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

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Abstract

We study the intergenerational social mobility of women by looking at how migration was associated with socioeconomic marriage mobility using complete-count census data for Sweden. The censuses 1880-1900 have been linked at the individual level, enabling us to follow almost 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 by SES These results highlight the importance of migration for women's intergenerational social mobility during industrialization.

1. Introduction

The study of intergenerational social 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 partner selection in terms of social origin was closely linked to social attainment and 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. Migration may have been an important factor in finding the right partner, through a broadening of the marriage market and a more efficient search for a spouse with desirable characteristics (Choi and Mare, 2012). In this way, migration could have been an important vehicle for social mobility, not only by promoting earnings or occupational mobility but also through the marriage market.

Our aim is to study the importance of internal migration for marriage and partner selection for women, using complete count census data for Sweden. Even if this does not measure women's own occupational status, it provides a relevant and important measure of their SES as it was largely defined at the time by their husbands' status. Hence, it gives us valuable insights into the process of intergenerational social mobility for women in early industrial society. 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 SES from occupation of the father and husband 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 and partner selection by SES. First, we analyze the association 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 sister fixed-effects models to account for family-level endogeneity 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 partner SES on the other. This association is also clearly visible in a sister fixed-effects model. Taken together, our findings suggest that migration played a powerful role in women's intergenerational social mobility during the breakthrough phase of industrialization in Sweden.

2. Theoretical background

2.1. Migration and Social Mobility

Most of the research on intergenerational 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 usually did not 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, marital mobility should 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 et al., 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 et al., 2012; Stolz and Baten, 2012; Salisbury, 2014; Eriksson and Stanfors, 2015).

In addition, migrants can be expected to be selected 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 destination area.

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 et al., 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, 1999; Minns, 2000; Abramitzky et al., 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 et al., 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 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 et al., 2010). Thus, by most accounts, migration is assumed to be an important instrument for social advancement, and increasing migration during industrialization and urbanization are usually connected to changes in occupational structure and opportunity for social mobility (Dribe et al., 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 SES (Van Dijk et al., 1984; Miles, 1999). By searching for a spouse with higher SES, 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 partner selection by changing the structure of the marriage market facing the migrants and 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 marriage within the same SES (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 et al., 1982; Abramitzky et al., 2011). More specifically, a more diverse marriage market would imply more social mobility.

Moreover, it is possible that partner selection is affected through own occupational attainment by women before marriage. Finding a job of higher status than the one held by the father, or a lower-status job in a sector where more high-status men are employed (e.g. most white-collar occupations), could increase the chances of women finding a spouse of a higher status than her father.

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 partner SES 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 marry spouses from a different SES origin than non-migrants (Bras and Kok, 2005). For Stockholm in 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 marrying down. In mid-nineteenth century Marseille (France), 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 it difficult to marry up socially, or even marry someone from the same origin (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 et al., 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 et al., 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 maintaining SES or even marry up, while risks of marrying down would be highest for the stayers.

To summarize, we hypothesize that migration promoted marriage with spouses with different SES, for several reasons. Less parental influence over partner choice can be expected to have been especially important for marrying down, as it could be expected that families were always in favor of children marrying a spouse with higher SES while they tried to stop children from marrying down (see the discussion in Dribe and Lundh, 2005). A more diverse marriage market should increase out-marriage 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 increase chances of marrying up.

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 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% in the first half of the nineteenth century to 2.1% 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 (Statistics Sweden, 1969: Table 14). The period 1850-1930 also saw large-scale emigration to North America, with over 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; Norström 1988). During most of the period more men than women emigrated; the proportion of men among all emigrants was around 55% for most of the period we are interested in (Statistics Sweden, 1999, Table 6.1). There was also a strong regional pattern in emigration (Carlsson, 1976), which we account for in the analysis by using parish-level fixed-effects models.

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% in 1880 to nearly 30% in 1900.

Table 1 here

4. Data

4.1. Linking Census Data

To study the association between migration and marriage outcomes, 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 have been 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). The Swedish historical censuses differ from the US and British ones in that they were not done by enumerators but instead the result of a compilation of excerpts from continuous parish registers maintained by the parish priest (of the Swedish Lutheran Church). The Swedish censuses do therefore not suffer from quality issues such as misreporting of age or birthplace which is common in historical records. Moreover, women consistently appear in the census with their maiden names recorded, even after marriage. This unusual feature means that married women can also be linked to a previous census when they resided in their parental home. 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, while the corresponding figures for 1900 are 5.2 and 1.4 million, respectively.

To avoid introducing bias, only time invariant variables are used in matching individuals between the censuses: birth year, birth place, sex, and names (see Ruggles, 2006). 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) are matched using probabilistic linking. 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.

Children residing with their parents rarely have a surname recorded in the census. We deal with this problem in two ways: Firstly, all children with missing surnames living in the same household as their fathers had their fathers' surnames appended. Secondly, since the patronymic tradition was still followed by some families, patronymic surnames were constructed using fathers' first names. Because it is impossible to know whether a family followed a patronymic tradition or not, we allow for both possibilities which results in two constructed surnames. An individual can thus be linked based on either the similarity of a recorded surname, or in cases were no surname is recorded, the similarity of family names or a patronymic name.

The likeness of names is evaluated using the Jaro-Winkler algorithm (see Christen, 2006, 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. The score increases 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 ranging from 0 (for completely dissimilar records) to 1 (for identical records). Because the true or false status is unknown, a classifier is constructed by setting a threshold value that a potential link has to exceed in order to be classified as true. 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.

About two-thirds of all individuals in the censuses have a second name recorded. Instead of using second names as a linking variable, second names are used to evaluate different Jaro-Winkler thresholds applied to first and last names. By evaluating the likeness of second names, we are able to gauge how more or less stringent thresholds affect the quality of the linked sample. We find that beyond a Jaro-Winkler threshold of 0.85, the share of individuals that could be confirmed when evaluating second names does not improve. Higher thresholds do however result in lower linkage rates. In order to strike the optimal balance between sample size and accuracy, a Jaro-Winkler threshold of 0.85 for classifying a link as true was chosen. At our chosen threshold for first and last names, 96.7 % of all linked women with a second name could be confirmed as true based on evaluations of the similarity of second names.

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 to 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, we link more than 230,000 women aged 5-18 in the 1880 census to both the 1890 and 1900 censuses. The forward linkage rate is 36% and the backward linkage rate is 49% (using the number of women aged 25-38 in the 1900 census as the denominator). The resulting linked sample is a cross section of people with data taken from two, or sometimes three, different censuses proving information on SES of both fathers and husbands as well as on migration distance.

Table 2 shows the descriptive statistics for the linked sample (II) and the comparison group of women in the complete census of 1880 (I). Differences between the means of the census and the linked sample are displayed in column III. Because of the large number of observations all differences are statistically significant despite being small in magnitude; the differences only constitute a small fraction of each variable's standard deviation. Moreover, the observed differences are on par with, or much smaller than, what is typically the case when comparing linked samples to cross sectional sources (see Long, 2005:6; Abramitzky et al., 2011: Online Appendix Table 6). The final column in table 2 presents statistics for the linked sample of women, married in 1900, for which we have information about the husband's SES. This is the sample used in the analysis.

Table 2 here

4.2. Variables

Migration is the main explanatory variable of interest and is measured as the distance in kilometers between the parishes of residence in 1880 and 1900 based on parish centroids.[1] The average distance moved was 34 kilometers. About two thirds of the women did not leave their parish of origin or only moved a short distance (less than 10 kilometers) to a neighboring parish. Just over 20% moved between 10 and 50 km while 15% moved 50 kilometers or more. With increasing distance, the share of women moving to an urban area increased. This pattern is reflected in Figure 1 which shows the destinations chosen by migrants in our sample of women. The attraction of major cities such as Stockholm, Gothenburg and Malmö is clear, but it is also important to note that several other industrializing and urbanizing areas across Sweden were popular destinations for migrants. We focus on women, but the migration pattern for men was very similar to the one for women. Both the distribution of migration distances and the share of rural-urban migrants were about the same for men and women (detailed results not shown). The never married were more likely to move than the married. While almost 86% of the married women did not move more than 10 kilometers, the corresponding figure for the never married

[1] Swedish parishes are small geographic units. The 1880 census includes 2,524 parishes in total. The average size of a parish was 162 km^2, a number which is inflated by the sparsely populated parishes in northern Sweden. When excluding the north, the average size falls to 90 km^2.

was 67%, and while 8% of the never married women moved more than 100 kilometers only 2.5% of married women did so. The differences in migration patterns by marital status were similar for men and women (detailed results not shown).

Figure 1 here

In addition to migration we include a number of control variables at the individual, family and the parish level. Disability indicates whether there was any notation in the census about medical conditions (deafness, blindness, etc.). Only 0.3% of women suffered such conditions, but they could be expected to be relevant for both decisions to migrate and for marital outcomes. In order to measure SES and mobility, we rely on occupational information of the women's fathers in 1880 when still living at home, and of the husband in 1900. Occupational notations in the censuses were coded according to the Historical International Standard Classification of Occupations (HISCO, see Van Leeuwen et al., 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% in the linked sample), while 19% came from the unskilled working class and approximately 8% from the elite and upper middle class.

We look at partner selection by comparing the SES of the woman's father in 1880 to the status of her husband in 1900. Table 3 shows the transition matrices linking the SES of father and spouse by migration distance. Overall, 49% of the women in the sample were married in 1900, and of these, 43% were married to a husband with the same SES, 28% were married to a husband with lower SES, and 29% were married to a husband with higher SES. Longer-distance migration is associated with greater chances of same-SES marriage in the elite group and with more heterogamy among farmers and lower status groups, who to a greater degree marry up socially 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 SES group of origin in the same age groups as a measure of the marriage market. The mean for the SES-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 to study the association between parish-level SES-specific sex ratios and migration distance. The dependent variable, migration distance, is based on a comparison of the parish of residence in 1800 and 1900 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 SES, 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 SES in two alternative specifications. δ_j are parish-level fixed effects to account for unobserved 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 being ever married in 1900 or different marriage outcomes: marry up, marry down and, marry someone of the same SES. In these analyses, we only include the SES groups that have a possibility to enter the stage under consideration, which implies that the elite is excluded from the marry-up estimation and the unskilled workers are excluded from the marry-down estimations. When analyzing heterogamy we limit the sample to married women. All models are estimated in such a way that the outcome of interest is compared to all other outcomes:

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

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 1890 and 1900, 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 alternative specifications. As before, we also estimate a basic model only including age and father's SES. 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).

6. Empirical Findings

We begin by looking at the association between the marriage market, as measured by the SES-specific sex ratio and migration. Table 4 shows estimates from 20 separate 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 SES-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 0.1-unit higher sex ratio corresponds to a 140-320 meter *longer* (and not shorter as we expected) move when not accounting for parish fixed effects. The corresponding effects of a ten-percentage point higher sex ratio on moving more than 10 kilometers are within the range of

0.04% to 0.34%. 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.[2] 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. These results do not support the expectation that women's 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

Table 5 displays the associations between migration distance and different marital outcomes: ever married (versus never married), marry someone from same SES (versus different SES), marry up (vs. same SES/down), and marry down (vs. same SES/up). Model I controls for age and father's SES; 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

Looking first at overall marriage probabilities in panel A, the estimates are highly similar in the first three models. This shows 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 of the family of origin.

For marrying up, the estimates of the first four models are remarkably similar. Longer migration clearly seems to increase the chances of marrying a spouse with higher SES, just as expected. The estimates for marrying down are also largely consistent in showing a positive effect of migration distance. The estimates are also fairly similar across the different specifications. In line with these results, the estimates for same-SES marriage in panel D show a clear and consistent negative effect of migration distance on the probability of marrying someone from the same SES. Longer-range migration implies a lower likelihood of same SES marriage.

Table 5 here

[2] Because of small numbers in some age groups and parishes, the sex ratios do contain a few observations with very large or small ratios. These do however not affect the results in any important way: excluding observations with sex ratios below the 5th percentile and above the 95th percentile does not change our findings.

Table 6 displays results for the first four models using a categorical measure of migration distance in order to study possible non-linearity 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 6 here

Short-distance migration, or no migration (<10 kilometers), is also related to higher probabilities of marrying a spouse with the same SES in all specifications, while longer-distance migration is associated with lower chances of marrying a spouse from the same SES. Instead, long-range migration is positively related especially to marrying up, but also to marrying down, while stayers are more likely to be homogamous. In other words, stayers are less likely to marry, but when they do, they are more likely to match with someone with the same SES than with someone with either a higher or lower SES. 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 marrying up, 5 percentage point higher chance of marrying down, and approximately 20 percentage point lower chance of marrying someone from the same SES (in model IV). Overall, these results are consistent with the hypothesis that migration is an important way to find a marriage partner with higher SES, and thus move up socially. One concern could be that errors in the record linkage (false links) could drive some of the association between migration and marrying someone of different SES. To check for this, we replicated Table 6 using links that were confirmed most likely to be true by comparing their second first names (same Jaro-Winkler threshold as before). The results were highly similar to the baseline estimates, which reassured us that linking errors did not affect the results in any noticeable way.

6.1 Mechanisms

The results presented so far show that migrants fared well in the marriage market. On average, migrants were more likely to marry a higher status husband than stayers, a pattern which holds even when comparing the marriage outcomes of sisters. There are a number of potential explanations for why migration results in more social mobility for women. This section explores three potential mechanisms. First, the effects of migration on marriage outcomes could be explained by female migrants' own performance on the labor market which improve their attractiveness on the marriage market. The second mechanism relates to the differences in the supply of men of different SES between the locations of migrants and stayers. The final mechanism is the role of urban areas in facilitating upward marriage mobility.

Testing for the mechanisms require information about how women's own labor market outcomes, the supply of men of different status, and urban status change as a result of migration. To ensure that the proposed mechanisms are temporally ordered we focus on migration distance before marriage, between 1880 and 1890. The resulting labor market outcomes of women, the supply of eligible men and urban status observed in 1890 after migration, are considered mediating factors through which migration may affect eventual marriage outcomes observed in 1900. To address reverse causality between migration, mechanisms and marital outcomes, the sample is restricted to women that were still unmarried in 1890.

Women's own labor market outcomes are measured by classifying the occupations held by women according to the same SES scheme used for husbands and fathers. However, because very few women in the sample hold high status occupations we aggregate the class scheme into three broader groups with the addition of a category capturing women with a missing occupation. The supply of eligible men is measured by the share of men with a SES above or below that of the fathers SES. Urban status in 1890 follows the definition provided by the census and is coded as a dummy.

Let $(\overline{H}_M - \overline{H}_S)$ denote the raw difference between the marital outcomes of movers and stayers. Following Oaxaca (1973) and Blinder (1973), the difference in outcomes between stayers and migrants could be decomposed in the following way:

$$(\overline{H}_M - \overline{H}_S) \quad = \overline{\boldsymbol{X}}_M \beta_M - \overline{\boldsymbol{X}}_S \beta_S$$

$$= (\bar{\boldsymbol{X}}_M - \bar{\boldsymbol{X}}_S)\beta_S + \bar{\boldsymbol{X}}_M(\beta_M - \beta_S) \qquad (5)$$

The first term $(\bar{\boldsymbol{X}}_M - \bar{\boldsymbol{X}}_S)$ denotes differences which are explained by the fact that migrants differ from stayers in terms of mean differences in covariates. We test the explanatory power of the proposed mechanisms by separating out the explained effects on marriage outcomes attributable to covariates observed prior to migration ($\bar{\boldsymbol{X}}_{M1880} - \bar{\boldsymbol{X}}_{S1880}$, which may be considered selection on observables) from effects attributable to covariates realized post migration ($\bar{\boldsymbol{X}}_{M1890} - \bar{\boldsymbol{X}}_{S1890}$, the considered mechanisms). The second term of the Oaxaca-Blinder decomposition $(\beta_M - \beta_S)$ denotes the remaining difference which is unexplained by covariates and attributable to differences in the probabilities of a specific marriage outcome for individuals with given characteristics.

Table 7 presents the descriptive statistics for stayers (having moved 10 km or less between 1880 and 1890) and different groups of migrants (10-50 km, 50 – 100 km and >100 km). There are some noticeable differences between stayers and migrants in terms of the covariates of the considered mechanisms. In 1890 migrants are more likely to have a recorded occupation and live in an urban area. Moreover, the prevalence of high status men indicates that the marriage market in migrants' destinations is more advantageous than the one for stayers.

Table 8 shows the results of the decomposition of marriage outcomes between stayers and migrants. The first row in each panel provides the raw differences in outcomes between stayers and migrants $(\bar{H}_M - \bar{H}_S)$. The rows below display the results of the decomposition of the differences into the unexplained and explained parts. The results indicate that differences in pre-migration (1880) covariates explain relatively little of the differences in outcomes between migrants and stayers, in particular when we consider longer distance migrants. Instead we find that differences in the proposed mechanisms play an important role in explaining differences in outcomes between migrants and stayers. The changes in individual and surrounding circumstances, which resulted from migration, were thus important factors in determining marital outcomes. Some covariates stand out as particularly important. Differences between migrants' and stayers' urban status in 1890 mattered for all marital outcomes, and, in particular, for migrants that moved longer distances. The difference in urban status provides an explanation for why long-distance migrants were less likely to be married by 1900, but when so, more likely to be married to a high-status husband. Many migrants with recorded occupation of their own ended up in the lowest SES category (3). This group of migrants were less successful on the marriage market. Although more were married by 1900, they were also less likely to marry up and more likely to marry down. This difference was, however, more than compensated for by a more favorable marriage market in migrant destinations: the availability of high status husbands accounts for most of the observed difference in having married a high status husband between migrants and stayers.

Table 7-8 here

7. Sensitivity analysis

We have performed several additional analyses to check the robustness of the results. The different estimates are presented in table 9. 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 SES of the spouse. 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 to marry up and lower chances of marry within the same SES, while the associations with marrying down 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 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.

Table 9 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 marrying up, the patterns are quite similar to the baseline results, while the differences are larger for marrying down and marrying someone from the same SES. When excluding farmers, there is a negative association between migration distance and marrying down, which is opposite what was found in the baseline results. The results for same-SES marriage 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 marrying down that we saw before was completely driven by the farmer group. When we exclude this group, longer-distance migration is clearly associated with lower chances of downward mobility and with higher chances of upward mobility, as we expected. In both sets of estimates, migration is negatively related to marrying someone from the same SES.

Due 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 northernmost counties. This exclusion has no effects on our results. In the final model (IX) in table 9, we address whether the estimated effect 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 fathers are observed as residents in the parish of origin in both 1880 and 1900. Imposing this restriction does not change our conclusions.

Finally, we use a different measure of SES. 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 10 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. 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 10 here

8. Conclusion

Our aim is to study the links between the structure of the marriage market, migration and partner selection by SES. The study is important to 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 effect on migration of the structure of the marriage market, as measured by the overall or the SES-specific sex ratios. 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 by SES. Longer-range migration lowers nuptiality but also increases the chances of marrying up socially. For non-farmers, longer-distance migration is also connected to lower risks of marrying down, 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 SES. Stayers are also less likely to marry (or to marry later) than medium-range migrants, but they are also more likely to marry within their SES. 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 due to 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 to marry up than stayers. However, the fact that upward marriage mobility increases more or less linearly with migration distance while downward marriage mobility declines at longer distances indicates that longer-range migrants are selected in some way related to ambition and ability, and 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.

Our analysis shows the importance of migration for social mobility not only through earnings 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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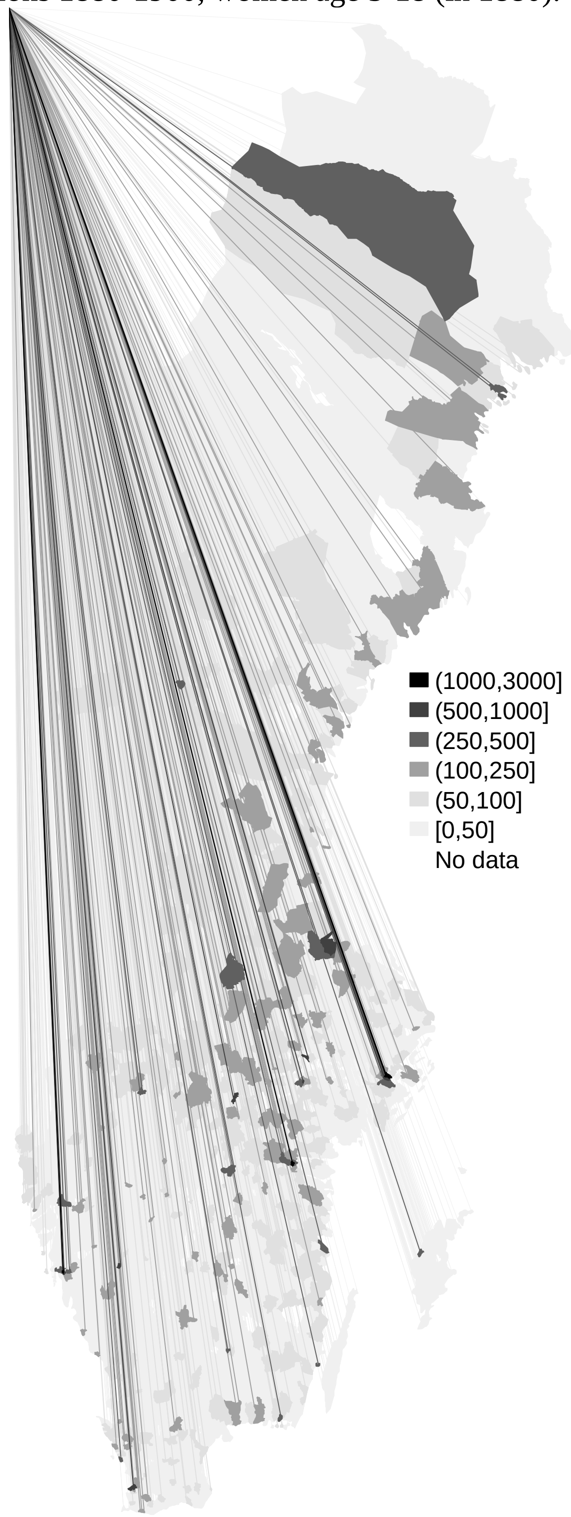
Figures

Figure 1: Migrant destinations 1880-1900, women age 5-18 (in 1880).



Sources: See table 1.

Tables

Table 1: Occupational structure and migration (%), age 20-59, 1880-1900.

	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: The Swedish National Archives et al. 2011a, 2011b, 2014. The Swedish 1880, 1890 and 1900 censuses, published by the North Atlantic Population Project (www.nappdata.org).

Table 2. Descriptive statistics.

	I	II	III	IV
	1880 Census	Linked Sample	Difference (Census - Sample)	Linked Sample, Married in 1900
Age	10.892	10.668	0.224***	11.554
	(3.939)	(3.974)		(3.853)
Sisters	1.586	1.571	0.015***	1.537
	(1.284)	(1.288)		(1.285)
Brothers	1.687	1.681	0.006*	1.646
	(1.324)	(1.329)		(1.327)
Male servants	0.148	0.186	-0.038***	0.179
	(0.481)	(0.537)		(0.518)
Female servants	0.203	0.245	-0.042***	0.205
	(0.597)	(0.649)		(0.599)
Disability	0.002	0.003	-0.001***	0.001
Father SES				
1	0.014	0.017	-0.003***	0.012
2	0.059	0.062	-0.003***	0.053
3	0.109	0.101	0.008***	0.097
4	0.512	0.551	-0.039***	0.547
5	0.082	0.076	0.006***	0.083
6	0.224	0.193	0.031***	0.208
Married (in 1900)		0.541		1.000
Spouse SES (in 1900)				
1				0.018
2				0.085
3				0.155
4				0.356
5				0.152
6				0.234
Migration distance (km, 1880-1900)		32.627		34.372
		(84.146)		(85.614)
Migration (categorical)				
<10 km		0.633		0.559
10-50 km		0.214		0.282
50-100 km		0.062		0.071
>100 km		0.091		0.088
N	487979	188306		92958

Notes: I: Women aged 5-18 with information on father SES in the 1880 census; II: Women aged 5-18 with information on father SES in the 1880 census linked to the 1900 census; III: Difference between I and II; IV: Women aged 5-18 with information on father SES in the 1880 census linked to the 1900 census, married in 1900 with information about husband SES. SES: (1) Elite (HISCLASS 1-2), (2) Upper middle class (HISCLASS 3-5), (3)

Skilled workers (HISCLASS 6-7), (4) Farmers (HISCLASS 8), (5) Lower skilled workers (HISCLASS 9-10), (6) Unskilled workers (HISCLASS 11-12). Standard deviations in parentheses. * p<0.1, ** p>0.05, *** p<0.01.
Sources: See table 1.

Table 3. Transition matrices

Spouse SES	Father SES 1	2	3	4	5	6	N
				Non-migrant (< 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: SES: (1) Elite (HISCLASS 1-2), (2) Upper middle class (HISCLASS 3-5), (3) Skilled workers (HISCLASS 6-7), (4) Farmers (HISCLASS 8), (5) Lower skilled workers (HISCLASS 9-10), (6) Unskilled workers (HISCLASS 11-12).
Sources: See table 1.

Table 4. Associations between sex ratio in same SES group 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	0.005	1.590	0.077	0.018	0.013	0.013*
	(1.499)	(0.034)	(0.009)	(0.007)	(0.005)	(1.981)	(0.047)	(0.013)	(0.009)	(0.007)
R^2	0.038	0.047	0.031	0.043	0.035	0.026	0.042	0.033	0.031	0.023
N	188,306	188,306	188,306	188,306	188,306	188,306	188,306	188,306	188,306	188,306
B. Sex ratio within own SES (Male/Female)										
Sex ratio	1.411**	0.017	0.004	0.004	0.003	0.699	0.007	0.001	0.002	0.002
	(0.698)	(0.015)	(0.004)	(0.003)	(0.002)	(0.792)	(0.016)	(0.004)	(0.003)	(0.003)
R^2	0.038	0.047	0.031	0.043	0.035	0.026	0.042	0.033	0.031	0.032
N	188,306	188,306	188,306	188,306	188,306	188,306	188,306	188,306	188,306	188,306
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. Associations between migration distance and marital outcomes in 1900.

	I	II	III	IV
		A. Married		
Log distance	0.036***	0.037***	0.037***	0.048***
	(0.001)	(0.001)	(0.001)	(0.001)
R^2	0.088	0.093	0.092	0.113
N	188306	188306	188306	188306
		B. Marry up (hypergamy)		
Log distance	0.032***	0.031***	0.030***	0.026***
	(0.001)	(0.001)	(0.001)	(0.002)
R^2	0.185	0.193	0.182	0.012
N	91789	91789	91789	91789
		C. Marry down (hypogamy)		
Log distance	0.018***	0.020***	0.020***	0.017***
	(0.001)	(0.001)	(0.001)	(0.003)
R^2	0.073	0.096	0.100	0.011
N	73600	73600	73600	73600
		D. Status maintenance (homogamy)		
Log distance	-0.045***	-0.046***	-0.046***	-0.040***
	(0.001)	(0.001)	(0.001)	(0.003)
R^2	0.069	0.072	0.059	0.026
N	92958	92958	92958	92958
Fixed effect	-	-	Parish	Sisters

Notes: Estimates from OLS (I, II) and FE (III, IV) regressions. I: Controls for age and father SES; II: Full model, controls for age, disability, # unmarried brothers 1880, # unmarried sisters 1880, # male servants 1880; # female servants 1880, and father socioeconomic status; III: Full models with parish FE; IV: Full model with sister FE. Standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01
Sources: See table 1.

Table 6. 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. Marry up (hypergamy)		
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. Marry down (hypogamy)		
Migration distance (reference: <10 km)				
10-50 km	0.090***	0.088***	0.079***	0.061***
	(0.004)	(0.004)	(0.005)	(0.011)
50-100 km	0.074***	0.079***	0.072***	0.047**
	(0.007)	(0.007)	(0.009)	(0.020)
> 100 km	0.021***	0.039***	0.054***	0.061***
	(0.007)	(0.007)	(0.008)	(0.021)
R^2	0.075	0.097	0.100	0.011
N	73,600	73,600	73,600	73,600
		D. Status maintenance (homogamy)		
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 7. Descriptive statistics by migration distance (1880-1890).

	All				Married in 1900			
	I	II	III	IV	V	VI	VII	VIII
	<10 km	10-50 km	50-100 km	>100 km	<10 km	10-50 km	50-100 km	>100 km
1880 covariates								
Age	9.72	10.339	11.077	11.338	10.046	10.551	11.203	11.472
	(3.724)	(3.535)	(3.635)	(3.691)	(3.548)	(3.331)	(3.423)	(3.429)
Sisters	1.591	1.599	1.69	1.724	1.569	1.601	1.672	1.693
	(1.285)	(1.256)	(1.304)	(1.335)	(1.278)	(1.257)	(1.285)	(1.317)
Brothers	1.71	1.639	1.705	1.709	1.681	1.625	1.748	1.693
	(1.329)	(1.280)	(1.317)	(1.319)	(1.324)	(1.268)	(1.307)	(1.317)
Male servants	0.198	0.131	0.129	0.133	0.193	0.113	0.095	0.106
	(0.549)	(0.453)	(0.488)	(0.522)	(0.531)	(0.414)	(0.418)	(0.426)
Female servants	0.265	0.159	0.268	0.338	0.230	0.114	0.161	0.248
	(0.655)	(0.545)	(0.784)	(0.861)	(0.609)	(0.455)	(0.571)	(0.745)
Father SES								
1	0.016	0.014	0.046	0.058	0.011	0.008	0.030	0.040
2	0.062	0.058	0.107	0.133	0.052	0.043	0.080	0.106
3	0.096	0.117	0.158	0.188	0.092	0.114	0.142	0.188
4	0.58	0.422	0.311	0.262	0.577	0.421	0.317	0.277
5	0.073	0.085	0.101	0.098	0.081	0.092	0.114	0.101
6	0.173	0.304	0.277	0.261	0.187	0.322	0.317	0.288
1890 covariates								
Own SES								
1	0.008	0.026	0.057	0.071	0.006	0.017	0.040	0.058
2	0.003	0.005	0.013	0.022	0.003	0.005	0.011	0.024
3	0.138	0.593	0.583	0.564	0.200	0.681	0.671	0.627
Missing	0.851	0.376	0.347	0.343	0.791	0.297	0.278	0.291
Supply of men								
With SES above	0.262	0.396	0.428	0.436	0.271	0.406	0.451	0.445
	(0.253)	(0.286)	(0.306)	(0.312)	(0.254)	(0.282)	(0.299)	(0.304)
With SES below	0.362	0.332	0.364	0.372	0.355	0.317	0.333	0.348
	(0.263)	(0.289)	(0.313)	(0.313)	(0.261)	(0.283)	(0.306)	(0.305)
Urban status	0.105	0.262	0.477	0.628	0.085	0.234	0.429	0.560
1900 outcomes								
Married	0.442	0.552	0.502	0.428				
Spouse SES								
1					0.019	0.013	0.040	0.059
2					0.083	0.081	0.149	0.184
3					0.149	0.190	0.233	0.247
4					0.358	0.206	0.130	0.104
5					0.149	0.188	0.176	0.192
6					0.242	0.322	0.272	0.214
N	133,447	17,016	4,045	5,359	53,475	8,739	1,917	2,149

Notes: Father/spouse SES: (1) Elite (HISCLASS 1-2), (2) Upper middle class (HISCLASS 3-5), (3) Skilled workers (HISCLASS 6-7), (4) Farmers (HISCLASS 8), (5) Lower skilled workers (HISCLASS 9-10), (6) Unskilled workers (HISCLASS 11-12). Own SES: (1) Elite and upper middle class (HISCLASS 1-5), (2) Skilled workers and farmers (HISCLASS 6-8), (3) Lower skilled and unskilled workers (HISCLASS 9-12). Standard deviations in parentheses.
Sources: See table 1.

Table 8. Oaxaca decompositions of marital outcomes.

	I	II	III	IV	V	VI
	10-50 km vs <10 km		50-100 km vs <10 km		>100 km vs <10 km	
			A. Married			
Difference ($\bar{H}_M - \bar{H}_S$)	0.110***	0.110***	0.060***	0.060***	-0.014**	-0.014**
	(0.004)	(0.004)	(0.008)	(0.008)	(0.007)	(0.007)
Unexplained	0.087***	0.030***	0.045***	0.010	-0.022***	-0.036***
	(0.004)	(0.004)	(0.008)	(0.008)	(0.007)	(0.007)
Explained	0.023***	0.080***	0.015***	0.050***	0.008***	0.022***
	(0.001)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)
1880 covariates	0.023***	0.026***	0.015***	0.017***	0.008***	0.010***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
1890 own SES						
1		-0.002***		-0.006***		-0.006***
		(0.000)		(0.001)		(0.001)
2		0.000**		0.000		0.001**
		(0.000)		(0.000)		(0.000)
3		0.058***		0.058***		0.050***
		(0.003)		(0.003)		(0.003)
Missing		0.022***		0.023***		0.027***
		(0.003)		(0.004)		(0.003)
1890 male SES above		-0.007***		-0.013***		-0.015***
		(0.002)		(0.002)		(0.002)
1890 male SES below		-0.003***		0.000		0.001**
		(0.000)		(0.000)		(0.000)
1890 urban resident		-0.013***		-0.030***		-0.046***
		(0.001)		(0.002)		(0.003)
N	150,463	150,463	137,492	137,492	138,806	138,806
			B. Marry up (hypergamy)			
Difference ($\bar{H}_M - \bar{H}_S$)	0.085***	0.085***	0.164***	0.164***	0.172***	0.172***
	(0.006)	(0.006)	(0.012)	(0.012)	(0.011)	(0.011)
Unexplained	0.031***	0.003	0.102***	0.033***	0.124***	0.032***
	(0.005)	(0.005)	(0.011)	(0.011)	(0.010)	(0.011)
Explained	0.053***	0.081***	0.062***	0.131***	0.048***	0.140***
	(0.002)	(0.003)	(0.005)	(0.006)	(0.005)	(0.006)
1880 covariates	0.053***	0.019***	0.062***	0.021***	0.048***	0.016***
	(0.002)	(0.002)	(0.005)	(0.003)	(0.005)	(0.003)
1890 own SES						
1		0.002***		0.005***		0.007***
		(0.000)		(0.001)		(0.001)
2		0.000		0.000		0.000
		(0.000)		(0.000)		(0.000)
3		-0.041***		-0.038***		-0.036***
		(0.005)		(0.005)		(0.004)
Missing		0.029***		0.026***		0.027***
		(0.005)		(0.005)		(0.005)
1890 male SES above		0.064***		0.088***		0.089***
		(0.003)		(0.005)		(0.005)
1890 male SES below		-0.001**		-0.001**		-0.001**
		(0.001)		(0.001)		(0.000)
1890 urban resident		0.011***		0.030***		0.039***
		(0.001)		(0.003)		(0.004)
N	61,541	61,541	54,731	54,731	54,934	54,934
			C. Marry down (hypogamy)			
Difference ($\bar{H}_M - \bar{H}_S$)	0.117***	0.117***	0.085***	0.085***	0.042***	0.042***
	(0.007)	(0.007)	(0.014)	(0.014)	(0.013)	(0.013)

Unexplained	0.102***	0.023***	0.048***	-0.010	-0.009	-0.037***
	(0.007)	(0.007)	(0.014)	(0.014)	(0.013)	(0.013)
Explained	0.016***	0.094***	0.037***	0.096***	0.051***	0.079***
	(0.002)	(0.004)	(0.005)	(0.007)	(0.005)	(0.007)
1880 variables	0.016***	0.005***	0.037***	0.006	0.051***	0.009**
	(0.002)	(0.002)	(0.005)	(0.004)	(0.005)	(0.004)
1890 own SES						
1		-0.001***		-0.003***		-0.005***
		(0.000)		(0.001)		(0.001)
2		0.000*		0.000		-0.001*
		(0.000)		(0.000)		(0.000)
3		0.069***		0.065***		0.058***
		(0.005)		(0.005)		(0.005)
Missing		-0.002		0.005		0.004
		(0.005)		(0.005)		(0.005)
1890 male SES above		0.024***		0.036***		0.037***
		(0.002)		(0.004)		(0.004)
1890 male SES below		0.015***		0.023***		0.023***
		(0.001)		(0.003)		(0.003)
1890 urban resident		-0.015***		-0.035***		-0.046***
		(0.002)		(0.004)		(0.005)
N	49,396	49,396	44,781	44,781	45,001	45,001
			D. Status maintenance (homogamy)			
Difference ($\overline{H}_M - \overline{H}_S$)	-0.116***	-0.116***	-0.166***	-0.166***	-0.150***	-0.150***
	(0.005)	(0.005)	(0.010)	(0.010)	(0.010)	(0.010)
Unexplained	-0.103***	-0.020***	-0.137***	-0.029***	-0.117***	-0.009
	(0.005)	(0.006)	(0.011)	(0.011)	(0.010)	(0.011)
Explained	-0.013***	-0.096***	-0.028***	-0.136***	-0.033***	-0.141***
	(0.001)	(0.003)	(0.003)	(0.005)	(0.003)	(0.005)
1880 variables	-0.013***	0.016***	-0.028***	0.021***	-0.033***	0.022***
	(0.001)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
1890 own SES						
1		-0.001***		-0.002***		-0.003***
		(0.000)		(0.001)		(0.001)
2		0.000*		0.000*		0.001
		(0.000)		(0.000)		(0.001)
3		-0.014***		-0.015***		-0.012***
		(0.005)		(0.005)		(0.004)
Missing		-0.024***		-0.025***		-0.026***
		(0.005)		(0.005)		(0.005)
1890 male SES above		-0.090***		-0.118***		-0.116***
		(0.003)		(0.006)		(0.006)
1890 male SES below		0.019***		0.011***		0.004
		(0.002)		(0.004)		(0.003)
1890 urban resident		-0.002**		-0.008***		-0.010**
		(0.001)		(0.003)		(0.004)
N	62,214	62,214	55,392	55,392	55,624	55,624

Notes: See Table 7. Standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01
Sources: See table 1.

Table 9. 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	188,306	188,306	159,867	188,306	110,106	78,200	77,583	165,929	101,546
					B. Marry up (hypergamy)				
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	91,789	91,789	65,462	91,789	45,313	46,476	34,034	79,013	46,734
					C. Marry down (hypoganmy)				
Log distance	0.020***	0.019***	0.017***	0.011***	0.015***	0.024***	-0.015***	0.021***	0.022***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
R^2	0.100	0.101	0.085	0.083	0.083	0.110	0.085	0.104	0.102
N	73,600	73,600	52,234	73,600	35,375	38,225	19,194	63,354	38,488
					D. Status maintenance (homogamy)				
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	92,958	92,958	66,280	92,958	45,800	47,158	35,062	80,073	47,094

Notes: All models control for the same variables as model III in table 6 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 10. Associations between migration distance and husband's HISCAM in 1900.

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

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