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MARTIN DRIBE, BJÖRN ERIKSSON, FRANCESCO SCALONE

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Centre for Economic Demography
Lund University School of Economics and Management
P.O. Box 7083
SE-220 07 Lund, Sweden

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Migration, Marriage and Social Mobility: Women in Sweden 1880-1900

Martin Dribe
Centre for Economic Demography
Department of Economic History
Lund University
Martin.Dribe@ekh.lu.se

Björn Eriksson
Centre for Economic Demography
Department of Economic History
Lund University
Martin.Dribe@ekh.lu.se

Francesco Scalone
Department of Statistical Sciences
University of Bologna
francesco.scalone@unibo.it

Abstract

We study the social mobility of women by looking at the connection between migration and marriage outcomes using complete count census data for Sweden. The censuses 1880-1900 have been linked at the individual level, enabling us to follow 100,000 women from their parental home to their new marital household. Marriage market imbalances were not an important push factor for migration but we find a strong association between migration distance and marriage outcomes, both in terms of overall marriage probabilities and in terms of partner selection. These results highlight the importance of migration for women's social mobility during industrialization.

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1. Introduction

The study of socioeconomic mobility has been a core theme in economic and social history for a long time, but it has gained renewed attention in recent years at least partly as a result of the uncovering of new data sources and new methods of data linkage (e.g., Clark 2014; Long and Ferrie 2013; Knigge et al. 2014; Lindahl et al. 2015; Dribe and Helgertz 2016). Most studies look at the intergenerational transmission of occupational status, class or earnings by comparing fathers and sons or, more recently, grandfathers, fathers, and grandsons. Usually, only men are considered (recent exceptions include Jäntti et al. 2006; Hellerstein and Morrill 2011; Olivetti and Paserman 2015), because historically it was typical for women to exit the labor force upon marriage or at least only work part time supplementing the husband's income if needed. This often left women without a registered occupation in censuses and other administrative registers (Goldin 1995; Stanfors 2014; Stanfors and Goldscheider 2017). This means that we do not know much about the conditions shaping social mobility and socioeconomic attainment for women in the past.

In historical contexts, marriage and partner selection constituted an important route to socioeconomic attainment in addition to own career and earnings. Naturally, this was especially the case for women, because of their primary role as homemakers. A micro-level study of a community in southern Sweden, for instance, showed that heterogamy was closely linked to social mobility (Dribe and Lundh 2009, 2010), which makes the workings of the marriage market a crucial factor for understanding the reproduction of socioeconomic status (SES) in the past and, thus, of inequality. Compared to being homogamously married, social hypergamy (marrying someone with higher socioeconomic status) had a positive effect on attaining higher social status for both men and women. Being hypogamously married, on the other hand, had a negative effect on status attainment for both sexes. Hypergamous marriages also increased the probability of upward social mobility for both men and women. Hypogamous marriages, on the other hand, lowered the likelihood of upward social mobility and increased the risk of downward mobility. One important factor in finding the right partner is migration. Leaving one's place of origin could be a way for people to broaden the marriage market and thus facilitate the search for a spouse with desirable characteristics (Choi and Mare 2012). In this way, migration could be an important vehicle for social mobility, not only by promoting earnings or occupational mobility but also through the marriage market.

The aim of this paper is to study the connection between internal migration and social heterogamy for women, using complete count census data for Sweden. The censuses 1880, 1890, and 1900 have been linked at the individual level, which enables us to follow individuals from their parental home to their new marital household. We have information on socioeconomic status from occupation as well as place of birth and place of residence. In addition, there is information about household context and a range of community-level socioeconomic and demographic indicators. We focus special attention on the association between migration and different marriage outcomes: overall marriage propensities, homogamy, hypergamy and hypogamy. First, we analyze the connection between the structure of the marriage market, as indicated by the local sex ratio, and the likelihood of migration. Then, we study the association between migration and marriage outcomes. In the analysis, we employ different kinds of fixed effects models and instrumental variable models to account for possible endogeneities in the link between migration and marriage. Our results show no connection between the local marriage market and women's migration decisions but a rather strong association between migration, on the one hand, and overall marriage probabilities and social heterogamy on the other. They suggest that migration played a powerful role in women's social mobility during the breakthrough phase of industrialization in Sweden.

2. Theoretical Background

2.1. Migration and Social Mobility

Most of the research on social mobility, whether dealing with contemporary or historical contexts, has focused on men. Studies that have included women as well have often found their mobility patterns to be quite similar to men's patterns, especially when looking at marital mobility (husband's occupation/earnings) rather than occupational mobility (Tyree and Treas 1974; Chase 1975; Dunton and Featherman 1983; Portocarero 1985). These studies reflect mobility in the United States and Europe from the 1950s to the 1970s, when married women did not usually fully participate in the labor market, although their labor force participation rates were still much higher than they were at the turn of the twentieth century (see Stanfors 2014), which is the period we study in this paper. Hence, we believe marital mobility to have been even more important to women's social status at this time than it is today, and some historical studies also seem to confirm this (Van Dijk, Visser and Wolst 1984; Sewell 1985; Mitch 1993; Schüren 1993; Miles 1999).

Migration has frequently been associated with social mobility, and much of the literature on migration is concerned with the possible returns to migration and the way such returns affect the decision to move (e.g., Sjaastad 1962; Todaro 1969; Harris and Todaro 1970). In most of the economics literature, there has been a strong focus on wage differences and the way migrants respond to these incentives, both in terms of internal, often rural-urban, migration (e.g., Boyer 1997; Boyer and Hatton 1997; Collins and Wanamaker 2014, 2015) and international migration (e.g., Hatton and Williamson 1994).

However, migrants are typically not a random sample of the sending population but are selected in different ways. In the classic model by Borjas (1987, building on Roy 1951), selection is determined by the distributions of earnings and returns to skills. When returns to skills are relatively high in the sending region, which is typically the case when income inequality is higher, migrants will be negatively selected from the sending population, because high-skill individuals have lower incentives to move. In contrast, when returns to skills are relatively low, migrants tend to be positively selected in terms of skills. Even though the empirical support for this model is far from unanimous, there is at least some confirmatory evidence in the literature on historical migration, both international and internal (e.g., Ferrie 1999; Long 2005; Abramitzky, Boustan and Eriksson 2012; Stolz and Baten 2012; Salisbury 2014; Eriksson and Stanfors 2015). However, the costs of migration are also important, and it has been argued that this is why the poorest segments of the sending populations do not move even when there appears to be clear incentives for them to do so (e.g., Hatton and Williamson 1994; Wegge 2002).

In addition, migrants can be expected to be selected based on various non-observed characteristics, for example, being more risk-taking and daring, which in turn may make them better suited to reap the benefits of greater opportunities for socioeconomic advancement in receiving areas (Chiswick 1978, 1999). Especially in cases of long-range international migration involving change of both language and culture, these kinds of selection mechanisms are likely to be very important. This kind of selection can be assumed to work independently of skills and education in the sense that within education or skill groups, migrants would be among the most risk-taking and would be more able and more ambitious. In turn, this could be expected to promote faster social mobility in the new country.

How migrants fare in the new destination also depends on their integration within the new labor market. Especially in the context of contemporary refugee migration into highly industrial societies, this has proven a serious obstacle to the economic mobility of immigrants (e.g., Bauer, Lofstrom and Zimmermann 2000; Le Grand and Szulkin 2002; OECD 2015). Moreover, even though it seems to have been much less of a concern in the transatlantic migration at the turn of the twentieth century, the economic assimilation of immigrants in the United States was not without its difficulties but differed by origin and time of immigration (Hatton 1997; Ferrie 1997; Minns 2000; Abramitzky, Boustan and Eriksson 2014). Even in cases of internal migration, there could be difficulties for immigrants to fully integrate due to a lack of specific skills or networks (e.g., Silvestre, Ayuda and Pinilla 2015), even though most studies seem to find migrants historically doing better than natives in terms of earnings or occupational mobility (e.g., Hatton and Bailey 2002; Maas and van Leeuven 2004; Sewell 1985; Eriksson and Stanfors 2015).

Taken together, economic incentives are of prime importance to explain migration, at least migration over medium and long geographic ranges (short-range moves are often connected with life-cycle transitions and residential changes). Migrants responding to these incentives are often experiencing considerable upward social mobility and wealth accumulation (Herscovici 1998; Ferrie 1999; Long 2015; Stewart 2006; Eriksson 2015a), even though there is some counter-evidence suggesting that migrants actually fare worse than non-migrants (see, e.g., Eichenlaub, Tolnay and Alexander 2010). Thus, by most accounts, migration is assumed to be an important instrument for social advancement, and increasing migration fields during industrialization and urbanization are usually connected to changes in occupational structure and opportunity for social mobility (Dribe, Helgertz, and Van de Putte 2015).

2.2. Migration and Marriage Outcomes

In addition to promoting occupational or earnings mobility, migration could also be a way for people to enlarge the marriage market and thus to facilitate the search for a spouse with desirable characteristics (Choi and Mare 2012). In turn, partner selection was an important vehicle for social mobility in preindustrial and early industrial society (Dribe and Lundh 2009; 2010), and this was especially true for women who, historically, depended on their husbands to a large extent for their socioeconomic status (Van Dijk, Visser and Wolst 1984; Miles 1999). By searching for a spouse with higher socioeconomic status, women could improve their own status without being occupationally mobile or finding a better-paying job. Partner selection in historical times was, however, deeply embedded in local culture and traditions, which put limits to this route to social mobility.

Partner selection is often viewed as a function of three different factors: the structure of the marriage market, own preferences and third-party influence (from parents, peers, church or other important local institutions) (see, e.g., Kalmijn 1998). Hence, migration not only potentially increases chances of social mobility through occupational attainment or improved earnings but could also have an indirect effect on social mobility through social heterogamy by limiting parental and other third-party influence over marriage decisions (Sewell 1985; Pélissier et al. 2005; Van de Putte et al. 2005). In particular, for long-distance migration, we would expect migrants to lose much of the regular contact with their place of origin, which should gradually reduce the impact of family and the local community of origin on marriage decisions. This diminishing third-party influence could be expected to increase chances of heterogamy in general, since local custom in preindustrial rural societies favored homogamy (see, e.g., Dribe and Lundh 2005).

Migration could also affect partner selection through the structure of the marriage market facing the migrants. To the extent that migration was not only circular within rural areas, but where sending and destination areas differed considerably in terms of age structure, gender composition and socioeconomic diversity, the marriage market facing the migrants in their new destinations might have been quite different from those in the sending areas. This would in turn be an important factor in determining the search for a spouse (Blau, Blum, and Schwartz 1982; Abramitzky, Delavande, and Vasconcelos 2011). More specifically, a more diverse marriage market would imply higher rates of heterogamy.

Finally, migration could also affect partner choice through simple selection. To the extent that migrants are positively selected in terms of ambition or ability, as was previously discussed, they should also be expected to be more likely to find partners of a higher social origin (Pélissier et al. 2005).

A connection between migration and social heterogamy has also been found in empirical studies of historical contexts, for example, in the late nineteenth-century Netherlands, where urban migrants were more likely to experience heterogamy than non-migrants (Bras and Kok 2005). For Stockholm and Sweden, Matovic (1990) noted a shortage of potential spouses in the upper class, which forced the local elite to marry in-migrants in order to avoid hypogamy. In mid-nineteenth century, Marseille (France) and Sewell (1985) found female migrants to be more socially mobile through marriage than working-class women born in the city. At the same time, it has been argued that urban migrants sometimes faced difficulties integrating into city society, which may have made hypergamy, and even homogamy, more difficult (see, e.g., King 1997; Van de Putte 2003).

It is also possible that the local marriage market could be a factor in determining migration. If the structure of the marriage market is highly unfavorable in terms of availability of potential spouses of the right age and status, this might induce individuals to move to locations where it is easier to find a spouse. The marriage market can be viewed as similar to the labor market, where searching for a spouse is similar to searching for a job (Oppenheimer 1988). According to standard search theory, labor market imbalances affect the reservation wage, i.e., the wage at which a job searcher is willing to take a given job, and thus the matching of jobs and workers. A shortage of labor will lower the reservation wage, while an abundance of jobs will increase it (see Rogerson, Shimer, and Wright 2005 for a review). In a similar way, a shortage of potential spouses could be expected to prolong search times and lower the requirements on spousal characteristics (see Lichter, Anderson, and Hayward 1995). One way of improving the search would be to move to destinations with a more favorable marriage market. We would expect women growing up in areas with a relative shortage of men in their own SES group to have been more likely to move, and that migration would have been associated with higher chances of getting married (but perhaps at a later age) and higher chances of homogamy or even hypergamy, while risks of hypogamy would be highest for the stayers.

To summarize, we hypothesize that migration had a positive effect on social heterogamy for several different reasons. Less parental influence over partner choice can be expected to have been especially important for increasing hypogamy (marrying someone from a lower social status origin), as it could be expected that families were always more positive to children marrying a spouse from a higher socioeconomic origin while they tried to stop children from marrying down (see the discussion in Dribe and Lundh 2005). A more diverse marriage market should increase heterogamy overall, but it should not affect the direction to any greater extent. Migration as a deliberate way to alter the marriage market or positive selection of migrants in terms of ambition, ability, etc., would imply a positive effect of migration on hypergamy.

3. The Context: Sweden 1880-1900

During the period 1880-1900, Sweden witnessed the real breakthrough of industrialization and the emergence of industrial society (see Schön 2010). Earlier in the nineteenth century, a number of important changes happened that paved the way for the industrial economy. Increased demand for agricultural products both domestically and from abroad led to massive investments in agriculture and to profound institutional change. The most important development was the enclosures, which led to a more efficient organization of land and production, which together with land reclamation and the introduction of new crops and rotation schemes promoted increased productivity of both land and labor (Svensson 2006; Olsson and Svensson 2010). As a result, the earnings of more-well-to-do farmers increased, which stimulated domestic industrialization, especially in textiles, during the first half of the century (Schön 1979). From mid-century, a very dynamic development took place around the railroad investments and innovations in steel making. At the same time, both economic and political institutions were transformed in a more liberal direction, including the introduction of a modern parliamentary system (although universal suffrage for both men and women was not fully implemented until 1921); the deregulation of production, trade, and the labor market; and a strengthening of property rights. The growth of both domestic and external demand has led to increasing growth in industrial investments and, ultimately, to a transition to modern economic growth (Jörberg 1961: 8-28). Iron and timber were the leading industrial sectors, and export of oats and, later, butter was also of great importance. Annual rates of growth in GDP/capita increased from 0.4 percent in the first half of the nineteenth century to 2.1 percent between 1890 and 1930 (Schön 2010:13).

This period also witnessed increased internal migration and urbanization and the emergence of an urban industrial working class. Nonetheless, Sweden retained its rural character. A majority of the population was still employed in agriculture at the turn of the twentieth century, and it was not until the 1950s that more than half of the population lived in towns (SCB 1969, Table 14). The period 1850-1930 also saw large-scale emigration to North America, with approximately 1 million people leaving out of a population in 1880 of approximately 4.5 million. Emigration peaked in the late 1860s, the 1880s and in the first decade of the 1900s, these peaks being connected with both a crisis in Sweden (late 1860s) and economic booms in the United States (Thomas 1941: 88-92).

In the period from 1890 until WWI, structural transformation changed the course of industrialization in Sweden, as elsewhere. From being largely driven by steam and railroads, the new development was formed around the combustion engine and electrical power. This was the period when industrial society made its real breakthrough in Sweden. From previously being dominated by iron, timber and agricultural products, economic and industrial growth was increasingly driven by engineering, paper and pulp (Schön 2010).

As a result of industrialization, the occupational structure changed in the period 1880-1900. Table 1 shows how the proportion employed in agriculture declined and the proportion in industry increased, as did the proportions in white-collar occupations. The table also shows the increasing importance of long-range migration. The proportion residing in a different county than they were born in increased from approximately 20 percent in 1880 to nearly 30 percent in 1900.

Table 1 here

4. Data

4.1. Linking Census Data

To study the association between migration and marriage, we use linked micro-level data from three different Swedish censuses (1880, 1890 and 1900) based on probabilistic matching techniques (see Eriksson 2015b). The census data were digitized by the Swedish National Archives and are published by the North Atlantic Population Project (NAPP, www.nappdata.org), which adopts the same format as the Integrated Public Use Microdata Series (IPUMS). All registered individuals are grouped by household, and their relationship to the household head is indicated. In total, the 1880 census counts approximately 4.6 million individuals in 1.2 million households from approximately 2,530 parishes, while the corresponding figures for 1900 are 5.2 and 1.4 million, respectively.

Any data linking starts with identifying variables suitable for matching individuals. To avoid introducing bias, only variables that are time invariant over the life course should be considered (see Ruggles 2006). Available variables that fulfill the criteria of being fixed over time include birth year, birth place, sex, and names. Birth year, sex, and birth place do not suffer from the problems of variation in spelling associated with names and are therefore used to index the data. In practice, this means that individuals are only compared to potential matches between censuses if the birth year, birth parish and sex match exactly in two censuses.

Names (first names and surnames) thus remain as the only variables on which probabilistic linking is performed. To ensure that the number of names held by a person does not influence the probability of being linked, only the first recorded first name and surname are used (whatever name appears as the first entry in the census). Prior to linking, names were subjected to some very limited and basic standardization. For patronymic surnames, the suffixes –sson and -sdotter was parsed out in order to reduce the homogeneity of patronymic surnames relative to family names. For the same reason, any nobility particles (e.g., von and af) were eliminated from the surname string.

A peculiarity of the Swedish censuses is that children residing with their parents rarely have a surname recorded. We remedy this problem in two ways: Firstly, all children with missing surnames living in the same household as their fathers have had their fathers' surname appended. Secondly, since the patronymic tradition was still followed by some families, patronymic surnames have been constructed using fathers' first names. An individual can thus be linked by either having an actual surname recorded or through the use of a patronymic or family name derived from the father.

The likeness of names is evaluated using the Jaro-Winkler algorithm (see Christen 2006 and Christen 2007:41-52 for a more detailed discussion of matching algorithms). The algorithm produces a similarity score by considering common characters, transpositions, and common character pairs. It increases the score if a string has the same initial characters, and it checks for more agreement between long strings than between short ones and adjusts the score accordingly. For each potential match, a similarity score is calculated that ranges from 0 (for completely dissimilar records) to 1.0 (for identical records). Because the true or false status will be unknown, a classifier is required. A simple way of classifying a link is to set a threshold value that a potential link has to exceed in order to be classified as true. It is important to note that a higher threshold does not necessarily lead to an improvement in link quality. This is because when the threshold is increased, the span within which matches are compared for duplicates simultaneously narrows. Less-restrictive criteria will thus initially yield more potential matches but also result in an increased proportion of links being lost because of an increase in ambiguous links.

A large share (approximately two-thirds) of all individuals in the censuses have a second name recorded. By evaluating the likeness of second names, different thresholds for the Jaro-Winkler score were assessed in terms of the share of links that could be confirmed and the number of links made. Based on these evaluations, a Jaro-Winkler threshold of 0.85 for classifying a link as true was chosen (see Eriksson 2015b).

After creating an initial sample of primary links and removing all ambiguous matches, an additional sample of secondary links is created from the remaining unlinked pool of individuals by exploiting the indirect linking of households created by primary links in the first stage. A new identifier is created for every pair of households in two censuses connected through a primary link. This identifier is then added to the index variables (age, birth parish and sex), thereby narrowing the initial criteria for being considered a match to individuals of the same sex, born in the same parish in the same year and residing with a particular linked individual in both censuses. Because the new indexing severely reduces the size of the group that individuals are compared within in each census, only first names are used for probabilistic matching. Again, a threshold of 0.85 was set, and all ambiguous links were discarded. In total, the final linked sample contains approximately 90,000 women aged 5-18 in 1880 from which we have information on both father and husband socioeconomic status (see table 2).

Table 2 here

4.2. Variables

Table 2 shows the descriptive statistics for the whole population (I) and different stages of exclusions to arrive at the final analytical sample of women in the population, married with information on both their fathers' and husbands' socioeconomic status (V). Overall, there are no large differences across samples, indicating that the final sample is fairly representative of the whole population in terms of the variables included. The number of servants with full information on socioeconomic status is a bit lower in the sample, which is explained by a fair number of apparently wealthy households lacking information about the occupation of the household head. However, there does not appear to be any significant selection bias in the construction of the sample we use in the analysis.

We include a number of variables at the individual/family level and the community level (parish). Disability indicates whether there was any notation in the census about medical conditions (deafness, blindness, etc.). Only 0.4 percent of women suffered such conditions (0.1 percent in the final sample), but they could be expected to be relevant for both decisions to migrate and for marital outcomes. Migration distance indicates the distance in kilometers between the parish of residence in 1900 and 1880 based on parish centroids. On average, women in the sample moved 34 kilometers. For socioeconomic status, we rely on information about the occupation of the father in case of daughters living at home and of the husband for married women. Occupational notations in the censuses were coded according to the Historical International Standard Classification of Occupations (HISCO, see Van Leeuwen, Maas, and Miles 2002). Based on HISCO, we have classified occupations into different classes following HISCLASS (Van Leeuwen and Maas 2011), which is a 12-category classification scheme based on skill level and degree of supervision, whether manual or non- manual and whether urban or rural. It contains the following classes: 1) higher managers, 2) higher professionals, 3) lower managers, 4) lower professionals and clerical and sales personnel, 5) lower clerical and sales personnel, 6) foremen, 7) medium skilled workers, 8) farmers and fishermen, 9) lower skilled workers, 10) lower skilled farm workers, 11) unskilled workers, and 12) unskilled farm workers. In this paper, we use a six-category version including: (1) the elite (higher managers and professionals, HC 1-2), (2) the upper middle class (lower managers and professionals and clerical and sales personnel, HC 3-5), (3) skilled workers (HC 6-7), (4) farmers (HC 8), (5) lower skilled workers (HC 9-10), and (6) unskilled workers (HC 11-12). In 1880, there was a predominance of women with a farmer background (55 percent in the final sample), while 21 percent came from the unskilled working class and approximately 6 percent from the elite and upper middle class.

We look at heterogamy by comparing the socioeconomic status of the woman's father in 1880 to the status of her husband in 1900. Table 3 shows the transition matrices linking the socioeconomic status of father and spouse by migration distance. Overall, 49 percent of the women in the sample were married in 1900, and of these, 43 percent were homogamously married, 28 percent hypogamously married (husband with lower socioeconomic status), and 29 percent hypergamously married (husband with higher socioeconomic status). Longer-distance migration is associated with more homogamy in the elite group and with more heterogamy among farmers and lower status groups, who to a greater degree marry hypergamously when migrating further away.

Table 3 here

A crucial variable in the migration analysis is the sex ratio (male/female). It is an indication of the structure of the marriage market, and we would expect a higher sex ratio to be associated with less migration of women, as more potential spouses would be available locally, thus facilitating finding a spouse with preferred characteristics. We define the overall sex ratio for each woman as the number of non-married men no more than 5 years older or younger in 1880 divided by the number of non-married women in the same age group. The mean sex ratio using this definition is 1.02 (standard deviation = 0.13, and values ranging from 0.40 to 6.3). There is thus considerable variation in the sex ratios across different communities, allowing an analysis of its association with migration outcomes. As an alternative, we also use the sex ratio in the socioeconomic group of origin in the same age groups as a measure of the marriage market. The mean for the class-specific sex ratio is 1.03 (standard deviation = 0.31, and values ranging from 0 to 12.0).

5. Methods

In the analysis, we first use OLS and linear probability models (LPM) to study the association between parish-level class-specific sex ratios and migration distance. The dependent variable, migration distance, is based on a comparison of the parish of residence in 1900 and 1880 and is transformed into logarithms and discrete distances in different specifications:

$$M_{ij} = \alpha + \beta \boldsymbol{X}_i + \gamma SR_i + \delta_j + \varepsilon_{ij} \qquad (1)$$

where M_{ij} is the distance moved between censuses for individual i living in parish j in 1800. $\boldsymbol{X}_i$ is a vector of individual variables referring to 1880 (age, number of brothers and sisters, number of male and female servants in the household, father's socioeconomic status, and disability). SR is the sex ratio (male/female) facing individual women in their parish of origin, overall for the entire parish and specific by socioeconomic group in two alternative specifications. δ_j are parish-level fixed effects to account for unmeasured geographical heterogeneity. Additional models without all control variables, as well as without the parish-level fixed effects, were also estimated with very limited impact on the association between the sex ratio and the migration distance (not reported).

In the next step, we look at the association between migration distance and different marital outcomes using linear probability models, where the dependent variable (H_{ij}) is either ever being married in 1900 or different social heterogamy outcomes (hypergamy, hypogamy, and homogamy). In these analyses, we only include the socioeconomic status groups that have a possibility to enter the stage under consideration, which implies that the elite are excluded from the hypergamy estimation and the unskilled are excluded from the hypogamy estimations. All models are estimated in such a way that the outcome of interest is compared to all other outcomes:

$$H_{ij} = \alpha + \beta \boldsymbol{X}_i + \theta M_i + \xi_j + \varepsilon_{ij} \tag{2}$$

where H_{ij} =1 if the individual is married in the category under consideration, and 0 otherwise. M_i is migration distance derived by comparing the place of residence in 1900 and 1880, and $\boldsymbol{X_i}$ is the same vector of individual variables as in (1). ξ_j are fixed effects at the parish level or family level (sisters) in alterative specifications. As before, we also estimate a basic model only including age and father's socioeconomic status. The specification with sister fixed effects controls for all unobserved heterogeneity at the family level (i.e., all conditions shared between sisters in the family).

There is reason to believe that the decision to move, and where to move, is not independent of the decision of if, when, and whom to marry. Therefore, we also consider an alternative identification strategy based on instrumental variables. More specifically, variation in access to railway transportation is used as an instrument for migration. Our first measure of railway access is constructed by identifying all station masters in the 1880 census. Thereafter, the distance from the location in 1880 of every woman in our sample to the nearest station master is calculated. The idea is that being close to means of transportation would increase migration probabilities without directly affecting marriage preferences. The validity of the instrument rests on the assumption that access to railroads does not affect women's marital outcomes through any other channel than migration. One concern is that railway stations (and station masters) are not randomly dispersed but are rather the result of a carefully planned process. Many station masters were located in urban areas, a factor that may have affected the marriage market. To address this concern, a control for distance to nearest urban area is included in both the first and second stages. With this control included, there is no reason to believe that distance to railway in the place of origin would have a direct effect on the marital outcomes independent of migration. Moreover, similar to Berger and Enflo (2016), we construct an alternative instrument in which railway access is approximated by straight lines connecting the capital (Stockholm) and the second- and third-largest cities in Sweden (Gothenburg and Malmö). These straight lines denote the lowest-cost path between the major endpoints around which railway construction was undertaken. Again, we use the minimum distance to one of these straight lines as the first-stage instrument for migration. The instrumental-variable models are estimated using two-stage least squares (2SLS):

$$M_{ij} = \alpha_1 + \beta_1\boldsymbol{X}_i + \delta_1 DU_j + \phi Z_j + \upsilon_{ij} \quad (3)$$

$$H_{ij} = \alpha_2 + \beta_2\boldsymbol{X}_i + \theta\widehat{M}_{ij} + \delta_2 DU_j + \varepsilon_{ij} \quad (4)$$

where Z_j is the instrument (distance to railway and distance to the straight line between major cities, in alterative specifications) and DU_j is the distance to an urban area from the place of residence (j) in 1880.

6. Empirical Findings

We begin by looking at the association between the marriage market, as measured by the class-specific sex ratio, and migration. Table 4 shows estimates from 20 different models. The models in panel A are based on the overall sex ratio at the parish level, and the models in panel B are based on the socioeconomic-origin-group-specific sex ratio at the parish level. Models VI-X include parish-level fixed effects. The associations between the sex ratio and migration in models I-V in Panel A are positive, implying longer migration being related to a more favorable marriage market (more men for every woman), which is not what we expected. None of the coefficients for the corresponding models in panel B are statistically significant except for model I, in which distance moved is the dependent variable. The magnitudes across the different specifications are very small: a ten percentage point higher sex ratio corresponds to a 140-320 meter *longer* move when not accounting for parish fixed effects. The corresponding effects on the chance of a ten percentage point higher sex ratio on moving more than 10 kilometers are within the range of 0.04 to 0.34 percent. Moreover, all effects are reduced when adding parish fixed effects, which should be interpreted as the sex ratios being correlated with some unobserved variables also affecting migration. In any case, the implied effects of the structure of the marriage market on women's migration distance are very small and not in the expected direction. Taken together, these results do not support the expectation that migration is sensitive to marriage market imbalances. In other words, there seems to be little connection between the local marriage market and migration propensities, implying that migrants are not selected from areas with a more unfavorable marriage market.

Table 4 here

Before turning to the results of the estimations of the associations between migration distance and the different marital outcomes, we look at the first stage of the two-stage regressions, as displayed in table 5. Two separate models are presented for each outcome, one for each instrument. Clearly, both instruments are relevant in the sense that they are associated with migration distance in all the different models. The endogeneity tests also confirm that migration distance is not exogenous in explaining marriage outcomes. The F-statistics of approximately 500 or higher indicate that the instruments are strong. The validity of the instruments cannot be formally tested in these models with only one instrument. Instead, it relies on the argument previously made that distance to railway and the straight lines between the major cities are only associated with migration distance and not directly with marriage.

Table 5 here

Table 6 displays the associations between migration distance and different marital outcomes: ever married (versus never married), homogamy (versus heterogamy), hypergamy (vs. homo/hypogamy), and hypogamy (vs. homo/hypergamy). Model I controls for age and father's socioeconomic status; model II is the full model controlling for number of brothers and sisters, disabilities and the number of servants in the household in 1880; model III is the full model with parish-level fixed effects; model IV is the full model with sister fixed effects; model V is the instrumental-variable model with distance to nearest station master as an instrument for migration distance; and model VI instead uses minimum distance to straight lines between Stockholm and Malmö or Gothenburg to instrument for migration.

Looking first at overall marriage probabilities in panel A, the estimates are highly similar in the first three models. This indicates that neither the inclusion of control variables nor parish-level heterogeneity alter the association between migration distance and the probability of being married in 1900. Longer migration distance is associated with a higher propensity of being married. The estimate in model IV, including sister fixed effects, is somewhat larger, indicating that the association remains when controlling for all shared characteristics at the level of family of origin. When estimating a causal effect of migration, however, the effect is negative, implying a lower likelihood of marriage as a result of longer migration. The different results of the instrumental-variable models could be related to the non-linear association between migration distance and marriage, where stayers and long-range migrants are less likely to marry than medium-range migrants (see below). It may be the case that being close to transportation induced alreadymigration-prone individuals to move farther afield, while it had no effect on the likelihood of stayers moving over short distances. This would explain the negative effect of migration on the likelihood of being married.

For hypergamy ("marrying up"), the estimates of the first four models are remarkably similar, and the causal estimates in models V and VI show a somewhat stronger positive effect of migration distance. Longer migration clearly seems to increase the chances of marrying a spouse from a higher social origin, just as expected. The estimates for hypogamy ("marrying down") are also largely consistent in showing a positive effect of migration distance. The estimates are also fairly similar across the different specifications, with the exception of the IV-estimate in model VI. In line with these results, the estimates for homogamy in panel D show a clear and consistent negative effect of migration distance on the probability of homogamy. Longer-range migration implies a lower likelihood of marrying someone from the same background.

Table 6 here

Table 7 displays results for the first four models using a categorical measure of migration distance in order to study possible non-linearities in the associations between migration distance and marital outcomes. The estimates are similar across different specifications, indicating that the associations found in a basic model are very robust to adding control variables and controlling for parish-level and sister fixed effects. Overall, there is an inverse U-shaped association between migration distance and overall marriage probabilities (panel A). A migration distance of 10-50 kilometers is associated with the highest marriage probabilities, and short-range migration is associated with the lowest, roughly 20 percentage points lower. Long-range migration, more than 100 kilometers, is associated with approximately 8 percentage point lower marriage probabilities (model IV).

Table 7 here

Short-distance migration, or no migration (<10 kilometers), is also related to higher probabilities of homogamy in all specifications, while longer-distance migration is associated with lower chances of homogamy. Instead, long-range migration is positively related especially to hypergamy, but also to hypogamy, while stayers are less likely to experience both hypergamy and hypogamy. In other words, stayers are less likely to marry, but when they do, they are more likely to match with someone from the same origin than with someone from either a higher or lower class. Long-distance migrants, on the other hand, are also less likely to marry overall, but if they do, they are more inclined to marry upwards than downwards. In terms of magnitudes, migration over more than 100 kilometers is associated with a 16 percentage point higher chance of hypergamy, 5 percentage point higher chance of hypogamy, and approximately 20 percentage point lower chance of homogamy (in model IV). Overall, these results are consistent with the hypothesis that migration is an important way to find a marriage partner of higher-class origin, which in turn could be an important way to advance socially.

7. Sensitivity Analysis

We have performed several additional analyses to check the robustness of these results. The different estimates are presented in table 8. Model I shows the baseline results of model III from table 5 (the parish fixed effects estimation). Model II is estimated with a control for urban migration, which somewhat increases the association between migration distance and overall marriage, but it hardly affects the associations with heterogamy and homogamy. Moving to an urban destination is in itself associated with lower chances of being married overall. This finding is consistent with long-distance migrants (e.g., rural-urban migrants) marrying at a later age, which may not be an indication of lower nuptiality overall (see, e.g., Oris 2000). Urban migration is also associated with higher chances of hypergamy and lower chances of homogamy, while the associations with hypogamy are small and inconsistent (not reported).

One concern is that marriage takes place before migration and that what we observe is the result of post-marital migration and social mobility. To check this, we linked the 1890 census to our sample and examined whether migration between 1880 and 1890 predicted marriage outcomes in 1900, conditioned upon women being single in 1890. The results are displayed in model III, and the patterns are highly similar to the baseline results, even though the associations are sometimes a bit weaker (especially for overall marriage probabilities). It seems clear, however, that the baseline results are not driven by post-marriage migration.

Tables 8 here

The baseline model includes origin-parish fixed effects to control for unobserved factors. Another concern could be that there are unobserved factors at the destination, which could affect the results. To account for this possibility, model IV instead includes destination-parish fixed effects. The estimates are highly similar to those with origin-parish fixed effects, which further supports the robustness of the results. In models V and VI, we estimate the model separately for women aged 5-11 in 1880 (and thus 25-31 in 1900) and those aged 12-18 (32-38 in 1900). Again, the results are very similar to the baseline results in model I, which does not give rise to any concern about heterogeneous effects across age groups.

Another issue is with the farmers, a large and rather special group in this regard because of their strong connection to the land, and a group that is often argued to have a great influence on observed social mobility patterns in largely rural societies such as Sweden at the time (see, e.g., Long and Ferrie 2013; Hout and Guest 2013; Xie and Killewald 2013). To ascertain the extent to which our results are driven by the behavior of farmers, we re-estimated the models with the continuous distance measure while excluding all women whose fathers and/or husbands were farmers (see model VII). For overall marriage probabilities, the exclusion of farmers does not change the results in any noticeable way. For hypergamy, the patterns are quite similar to the baseline results, while the differences are larger for hypogamy and homogamy. When excluding farmers, there is a negative association between migration distance and hypogamy (marrying down), which is opposite what was found in the baseline results. The results for homogamy are of the same sign as in the baseline estimations, but with a lower magnitude. Thus, the positive effect of migration on the risk of hypogamy that we saw before was completely driven by the farmer group. When we exclude this group, longer-distance migration is clearly associated with less hypogamy and with more hypergamy. In both sets of estimates, migration is negatively related to homogamy. Because of the lower population density in northern Sweden, parishes are much larger in this part of the country. One concern could be that the sizes of these parishes artificially inflate the measure of migration distance. Model VIII presents results estimated after excluding Sweden's four most northern counties. This exclusion has no implications for our results. In the final model (IX) in table 8, we address whether the estimated effects of migration are the result of an individual decision to migrate and not the result of family migration when young. The results are estimated by only including women whose father is observed as a resident in the parish of origin in both 1880 and 1900. Imposing this restriction does not change our conclusions.

Finally, we perform an analysis using a different measure of socioeconomic attainment. Instead of basing it on HISCLASS, we look at the association between migration distance and husband's occupational status as measured by the continuous HISCAM score, while controlling for father's occupational status using the same measure. HISCAM determines the position of an occupation in the overall hierarchy based on social interaction patterns, mainly using information on marriage and partner selection (Lambert et al. 2014). It is based on the interaction between people with different occupations and is translated into a relative position in a social hierarchy. HISCAM is based on HISCO codes, just as HISCLASS is, and it is standardized to have a mean of 50 and a standard deviation of 15 in a nationally representative population, ranging from 39.9 to 99 (in our father population, the mean is 51 with s.d.=6.4; in the husband population, the mean is 52 with s.d.=8.0). We used the universal scale rather than the Sweden-specific version due to the small sample size used in constructing the Swedish HISCAM scale. The results are displayed in table 9 and show a highly similar pattern to the one given by the analysis of social heterogamy based on HISCLASS. Longer-range migration is associated with a higher husband HISCAM score, which implies that women who move over longer distances are married to husbands with higher occupational status when their father's occupational status is controlled for. In the IV-models, the effects are not statistically significant, but in at least one of the specifications (distance to actual railway lines), there is a positive coefficient of a lower magnitude than in the other specifications. Overall, these results support the previous findings of a strong relationship between migration and upward social marriage mobility for women in Sweden at the turn of the twentieth century.

Table 9 here

8. Conclusion

Our aim is to study the link among the structure of the marriage market, migration and heterogamy. This is important for increasing our knowledge about both assortative mating and conditions for social mobility for women in industrializing societies, which is of particular relevance given the overwhelming focus on men in previous research.

The findings show no association between the structure of the marriage market, as measured by the overall or the SES-specific sex ratios, and the likelihood of migration or the distance moved. Marriage market imbalances do not seem to have been an important push factor in internal migration for women at the turn of the last century in Sweden.

On the other hand, we find a strong association between migration distance and marital outcomes, both in terms of overall marriage probabilities (or at least the timing of marriage) and in terms of partner selection. Longer-range migration is associated with lower nuptiality but also with more hypergamy. For non-farmers, longer-distance migration is also connected to lower risks of hypogamy, while the opposite effect is found for farmers. Non-farmer migrants, in other words, may be less likely to marry, or at least to marry later, but they are more likely to find a favorable match in terms of social origin. Stayers are also less likely to marry (or to marry later) than medium-range migrants, but they are also more likely to be homogamous and instead less likely to be both hypergamous and hypogamous. These patterns are consistent with several explanations for partner selection commonly mentioned in the literature. Most likely, migrants make more-independent decisions on marriage than stayers because of less influence from parents or local authorities, which should contribute to heterogamy more generally. This we also see for the medium-distance migrants who have a higher propensity of hypergamy than stayers. However, the fact that hypergamy increases more or less linearly with migration distance while hypogamy declines at longer distances indicates that longer-range migrants are probably selected in some way related to ambition and ability or that they move to places with a higher supply of higher-status individuals. In any case, we find little support for the idea that migrant women face difficulties integrating into the new communities, at least as judged by their marriage patterns.

Taken together, our analysis shows the importance of migration for social mobility not only through earnings mobility and occupational career, as has been the focus of much previous research, but also through partner selection in the marriage market. Migration was clearly a way for many women in early industrial Sweden to improve their socioeconomic attainment by searching for, and finding, the right partner.

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Table 1: Occupational structure and share migration (percent), age 20-59, 1880-1910.

	1880	1890	1900
Male occupational structure (Main HISCO groups)			
Professional, technical and related workers	2.8	3.1	3.4
Administrative and managerial workers	1.6	1.8	2.3
Clerical and related workers	1.7	2.0	2.5
Sales workers	2.3	2.8	3.4
Service workers	6.3	5.9	5.7
Agricultural, animal husbandry and forestry workers, fishermen and hunters	50.1	48.0	39.4
Production and related workers, transport equipment operators and labourers	35.2	36.3	43.4
Migration (Share residing in county other than county of birth)			
Men	20.6	25.0	28.3
Women	19.0	23.6	27.9

Sources: Swedish 1880, 1890 and 1900 censuses, published by the North Atlantic Population Project (NAPP, www.nappdata.org).

Table 2. Descriptive statistics.

	Census		Linked sample		
	I	II	III	IV	V
Age	11.407	10.892	11.114	10.668	11.554
	(4.082)	(3.939)	(4.136)	(3.974)	(3.853)
Sisters	1.451	1.586	1.487	1.571	1.537
	(1.275)	(1.284)	(1.284)	(1.288)	(1.285)
Brothers	1.548	1.687	1.597	1.681	1.646
	(1.323)	(1.324)	(1.329)	(1.329)	(1.327)
Male servants	0.166	0.148	0.207	0.186	0.179
	(0.525)	(0.481)	(0.579)	(0.537)	(0.518)
Female servants	0.267	0.203	0.308	0.245	0.205
	(0.696)	(0.597)	(0.731)	(0.649)	(0.599)
Disability	0.003	0.002	0.003	0.003	0.001
Migration distance (km)				32.627	34.372
				(84.146)	(85.614)
Father HISCLASS					
1		0.014		0.017	0.012
2		0.059		0.062	0.053
3		0.109		0.101	0.097
4		0.512		0.551	0.547
5		0.082		0.076	0.083
6		0.224		0.193	0.208
Spouse HISCLASS					
1					0.018
2					0.085
3					0.155
4					0.356
5					0.152
6					0.234
N	643744	487979	233135	188306	92958

Notes: I: Entire population; II: population with information on father SES; III: Linked sample 1880-1900; IV: Linked sample with information on father SES and migration distance; V: Linked sample with information on father and spouse SES and migration distance. Standard deviations in parentheses. HISCLASS: HISCLASS: (1) Elite (HC 1-2), (2) Upper middle class (HC 3-5), (3) Skilled workers (HC 6-7), (4) Farmers (HC 8), (5) Lower skilled workers (HC 9-10), (6) Unskilled workers (HC 11-12).
Sources: See table 1.

Table 3. Transition matrices

	Father HISCLASS						
Spouse HISCLASS	1	2	3	4	5	6	N
	Non-migrants (< 10 km)						
1	28.5	6.3	1.0	0.3	0.5	0.2	395
2	29.4	28.4	11.1	3.9	5.9	4.8	3,123
3	10.0	18.4	27.5	9.1	16.1	15.8	6,637
4	18.5	21.7	17.8	61.8	20.7	21.6	23,773
5	5.5	11.2	18.9	8.9	33.7	20.6	7,207
6	8.2	14.1	23.6	16.0	23.1	37.1	10,884
N	330	2,159	4,192	31,723	4,070	9,545	52,019
	Migrant (10-50 km)						
1	30.2	7.0	1.3	0.6	0.6	0.3	287
2	28.8	25.6	10.6	7.4	7.4	5.0	2,127
3	13.7	18.1	25.8	15.1	17.7	16.4	4,407
4	16.1	18.4	15.0	40.8	18.8	18.3	7,826
5	3.9	13.7	18.8	13.5	25.2	19.2	4,258
6	7.3	17.2	28.5	22.7	30.3	40.9	7,299
N	205	1,179	2,624	13,828	2,136	6,232	26,204
	Migrant (50-100 km)						
1	46.2	15.5	3.5	2.3	1.1	0.8	279
2	28.6	34.4	19.2	14.3	12.7	10.4	1,039
3	10.4	18.0	30.4	19.9	28.8	21.4	1,454
4	9.9	8.3	6.7	20.3	7.6	9.6	871
5	1.7	12.1	18.7	15.6	22.3	23.0	1,173
6	3.3	11.7	21.5	27.6	27.5	34.8	1,744
N	182	529	860	2,682	699	1,608	6,560
	Migrant (> 100 km)						
1	51.1	25.8	7.4	4.6	5.3	1.7	786
2	25.9	34.8	21.0	18.9	16.7	12.5	1,621
3	12.8	18.3	28.7	20.6	25.7	26.2	1,881
4	6.4	6.1	4.5	11.5	5.0	6.7	626
5	2.9	8.3	18.7	18.1	24.6	22.1	1,448
6	0.9	6.7	19.7	26.3	22.8	30.9	1,813
N	452	1,016	1,299	2,649	786	1,973	8,175

Notes: HISCLASS: (1) Elite (HC 1-2), (2) Upper middle class (HC 3-5), (3) Skilled workers (HC 6-7), (4) Farmers (HC 8), (5) Lower skilled workers (HC 9-10), (6) Unskilled workers (HC 11-12).
Sources: See table 1.

Table 4. Associations between sex ratio in own class and migration in different models.

	I	II	III	IV	V	VI	VII	VIII	IX	X
	Migration distance		Binary migration outcome			Migration distance		Binary migration outcome		
	km	log(km)	>10 km	>50 km	>100 km	km	log(km)	>10 km	>50 km	>100 km
	A. Overall sex ratio (Male/Female)									
Sex ratio	3.210 **	0.144 ***	0.034 ***	0.007	0.034 ***	1.590	0.077	0.018	0.013	0.018
	(1.499)	(0.034)	(0.009)	(0.007)	(0.009)	(1.981)	(0.047)	(0.013)	(0.009)	(0.013)
R^2	0.038	0.047	0.031	0.043	0.031	0.026	0.042	0.033	0.031	0.033
N	188306	188306	188306	188306	188306	188306	188306	188306	188306	188306
	B. Sex ratio within own SES (Male/Female)									
Sex ratio	1.411 **	0.017	0.004	0.004	0.004	0.699	0.007	0.001	0.002	0.001
	(0.698)	(0.015)	(0.004)	(0.003)	(0.004)	(0.792)	(0.016)	(0.004)	(0.003)	(0.004)
R^2	0.038	0.047	0.031	0.043	0.031	0.026	0.042	0.033	0.031	0.033
N	188306	188306	188306	188306	188306	188306	188306	188306	188306	188306
Fixed effect	-	-	-	-	-	Parish	Parish	Parish	Parish	Parish

Notes: Model control for age, disability, # unmarried brothers 1880, # unmarried sisters 1880, # male servants 1880; # female servants 1880, and father socioeconomic status. Standard errors in parentheses. * p<0.1, ** p>0.05, ***p<0.01.
Sources: See table 1.

Table 5. First stage estimations of instruments on migration distance in the different models, 2SLS regressions.

	A. Married				B. Hypergamy (upward mobility)				C. Hypogamy (downward mobility)				Homogamy (status maintenance)			
	V		VI		V		VI		V		VI		V		VI	
Distance to urban area	-0.00209	***	-0.00063	***	-0.00211	***	0.00000		-0.00215	***	0.00008		-0.00209	***	0.00001	
	(0.00018)		(0.00019)		(0.00024)		(0.00026)		(0.00025)		(0.00027)		(0.00024)		(0.00026)	
Distance to rail	-0.00145	***			-0.00195	***			-0.00188	***			-0.00194	***		
	(0.00006)				(0.00008)				(0.00009)				(0.00008)			
Distance to straight line			-0.00101	***			-0.00136	***			-0.00135	***			-0.00135	***
			(0.00003)				(0.00004)				(0.00004)				(0.00004)	
F-statistic	533.539	***	1038.910	***	553.612	***	1066.680	***	488.125	***	999.772	***	549.205	***	1059.59	***
N	188306		188306		91789		91789		85267		85267		92958		92958	
Tests of endogeneity																
Durbin score χ^2	433.821	***	866.135	***	18.551	***	12.140	***	0.075		3.756	**	13.422	***	0.830	
Wu-Hausman F-statistic	434.760	***	870.012	***	18.550	***	12.138	***	0.075		3.755	**	13.420	***	0.830	

Notes: Models control for age, disability, # unmarried brothers 1880, # unmarried sisters 1880, # male servants 1880; # female servants 1880, and father socioeconomic status distance to urban area. Standard errors in parentheses. * p<0.1, ** p>0.05, ***p<0.01
Sources: See table 1.

Table 6. Associations between migration distance and marital outcomes in 1900.

	I		II		III		IV		V		VI	
	A. Married											
Log distance	0.036	***	0.037	***	0.037	***	0.048	***	-0.191	***	-0.194	***
	(0.001)		(0.001)		(0.001)		(0.001)		(0.015)		(0.011)	
R^2	0.088		0.093		0.092		0.113					
N	188,306		188,306		188,306		188,306		188,306		188,306	
	B. Hypergamy (upward mobility)											
Log distance	0.032	***	0.031	***	0.030	***	0.026	***	0.071	***	0.054	***
	(0.001)		(0.001)		(0.001)		(0.002)		(0.010)		(0.007)	
R^2	0.185		0.193		0.182		0.012					
N	91,789		91,789		91,789		91,789		91,789		91,789	
	C. Hypogamy (downward mobility)											
Log distance	0.015	***	0.016	***	0.016	***	0.014	***	0.019	*	0.003	
	(0.001)		(0.001)		(0.001)		(0.002)		(0.010)		(0.007)	
R^2	0.177		0.198		0.207		0.010					
N	85,267		85,267		85,267		85,267		85,267		85,267	
	D. Homogamy (status maintenance)											
Log distance	-0.045	***	-0.046	***	-0.046	***	-0.040	***	-0.086	***	-0.053	***
	(0.001)		(0.001)		(0.001)		(0.003)		(0.011)		(0.008)	
R^2	0.069		0.072		0.059		0.026					
N	92,958		92,958		92,958		92,958		92,958		92,958	
Fixed effect	-		-		Parish		Sisters		-		-	

Notes: Estimates from OLS (I, II), FE (III, IV) and 2SLS (V, VI) regressions. I: Controls for age and father SES; II: Full model; III: Full models with parish FE; IV: Full model with sister FE; V: Distance to railway IV; VI: Straight line IV. Standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01
Sources: See table 1.

Table 7. Associations between categorical migration distance and marital outcomes in 1900.

	I		II		III		IV	
	A. Married							
Migration distance (reference: <10 km)								
10-50 km	0.206	***	0.205	***	0.203	***	0.229	***
	(0.003)		(0.003)		(0.004)		(0.006)	
50-100 km	0.118	***	0.120	***	0.110	***	0.154	***
	(0.005)		(0.005)		(0.007)		(0.011)	
> 100 km	0.030	***	0.034	***	0.042	***	0.083	***
	(0.004)		(0.004)		(0.006)		(0.010)	
R^2	0.098		0.103		0.099		0.116	
N	188,306		188,306		188,306		188,306	
	B. Hypergamy (upward mobility)							
Migration distance (reference: <10 km)								
10-50 km	0.050	***	0.051	***	0.057	***	0.059	***
	(0.003)		(0.003)		(0.004)		(0.010)	
50-100 km	0.144	***	0.142	***	0.143	***	0.117	***
	(0.006)		(0.006)		(0.007)		(0.018)	
> 100 km	0.198	***	0.189	***	0.177	***	0.162	***
	(0.006)		(0.006)		(0.007)		(0.018)	
R^2	0.187		0.194		0.182		0.014	
N	91,789		91,789		91,789		91,789	
	C. Hypogamy (downward mobility)							
Migration distance (reference: <10 km)								
10-50 km	0.071	***	0.069	***	0.064	***	0.048	***
	(0.003)		(0.003)		(0.004)		(0.009)	
50-100 km	0.061	***	0.064	***	0.062	***	0.035	**
	(0.006)		(0.006)		(0.007)		(0.017)	
> 100 km	0.021	***	0.035	***	0.048	***	0.054	***
	(0.006)		(0.005)		(0.007)		(0.018)	
R^2	0.179		0.199		0.207		0.010	
N	85,267		85,267		85,267		85,267	
	D. Homogamy (status maintenance)							
Migration distance (reference: <10 km)								
10-50 km	-0.120	***	-0.119	***	-0.119	***	-0.109	***
	(0.004)		(0.004)		(0.005)		(0.011)	
50-100 km	-0.201	***	-0.202	***	-0.200	***	-0.154	***
	(0.006)		(0.006)		(0.008)		(0.018)	
> 100 km	-0.211	***	-0.215	***	-0.216	***	-0.208	***
	(0.006)		(0.006)		(0.007)		(0.018)	
R^2	0.066		0.069		0.056		0.025	
N	92,958		92,958		92,958		92,958	
Fixed effect	-		-		Parish		Sisters	

Notes: See Table 5
Sources: See table 1.

Table 8. Sensitivity analysis.

	I		II		III		IV		V		VI		VII		VIII		IX	
	A. Married																	
Log distance	0.037	***	0.051	***	0.011	***	0.055	***	0.037	***	0.036	***	0.032	***	0.038	***	0.058	***
	(0.001)		(0.001)		(0.001)		(0.002)		(0.001)		(0.001)		(0.001)		(0.001)		(0.001)	
R^2	0.092		0.115		0.030		0.110		0.063		0.034		0.077		0.091		0.110	
N	188306		188306		159867		188306		110106		78200		77583		165929		101546	
	B. Hypergamy (upward mobility)																	
Log distance	0.030	***	0.026	***	0.018	***	0.025	***	0.028	***	0.032	***	0.024	***	0.032	***	0.030	***
	(0.001)		(0.001)		(0.001)		(0.001)		(0.001)		(0.001)		(0.002)		(0.001)		(0.001)	
R^2	0.182		0.187		0.155		0.183		0.164		0.201		0.166		0.175		0.172	
N	91789		91789		65462		91789		45313		46476		34034		79013		46734	
	C. Hypogamy (downward mobility)																	
Log distance	0.016	***	0.015	***	0.015	***	0.010	***	0.012	***	0.020	***	-0.010	***	0.017	***	0.018	***
	(0.001)		(0.001)		(0.001)		(0.001)		(0.001)		(0.001)		(0.001)		(0.001)		(0.001)	
R^2	0.207		0.207		0.204		0.212		0.219		0.194		0.395		0.212		0.199	
N	85267		85267		60706		85267		41594		43673		28706		73047		42981	
	D. Homogamy (status maintenance)																	
Log distance	-0.046	***	-0.041	***	-0.030	***	-0.034	***	-0.039	***	-0.051	***	-0.015	***	-0.048	***	-0.047	***
	(0.001)		(0.001)		(0.001)		(0.001)		(0.002)		(0.001)		(0.002)		(0.001)		(0.001)	
R^2	0.059		0.066		0.031		0.036		0.040		0.080		0.018		0.058		0.064	
N	92958		92958		66280		92958		45800		47158		35062		80073		47094	

Notes: All models control for the same variables as model III in table 5 and includes parish fixed effects. Standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01

I Reference model, identical to model III, table 5.
II With urban destination control.
III Migration in 1890, marital outcomes in 1900.
IV Destination parish fixed effects.
V Age 5-11 in 1880.
VI Age 12-18 in 1880.
VII Farmers excluded.
VIII Excluding the north
IX Women with migrating fathers excluded

Sources: See table 1.

Table 9. Associations between migration distance and husband's HISCAM in 1900.

	I		II		III		IV		V	VI
Log distance	0.670	***	0.645	***	0.632	***	0.443	***	0.233	-0.010
	(0.016)		(0.015)		(0.020)		(0.043)		(0.159)	(0.118)
R^2	0.220		0.271		0.232		0.015			
N	92,237		92,237		92,237		92,237		92,237	92,237
Fixed effects	-		-		Parish		Sisters		-	-

Note: See table 5. Model also includes control for father's HISCAM.