily examine the relationship between school grades achieved and ethnic school segregation and find that school grades generally are lower in ethnically segregated schools. For immigrants, Grönqvist (2006) finds a negative association between the size of the ethnic enclave and the probability of graduating from higher education.

The result of our study indicate that the skills of male second-generation immigrant is rather positively than negatively affected by ethnic school segregation, i.e. there seem to exist a positive ethnic externality. The interaction with fellow second generation immigrants do on the other hand seem to affect second generation immigrants Swedish skills negatively.

The paper is structured in the following way. The data and descriptive statistics are presented in section 2. Section 3 describes and discusses the specification of the econometric model. The results are reported in section 4. Section 5 concludes the study.

## **2 Data and descriptive statistics**

Our empirical analysis uses data from Statistics Sweden. The basic data is a full sample of every individual in the age group 20-27, living in Sweden in the year 1999. However, the sample used in the analysis contains only Swedish-born individuals, i.e. it includes only second generation immigrants and natives.<sup>7</sup> The exclusion of first generation immigrants implies that the analysis escapes possible problems with immigration effects. The data is further restricted to individuals graduating from a compulsory school located in a municipality belonging to the ones included in the analyses of the *Commission on Metropolitan Areas in Sweden*, i.e. a school located in Stockholm (or some of its suburbs), Gothenburg or Malmö. The sample then includes 100,586 individuals. By excluding individuals attending a private school the sample is reduced to 95,636 individuals.<sup>8</sup>

The data provides information on which compulsory school the individual has graduated from.<sup>9</sup> After categorizing the individuals into different schools, each school's

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<sup>7</sup> Where natives are defined as Swedish-born with two Swedish-born parents. Second generation immigrants are defined as born in Sweden and having at least one parent born abroad.

<sup>8</sup> 2,721 individuals (2% of the natives and 4% of the second generation immigrants) are also excluded because information on either the individual's educational variable or grades is missing.

<sup>9</sup> It is only from the academic year 1992/93, that every Swedish pupil has a right to choose to attend a school outside the local school district. This is after our cohorts started senior level of compulsory school.

ethnic concentration rate is calculated. Our strategy for calculating the ethnic concentration rate is based on the concentration of first and second generation immigrants attending the school.<sup>10</sup> More precisely, the concentration rate is the share of first and second generation immigrants graduating from the school a particular year. Thus it is the cohort-specific ethnic concentration rate that we use.<sup>11</sup> This leaves us with an average ethnic concentration rate of 31% at the included schools.

We divide the individuals into natives and eleven different groups of second generation immigrants. The categorization of the second generation immigrants is based on parental region of birth: Nordic countries, Western Europe (including North America and Oceania), Eastern Europe, Southern Europe and outside Europe. We also identify whether one or both parents are foreign-born. Individuals with a mixed foreign background, i.e. where both parents are born abroad but in different countries, constitute a separate group named *Mixed*. Sample sizes for each group of second generation immigrants are found in Table 1. A majority, 53%, of the second generation immigrants have a native Swede as their father/mother.

Our measure of cognitive ability is the test score from the Swedish Military Enlistment Battery test, which tries to measure cognitive ability<sup>12</sup> and is taken by virtually every male Swedish citizen when he turns 18.<sup>13</sup> Besides lacking the test score for women, 10% of the men are lost due to missing values in the test<sup>14</sup>, i.e. when analyzing the Enlistment test score the sample contains 44,111 men. Synonymous

Our educational attainment measure, SUN 2000, is for the year 2003.<sup>15</sup> The constructed educational attainment variable contains all potential years of schooling

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It is however not true for those aged 20 in 1999, but since it went some time until people started choosing a school outside the local school district it is practically also true for this group of individuals. Thus, since our cohorts have no right to choose to attend a school outside the local school district, school and school district are identical.

<sup>10</sup> Information regarding home municipality and school attendance is missing for 8% of the first generation immigrants. By excluding these individuals the actual concentration rate of first and second generation immigrants is in fact higher than that calculated by us, particularly because most first-generation immigrants decide to live in the metropolitan areas.

<sup>11</sup> The average school-specific ethnic concentration rate for the entire time period 1988-1995 is also calculated.

<sup>12</sup> Our cognitive measure is the general intelligence factor, G. For more information about the G factor, see Caroll (1993).

<sup>13</sup> For more information about the Swedish Military Enlistment Battery test see the Appendix.

<sup>14</sup> There are those who do not enlist because of legitimate health reasons. In 2000 (the latest year for which this information is available), 7 percent of the cohort did not have to enlist because of health reasons. Among the second generation immigrants we lose around 20%, mostly because of foreign citizenship.

between eight and twenty, except for nineteen years of schooling. Since we want to study final educational attainment, data from 2003 is used. The individuals are then in the ages 24-31. However, for 2003 we lack data (and therefore educational attainment) for the cohort aged 24, which reduces the sample used in the educational attainment analysis to 83,583 individuals.<sup>16</sup>

The final grades in math and Swedish from compulsory school (at age 16) are the grades that will be analyzed. Since the students choose different math courses,<sup>17</sup> either an advanced math course or a basic math course, but receive the same type of grades (from one to five) we have to calculate a common math grade. In our sample 61% of the individuals have taken the advanced math course. A national assessment test of every student provides support and guideline for teachers in the grading of the students. Irrespectively of the math course the students take same assessment test. Since we have this test result for a sample of individuals we are able to use it for calculating a common grade for both math courses. By calculating the mean test result (also a scale varying from 1 to 5) on the national assessment for each grade and for each math course a common math grade variable is arrived at. Students with a foreign home language are free to choose a Swedish course suited for their needs. Similarly as for the math grade we use the national assessment to calculate a common Swedish grade for both groups.

Summary statistics for test score, educational attainment and math and Swedish grades are given in Table 1. The statistics are reported separately for natives and each ethnic group, and for each gender. The table also contains the mean school-specific ethnic concentration rate for each ethnic group. Table 1 reveals that second generation immigrants with two foreign born parents more often than others attend ethnically segregated schools, and that the average ethnic concentration rate is highest for those with both parents born in Southern Europe or outside Europe. We also find the human capital outcome to be lowest for second generation immigrants with two parents born in the Nordic countries, Southern Europe or outside Europe. The Enlistment test score is particularly low for men with both parents born in Southern Europe or outside Europe.<sup>18</sup>

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<sup>15</sup> The measure is a revision of the former SUN classification adjusted to fit the International Standard Classification of Education (ISCED97).

<sup>17</sup> One percent of the individuals attend a school with only one track in mathematics.

<sup>18</sup> The difference in test score results is even larger than in Nordin and Rooth (2009). This is mostly for the reason that we restrict the sample to the metropolitan areas and include younger cohorts (since they

For second generation immigrants with a background in Western or Eastern Europe the human capital outcome is similar to that of natives.

### 3 Econometric specification

The econometric specification is based on Hoxby's (2000) model for identifying peer effects. The child's human capital outcome,  $HC$ , is explained with the following expression:

$$HC = \beta ER_{kc} + \sum_{k=1}^{139} \alpha_k S_k + \lambda y + \delta Educ_f + \rho Educ_m + \beta X + \varepsilon \quad (1)$$

where  $ER_{kc}$  indicates the concentration rate of first and second generation immigrants in the cohort  $c$  graduating from school  $k$ .  $\beta$  measures if the child's human capital outcome,  $HC$ , varies systematically with changes in the concentration rate of first and second generation immigrants between cohorts at a particular school. With the 139 school-fixed effects,  $S_k$ , time invariant school (and neighbourhood) characteristics are controlled for. Thus, by adding the school-fixed effects it is the cohort-to-cohort changes in the ethnic concentration rate *within a school* that identifies the ethnic school effect. The cohort-to-cohort changes are assumed to be random and not correlated with unobserved (family) factors.

However, if the ethnic share increases over time, and the increase is correlated with family factors one might estimate a time trend instead of an ethnic school effect. Since there may be a time trend in family characteristics in a school district we therefore control for family income,  $y$ , and father's and mother's education level,  $Educ_f$  and  $Educ_m$ .<sup>19</sup> As to the individual characteristics,  $X_i$ , cohort dummies are used together with a set of dummy variables describing what part of the world the parent/parents were born in. When school-fixed effects are not included in the model, i.e. when estimating *between school* differences in ethnic concentration rate, we instead add fixed effects for municipality.

The main factor influencing the children belonging to an ethnically segregated cohort are the peers, whom the children come across in school. Peer interaction and school characteristics have been invoked and explored in the literature. That peer achievement has a positive effect on student school achievement has been established in

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estimated income equations they restricted the sample to those aged 28 or older). They also excluded the group (a relatively low scoring group) with missing values for the separate test scores.

several studies (e.g. Hanushek et al., 2003; Hanushek et al., 2009; Hoxby, 2000; Zimmerman, 1999; Sacerdote, 2001).

If school characteristics vary with the cohort-specific ethnic concentration rate this might also affect the children.<sup>20</sup> It is however uncertain if teacher and school quality matters for student outcomes (Hanushek, 1986; Card and Krueger, 1992; Rivkin et al., 2005; Jepsen and Rivkin, 2009). Rivkin et al. (2005) do, however, find that unobserved differences in teacher quality may affect student performance. They also show teacher quality to vary within schools, rather than between schools. Nonetheless, if there is systematic variation in school characteristics we argue it is one part of  $\beta$  since it can be associated to the ethnic concentration rate.

#### **4 Empirical results**

We begin by analyzing the association between the individual's human capital outcomes and attending an ethnically segregated school, i.e. whether *between school* differences in the ethnic share explains the human capital outcome of the individual. We also take special interest in whether ethnic school segregation explains the human capital gaps between natives and the different groups of second generation immigrants. The analysis is carried out separately for each human capital outcome and for each gender. In a next step, by estimating the Hoxby model with cohort-specific concentration rates we examine whether the ethnic segregation effect is a causal effect. By controlling for family background a possible linear trend in family characteristics is controlled for. Finally, we examine whether ethnic segregation affects second generation immigrants differently than native Swedes.

##### *The ethnic gaps*

Tables 2 to 5 show the estimation results for the respective human capital outcomes. Table 2 reports the results when the Enlistment test score is our dependent variable. In Table 3 we analyze the educational attainment variable. Tables 4 and 5 show the estimation results for the math grade and the Swedish grade, respectively.

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<sup>19</sup> The Appendix lists and describes the construction of the covariates used in the study.

<sup>20</sup> Teacher quality and class size could be school characteristics that vary with the cohort-specific ethnic concentration rate. Good teachers might for example quit their job when the school becomes more segregated.

In all tables Column (1) for men and column (6) for women contain the coefficients of the different second generation immigrant groups when controlling for cohort and municipality. As in the descriptive statistics in Table 1 we find that the native-second generation immigrant human capital gaps are related to having one or two foreign-born parents. Also, the groups originating from Southern Europe or outside Europe are the ones most negatively affected by having one or two foreign born parents.

#### *Attending an ethnically segregated school*

For each human capital outcome column (2) for men and column (7) for women show a large and significantly negative school-specific effect of attending an ethnically segregated school. In column (3) for men and column (8) for women we estimate the school effect when the family background factors (family income and the parents' education levels)<sup>21</sup> are added to the model. The size of the effect of attending an ethnically segregated school decreases with around 50 to 60 percent when the family background factors are added, which shows that location is related to the socio-economic status of the family.

In general, when controlling for the school-specific ethnic concentration rate and family background, the negative impact on human capital outcomes of being a second generation immigrant decreases dramatically. Interestingly, for the groups of second generation immigrants with the largest ethnic gaps (those with both parents born in Southern Europe or outside Europe) when controlling for ethnic school segregation and family background the educational attainment and math gaps even turn positive (except for the math grade for women with both parents born outside Europe). For male second generation immigrants with both parents born in Southern- or outside Europe the negative Enlistment test score gap to natives remain large.

#### *A causal effect*

As a next step we estimate the ethnic school effect in lines with the Hoxby specification, i.e. we estimate if there is an association between the ethnic variation between cohorts *within a school* and the individual's human capital outcome. The results are presented in Tables 2 to 5, column (4) and (9) without control for family background, and columns (5) and (10) with control for family background.

It turns out that only for women's math and Swedish grades do we find a significantly and negative effect of ethnic school segregation. When controlling for family background the effect is significant only for women's Swedish grade (see Table 5 column 10). For men there is actually a positive relationship between ethnic school segregation and the Enlistment test score and educational attainment both when family background is and is not controlled for. The effect is however small and insignificant. The ethnic human capital gaps are very similar when using the cohort-specific ethnic concentration rate instead of the school-specific ethnic concentration rate. Thus, despite the small (and most often insignificant) cohort-specific ethnic school effect we explain as much of the ethnic human capital gaps as when using the school-specific ethnic concentration rate. This indicates that it is the school fixed effects in the Hoxby specification that are important and that school (and neighbourhood) differences between schools (and neighbourhoods) explain parts of the ethnic human capital gaps.

#### *School segregation and natives versus second-generation immigrants*

To analyze if ethnic school segregation affects second generation immigrants differently from native Swedes, we add separate cohort-specific ethnic concentration rate variables for natives and second generation immigrants with one or two foreign born parents.<sup>22</sup> In Table 6 the cohort-specific ethnic segregation effects are reported for natives and second generation immigrants with two respectively one foreign-born parent. The upper panel reports the results for men and the lower panel the results for women.

In contrast to our earlier results about the cohort-specific ethnic segregation effects Table 6 reveals a number of interesting findings. First, column (1) shows that the Enlistment test score for male second generation immigrants with two foreign born parents is significantly positively influenced by ethnic school segregation. Secondly, for educational attainment the ethnic school segregation effect for women goes in different directions for natives and second generation immigrants. The effect on educational attainment are, however, never significant.<sup>23</sup> Thirdly, the natives' math grades are significantly lower when the ethnic concentration rate increases. Finally, and most

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<sup>21</sup> All family background variables have the expected sign.

<sup>22</sup> An alternative specification would be to add an interaction between a second generation immigrant dummy and the cohort-specific ethnic concentration rate variable. However, this gives us the difference in ethnic segregation effects between the groups instead of the effect for second generation immigrants.

<sup>23</sup> The difference in coefficient compared to natives is significant on the 5%-level for those with two foreign born parents and significant on the 10%-level for those with one foreign born parent.

interestingly, we find a substantial and significant effect of ethnic school segregation on the Swedish skills of second generation immigrants (both men and women) with two foreign born parents. Also (but not reported), when we use separate cohort-specific ethnic concentration rate variables for the groups, the Swedish grade difference to natives is explained for males with two parents born in Southern Europe or outside Europe and for women with two parents born in Southern Europe.

#### *The Enlistment test result and Swedish skills for second generation immigrants*

We have seen that family background and between school differences explain the ethnic educational attainment gaps and the ethnic math grade gaps and that ethnic school segregation explains the ethnic Swedish gaps. Hence, except for the Enlistment test result our analyses have explained most parts of the ethnic human capital gaps. Since second generation immigrants with two foreign born parents seem to lack in Swedish skills we investigate if this is part of the explanation behind the low results on the Enlistment test for these groups. Table 7 shows the results by adding a control for Swedish grades. Comparing columns (1) and column (2) we find that the Swedish grades explain roughly 50% of the test score gap for second generation immigrants with two parents born in Southern Europe or outside Europe.

The Swedish grades also explain the relatively large Enlistment test score gap for second generation immigrants with two parents born in the Nordic countries. Adding family background in column (3) and school fixed effects in column (4) we explain another 20% of the Enlistment test score gap for second generation immigrants with two parents born in Southern Europe or outside Europe, i.e. only 40% and 26% of the original gaps remain (when comparing the gaps in column (1) with the gaps in column (3)).

## **5 Conclusions**

Our study has reported a relationship between attending an ethnically segregated school and the individuals' human capital outcomes in the metropolitan areas of Sweden. The relationship is relatively strong, but it is not necessarily a causal effect.

By analyzing whether the variation in ethnic concentration rate between cohorts *within a school* affects the human capital outcome we aim at estimating a causal effect. The estimations show (except for women's Swedish grade) an insignificant ethnic

school segregation effect. However, when estimating separate ethnic segregation effects for natives and second generation immigrants with one or two foreign born parents a somewhat different picture emerges. Having a large share of schoolmates with a foreign background influences the Enlistment test score positively (for men), but the Swedish grade negatively (for men and women), for second generation immigrants with two foreign born parents. Consistent with the positive effect on the Enlistment test, educational attainment seems for second generation immigrants to be positively (however insignificantly) influenced by the share of ethnic schoolmates.

A possible explanation for a positive ethnic school segregation effect is an ethnic externality having a positive impact on the human capital outcome for second generation immigrants. Assuming that it is positive to have schoolmates with the same ethnic origin as oneself, ethnic school segregation does not have to be negative for youths attending ethnically segregated schools. Edin et al. (2003) who study the economic consequences of living in ethnic enclaves for immigrants in Sweden also report a positive externality. They find that living in enclaves improves the labour market outcome for less skilled immigrants, and that the gain from living in an enclave is largest for immigrants belonging to a high-income ethnic group. Also the ethnic share in a neighbourhood seem to be positively related to the compulsory school grade of immigrant children (Åslund et al., 2009)

But as the ethnic externality affects the general human capital outcome of second generation immigrants positively (Enlistment test and educational attainment) a close interaction with fellow second generation immigrants who speaks the same foreign language as oneself might influence the Swedish skills negatively. The particularly large and negative ethnic school segregation effect on the Swedish skills of second generation immigrants with two foreign born parents agrees to such an explanation.

Since the ethnic school effect for second generation immigrants goes in different directions for different human capital outcomes a bias caused by a linear time trend in unobservable family characteristics is unlikely.

Moreover, the study reports natives' math grade (and possibly also native woman's educational attainment) to be lower when the ethnic concentration rate increases. Why

this is so is uncertain, but it could be that attending an ethnically segregated school is more harmful for natives than for second generation immigrants.<sup>24</sup>

The analysis has as well shown that the ethnic educational attainment gaps and the ethnic math grade gaps are explained by family background and between school differences, but it does not seem as it is the ethnic concentration rate as such that explain these gaps. However, the substantial ethnic school segregation effect on the Swedish grade for second generation immigrant with two foreign born parents explains the Swedish grade differences against natives.

The Enlistment test score differences for second generation immigrants with two foreign born parents is still partly unexplained, even if we manage to explain up to 75 percent of the gap when also taking regard of the low Swedish skills of these groups.

Whereas the sample sizes of second generation immigrants from Southern- or outside Europe is relatively small we believe the results also stand for younger (and the larger) cohorts of younger second generation immigrants and for first generation immigrants attending compulsory school in Sweden. The relevance of the findings also increases as the Swedish society becomes more ethnically and socially segregated.

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<sup>24</sup> It could also be that selection on unobservables takes place in the case of natives.

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## **Appendix**

The Enlistment Battery has been used for the assessment of intelligence in the Swedish military since the middle of the forties. The test results from the Enlistment Battery principally measure a general ability, but to a certain extent also more specific abilities. The information from the test is then used to allocate the individuals into different branches of the military, and to select those who are capable of performing more qualified jobs. The Enlistment Battery includes four tests, Instructions, Synonyms, Metal folding and Technical comprehension. The aim of the Instruction test is to measure the individual's ability to make induction, while the test Synonyms captures verbal ability. Verbal skills are however also needed for performing well on the Instruction test. Metal Folding is a spatial test, and the fourth test measures Technical comprehension. Each test is normalised into a nine-point scale. The values are then, in accordance with the method of factor analysis, summed up and transformed into a new nine-point scale. Using the nine-point scale or the actual test score as our cognitive ability measure makes little difference to the results in this study. Since there are more missing values for the separate test we prefer the nine-point scale.

An estimate of average earnings, based on more than one year, is a less "noisy" measure than one based on a single year and therefore the mother's and father's average incomes for the years 1970, 1975 and 1980<sup>25</sup> are computed. If any of the incomes for the three years are zero, an average of the remaining positive incomes is computed. We then add the mother's and father's average incomes and obtain a measure for the family income.

The reported education level is the highest education attained by the parent. Four dummy variables indicate if the education levels of the mother and the father are upper

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<sup>25</sup> All earnings are in 1980 prices.

secondary, short university, long university or a graduate degree. The reference group has completed compulsory school for the mother's and father's education level. Missing values for the father's and the mother's education levels are reported in X% and X% of the cases, respectively.

## Tables

**Table 1.** Summary Statistics

<i>Men</i>	<i>Ethnic conc. rate</i>	<i>Test score</i>	<i>Educational attainment</i>	<i>Math grade</i>	<i>Swedish grade</i>	<i>N</i>
Swedish	.28 (.00)	5.25 (.01)	12.48 (.01)	2.79 (.00)	2.98 (.00)	36,737
<i>Two foreign born parents:</i>						
Nordic countries	.44 (.00)	4.42 (.06)	11.57 (.05)	2.45 (.02)	2.44 (.02)	1,537
Western Europe	.35 (.02)	5.56 (.39)	12.16 (.28)	2.67 (.14)	2.85 (.11)	50
Eastern Europe	.35 (.01)	5.12 (.10)	12.78 (.12)	2.85 (.04)	2.98 (.04)	361
Southern Europe	.47 (.00)	3.67 (.05)	11.93 (.05)	2.48 (.02)	2.56 (.02)	1,635
Outside Europe	.51 (.01)	3.63 (.06)	11.60 (.07)	2.41 (.03)	2.33 (.02)	1,142
Mixed	.41 (.01)	4.48 (.06)	12.20 (.06)	2.61 (.03)	2.73 (.02)	1,172
<i>One foreign born parent:</i>						
Nordic countries	.31 (.00)	5.08 (.04)	12.16 (.04)	2.68 (.02)	2.88 (.01)	2,609
Western Europe	.29 (.00)	5.26 (.06)	12.56 (.06)	2.80 (.02)	2.99 (.02)	1,231
Eastern Europe	.32 (.01)	5.10 (.08)	12.64 (.08)	2.80 (.03)	2.97 (.03)	768
Southern Europe	.35 (.00)	4.67 (.06)	12.12 (.06)	2.54 (.03)	2.82 (.02)	1,073
Outside Europe	.34 (.01)	4.92 (.07)	12.27 (.07)	2.65 (.03)	2.89 (.02)	953
<i>Women</i>						
Swedish	.28 (.00)		12.88 (.01)	2.82 (.00)	3.34 (.00)	34,444
<i>Two foreign born parents:</i>						
Nordic countries	.44 (.00)		12.02 (.05)	2.54 (.02)	2.87 (.02)	1,624
Western Europe	.37 (.03)		12.89 (.33)	2.74 (.14)	3.21 (.11)	41
Eastern Europe	.36 (.01)		13.12 (.14)	2.79 (.05)	3.30 (.04)	292
Southern Europe	.49 (.00)		12.19 (.05)	2.5 (.02)	2.89 (.02)	1,467
Outside Europe	.51 (.01)		11.87 (.06)	2.29 (.03)	2.53 (.02)	1,139
Mixed	.41 (.01)		12.56 (.07)	2.59 (.03)	3.10 (.02)	1,056
<i>One foreign born parent:</i>						
Nordic countries	.32 (.00)		12.49 (.04)	2.68 (.02)	3.27 (.01)	2,523
Western Europe	.30 (.00)		12.97 (.06)	2.80 (.02)	3.38 (.02)	1,127
Eastern Europe	.31 (.01)		13.09 (.08)	2.87 (.03)	3.40 (.02)	703
Southern Europe	.35 (.00)		12.39 (.07)	2.54 (.03)	3.17 (.02)	1,022
Outside Europe	.33 (.01)		12.62 (.07)	2.67 (.03)	3.27 (.02)	930

Notes: For the Enlistment test the total sample contains 44,111 men, and for Educational attainment the total sample contains 43,020 men and 40,565 women. Standard errors in parentheses.

**Table 2.** Results of estimating the ethnic Enlistment test score gaps and the ethnic school effect (men).

<i>Men (n=44,111)</i>	1	2	3	4	5
<i>Two foreign born parents:</i>					
Nordic countries	-.772 .062***	-.506 .062***	-.141 .058**	-.482 .061***	-.146 .058**
Western Europe	.257 .364	.354 .360	.564 .334*	.358 .355	.535 .333
Eastern Europe	-.063 .107	.066 .106	-.179 .098*	.036 .104	-.198 .098**
Southern Europe	-1.514 .054***	-1.163 .055***	-.823 .051***	-1.142 .055***	-.829 .052***
Outside Europe	-1.624 .068***	-1.225 .068***	-.724 .064***	-1.263 .068***	-.760 .065***
Mixed	-.749 .064***	-.511 .064***	-.320 .059***	-.521 .063***	-.336 .059***
<i>One foreign born parent:</i>					
Nordic countries	-.181 .041***	-.124 .040***	-.014 .038	-.114 .040***	-.018 .037
Western Europe	-.012 .061	.020 .061	-.089 .056	-.020 .060	-.094 .056*
Eastern Europe	-.139 .072*	-.058 .071	-.181 .066***	-.108 .070	-.207 .066***
Southern Europe	-.588 .062***	-.454 .062***	-.241 .057***	-.428 .061***	-.243 .057***
Outside Europe	-.396 .067***	-.265 .066***	-.212 .062***	-.290 .065***	-.230 .062***
School-specific ethnic conc. rate		-1.915 .062***	-.808 .059***		
Cohort-specific ethnic conc. rate				.064 .178	.140 .167
School fixed effects	no	no	no	yes	yes
Family background	no	no	yes	no	yes
R-squared	.05	.07	.20	.10	.21

Notes: The dependent variable is the Enlistment test score. In the baseline model, column (1), we control for cohort (cohort dummies) and municipality. In column (2) the school-specific ethnic concentration rate is added, and in column (3) we also add family background. In column (4) we add the cohort-specific ethnic concentration rate and school fixed effects to the baseline model (while municipality is omitted). In column (5) family background is also added. Standard errors are shown below the coefficients.

**Table 3.** Results of estimating the ethnic educational attainment gaps and the ethnic school effect (men and women).

	Men (n=43,020)					Women (n=40,565)				
	1	2	3	4	5	6	7	8	9	10
<i>Two foreign born parents:</i>										
Nordic countries	-.857	-.545	-.126	-.555	-.156	-.786	-.448	-.013	-.460	-.047
	.056***	.057***	.052**	.056***	.052***	.054***	.054***	.050	.054***	.051
Western Europe	-.293	-.216	-.101	-.242	-.140	.069	.262	.419	.135	.355
	.304	.300	.273	.296	.272	.333	.329	.299	.324	.298
Eastern Europe	.287	.436	.291	.411	.272	.250	.425	.286	.408	.291
	.116**	.115***	.105***	.113***	.104***	.128*	.127***	.115**	.125***	.115**
Southern Europe	-.568	-.185	.151	-.197	.127	-.704	-.235	.119	-.275	.075
	.055***	.055***	.051***	.056***	.052**	.057***	.058***	.054**	.059***	.055
Outside Europe	-.844	-.424	.209	-.486	.156	-.975	-.481	.206	-.517	.161
	.070***	.070***	.065***	.071***	.066**	.070***	.071***	.065***	.071***	.066**
Mixed	-.275	-.029	.205	-.048	.182	-.323	-.055	.158	-.069	.143
	.066***	.066	.060***	.065	.060***	.068***	.068	.062**	.067	.062**
<i>One foreign born parent:</i>										
Nordic countries	-.302	-.241	-.093	-.217	-.089	-.365	-.280	-.085	-.259	-.082
	.044***	.043***	.039**	.042***	.039**	.044***	.044***	.040**	.043***	.040**
Western Europe	.060	.090	-.002	.056	.004	.081	.124	.009	.088	.009
	.062	.062	.056	.061	.056	.065	.064*	.059	.063	.058
Eastern Europe	.141	.227	.101	.195	.094	.188	.248	.073	.181	.067
	.079*	.078***	.071	.077**	.071	.083**	.081***	.074	.080**	.074
Southern Europe	-.381	-.236	.062	-.196	.073	-.518	-.370	-.009	-.333	-.007
	.067***	.067***	.061	.066***	.061	.069***	.068***	.062	.067***	.062
Outside Europe	-.238	-.106	.056	-.089	.066	-.295	-.186	-.056	-.181	-.049
	.073***	.072	.066	.071	.066	.073***	.072***	.066	.071**	.065
School-specific ethnic rate		-2.089	-.770				-2.352	-1.062		
		.066***	.062***				.067***	.063***		
Cohort-specific ethnic rate				.104	.128				-.242	-.031
				.200	.184				.203	.187
School fixed effects	no	no	no	yes	yes	no	no	no	yes	yes
Family background	no	no	yes	no	yes	no	no	yes	no	yes
R-squared	.02	.04	.21	.08	.22	.03	.06	.22	.09	.23

Notes: The dependent variable is educational attainment. In the baseline model, column (1), we control for cohort (cohort dummies) and municipality. In column (2) the school-specific ethnic concentration rate is added, and in column (3) we also add family background. In column (4) we add the cohort-specific ethnic concentration rate and school fixed effects to the baseline model (while municipality is omitted). In column (5) family background is also added. Standard errors are shown below the coefficients.

**Table 4.** Results of estimating the ethnic math grade gaps and the ethnic school effect (men and women).

	<i>Men (n=49,268)</i>					<i>Women (n=46,368)</i>				
	1	2	3	4	5	6	7	8	9	10
<i>Two foreign born parents:</i>										
Nordic countries	-.326	-.203	-.019	-.201	-.025	-.257	-.124	.054	-.119	.051
	.023***	.023***	.021	.023***	.021	.022***	.022***	.020***	.022***	.020**
Western Europe	-.120	-.076	-.005	-.084	-.018	-.046	.025	.135	-.001	.128
	.123	.122	.113	.121	.112	.131	.130	.120	.128	.119
Eastern Europe	.079	.136	.072	.125	.062	-.013	.053	.005	.045	.006
	.046*	.046***	.042*	.045***	.042	.049	.049	.045	.048	.045
Southern Europe	-.295	-.143	.013	-.146	.006	-.307	-.127	.028	-.137	.014
	.022***	.022***	.021	.023***	.021	.022***	.023***	.021	.023***	.022
Outside Europe	-.392	-.218	.060	-.233	.052	-.530	-.338	-.042	-.346	-.051
	.026***	.027***	.025**	.027***	.026**	.026***	.026***	.025*	.026***	.025**
Mixed	-.175	-.074	.031	-.079	.025	-.228	-.122	-.028	-.130	-.033
	.026***	.026***	.024	.026***	.024	.026***	.026***	.024	.026***	.024
<i>One foreign born parent:</i>										
Nordic countries	-.113	-.088	-.029	-.082	-.030	-.138	-.107	-.032	-.100	-.031
	.018***	.018***	.016*	.017***	.016*	.017***	.017***	.016**	.017***	.016**
Western Europe	.006	.017	-.022	.002	-.020	-.028	-.011	-.052	-.019	-.047
	.025	.025	.023	.025	.023	.025	.025	.023**	.025	.023**
Eastern Europe	.014	.047	-.001	.039	-.001	.045	.068	.012	.048	.012
	.032	.031	.029	.031	.029	.032	.032**	.029	.031	.029
Southern Europe	-.255	-.199	-.075	-.185	-.072	-.289	-.232	-.090	-.226	-.094
	.027***	.027***	.025***	.026***	.025***	.027***	.026***	.025***	.026***	.024***
Outside Europe	-.161	-.106	-.047	-.114	-.055	-.170	-.127	-.064	-.128	-.062
	.029***	.028***	.026*	.028***	.026**	.028***	.028***	.026**	.027***	.026**
School-specific ethnic rate		-.816	-.284				-.894	-.393		
		.027***	.025***				.027***	.025***		
Cohort-specific ethnic rate				-.112	-.081				-.161	-.073
				.077	.071				.076**	.071
School fixed effects	no	no	no	yes	yes	no	no	no	yes	yes
Family background	no	no	yes	no	yes	no	no	yes	no	yes
R-squared	.02	.04	.18	.07	.20	.03	.05	.19	.08	.20

Notes: The dependent variable is the math grade. In the baseline model, column (1), we control for cohort (cohort dummies) and municipality. In column (2) the school-specific ethnic concentration rate is added, and in column (3) we also add family background. In column (4) we add the cohort-specific ethnic concentration rate and school fixed effects to the baseline model (while municipality is omitted). In column (5) family background is also added. Standard errors are shown below the coefficients.

**Table 5.** Results of estimating the ethnic Swedish grade gaps and the ethnic school effect (men and women).

	Men (n=49,268)					Women (n=46,368)				
	1	2	3	4	5	6	7	8	9	10
<i>Two foreign born parents:</i>										
Nordic countries	-.515 .018***	-.417 .018***	-.280 .017***	-.404 .018***	-.272 .017***	-.448 .016***	-.345 .016***	-.220 .016***	-.321 .016***	-.201 .016***
Western Europe	-.126 .098	-.090 .098	-.029 .091	-.093 .096	-.036 .090	-.106 .100	-.051 .099	.023 .092	-.092 .097	-.003 .092
Eastern Europe	.007 .037	.052 .037	.003 .034	.048 .036	-.000 .034	-.029 .038	.022 .037	-.019 .035	.011 .037	-.022 .035
Southern Europe	-.415 .018***	-.294 .018***	-.170 .017***	-.291 .018***	-.172 .017***	-.436 .017***	-.297 .017***	-.179 .017***	-.300 .018***	-.186 .017***
Outside Europe	-.643 .021***	-.505 .021***	-.301 .020***	-.486 .022***	-.273 .021***	-.814 .019***	-.665 .020***	-.462 .019***	-.647 .020***	-.441 .019***
Mixed	-.247 .021***	-.167 .021***	-.089 .019***	-.169 .020***	-.091 .019***	-.235 .020***	-.153 .020***	-.091 .019***	-.154 .020***	-.089 .019***
<i>One foreign born parent:</i>										
Nordic countries	-.090 .014***	-.070 .014***	-.026 .013**	-.065 .014***	-.025 .013*	-.065 .013***	-.041 .013***	.011 .012	-.036 .013***	.012 .012
Western Europe	.007 .020	.016 .020	-.017 .019	-.002 .020	-.020 .018	.037 .019*	.051 .019***	.017 .018	.040 .019**	.017 .018
Eastern Europe	-.013 .025	.013 .025	-.024 .023	.003 .025	-.027 .023	.053 .024**	.071 .024***	.028 .023	.049 .024**	.022 .022
Southern Europe	-.163 .022***	-.118 .021***	-.027 .020	-.115 .021***	-.031 .020	-.176 .020***	-.132 .020***	-.036 .019*	-.123 .020***	-.033 .019*
Outside Europe	-.097 .023***	-.054 .023**	-.014 .021	-.062 .022***	-.020 .021	-.079 .021***	-.045 .021**	-.012 .020	-.054 .021***	-.016 .020
School-specific ethnic rate		-.650 .022***	-.241 .020***				-.694 .020***	-.347 .020***		
Cohort-specific ethnic rate				-.096 .061	-.073 .057				-.183 .058***	-.122 .054**
School fixed effects	no	no	no	yes	yes	no	no	no	yes	yes
Family background	no	no	yes	no	yes	no	no	yes	no	yes
R-squared	.05	.07	.20	.10	.21	.07	.09	.20	.12	.22

Notes: The dependent variable is the Swedish grade. In the baseline model, column (1), we control for cohort (cohort dummies) and municipality. In column (2) the school-specific ethnic concentration rate is added, and in column (3) we also add family background. In column (4) we add the cohort-specific ethnic concentration rate and school fixed effects to the baseline model (while municipality is omitted). In column (5) family background is also added. Standard errors are shown below the coefficients.

**Table 6.** Results of estimating the ethnic school effects separately for natives and second generation immigrants with one or two foreign born parents (men and women).

<i>Men</i>	<i>Test Score</i>	<i>Educational attainment</i>	<i>Math grade</i>	<i>Swedish grade</i>
<i>Cohort-specific effect for:</i>				
Two foreign born parents:	.362 .206*	.216 .222	.060 .085	-.458 .068***
One foreign born parent:	.110 .211	.165 .230	-.137 .090	-.014 .072
Cohort-specific effect for natives	.065 .173	.085 .191	-.131 .075*	.092 .060
<i>Women</i>				
<i>Cohort-specific effect for:</i>				
Two foreign born parents:		.239 .225	-.012 .083	-.519 .064***
One foreign born parent:		.138 .234	-.007 .089	.070 .069
Cohort-specific effect for natives		-.185 .195	-.125 .074*	.032 .057

Notes: In all models separate cohort-specific concentration rates are used for natives and second generation immigrants with one or two foreign born parents. We control for cohort (cohort dummies), family background and school fixed effects. Standard errors are shown below the coefficients.

**Table 7.** Results of estimating the ethnic Enlistment test score gaps when controlling for Swedish grade (men).

<i>Men (n=44,111)</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Two foreign born parents:</i>				
Nordic countries	-.772 (.062)***	-.050 (.051)	-.144 (.058)**	.182 (.050)***
Western Europe	.257 (.364)	.561 (.299)*	.536 (.333)	.653 (.289)**
Eastern Europe	-.063 (.107)	-.135 (.088)	-.197 (.098)**	-.212 (.085)**
Southern Europe	-1.514 (.054)***	-.940 (.045)***	-.827 (.052)***	-.636 (.046)***
Outside Europe	-1.624 (.068)***	-.725 (.056)***	-.754 (.065)***	-.430 (.056)***
Mixed	-.749 (.064)***	-.404 (.052)***	-.333 (.059)***	-.238 (.051)***
<i>One foreign born parent:</i>				
Nordic countries	-.181 (.041)***	-.055 (.034)*	-.017 (.037)	.010 (.033)
Western Europe	-.012 (.061)	-.010 (.050)	-.093 (.056)*	-.059 (.049)
Eastern Europe	-.139 (.072)*	-.106 (.059)*	-.205 (.066)***	-.156 (.058)***
Southern Europe	-.588 (.062)***	-.362 (.051)***	-.241 (.057)***	-.216 (.050)***
Outside Europe	-.396 (.067)***	-.281 (.055)***	-.228 (.061)***	-.222 (.053)***
Swedish grade		1.568 (.011)***		1.357 (.011)***
School fixed effects	no	no	no	yes
Family background	no	no	yes	yes
R-squared	.05	.36	.21	.41

Notes: The dependent variable is the Enlistment test score. In the baseline model, column (1), we control for cohort (cohort dummies) and municipality. In column (2) the Swedish grade is added. In column (3) family background and school fixed effects are added to the baseline model, while the Swedish grade (and municipality) is omitted. In column (4) the Swedish grade is included. Standard errors in parentheses.

## **Does Grandma “Decide” the Number of Children? - Effects of grandparents’ proximity on childbearing in Sweden**

Anna Hjälml and Gunnar Malmberg

In Sweden as in the other Nordic countries, the family has often been understood as less important for intergenerational care and support than in countries with a less extensive public sector. Still, we know from previous studies that intergenerational family ties are important even in Sweden. In fact, adult children and parents live rather close to each other, and moreover, adult children and grandchildren are often attractions when people make their migration decisions. Further, proximity has been proven important for mutual assistance between generations, and help from the older generation to the younger, for example with caretaking of grandchildren, plays a significant part in the interaction especially in Sweden (Hank and Buber 2008).

Though, previous studies have scrutinised the role of welfare institutions such as day care and parental leave on fertility rates, the role of the traditional forms of care-taking and assistance has been less focused. Therefore, we want to further investigate if there is an association between, on one hand, the presence and proximity to parents, and on the other, having children.

In this paper, based on extensive Swedish register data, we explore the impact of having parents or parents in law (living close or distant) on having a first, second and third child. The data includes all women aged 18 – 45 resident in Sweden for three cross-sections during the period 1991 to 2006.

# “Like Father, Like Son?”: The Intergenerational Transmission of Nonmarital Fertility

Robin S. Högnäs & Marcia J. Carlson

Center for Demography & Ecology  
University of Wisconsin-Madison

## ABSTRACT

We use data from the 2002 National Survey of Family Growth ( $N=11,182$ ) to examine the intergenerational transmission of nonmarital fertility for both men and women. We find that being born to unmarried parents increases the risk of both (adult) sons and daughters having a nonmarital first birth. Family instability appears to be a key mechanism by which parents' nonmarital birth is linked to offspring fertility, although net of all mechanisms and covariates, being born to unmarried parents remains a significant predictor of daughters'—but not sons'—having a nonmarital birth. We find that gender, race/ethnicity, and SES all moderate the intergenerational transmission of nonmarital fertility.

Keywords: Nonmarital fertility; intergenerational transmission

## **Transition to retirement in Spain. A study of the cohorts 1906 to 1925.**

**Madelín Gómez León**, *Universitat Autònoma de Barcelona*

In the last decades the rise of aging population in Spain has caused concern with regard to the consequences on the workforce structure and Pension System Sustainability. In addition, the legal retirement age is 65 years old, but the pre-retirement patterns were frequently used in recent past worryingly reducing the labour force size and adding more pressure on the Pension System.

The aim of this paper is characterize the retirement decision in a period of labour market re-structuration and an aging process in Spain. Therefore we will describe the transition to retirement in Spain, accounting for the differences of behaviour by cohort, sex and age of individuals retired between 1971 and 1991 years.

Based on the Socio-demographic Survey carried out in 1991 (157.100 individuals), this study focuses on the transition to retirement of those from 1906 to 1925 cohorts (31.258 individuals). To pursue this objective a longitudinal analysis was performed. First, to look at the survival curves from active to retirement; secondly, looking at the socio-demographic characteristic of the retirees, and lastly to check for possible determinants of the retirement decisions.

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# On statistical methods for clustering; a case study on infant mortality, northern Sweden 1831–1890.

Henrik Holmberg & Göran Broström

Department of Statistics  
Umeå University  
SE-901 87 Umeå, Sweden

## Abstract

An analysis of infant mortality (based on 36025 births) in Skellefteå, in north-eastern Sweden during the nineteenth century showed that infant mortality was highly clustered with a relatively small number of families accounting for a large proportion of all infant deaths. The clustering of infant deaths points to the need to re-evaluate our interpretations of the causes of infant mortality in the past. We present statistical tools for detecting clustering and propose measures for quantifying excess clustering. The methods are evaluated on 19<sup>th</sup> century data from Skellefteå and Sundsvall in northern Sweden. We find that the essential properties of clustering is maintained in three numbers: The number of families with (i) no infant deaths, (ii) exactly one infant death, and (iii) two infant deaths or more. A definite sign of clustering is that the third category is too large in comparison to what would be expected if clustering wasn't present.

**Key words:** 19th century Sweden, death clustering, generalized linear mixed models, infant mortality, mixed effects models,  $\chi^2$  test.

# The Mortality of the Married and Cohabiting - The Role of Socio-Economic Status.

Sven Drefahl

Demography Unit  
Department of Sociology  
Stockholm University  
S-106 91 Stockholm  
Tel: +46 8 16 17 62  
Email: [sven.drefahl@sociology.su.se](mailto:sven.drefahl@sociology.su.se)  
<http://suda.su.se>

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## 1 Background and Research Questions

In 1853 William Farr was probably the first who recognized that marital status is a predictor of life expectancy. Since then a long line of research has confirmed that marriage is a positive health factor (e.g. Johnson et al. (2000); Verbrugge (1979)). A recent review paper that pooled more than 50 independent publications that were published between 1994 to 2007 concluded that the relative mortality risk for married versus non-married individuals was 0.88 (Manzoli et al., 2007). Several possible pathways were proposed to explain the observed survival differences by marital status. Possible explanations include health selection, the consequences of marital dissolution in terms of material resources, differences in health behaviors and different levels of social support and social relationships.

There are some indications that the relative mortality differences between married and non-married increased in the last decades because mortality of the married declined faster than of the non-married persons (e.g. Valkonen et al. (2004)). At the same time various demographic developments such as the emergence of below-replacement-fertility, increasing divorce rates and the postponement of marriage and parenthood were observed all over Europe. Therefore recent studies argue that due to this social-structural changes, marital status does not reflect today's social reality because more and more individuals are classified as never-married, widowed, or divorced although they are living together with a partner. Today's studies thus have to incorporate both partnership situation and household composition (Joutsenniemi et al., 2006; Koskinen et al., 2007). Denmark is one of the forerunners of this social-structural changes and Danish data are especially suitable to study these phenomena because it is one of only very few countries where administrative sources

provide information on cohabitation and other non-traditional living arrangements on the individual level and for the whole population.

With Finnish register data excess mortality for cohabiters of about 67% was observed among men and women aged 30–64 when compared to married people (Koskinen et al., 2007). If adjusted for indicators of socio-economic status excess mortality for the non-married was reduced to 21–31% for people aged 30–64.

This study aims to extend previous research and investigate the interaction between socio-economic status and living arrangement in more detail.

## 2 Data and Methods

We apply hazard regression models on individual-level Danish register data. In total we studied 1,984,402 men and 1,903,670 women aged 18 to 65 who lived in Denmark between 1st January 1990 and 31st December 2004. Danish registers are considered as a source of detailed and very exact information with a very low percentage of missing data. The information collected for every individual are events such as birth, death, migration, as well as a variety of very detailed demographic background information such as education, income, wealth, marital status, parity, and family type.

## 3 First Results

Relative to the married, excess mortality among men and women aged 18–65 was observed for all non-married living arrangements. Lowest excess mortality was found for cohabiters (30%), highest for households of 3 or more singles (350%). Adjusting for the three indicators of socio-economic position reduced the excess mortality of non-married groups remarkably. For men excess mortality of cohabiters was not statistically significant anymore. Additional interaction models revealed that married individuals have the lowest relative mortality differences by income, education and wealth of all types of living arrangements. We also found that they do not automatically and in all cases experience the lowest risk of dying. For both sexes we observed a lower risk of dying for highly educated cohabiters and cohabiters with high income than for their married counterparts. The results are statistically significant at the 0.001 level.

## 4 Discussion

We used a longitudinal approach on individual-level Danish register data to investigate the relation between living arrangement and socio-economic characteristics. We showed that married individuals do not always have the lowest mortality of all living arrangements. Cohabiters of high socio-economic status experience a significantly lower risk of dying among men and women. Further results will be available in time for the Nordic Demographic Symposium.

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**The impact of job constrains and social aspects of  
the working place on the incidence of  
cardiovascular disease**

Author

Tina Hannemann  
PhD student  
Department for Economic History  
University of Lund  
Sweden  
[tina.hannemann@ekh.lu.se](mailto:tina.hannemann@ekh.lu.se)



**LUND**  
UNIVERSITY

Extended Abstract:

This paper will be part of a dissertation which is aiming to investigate the impact of varying levels of social capital in different life aspects and their impact on the individual health status. The fundamental research question deals with the effects of individual choices, concerning social engagement on medical outcomes. One important issue will concern the extent to which one can measure the health benefit of a dense, close and supporting network. The fundamental hypothesis to be tested is that a lack of involvement and support resources in both the private and work environment lead to direct or indirect health deficits.

The term "social capital" has a long history and is based on a complex set of definitions. A variety of schools of social capital are dealing with the topic very different; the term is applied at various aggregation levels, has different sources, and therefore has various benefits, effects and mechanisms. This confusion of explanation and definitions makes it essential to define the way the term is used in every research study. In this paper we follow the school of Pierre Bourdieu, who defined social capital as the individual asset of personal relationships, which include potential resources for many types of benefits.

Following Bourdieu's approach, we investigate connections at the individual level between the personal choice of social contacts and both subjective personal well-being and objective medical outcomes. The current paper is focussing on the work environment as important life aspect of the employable share of the population. This specific life aspect has to be investigated with some caution. Many personal contacts in the work environment are less voluntary chosen, than part of a fixed set of condition individuals have to accept. Additionally we have the different demands the job is requiring from the individual. We assume that the diverse combinations of social components at work and job requirements will have different impacts on the individual health, measured in incidences of cardiovascular disease.

The project makes use of individual-level data from the Malmö Diet and Cancer Study (MDCS), which contains detailed information about the health status (self reported and medical records) of its 28,000 participants. Further, we have exhaustive information about

social activities and personal relationships. Additionally we have access to information about the kind of occupation, characteristics of the tasks and demands as well as social aspects of the working environment.

A classification of job requirements and stress level will be performed on the Karasek demand and control model. The author is dividing the different work conditions on two different dimensions. The first one is the job demands. A high level of requirements will produce challenging stress, which could be seen as potential energy. The second dimension is the range of decision making freedom. This aspect is determining the process of transforming the stress in action. If the demands of the work are not matching the decision making freedom, the stress can't be released in productive work. Therefore the model is distinguishing between four groups. The two matching groups, where either demands and freedom are both low or high, will contain people, who have less distress in their work environment. The mismatching groups will have low demands and high control on the one side and high demands and low control on the other one. While individuals in the first group will contain people with low strain, the latter one will contain people suffering from high strain at work.

Given this classification of job requirements we will further include the social aspect of the work environment in the model. The data set is including information about the social contacts and their nature as well as the overall atmosphere at the working place. Knowing that individual health is determined by more than only variables of the social environment, we expand our model to include other characteristics. To control for other causes we will include data about tobacco consume, sex, living conditions, general health condition, heritage of cardiovascular vulnerability, and medical history of cardiovascular diseases. We use diverse regression models and the technique of survival analysis to address causality issues brought up in the hypotheses.

## **Childbearing patterns of the second generation immigrants in Sweden**

### **Abstract**

Women born abroad have the highest fertility in Sweden whereas the second generation immigrants seem to have the lowest. In 2008 the Total Fertility Rate (TFR) for women born abroad was 2.20 and for Swedish-born women with Swedish-born parents the TFR was 1.86 whereas women of the so-called second generation had a TFR as low as 1.68.

The purpose of the study is to provide better understanding of fertility trends for women born in Sweden with foreign born parents. The childbearing patterns of the second generation immigrants are compared with the patterns of the Swedish-born with Swedish-born parents and the foreign born women. Childbearing patterns by birth order are studied for different sub-groups depending on in which country they have their roots.

Results show that women of the second generation with background from the Nordic countries have very similar birth patterns as the Swedish-born with a full Swedish background. On the contrary, second generation women with background from EU-countries have lower fertility and that also seems to apply for women born in Sweden with a background from a country with medium HDI (Human Development Index).

This study examines whether the lower fertility for certain sub-groups is related to socio-economic factors with focus on educational levels and labor market attachment.

[christian.skarman@scb.se](mailto:christian.skarman@scb.se)

+46 (8) 506 94 283

Box 24 300  
104 51 Stockholm

### **Domestic migration and settlement patterns among second generation immigrants**

The aim of this study is to give an overview of the settlement pattern of Swedish born persons with one or two parents born abroad and examine if this pattern differs from foreign born and from Swedish born with both parents born in Sweden.

Studies have shown that Sweden has a segregated settlement pattern where some neighborhoods have a very high concentration of immigrants to low income neighborhoods. The study examines if this segregated settlement pattern also complies for the second generation immigrants and if so, in what extent.

The preliminary results show that the second generation immigrants are more concentrated to Sweden's metropolitan regions, compared to the Swedish born with two Swedish born parents. Compared to those Swedish born with both parents born in Sweden, the Swedish born with both parents born abroad in larger extent lives in neighborhoods characterized by apartment blocks where the income levels are low. At the same time they live in lesser extent in these "low-status" neighborhoods than the foreign born population. On the other hand, the Swedish born persons with only one parent born abroad have a settlement pattern quite similar to those with two Swedish born parents.

Of the Swedish born who lived in apartment blocks with low income levels when they were 17 years old, a larger proportion of those with two foreign born parents still lived in this neighbourhood type when they were 30 years old, compared to those whose both parents was born in Sweden. The reverse pattern goes for the Swedish born persons who lived in apartment blocks with high income level when they were 17, thus a smaller proportion of those with two foreign born parents still lived in this neighbourhood type when they were 30, than for those with two Swedish born parents. This indicates that Swedish born with two foreign born parents have more difficulties making a housing career than those whose both parents are born in Sweden.

## **Extended abstract:**

# **Timing of education, work and childbirth: Comparisons between native Danes, second generation immigrants and first generation immigrants raised in Denmark**

*Siddhartha Baviskar, Mette Deding, Vibeke Jakobsen, Mette Lausten*

## **Purpose**

The purpose of the paper is to examine how the timing of childbirths is related to the timing of education and work for four groups of women: native Danes (group A), second generation immigrants (group B), first generation immigrants who came to Denmark at pre-school age (group C) and first generation immigrants who came to Denmark at school age (group D). The focus is on immigrants with non-Western background.

## **Hypothesis**

The individual's preferences with regard to timing of childbirth and labour supply may be influenced by their culture. Culture can be defined as 'those customary beliefs and values that ethnic, religious and social groups transmit fairly unchanged from generation to generation' (Guiso et al. 2006, 23). When individuals emigrate they take some aspects of their culture with them and transmit them inter-generationally. Thus, the children of immigrants may share some of the cultural norms from the country of origin of their parents. However, the preferences of the children of immigrants may also be influenced by the social, economic and institutional environment of the host country, and they will therefore adapt to the norms of the host society (Fernandez and Fogli, 2009). The adaptation hypothesis suggests that the more time individuals with immigrant background spend in the host country and the younger they are when they arrive, the more their preferences (e.g. with respect to fertility and labour supply) is influenced by the current societal context. Thus, we expect not only that groups B-D are influenced by the culture of the parents' country of origin, but also – because of differences in exposure to the environment of their host country – that of the three immigrant groups, group B will most resemble the native Danes with respect to fertility, educational attainment and employment status, followed by group C and group D.

## **Motivation/background**

Non-Western immigrants to Denmark typically come from countries that differ from Denmark with respect to norms regarding the timing of childbirths and women's labour supply. At first glance, the differences between the three groups of women with non-Western immigrant background and the native Danish women with respect to educational attainment, labour market status and fertility rate seems to support expectations based on the adaptation hypothesis. Our preliminary analyses show, for example, that the expected pattern of differences holds with respect to labour market status at ages 20 and 30 (see table 1): the percentage outside the labour force is lowest in group A followed by groups B, C and D in that order. The same pattern is found with respect to educational attainment: the educational level is highest in group A and

lowest in group D; the only other notable difference here is the large gap between group A and the other three groups (figure not shown). Further, at age 30, the average number of children is 1.0 for native Danes (group A), 1.3 for second generation immigrants (group B), 1.6 for first generation immigrants who came to Denmark at pre-school age (group C) and 1.9 for first generation immigrants who entered the country at school age (group D) (see figure 1).

Yet, closer examination of selected native Danish cohorts suggests that some of these differences in average fertility may be temporary and have more to do with the differential timing of births across the groups rather than differences in average total fertility. For example, for much of their fertile age Danish women born in 1966 had lagged behind their counterparts from the 1954 cohort with respect to average number of children. But by age 45, they had overtaken women from the 1954 cohort (see figure 2).

If this catch-up effect can be generalized to the other three groups, the expectation of differences across the four groups with respect to average total fertility could well be proved wrong. This line of reasoning suggests that it may be more fruitful to examine the adaptation hypothesis in terms of the different pathways to childbirth in terms of both number and timing of births across the four groups. We do this by focusing on the way the timing of childbirths is related to two other critical aspects of the life-course: education and work.

There is a clear gap in the extant literature that our study will fill. While there is some research on first generation immigrants (see e.g. Franséhn et al. 2009, Andersson and Scott, 2007), there is little or no international research on fertility differences between the four groups we have defined. This is particularly so with respect to the relationship between education, employment and the timing of childbirth.

## **Data and method**

To further examine the above hypothesis in detail, we use longitudinal administrative register data from Statistics Denmark for the period 1986-2006 of the total population of first and second generation immigrants and a 10% sample of native Danes. The data include detailed information on variables such as education, employment, births and civil status. We focus on women born in 1967-1975, whom we are able to follow up to the age of 30. Given the very small numbers of women with immigrant background in Denmark, we are forced to group the nine birth cohorts together for each of the four groups and treat them as homogenous groups. Since we do not have sufficient observations to distinguish between immigrant groups by country of origin we group the non-Western countries together. We use duration models in the analyses.

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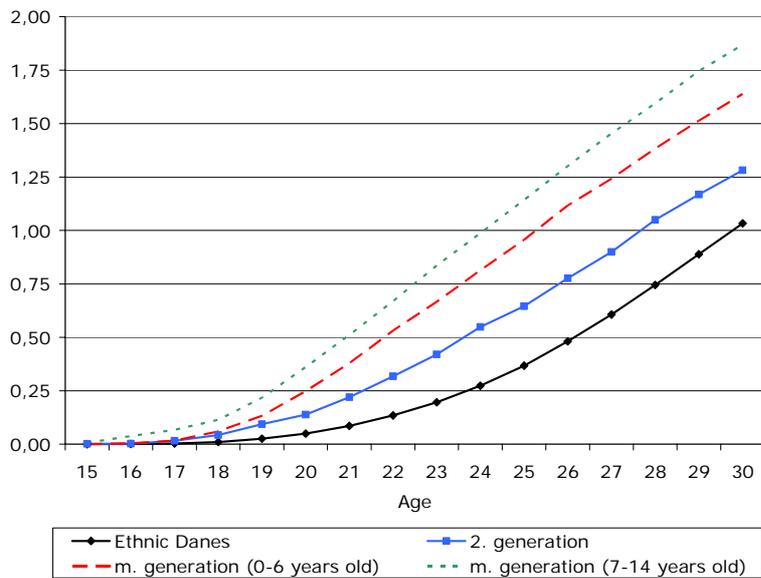
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**Table 1. Distribution of labour market status by age 20 and 30. Women born in 1967-1975 . Separate for native Danes, second generation immigrants and for two groups of first generation immigrants.**

	Native Danes (A)	Second generation (B)	First generation (0-6 years old) (C)	First generation (7-14 years old) (D)
<b>Age 20:</b>				
Employed	66.8	52.2	47.0	38.1
Unemployed	10.8	14.1	22.0	23.9
In Education	10.4	16.4	11.2	12.5
Early retirement	0.4	0.6	0.1	0.1
Others out of labour force	11.6	16.8	19.8	25.5
Total	100.0	100.0	100.0	100.0
N	31,242	1,229	1,265	1,956
<b>Age 30:</b>				
Employed	81.0	62.4	57.2	51.6
Unemployed	10.7	18.8	27.2	27.8
In Education	2.3	2.6	2.2	2.1
Early retirement	1.5	2.5	2.2	2.1
Others out of labour force	4.4	13.6	11.1	16.5
Total	100.0	100.0	100.0	100.0
N	30,776	1,177	1,176	1,794

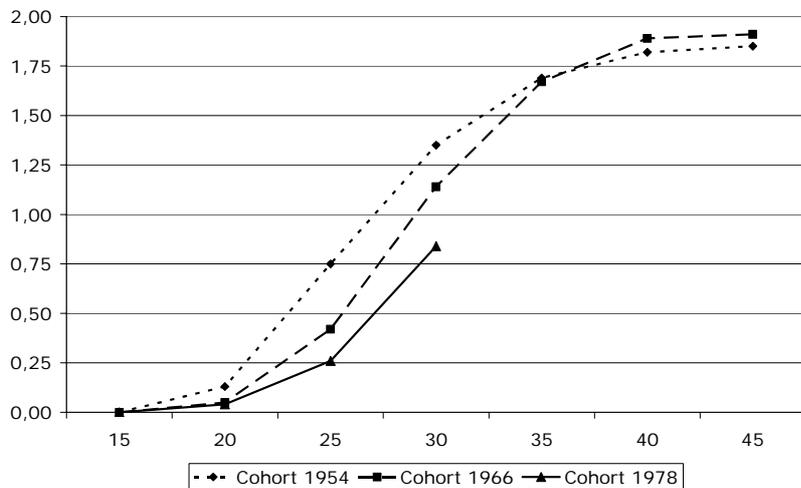
Source: Own calculations based on register data from Statistics Denmark.

**Figure 1. Average number of children by age. Women born in 1967-1975 (aged 15-30) Separate for native Danes, second generation immigrants and for two groups of first generation immigrants.**



Source: Own calculations based on register data from Statistics Denmark.

**Figure 2. Average number of children by age. Native Danish women born in 1954, 1966 and 1978.**



Source: Own calculations based on register data from Statistics Denmark.

## Second generation and family formation in Sweden

Migration contributes significantly to the population of Sweden. Ever since the 1930s, except for a few years in the beginning of the 1970s, Sweden has had an immigration surplus. The children of the immigrants are now a growing group in Sweden. In 2008 11 per cent of the Swedish population has at least one parent born abroad and the share is assumed to increase. Most of those born in Sweden with at least one parent born abroad have their roots in another Nordic country, Germany, the former Yugoslavia or Turkey.

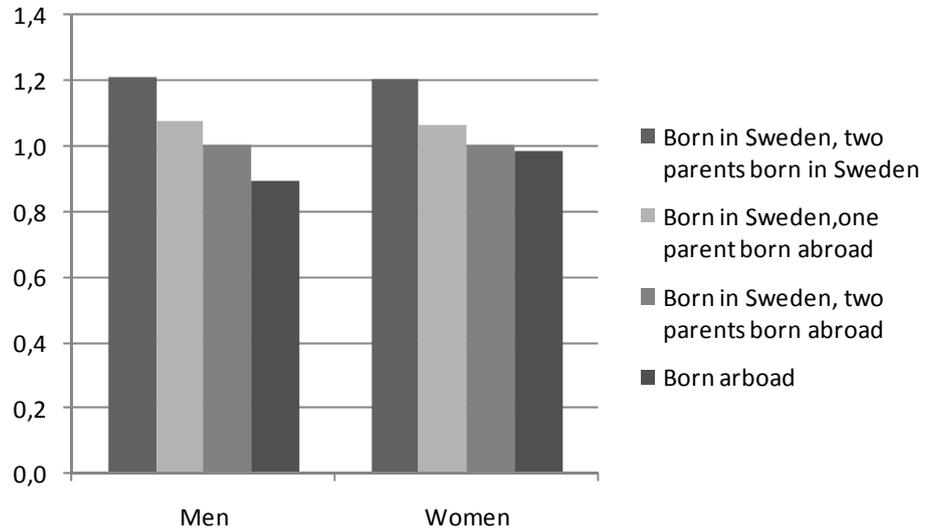
In this ongoing study the aim is to investigate if second generation migrants has a different pattern when it comes to family formation compared to others born in Sweden. There are several questions we would like to answer, for instance: Are they forming a family at younger ages than others born in Sweden? With whom are they forming a family? Is the spouse more often born abroad? And in that case born in the same country as the parents? Are there any differences depending on the parents' country of birth?

Sweden has a high quality register data which are used in this study. The population is divided into four groups; Born in Sweden with two parents born in Sweden, Born in Sweden with one parent born abroad, Born in Sweden with two parents born abroad and Born abroad.

One is considered to have formed a family either when you had your first child or your first marriage. The data consists of everyone that formed a family during the years 2004-2008 and those that have remained childless and unmarried during those years.

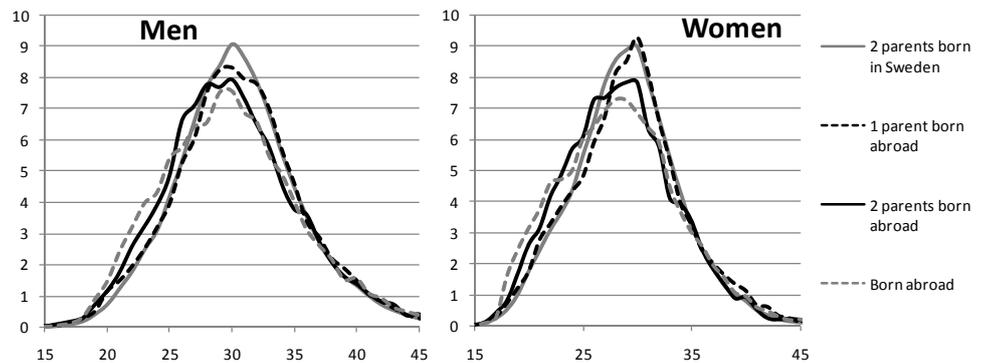
The preliminary result indicates that the second generation Swedes with two parents born abroad have a significant lower propensity to form a family both compared to those born in Sweden with two parents born in Sweden and those born in Sweden with one parent born abroad. On the contrary they have a significant higher propensity to form a family than those born abroad. Those results apply both to men and women in the age group 25-40 years.

**Chart 1: Relative risk for forming a family ages 25-40, by sex. Controlled for age and highest education**

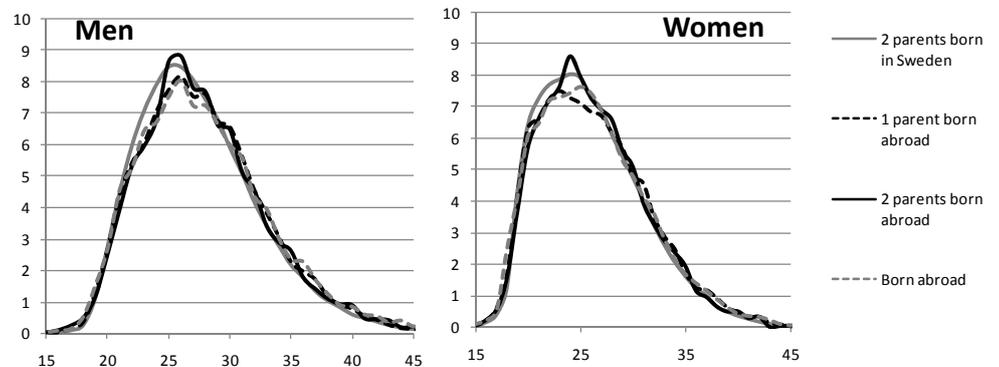


The Swedish registers don't contain information about people living together without being married or having common children. However when a couple have had a child or have got married, we can follow them backward and see how long they have been registered at the same property.

**Chart 2: Age structure of those that have formed a family 2004-2008**



**Chart 3: Age structure when they started to live together of those that have formed a family 2004-2008**



In the two topmost previous diagrams it is clear that the second generation Swedes with two parents born abroad and those born abroad are forming a family at younger ages than those born in Sweden with two parents born in Sweden or one parent born abroad. If we study at marriage and having a child separately then it is clear that the difference is due to early marriage among those born abroad and born in Sweden with two parents born abroad. When we take into account the age when they started to live together there are no differences among the different groups (the two bottomed diagrams).

The next step in this study is to further investigate the results and divide the group by country of roots. Another issue is who the second generations migrants are forming a family with and the difference due to parents' country of birth. In time for the Nordic Demographic Symposium in Lund more results will be presented.

Hege Kitterød and Trude Lappegård  
Statistics Norway  
Email: [rhk@ssb.no](mailto:rhk@ssb.no) and [lap@ssb.no](mailto:lap@ssb.no)

## **A Typology of Dual Earner Couples based on Work-Family Arrangements in Norway**

Norwegian work-family policies aim at promoting an equal division of paid and unpaid work between women and men. Numerous studies have investigated the allocation of housework and childcare among couples in Norway and there are also some that explore the division of paid labour. However, partners' allocation of paid and unpaid labour has rarely been examined in concert, at least not with large quantitative data. To be sure, a great many researchers have looked at couples' distribution of market work, household chores and childcare with qualitative data, trying to bring to the fore as much variation between couples as possible, or looking at couples with certain characteristics. In the present paper we will develop a typology of Norwegian couples based on various work-family arrangements using a large representative survey. We use information on market work, housework, and childcare and identify various types of couples based on the way the partners allocate these responsibilities between them. We will estimate the frequencies of different types of couples and also investigate background characteristics and factors explaining variation among different types of couples. The analysis will be based on the Norwegian Generations and Gender survey (GGS) – a large representative survey that captures a lot of information on peoples' life course and daily life activities. The sample units are individuals, not households, but respondents also give information about their partners. We will look at married and cohabiting people with young children in the household. Using a multinomial latent-class model the analyses will first create a typology of various patterns of sharing based on information about the respondents and their partners' paid working hours and participation in various unpaid chores, and then investigate the background characteristics of the various types of couples.

## **Lund abstract**

### **Economic resources and the formation of first unions in Finland: a register-based follow-up study**

Marika Jalovaara  
Department of Social Studies  
University of Helsinki

**Abstract.** Social scientists generally agree that better individual economic prospects enhance the probability of marriage among men, whereas there are competing hypotheses about the effect among women. This study focuses on the role of the economic resources of young adults in the formation of cohabiting and marital unions. Applying event history methods to longitudinal register data, we analyze the formation of first coresidential unions among 109 thousand women and men born in 1969–84 in Finland. An important feature of these Finnish register data is that they contain information which makes it possible to also link childless and unmarried partners to coresidential couples. High level of education, participation in the labour force, and high income were found to promote union formation. Full-time studies discouraged union formation as compared to being in the labour force. The findings were strikingly similar for women and men. Thus, the findings contradict the expectation that women's likelihood of entering unions is weakened by increased economic self-sufficiency.

Paper proposal for the Nordic 2010 Conference, June 2010, in Lund Sweden:

### **Fertility variation in a long-term perspective**

Maria Stanfors

Department of Economic History/Center for Economic Demography

Lund University

Sweden

[Maria.Stanfors@ekh.lu.se](mailto:Maria.Stanfors@ekh.lu.se)

### **Abstract**

This paper aims at explaining medium-term fertility variations in twentieth century Sweden by relating the total fertility rate to macro-level economic change and gender-specific changes in economic factors relevant to women's childbearing behaviour. Models that explore the New Home Economics approach, Easterlin's relative income theory, and standard indicators of business cycle variations are estimated. The results confirm a strong correlation between general economic performances on a national level, but also the relative demand for women's labour proves to be important. Female-to-male relative wages have a strong effect on fertility, although not in a straightforward way. In 1975, a pattern of counter-cyclical fertility is reversed into one of pro-cyclical fertility as a strong negative price effect turns into a positive income effect.

## Type of Occupation and the Transition to Parenthood in Sweden

Sofi Ohlsson, Stockholm University Demography Unit (SUDA), Sweden  
sofi.ohlsson@sociology.su.se

### Background and general purpose

Ever since large numbers of women started to enter the labor market in the second half of the 1900s, much research has been devoted to the relationship between work and family life. The research has focused on reconciliation of family and work, and how having children is related to labor-market activity, especially from women's point of view. There are, however, still some dimensions of labor market activity and work conditions that have not been fully studied in relation to family dynamics. The aim of this study is to add to the theoretical understanding of the relationship between work and family life, and more specifically between type of occupation and the transition to parenthood. This paper proposes that men and women in the labor market might face quite different possibilities to reconcile family and work depending on the characteristics of their occupation and might therefore have differential transitions to parenthood.

This paper builds to a large extent on Swedish studies that show that educational *field* is more important for determining childbearing differentials than is educational *level*, which is commonly used in studies of family formation (Hoem *et.al.* 2006a; 2006b; see also Lappegård & Rønsen, 2005 for a Norwegian study). These studies have found large differentials in completed fertility and ultimate childlessness, among women across different educational fields. A central part of the authors' interpretations of the results are the diverse work conditions and experiences of women of different occupations. They mean that there might be differential possibilities to combine work and family life related to the security of the employments, the flexibility in work conditions and sex distribution in different sectors of the labor-market. They also address issues such as possible self-selection into labor-market sectors and family forms, as well as possible cultures of reproduction in different social groups. However, these studies use information on educational field and not occupational characteristics. There is hardly any research on the relationship between type of occupation and family dynamics (see e.g. Stanfors, 2009 for an example of a Swedish study on three specific "fast-track professions"). Therefore this study addresses this topic, with access to actual employment data.

### Sweden as a point of reference

It is particularly interesting to study the interplay between work conditions and family dynamics in a country like Sweden. This country, as well as its Nordic neighbors, often serves as a point of reference in studies on family dynamics and the relationship between family and work. There are several reasons for this. First, there is very rich and reliable register data, containing life histories on for example demographic events as well as socio-economic characteristics. Another reason is that a high level of female labor-force

participation is combined with relatively high levels of childbearing (see e.g. Billari & Kohler, 2004). Furthermore, labor-market attachment and childbearing are positively related at the individual level for both men and women (see e.g. Andersson, 2000; Hoem, 2000). This has generally been ascribed to policies promoting reconciliation of family and work, encouraging parent's labor-market attachment and promoting gender equality (for a general discussion see e.g. Neyer & Andersson, 2007; for discussion on Sweden, see e.g. Bernhardt 1993; Hoem, B. 1993). The Nordic countries are also often seen as forerunners in the development of new family-demographic behavior (see e.g. van de Kaa 2002).

### **Central concepts and theoretical considerations**

The theoretical focus in this paper is mainly on compatibility of work and family life, as well as gendered patterns in the relationship between occupational characteristics and childbearing. As in the studies on educational field and childbearing by Hoem *et.al.* (2006a; 2006b), some attention is paid to possible differential norms on work and family life, different cultures of reproduction, that are maintained or reinforced through interaction between people within a social group (Elster, 1991), in this case within an occupational group. Also addressed are issues related to the selection of individuals into labor-market sectors and family forms and the adaptation of behaviors related to family life and activity in the labor market.

When studying the transition into parenthood the question of postponement and timing of childbearing becomes central. Therefore a life course perspective is appropriate and issues related to the process of getting established on the labor market and perhaps also in a certain occupation. In Sweden it is common to re-enter education after having been active on the labor market for some time and also to combine part-time study and part-time work (Breen and Jonsson 2000). Partly as a result of that, occupations may vary greatly across different stages of life. Therefore not only the timing of childbearing but also the timing of labor-market activity and occupations is of relevance. Norms regarding the appropriate timing of childbearing is a related matter.

Gender is another central concept in this study. By including both men and women in the analysis, which has not been done in the mentioned studies on educational field and childbearing (Hoem *et.al.*, 2006a; 2006b), more knowledge about the relationship between employment, family behavior and gender can emerge. By studying similarities or differences in patterns between the two sexes there can be a more valid theoretical discussion and evaluation of the validity of theoretical arguments in previous research on family and work.

### **Data and methods**

For the analysis I use Swedish population register data derived from the STAR (Sweden in Time – Activities and Relations) Database<sup>1</sup> that gathers data from various administrative registers. In total, 1.6 million men and women are included in the study. The data is

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<sup>1</sup> The database is maintained at the Stockholm University Demography Unit (SUDA) and the Swedish Institute for Social Research (SOFI) at Stockholm University and is administered by Statistics Sweden.

longitudinal and at the individual level, containing relevant occupational and family demographic histories as well as a large amount of socio-economic and background data for the entire Swedish population in the years 1996-2007. Information on occupation is recorded yearly, while childbearing is covered with the accuracy of a month. There is information on occupation on different levels of detail and for this study around 40 different categories are created. This precise specification of occupational type is only possible when having as large data sets as in this register data. The occupational data combines information on type of work performed and level of qualification.

In the articles by Hoem *et.al.* (2006a; 2006b), childbearing is studied through completed fertility and ultimate childlessness. By using more refined measurements of childbearing, this study enables a closer understanding of the interrelation between the transition to parenthood and occupation. To maximally utilize the longitudinal character of available demographic and socio-economic data, the method of analysis used here is event-history analysis, which is a standard method for this kind of data (see Hoem, 1993 for an introduction). First birth risks among men and women in different occupational groups are studied. The propensity of becoming a parent is modeled as affected by the type of occupation and other characteristics of the occupation and workplace, as well as by a set of other relevant control variables.

### **Expected results and implications of the study**

As in the studies on educational field and childbearing (*ibid.*), many of the interpretations are related to characteristics of the occupations. Here some of those characteristics, in addition to the actual occupation, can be measured such as sex distribution and private or public sector. For women, Hoem *et.al.* (2006a; 2006b) discuss that a combination of factors; security of the employments, flexibility in work conditions and sex distribution in different sectors of the labor-market seem to impact childbearing patterns. For example they found lower levels of ultimate childlessness and higher completed fertility among women with educations oriented towards the caring and teaching professions, while women with artistic educations had much higher childlessness and lower completed fertility than others. I expect quite similar results to be found for women when using data on actual occupation instead of education and transition to parenthood instead of completed fertility and childlessness. However, many men and women do not actually work in occupations that are related to the educational fields within which they have studied and this mismatch is more common for certain educational fields than others (e.g. Wolbers, 2003).

Regarding possible sex differences in the relationship between occupational characteristics and the propensity of entering parenthood, I expect the flexibility of work conditions to be of less importance for childbearing differentials among men than among women, as mothers in Sweden still do most of the caring for children and work part time and take parental leave to a much larger extent than do fathers (Statistics Sweden, 2007). On the other hand, I expect employment security to be of importance for both men and women, as usually both sexes provide for the family in Sweden (*ibid.*). Regarding sex distribution, I expect both men and women to have higher propensities of becoming a parent in female dominated occupations as in Hoem *et.al.* (2006a; 2006b) because these may be environments in which pregnancy and

parenthood are relatively common and employers are accustomed to the needs of childrearing parents. However, it seems likely that there might be significant gender differences in cultures of reproduction within occupational groups, as well as in self-selection processes into family forms and work life.

The main contribution of this study is that it further explores the relationship between work and family dynamics in a manner that fully takes advantage of the available data from Swedish population registers. By studying different occupational types, the heterogeneity of labor-market experiences and their associations to childbearing are taken into proper account.

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# Labour Market Participation of Immigrants in Finland and its Regions

## Abstract

Elli Heikkilä  
Institute of Migration, Finland

This paper focuses on employment of immigrants in the Finnish labour markets. Firstly, it will concentrate on the employment of immigrants with respect to different background variables, such as employment sector, gender, education and country of birth. Secondly, the regional distribution of immigrants is studied. A view to the county level labour markets explains how they are functioning and employing immigrants. The aim of the analysis is to give knowledge of the situation of the immigrants in the Finnish labour markets during the economic recession at the beginning of the 1990s and during the economic upswing of the early 2000.

Research data has been obtained from Statistics Finland: regional gross-stream data on the immigrant population of working age (15–74 years) for the periods 1993–1994 and 2002–2003. The years 1993 and 2002 are periods of immigration, and for these years it is used background data and main activity data for immigrants. The gross-stream data include all working-age immigrants for the years 1993 and 2002, and this data is compared to the situation the next year (1994, 2003) with regard to labour market performance. Also separate stock data for immigrants for the years 1995, 2000 and 2004 has been bought from the Statistics Finland.

High unemployment level of Finland in the depression time in the beginning of the 1990s affected also very high unemployment figures for the immigrants. During the recent decade the employability of immigrants has been better because of recovery of the economic life in Finland. There are signs that immigrants are in different position in the Finnish labour markets according to their ethnic background. Also there are differences in economic branches by gender into which immigrants enter.

# Mother's employment and fertility in Norway 1994-2002

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## *Short abstract*

Authors:

Mette Gerster, University of Southern Denmark

Trude Lappegård, Statistics Norway

The effect of socioeconomic factors such as education and labour market attachment on fertility has been the subject of numerous studies in the demographic literature for many years. Over the last decades, the educational level of women as well as female labour force participation have been rising in most industrialized countries and at the same time the overall level of fertility has been declining. Therefore, it is relevant from a societal point of view how these issues are related, both from a macro- as well as from a micro-perspective. The results presented in this talk will be based on the latter.

Traditionally, studies of fertility and its socioeconomic determinants have been concerned with separate parity transitions, i.e. how the rate of having e.g. a second or a third child depends on the woman's current labour market attachment or educational attainment, say. This paper concerns the effect of employment status on second- and third-birth intensities for Norwegian mothers in the period 1994-2002. However, due to unobserved heterogeneity possibly affecting both the birth and the employment processes we employ a simultaneous equations approach for hazard models, originally suggested by Lillard (1993). This model is a joint model for both parity transitions, including latent variables to govern the possible selection mechanism/endogeneity. Our results show that there is a slightly positive effect of currently being in employment on the second-birth intensity, whereas the third birth intensity is larger for women who are currently non-employed, even when unobserved heterogeneity is taken into account.

Nordic Demographic Symposium 2010  
Lund, Sweden

Abstract

(February 28)

Erik H. Nymo  
Division for social and demographic research  
Statistics Norway  
PO Box 8131 Dep  
NO-0033 Oslo, Norway  
(ehn@ssb.no)

Some longitudinal perspectives on underemployment in Norway

Being underemployed is having fewer contractual work hours per week than preferred. Norway has relatively many part-time employed, but few underemployed. A waste majority of the underemployed are women and most frequently they are in early parts of their adult life-course.

In official statistics and most research articles underemployment are seen in a cross-sectional perspective. Longitudinal studies are few, even though they can give a better understanding of the processes involved. Understanding underemployment is of importance for instance in mobilizing labour reserves in times of ageing population and relatively fewer people in their economic active ages.

This is a panel study of data from the Norwegian labour force survey (LFS). Respondents are sampled to be interviewed 8 times over a period of 24 months. During each wave 3000 of the gross sample are substituted with new respondents. The survey includes detailed questions on contractual, actual and preferred work hours per week. Data on education, age, marital status and more are entered from administrative registers.

The study analyse from which positions people enter into the state of underemployment and which positions they enter afterwards. To which degree is underemployment a persistent state, and what are the relative importance of changing preferences and changing work hours?

## **What makes women satisfied with full-time work?**

*Marit Rønsen and Ragni Hege Kitterød, Research Department, Statistics Norway*

### **Background**

Norwegian women have a high employment level, but at the same time one of the highest part-time rates in Europe. Although somewhat shrinking, the part-time rate among employed women in Norway is still more than 40 per cent, and part-time is common among women in all stages of the life cycle. High part-time rates among women with small children have usually been explained with a shortage of kindergartens, but as the coverage of kindergartens has now improved tremendously, this explanation is less obvious. Moreover, new generations of women are better educated, the cultural climate in Norway is more supportive of women's full-time work than before, and the extension of parental leave rights combined with improved supply of kindergartens and after school programs, have facilitated women's employment. In addition, men are expected to be more involved in family work. An intriguing question is therefore why the proportion of female part-time workers is still so high in Norway, and why many women withdraw from the labour market for longer periods.

These issues are at the core of our project 'Mobilizing unutilised labour reserves: the role of part-time work and extended employment interruptions' which is part of the Working Life Research Programme of the Norwegian Research Council. We explore to what extent it is possible to mobilize additional female labour supply and how this can be done, focusing both on part-time work and prolonged career interruptions due to childbearing and childrearing. The project consists of several subprojects, one of which focuses on discrepancies between preferred and actual working hours. Since longer working hours among women would alleviate the lack of labour in many sectors of the economy, it is particularly important to identify factors that make women content with full-time work. This is the subject of the present paper.

### **Data and analytical approach**

Studies from many countries have shown that there are significant discrepancies between people's actual and preferred working hours, and a unanimous finding has been that the proportion preferring shorter working hours far outweighs the proportion preferring longer

hours. Similar results have been obtained for Norway based on a variety of surveys with different themes and contexts, but some of these surveys are fairly old. People have also been asked about their working hours preferences in the regular Norwegian Labour Force Surveys (NLFS), but before 2006 this question was only put to part-time workers. Later, also full-time workers have been asked if they would prefer another working-hours agreement than the one they have at present, and if so, how many hours per week they would like to work.

Based on recent NLFS-data from 2006-2007 we are thus able to illuminate both full-time working and part-time working women's contentment with their contractual working hours, but the main goal is to distinguish the most influential factors of contentment among full-time workers. We do so by running a logistic regression model where the dependent variable has two possible outcomes (content/not content with present hours), and guided by economic and sociological theories we include a set of individual and job related explanatory variables that are believed to affect women's preferences and contentment. The analysis include female employees in their prime childbearing and childrearing ages, 25-54 years, i.e. we leave out self-employed women. To assess the importance of the partner's work situation (working hours, occupation etc.), we further analyse a sub-group of married women as there is no information on cohabiting partners in the NLFS.

### **Preliminary results**

Somewhat surprisingly based on previous research, we find a high degree of contentment with full-time work among female employees. Only about 10 per cent report that they would have liked other working hours, i.e. about 90 per cent are satisfied with their present full-time contract. Contrary to previous research we also find that female part-timers seem to be more discontent with their working hours than female full-timers, as about 20 per cent of those who work long part-time (20-36 hours per week) and about 30 per cent of those who work short part-time (1-19 hours per week) report that they would have liked other contractual working hours. At first sight, examining bivariate relationships, there seems to be fairly small differences in contentment with full-time work between women with various personal and job-related characteristics. However, in a multivariate model setting there are some significant contrasts related to human capital (age and education), children and the family situation as well as to type of work (industry, fixed/temporary contract, shift/rota etc.). In this paper we pursue these differences in more refined models and also examine the importance of the partner's characteristics based on the subgroup of married women.

# Early-Life Conditions and Income Attainment In Sweden During 1968-2001: Using Sibling Data To Further Explain Why Country of Origin Should Matter

Jonas Helgertz

Centre for Economic Demography

Lund University

Jonas.Helgertz@ekh.lu.se

The socioeconomic integration of immigrants has during the past decades become increasingly problematic in numerous countries in the Western hemisphere. Empirical research on Sweden has established the labor market problems experienced by immigrants as a structural phenomenon that cannot be fully explained neither by standard supply- or demand side factors, such as business cycle effects, nor understood as being the sole result of human capital characteristics. This paper expands on the research that suggests a causal link between exposure to adverse early life conditions and inferior later life health and socioeconomic outcomes, attempting to find evidence for the existence of such a mechanism on attained labor market outcomes in Sweden. Should such a mechanism be confirmed, it may suggest the pattern of immigrant disadvantage as being linked to poorer health, resulting from exposure to adverse early life conditions. Using a longitudinal dataset measuring the labor market outcomes of roughly 11,000 natives and immigrants in Sweden during the time period 1968-2001, the paper provides evidence supporting the influence of early life conditions on adult income attainment. Taking advantage of within family variation in the infant mortality rate as a means of measuring differences in exposure to infectious disease during infancy, results remain consistent when also controlling for unobserved family characteristics. Supporting early-life conditions as a mechanism underlying the labor market outcomes attained, the results indeed point to the relevance of differences in such factors in explaining observed differences between the labor market outcomes of natives and immigrants in Sweden.

## **The effect of a mother's early life conditions on the survival of her offspring**

Luciana Quaranta and Tommy Bengtsson

The importance of early life conditions for health in later life has been known for many years. Recent developments in modeling techniques have given rise to a series of in-depth studies, many of which deal with aspects such as adult health, the incidence of particular diseases and later life mortality. Not much work has been conducted, however, on the way in which conditions in the early life of a mother affect her reproductive outcomes and the quality of life of her children.

Using a full life course approach, this study will try to analyse how critical periods in a woman's development affect the health and chances of survival of her children. Focus will be placed on two outcome variables: fecundity and the survival of offspring, measured by infant and childhood mortality. Early life conditions of the mother will be considered through aspects such as income, food prices and disease environment. The first part of the work will consider both environmental and socioeconomic factors, while at a later stage an emphasis will be posed only on the former, by comparing the reproductive success of sisters.

The source material used for this work is the Scanian Demographic Database, which is based on family reconstitutions from church records on births, deaths and marriages for five rural parishes. Occupational information from poll-tax registers and census information will also be employed. The study will cover the years 1830 to 1968, therefore also considering the periods of the fertility decline and of the baby boom.

# Early Life Conditions and Later Life Health – Immigration as a Natural Experiment

Tommy Bengtsson , Gerard J. van den Berg , and Petter Lundborg

## Abstract:

We use data on families migrating into Sweden from poorer countries in order to identify the effect of age at immigration on children's development towards their later life health status. In order to identify the causal effect of improved early life conditions, we rely on variation in age at immigration between siblings who arrived at the same point in time to Sweden. This approach also allows us to identify certain ages, where improvements in living standards have particularly strong effects on later life health. We find a strong association between age at immigration and later life health.

[karin.lundstrom@scb.se](mailto:karin.lundstrom@scb.se)

+46 (8) 506 94 187

Box 24 300

104 51 Stockholm

## **Children, separations and living arrangements in Sweden**

The aim of this study is to give an overview of the family situation of children in Sweden, today and in the past. In the study we describe the development in separations, living arrangements after a separation and the proportion of children whose parents never have lived together. We also describe how many children who experience the death of a parent. The results are based on both register data and the Swedish Living Conditions Survey.

The results show that since around 1970 the number of children growing up with both their parents has decreased. Today about 60 percent of all 16 year olds in Sweden live with both their original parents, compared to over 80 percent 40 years ago. The development during the last years however point to a possible shift in the trend. The number of children experiencing a parental separation has decreased during the 21<sup>st</sup> century. The risk of separation was around 15 percent lower in 2008 than in 1999. The fact that parents are older and more highly educated when they have children may be one explanation.

The living arrangements after a separation indicate that fathers play a more active role in their children's lives. A larger proportion of children live alternately about half the time with each parent and more children are registered at their father's residence after the parents have separated. On the other hand it seems that more children have parents who have never lived together.

Today most children living with one of their parents have experienced a parental separation but that was not the case 50 or 100 years ago. In the early 1900's a relatively large proportion of children lost a parent during their childhood. Now only a few percent of all children experience a parent's death before the age of 18.

# Dissolution of marital unions in Poland<sup>1</sup>

Marta Styrac, mstyrac@o2.pl

Warsaw School of Economics, Max Planck Institute for Demographic Research fellow

## **Abstract**

This paper examines the correlates of first marriages disruption in Poland on the data coming for the retrospective survey ‘Employment, Family and Education Survey’ (EFES) of 2006. The EFES data cover the period since middle 1980s but relevant analyses are possible since 1990s. The event history model formulated includes several covariates which refer to: a period, a type of union (three binary variables showing whether marriage has been preceded by cohabitation or premarital birth, or whether it was a shot-gun marriage), a place of residence at age of 15, education attainment (time-varying) and a variable describing parity and pregnancy status combined with the age of the youngest child. Estimates reveal dependencies similar to those found for other countries about impacts of traditionalism of the upbringing environment, meaning of a shot-gun marriage and a premarital child, importance of children and pregnancy, a stronger impact of younger children. Diverging results concern an influence of premarital cohabitation which does not increase the risk of marriage dissolution. Compared to previous studies on Poland by Härkönen and Dronkers (2006) the change of educational gradient has been observed – from positive to negative.

Aside from several expected correlations the model reveals that marriage is still an important institution in Poland even a couple decides for premarital cohabitation. However, after 2000 the readiness to terminate an unsatisfactory marriage has increased what can be interpreted as being in line with the second demographic transition concept.

## **References**

Härkönen. J., Dronkers J. (2006), Stability and Change in the Educational Gradient of Divorce. A Comparison of Seventies Countries, *European Sociological Review* 22(5): 501-517.

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<sup>1</sup> The analysis was carried out for the MPI course ‘Applied event history analysis’ in the winter semester 2008/2009.

## **Parental separation and offspring's academic outcome: Does social support make a difference?**

Mogens Nygaard Christoffersen, Senior Researcher, MSc (soc)  
SFI – THE DANISH NATIONAL CENTRE FOR SOCIAL RESEARCH

Various disadvantages such as long-term unemployment, early motherhood, parental mental illness, alcohol and drug abuse, family violence, are associated with increased risks family separations (Christoffersen, 2002). Even though taking account of disadvantages that often are seen in associations with family breakdown, various Danish comprehensive studies based on registers have shown that parental separations are associated with later life events and negative outcomes for offspring e.g. an increased risk of being in residential care, convicted of violence, teenage parenthood, youth unemployment, etc. Offspring experiencing parental separations have a decreased probability of graduate to university or accomplish vocational training, when accounted for parents' own educational achievements and economic background. However, it has not yet been scrutinized if social support from significant others may have a positive influence on offspring's academic achievements despite bad odds.

The present study explore the assumption that family separations may lead to a loss of parental social (and economical) support compared to children living in two parents families, but significant others such as grand parents, extended family members or others may compensate for the loss of parental support. The assumption is still not yet well researched but it is worth to test in the longitudinal study.

### **Sample and population:**

The sample is a stratified random probability sample (N=2,980) of adolescents born in 1984. Children who have been in care were over sampled. The personal interviews were conducted in 2009 as telephone interviews or residential interviews if telephone interviews could not been obtained. Information from registers about the total birth cohort of children born in 1984 (N=51,000) is used estimate their chances of graduation to university based on various parental background factors e.g. parental education, income, unemployment.

### **Key measures:**

Whether their parents are living together, married, or not, the personal identity number was used to link the children and their biological parents to information in 15 annual registers. Separation was registered when parents were entered on different addresses in the register while the child in focus was younger than 18 years. This method of constructing 'separation' is in accordance with two earlier studies of the birth cohorts of children born in 1966 and 1973 (Christoffersen, 1999).

Academic achievements includes graduated to university or ever been in high school according to registers.

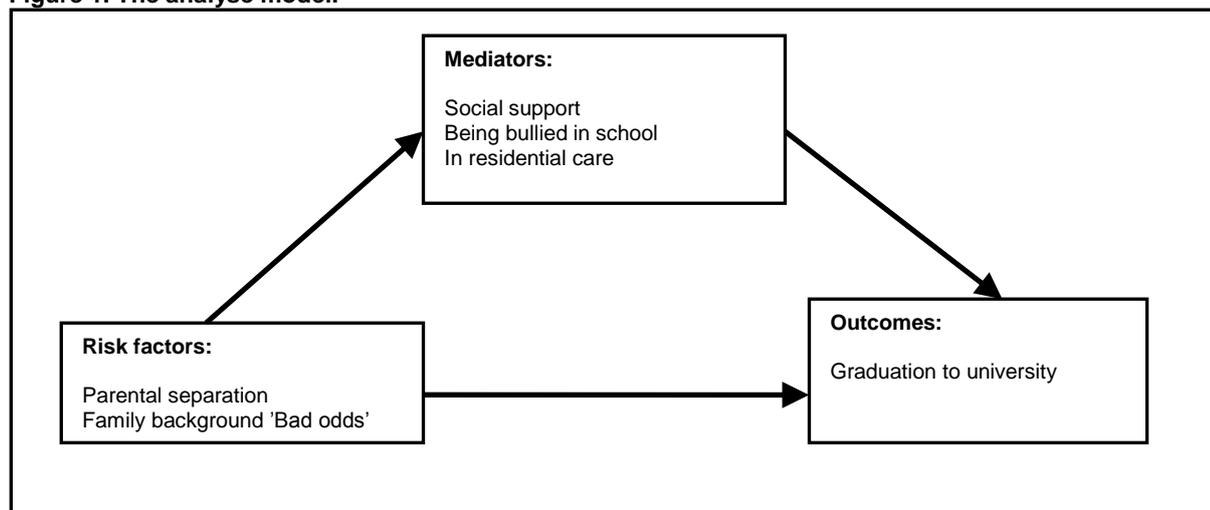
Social support is defined as a social relation leading the individual to believe that he or she is cared for, loved, esteemed, and valued. The relationship is characterized as emphatic, understanding, of respect, and of constructive genuineness (Cobb, 1976; Porritt, 1979). Assessing a child's social support system could include e.g. helpful people, material aid or advice or counselling, empathic listening, assistance in problem solving, reassurance of worth, affirmation and protection (Belle,

1989; Thompson, 1995). In the study we use the Crisis Support Scale (CSS) developed for adults (Joseph et al., 1992a; Joseph et al., 1992b) that consider the core aspects of crisis support e.g. to have others who are willing to listen, who provide support in emotional and practical ways when necessary, and contact with others in a similar situation (Elklit et al., 2001; Lindgaard, 2002).

### **Social support as a mediator**

The assumption is that the adolescents who have experienced child maltreatment during childhood but also had experienced supportive adults have developed resilience with a strengthened self-esteem. Bandura, Katz, Rutter and others describe the psychology of chance encounters in the meeting with another person and experience social support and compensatory relationships (Bandura, 1982; Katz, 1997; Rutter & Rutter, 1993). Social support is seen as a possible mediator of distress among people exposed to various forms of distress. In many studies social support moderate the effect of distress on developing post-traumatic symptoms after experiencing e.g. combat, disaster, burn injury, and HIV (Elklit et al., 2001). Other studies explore the effect of supportive adults for a child's development of self-esteem after exposed to disadvantages during childhood. Among the supportive adults, who fostered trust acted as gatekeepers for the future, they found grandparents, elder mentors, youth leaders, members of church groups (Werner, 1992).

**Figure 1. The analyse model.**



Note: Figure 1 is using the notation from Lockwood & MacKinnon (MacKinnon et al., 1995)

### **Analysis in two stages**

The first stage, the present study examines the situation in the family to identify risk factors for low educational achievements for offspring in separated families compared to intact families in order to estimate children's 'bad odds'. Information in registers covering prospective statistics about health aspects, demographic variables, family violence, self-destructive behaviour, parental educational achievements, unemployment, and income ratio was analysed using a discrete-time Cox-model following the total birth cohort of 51.000 children born in 1984.

In the second stage, the sample consists of 4,718 young people aged 24-25 born in 1984 and interviewed October 2008 to April 2009. The sample was constructed as a stratified random probability sampling across the country based on the personal identity numbers and national population registers. Only young people who have lived Denmark during their adolescence were

included.<sup>1</sup> Children who have been 'in care' or at risk according to the files of local social workers were over sampled. Some of the sample (n=242) could not be interviewed because of handicap, sickness, death, moved abroad, or language difficulties. The survey then obtained a 67% response rate among the remaining sample which measures up to 2,980 interviewed persons.

The duration of the interview was estimated to 43 minutes. The personal interviews were conducted as telephone interviews or residential interviews if telephone interviews could not be obtained. Experiences show that greater interviewer effect is found in case of personal interviews if embarrassing, social disadvantageous questions are asked (Christoffersen, 1984). The personal interviewing in the homes was using a so called CAPI method (computer assisted personal interview). Since some of the questions could be seen as embarrassing or social labeling these were filled out on the laptop by the interview person himself/herself while the interviewer were waiting with no knowledge of neither the questions nor the answers given. The interview method has been used and evaluated in a similar British study exploring the same age group and studying the same issues as the present study (Cawson et al., 2000; Cawson, 2002). The CAPI- method has been shown to give more honest answers in a study of the use and abuse of drugs ((Brooker & Kelly, ). After the interview, the interviewed persons were offered a telephone number to a help line with a professional psychologist<sup>2</sup>.

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<sup>1</sup> Children were in the country 1<sup>st</sup> January 1985 and 1<sup>st</sup> January 2003 according to registers.

<sup>2</sup> Two per thousand used the help line. After the talk with the helpline an appointment was arranged with a professional psychologist in their own local region.

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