Local Mating Markets and Partnership Formation:

The Role of Education-Specific Mating Squeezes

Nadia Steiber; Erich Striessnig; Laura Zilian

Introduction

The reversal of the gender gap in education affects patterns of assortative mating (De Hauw et al. 2017). Shares of *hypogamous* heterosexual couples, where the woman is more educated than the man, are rising at the expense of *hypergamous* couples, where the man is the more educated partner (Esteve et al. 2012). This study examines how local mating markets affect partnership formation and assortative mating and in particular the formation of hypogamous unions (Corti and Scherer 2021). This is important for several reasons. Educational sorting into couple unions is consequential for social stratification and mobility as it affects the distribution of resources between and within households (Schwartz & Mare, 2005, Blossfeld 2009; Breen & Andersen 2012). In addition, educational sorting patterns can affect the intergenerational transmission of advantages by creating unequal opportunities for children (Mare & Schwartz, 2006; Rauscher, 2020). A better understanding of the *selection* into unions is important to improve our ability to study the impact of assortative mating — and particularly the rise of hypogamy — on demographic and economic behaviours (Bertrand et al. 2015; Nitsche et al. 2018; Van Bavel 2012) and on gender inequality within couples (Van Bavel & Klesment 2017). The accurate modelling of selection into hypogamous unions can inform the identification of causal pathways from hypogamy to its consequences (e.g. in terms of union stability, fertility, gender inequality, child health, etc.).

Two key dynamics drive the patterns of educational assortative mating in union formation: 1) mate *preferences* (i.e. seeking to mate with someone of similar age and educational attainment) and 2) *structural* opportunities and constraints related to the availability of potential partners with the preferred characteristics (Leesch & Skopek 2023). This study aims to contribute to our understanding of the *structural factors* driving the formation of unions. Such structural factors vary across time and space as a result of educational expansion and the regional mobility of individuals. We investigate how regional and temporal variations in the availability of potential partners affect the timing of union formation and educational sorting in Austria. The *mating-squeeze hypothesis* (De Hauw et al. 2017; Van Bavel 2012), which we are testing, posits that a shortage of highly educated men relative to women in a given age group can lead to a higher prevalence of hypogamous unions, as women choose from a smaller pool of potential partners. It predicts a higher prevalence of hypogamous unions when and where we observe a relative scarcity of highly educated males in the relevant age brackets. This constrained choice is expected to also influence the timing of union formation, as women with higher education may delay union formation in squeezed mating environments. Moreover, from a life course perspective *search*

theory (Oppenheimer 1988) posits that structural constraints become more relevant the longer individuals search for a partner. Squeezes of equal strength may thus affect older individuals more strongly (Corti & Scherer 2021).

Data and Methods

Using Austrian register data, we identify all childless "singles" (i.e. not co-residing with a partner), who were born in 1991 and resided in Austria in 2011, and track their partnership status, as well as the characteristics of their partners over the next ten years. During the observation period from 2011 to 2021, we identify their first long-term partners, restricting the study to unions lasting at least two years. Within this time frame, approximately 43% of men and 56% of women in the sample formed a partnership.

We differentiate four levels of education (1-low, 2-medium-low, 3-medium-high, 4-high)[1] and define *local mating markets* based on political districts[2]. In accordance with Corti and Scherer (2021, CS), we calculate the mating squeeze measure as a *gender balance indicator* of highly educated women relative to highly educated men.

$$Sq_i = \frac{\sum_{k-2}^{k+2} W_{h=3tm}}{\sum_{k-2}^{k+2} M_{h=3tm}} \qquad (1)$$

Sq_i describes the ratio of medium-high and high educated women ($W_{h>2}$) in each year (*t*) and mating market (*m*) over that of men with the same level of education ($M_{h>2}$) in the age range +/- 2 years of individual *i*. In a first step, we replicate the findings from CS and analyse the effects of the mating squeeze on union formation using discrete-time event history models with two specifications: (i) a logit model to examine the timing of union formation per-se with age dummies, stratified by gender and clustered at the individual level and (ii) a multinomial model to analyse the type of union formed:

$$h_{itm} = \alpha D_{it} + \beta Sq + \beta density + \beta Sq * D_{it} + \beta density * D_{it} \qquad (2)$$

where the shape of the hazard is determined by the age D_{it} that is interacted with the mating squeeze (βSq) to assess how squeeze effects vary by age. Moreover, we control for the density of the mating market (i.e., number of opposite-sex individuals in the respective age groups within a 30-minute driving radius; $\beta density$), which we also interact with age. These models allow us to assess the probability of union formation over time, accounting for the right-censoring in partnership formation. For our initial

[1] *Low* comprises those with compulsory education, *medium-low* those with vocational training (apprenticeship), *medium-high* those with 'Matura' (i.e. Austrian higher education entry qualification), and *high* those with tertiary education. This distinction is important because Austria's education system channels individuals into different educational and career paths early on. Those with a 'Matura' often continue to tertiary education, making this group a key link between intermediate and higher attainment levels.

[2] This represents a more fine-grained spatial unit compared to those used in previous studies, and it better reflects everyday social life and regional differences in Austria.

analysis, we focus on women with the two highest educational levels taken together (highly educated women) — the demographic group that is most at risk of remaining single or forming hypogamous unions. We run separate models for men and women, distinguishing the following states: singlehood, homogamy (the man's education is equal to the woman's education), hypergamy (the man's education is higher than the woman's) and hypogamy (the woman's education is higher than the man's). In subsequent analyses, we take advantage of the large register data to explore in more detail the types of women and men forming hypogamous unions and the types of hypogamous unions (i.e., at different levels of education) formed.

First Results and Discussion

Our results show that the probability and timing of finding a partner is lower and later for men than for women. Descriptive analyses of the squeeze show that education-based mating squeezes tend to be larger in rural areas (i.e., less densely populated mating markets) than in urban ones. However, they also vary by age and over time, highlighting the importance of both local and temporal contexts for partnership formation (Figure 1).

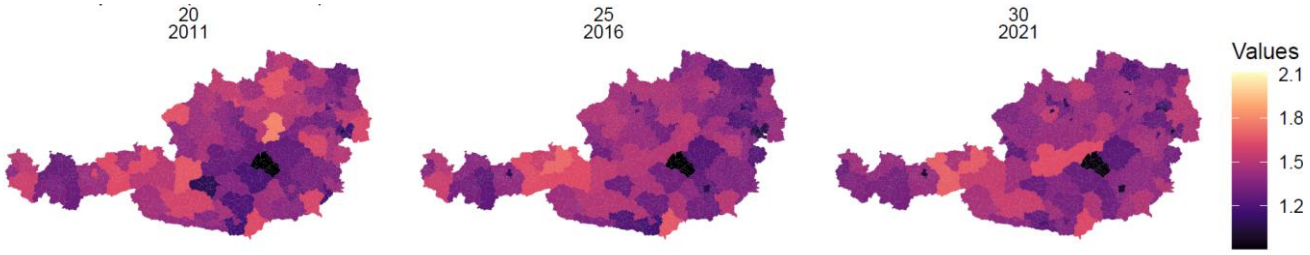

Figure 1 Spatial and temporal variation of the squeeze by age. The maps display the mating squeeze at ages 20, 25, and 30 between 2011 and 2021. Ratios above 1 indicate that women outnumber men. The higher the number, the higher the squeeze (i.e. lack of highly educated men).

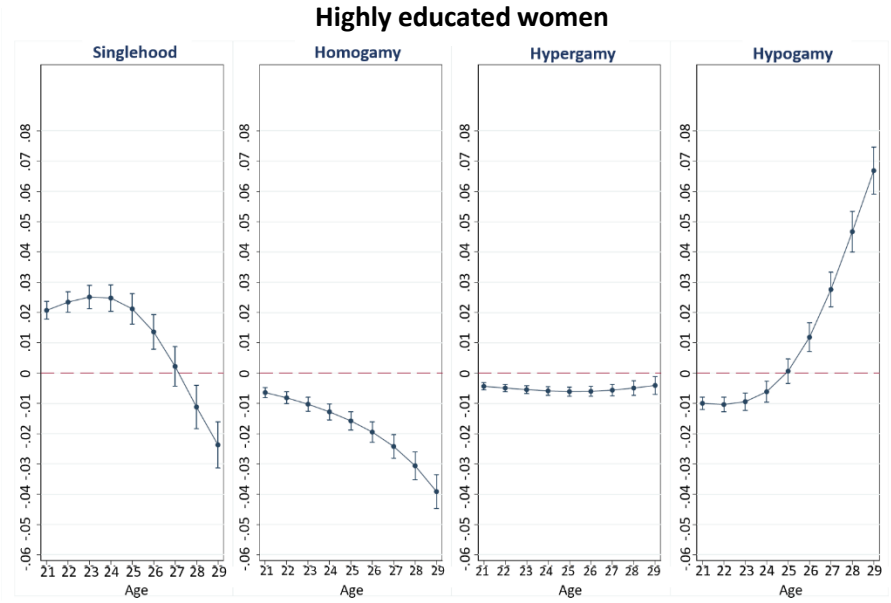

Figure 2 AME of z-standardised squeeze for highly educated women.

Moreover, in line with CS for Germany, we find a positive effect of more pronounced mating squeezes on the hazard of hypogamous union formation among highly educated women at higher ages, and these effects become stronger as women grow older. At younger ages, stronger squeezes increase the likelihood of remaining single; however, this effect weakens with age and eventually reverses for the two oldest age groups. Our preliminary findings suggest that mating squeezes play a crucial role in shaping partnership outcomes, union patterns, and assortative mating among highly educated women. Importantly, these effects are dynamic and evolve over the life course: younger and older women respond differently to constraints in the mate market. In ongoing analyses, we explore the regional factors that drive strong mating squeezes while also affecting the likelihood of union formation, aiming to control for such regional confounders. We interact the squeeze indicator with the market size to account for the greater implications of a squeeze in less densely populated areas and investigate the ideal definition of mate markets in terms of radius.

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