## Age differences between couples in Sweden

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Age differences between partners have important societal consequences. An age gap between a woman and a man in a relationship has important implications that often will influence the rest of the life course for both partners in the couple (Berardo, Appel, and Berardo 1993; Presser 1975; Vera, Berardo, and Berardo 1985). Individual and population level consequences of an age gap in which men on average are older than women for example affects; labor market/educational decisions, division of labor in society, share of child care/parental leave/house work, survival into widowhood and overall gender equality in society. Age differences in unions have profound influence of age differences on many aspects of modern life but are still often neglected by demographers and sociologists. Despite the importance and universality of stable age preferences only a limited number of studies have examined the change in age differences over time. Recent long time series is available for the UK (Bhrolcháin 2005) and Australian (Qu 1998) population. A contribution of this article is, besides making an empirical contribution to the knowledge of demography in Sweden, to look at changes over time for unions were the man or woman is significantly older than his/her partner.

This study is based on Swedish couples and parent dyads based on all $1^{\text {st }}$ marriages ( $\mathrm{N}=1304591,1^{\text {st }}$ birth for both parents) and $1^{\text {st }}$ births ( $\mathrm{N}=2583231,1^{\text {st }}$ marriage for both spouses) taking place in Sweden between 1932-2007 (1967-2007 for marriages) collected from administrative registers. The population is decomposed by period and country of origin. Both changes in mean and quantiles are examined over time. Results in this study are presented as the average age differences of the subpopulation in one year. Means and medians are calculated on the difference between male age and female age (with positive values assigned to male age advantage and negative to female age advantage, i. e. the analysis is not based on absolute age differences).

Sweden is characterized by a large proportion of cohabitation as an alternative to marriage and childbearing outside marriage is very common ( $55.5 \%$ of all births in 2006). Due to changing marriage trends over time it is essential to look at all unions and childbearing is an appropriate way to get closer to this goal. Age differences between parents at first parenthood are available longer back in time, relevant for a larger population and are also independent of fluctuations in the selection into marriage. Because of this the study focuses on couples identified by a common first child in addition to marriages.

Marriage propensities decreased steadily for most of the second half of the $20^{\text {th }}$ century (Andersson and Kolk 2011) even though the $21^{\text {st }}$ century has been characterized by a trend reversal (OhlssonWijk 2011). Same-sex couples in registered partnerships will not be considered in this study. They are characterized by somewhat higher age differences between partners than in opposite sex unions (Andersson, Noack, Seierstad, and Weedon-Fekjaer 2006) in Sweden. Same sex marriages became legal in Sweden 2009.

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## Results

A large number of different analyses have been carried and are referred to in this result section, only a selection of those results are presented in graphical form in this abstract (Fig 1.). Overall patterns are characterized by a fair amount of continuity over the decades with a slightly decreasing mean difference between partners with the man around $2-3.5$ year older for first births and an even more stable pattern for marriages with 1.75 - 2-5 years of male age advantage. Both median and mean age differences between married couples are consistently lower than those for $1^{\text {st }}$ birth parents. The age difference between parents shrunk rapidly in the sixties after it began to slowly rebound in the eighties but has the last two decades shrunk to the lowest level so far. For married couples the period since 1968 is characterized by a stable pattern of age differences. The small increase in 1989 is due to a reform of the widow pension that resulted in a large increase in the number of marriages in Sweden.

Besides analysis of the mean the role of quantiles describing the median and the tails of the distribution of age differences of partners have also been examined. Results show that there was very large variation in age differences for the entire examined period. The first part of the century shows the widest spread while the sixties shows the highest degree of age homogamy. From the middle of the seventies age homogamy has increased and the gap is widening. Spouses as compared to parents show higher levels of homogamy characterized by fewer couples with a much older man but also more couples with an older woman. Marriage also shows less temporal variation except for an increasing proportion of couples with an older woman over time.

The fraction of unions with one partner born outside Sweden is increasing steadily over the time frame consistent with increased immigration to Sweden. At the end of the study approximately 75\% of parent-dyads and a little more than $80 \%$ of marriages included at least one person born outside Sweden. When analyzing the population by country of origin large differences appear between the two native born partners and when the woman is born outside Sweden. Foreign born parents show a very different pattern with age differences comparable to native couples in the sixties followed by rapidly increasing age differences reaching a difference of 5.5 years in 2007. Parents where the mother is born in Sweden shadow the trend for Swedish born parents at slightly higher levels while parents where the father is born in Sweden follows the pattern for two foreign born parents at lower levels. Similar overall patterns exist for marriages.

In the future further analysis looking at the trends for specific countries will be carried out to see if the diverging patterns of partly/completely foreign born couples is due to changing selection of immigrants. The patterns of $2^{\text {nd }}$ generation immigrants will also be examined. I will also examine the role of absolute age differences in the context of age homogamy.

## Conclusions

Swedish patterns are overall similar to with what has been previously reported for the US, UK and Australia (Bhrolcháin 2005; Presser 1975; Qu 1998). Both trends and this size of the age difference is surprisingly uniform over time. Australia and the US have both experienced a similar decline to Sweden in age differences over time while in the UK patterns have been more stable.

The study is a contribution to the understanding on the continuity and change of age differences between partners. The study is based on data over a long period, large case numbers, analysis using quantiles and information on country of origin. While stability of the patterns for 75 years is striking for Swedish born, a new pattern can be seen for non-native couples the last 40 years culminating in the most recent decade. Normative patterns regarding age homogamy appears to have been reached a peak in the late sixties in Sweden. New patterns of globalization with both Swedish males seeking brides abroad (sometimes referred to as mail order brides) and increased numbers of $1^{\text {st }}$ and $2^{\text {nd }}$ generation immigrants in Sweden has created more diversity in partner characteristics.

A novel finding of the study is an increasing divergence in age gap by country of origin in Sweden. Three major explanations most likely explain the changing pattern. The first alternative is a changing selection of migrants coming to Sweden in which non-Nordic and non-European migrants increase in numbers over time. The second is second generation immigrants searching for a partner from their parent's country of origin. The third is the emergence of marriage migration in which older ethnic Swedish males find younger females for family formation from less developed countries (Niedomysl, Östh, and van Ham 2010).

Figure 1: Various graphs on distribution, quantiles and means of age differences of couples in Sweden


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