Local ties and family migration

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Abstract
The migration of couples and families has thus far been mainly approached from human-capital and gender perspectives. In this paper, we investigate how the male and female partner's local ties influence the likelihood of family migration. Our hypotheses are that local ties to work and family strongly decrease the likelihood of migrating; that, given the dominating gender structures, ties to the man's work are more influential than ties to the woman's work; and that ties to the woman's family are more influential than ties to the man's family. We use data from the unique ASTRID micro database for Sweden, based on administrative information about the entire Swedish population. The method is logistic regression analysis of moving a distance exceeding 50 kilometers, for two-gender couples who did not separate between December 2004 and December 2005. We find marked negative associations of working close to home, the presence of parents and siblings nearby, and whether someone lives near the place of birth, with the likelihood of migrating. The man's ties to work seem to be more important to the likelihood of migrating than the woman's, but we find hardly any gender differences in the impact of ties to family.

Introduction

Migration opens up new labor-market opportunities, but may have a negative impact on the labor-market outcomes of those who move for the sake of a partner. Not surprisingly, therefore, following Mincer's (1978) article on why families move, an extensive literature has developed on the migration of couples and families and its gendered causes and consequences in western countries. The focus in many studies is on the labor-market outcomes of family migration (for example Boyle, Cooke, Halfacree & Smith, 2001; Cooke, 2003; Cooke & Bailey, 1996; Cooke, Boyle, Couch & Feijten, 2009; Shihadeh, 1991), whereas other studies address the likelihood of migrating among couples and families or on their the willingness to move (for example Bielby & Bielby, 1992; Jürges, 2006; Markham & Pleck, 1986; Smits, Mulder & Hooimeijer, 2003; Tenn, 2010). The most common theoretical perspectives are human-capital theory, in which it is argued that the couple's joint expected income after the move determines the migration decision, and gender-role theory, in which it is argued that the man's income prospects are dominant in the migration decision (Cooke, 2003).

An important concept in the family migration literature is that of the tied stayer: someone who would migrate if it were not for a partner who prevents the move. Implicit in the tied stayer concept is the idea that if one partner is tied to the couple's residential location, that partner's local ties tend to keep the couple or family from moving. Surprisingly, however, the impact of the individual partners' local ties on family migration has received only limited attention in the family migration literature. Ties to work are often included in the analyses in some way, but usually the attention is limited to whether the partners work, whereas the work location is not considered. The only local tie to family members other than the partners themselves that is routinely included in analyses of family migration is the presence of children in the household – but that is a tie for the couple rather than just one partner. At the same time, there is a literature providing evidence of a negative impact of local ties on migration (for example, David, Janiak & Wasmer, 2010; Michaelides, 2011), but that literature focuses on the migration of individuals, not on family migration.

In this paper, we address the impact of the individual partners' local ties on the likelihood of migration among couples and families. We focus on ties to work (working from home or close to home), family (parents and siblings living close) and more general ties to the location of residence (living in the county of birth). Our research question is: To what extent do local ties prevent couples and families from migrating, and how does the impact of local ties differ between the male and the female partner's ties? We use data from the unique ASTRID micro database for Sweden, based on administrative information about the entire Swedish population, and logistic regression of whether the couple or family migrates a distance over 50 kilometers.

Theoretical and research background

Local ties and migration

We start from the well-known premise that people only migrate when they expect the returns of the move to exceed the costs (Sjaastad, 1962). Another premise is that couples want to stay together and that migration by just one partner is not an option. This is a simplification, because some couples may start a commuter partnership rather than migrate together (Van der Klis & Mulder, 2008), whereas some other

couples might split up because one spouse does not want to migrate and the other does not want to stay put. Such couples likely only form a small minority, however.

Severing local ties is an important cost of migrating. The term local ties is used in this article as a synonym for location-specific capital (DaVanzo, 1981). This is the human, economic, and social capital that is bound to a particular location (dwelling, neighborhood, town or village, or somewhat larger region) and cannot be taken from there or only with difficulty. According to Fischer et al. (2000), location-specific capital can be either work-oriented (e.g. local knowledge or the social network that is important for labor market performance or employment chances) or leisure-oriented (e.g. social ties or local knowledge of importance for doing preferred leisure activities). Local social ties can of course also be important for care taking and support between family members. These ties usually take time to develop and moving away may have adverse consequences for labor-market chances and for social life in general, especially when moving for the sake of the partner.Our main interest is in local ties that can be identified as belonging to one partner in a couple. For such local ties, an important issue is whose ties we can expect to exert the greatest influence on migration: the male or the female partner's. But of course we also have to take into account local ties that apply to the couple as a whole, and other factors influencing the likelihood of migrating.

Ties to work

Paid work is an important source of economic capital and attachment to the local labor market or a particular job may therefore render an individual partner reluctant to migrate. One would therefore expect those couples in which one or both partners have jobs to be less likely to migrate than those in which none of the partners works, or just one, all else being equal; unemployment will increase the likelihood of migrating. Empirical evidence for this idea was found by, among others, Mincer (1978), Lichter (1982), Fischer and Malmberg (2001), and Smits, Mulder and Hooimeijer (2003, 2004). It should be noted that unemployment may stand for two different things. For the unemployed partner, unemployment could lead to migration to the workplace of a new job. For the partner with a job, the other partner's unemployment decreases the obstacles preventing moving away, making it easier to migrate for his or her own job.

Working close to home or from home likely represents a particularly strong tie to the local labor market. At the same time, working far from home may be a reason for moving closer to work. The impact of the work location has not often been considered in the family migration literature, but there is some evidence that the likelihood of migration is greater if a couple member works in a different region (Smits, Mulder & Hooimeijer, 2003, 2004) or commutes (Nivalainen, 2004).

For those with a high level of education, the gains of migrating are higher than for those with less education; not surprisingly, the highly educated are more inclined to migrate than those with less education (e.g. Fischer & Malmberg, 2001; Mulder, 1993). Enrolment in education seems to be associated with flexibility and a greater likelihood of moving (Fischer & Malmberg, 2001). Like those with high education, those with high incomes may have more to gain from migrating. Alternatively, with a given level of education, a high-income job could be worth keeping and could constitute a local tie.

From a gender perspective on family migration (Cooke, 2003) one would expect the male partner's ties to work to have a stronger impeding impact on migration than the female partner's, given the dominating gender structures. The existing evidence is not explicitly related to the individual partners' local ties to work,

but points in the direction that the male partner's income and level of education are more important to the migration decision than the female partner's (Bielby & Bielby, 1992; Bird & Bird, 1985; Lichter, 1982; McKinnish, 2008; Shihadeh, 1991; Swain & Garasky, 2007; Brandén and Ström, 2011). There are signs, however, that the dominance of male partners has decreased (Smits, Mulder & Hooimeijer, 2003, 2004; but see Tenn, 2010).

It is quite possible that the impact of local ties to work differs between couples with and without children, and this also holds for the extent to which this impact is gendered. Gender differences in the impact of unemployment and education may be particularly pronounced for those with children, because gender-specific division of labor within the households tends to emerge or strengthen after a couple has children. Furthermore, as Cooke (2001) has shown, the negative impact of family migration on women's labor force participation mainly holds for mothers. Mothers holding well-paying jobs may be aware of the possible disruptive effect of migration on their careers, and they may be extra keen on keeping a job close to home.

Ties to family

As has been widely acknowledged in the migration literature, ties to family are powerful forces preventing people from migrating (Fischer & Malmberg, 2001). In the existing family migration literature, the attention to ties to other family members than the partner is usually restricted to the presence of children in the household (e.g. Bailey & Boyle, 2004; Bartel, 1979; Clark & Withers, 1999; Nivalainen, 2004; Swain & Garasky, 2007). Next to children, however, parents and siblings tend to be important members of people's social networks (Rossi & Rossi, 1990) and relatives who live close are more important for the daily social interaction, support and care (see e.g. Daatland, 1990; 1997; Hank, 2005). Therefore, if they live close they are an important source of local ties. As Michielin, Mulder and Zorlu (2008) have shown, individuals whose parents live close are indeed less likely to migrate than others. Likewise, in analyses of moves around separation and divorce for Sweden and the Netherlands, separated persons whose parents or siblings lived close were less likely to move from the joint home than others (Mulder & Malmberg, forthcoming; Mulder & Wagner, forthcoming – their analysis only pertained to parents living close).

With regard to whose local ties to family would be more influential, competing hypotheses can be derived from two alternative perspectives. From a male-dominance perspective, it could be hypothesized that, owing to higher income but also to dominating gender structures in general, men tend to have a greater say in migration decisions than women and that, therefore, any local tie of the male partner would have a greater impeding impact on the likelihood of family migration than a similar local tie of the female partner. Also if the main importance of family ties is to improve the chances to find employment, the local family ties of men may impede the migration more than those of women. An alternative hypothesis can be derived from gender differences in the strength of relationships with family members. Women tend to have stronger relationships with family members than men (Rossi & Rossi, 1990) and to be more engaged in support exchange with family members (Klein Ikkink, Van Tilburg & Knipscheer, 1999). This could imply that the woman's local ties to family members are more important to the couple than the man's, leading to the alternative hypothesis that the female partner's ties to family have a greater impeding impact on migration than the male's. This could be the case even though previous research indicates that men tend to live closer to family than women (see e.g. Malmberg and Pettersson 2007).

After the birth of children, relationships with family members tend to change. Grandparents, for example, are important providers of childcare (De Meester, 2010; Hank & Buber, 2009). Local ties to family might therefore be a stronger deterrent of migration among couples with children than among those without.

Other individual ties to the residential location

Next to ties to work or family, numerous other ties to a location can be thought of. Some examples are ties to friends, emotional attachment to a place, knowledge of the local labor or housing market, familiarity with the local dialect, habits or landscape, or just the convenience of knowing one's way around. All these ties could keep people from moving. For example, local social capital in the form of close friendship ties and club memberships have been shown to decrease the likelihood of migration (David, Janiak & Wasmer, 2010). We are not able to operationalize all these different types of local ties, but it is likely that they are stronger for those who have lived at a certain location for a long time or who used to live there in the past. We therefore expect those couples in which one or both partners live near the place where they were born (that is, in the same county) to be less likely to migrate. In previous work for the United States, Michaelides (2011) indeed found a negative impact of living in one's state of birth, or one's spouse's state of birth, on the probability of migrating. Just as for ties to family, it is not immediately obvious whether this effect should be expected to be stronger for the male or for the female partner.

Local ties of the couple and other factors to account for

Some local ties cannot be attributed to either partner but rather apply to the couple as a whole, and we need to account for these. Two important sources of local ties that decrease the likelihood of migration are the presence of children in the household, particularly if they are of school age (Mulder, 1993; Fischer & Malmberg, 2001) and home-ownership (Speare, Goldstein & Frey, 1975; Fischer & Malmberg, 2001; Helderman, Van Ham & Mulder, 2006). Because jobs, amenities and housing are concentrated in urban areas, couples living in such areas will tend to have fewer reasons for migrating. We therefore account for degree of urbanization. Other factors we take into account are age, whether any of the partners is foreign-born, and whether the couple is married.

Data and method

Data

We used the individual micro database ASTRID provided by Statistics Sweden, covering the total Swedish population and including rich information about socio-economic conditions, households and families, and residential locations with a spatial resolution of 100-meter squares. The information in the data was derived from various administrative registers, among which the population register and the tax register. To trace migrations, we used location data for two consecutive years (last of December 2004 and last of December 2005).

Our analyses are based on all married couples, and cohabiting couples with common children, who, according to Statistics Sweden, were registered as living in the same household in December 2004 and also in December 2005 (N = 1,712,871). The majority of these still lived in the same 100 metres squares in 2005 as in 2004, while some had moved to another place, distant or near. Note that the available Swedish data define cohabitants without joint children and married people registered

at different addresses than their partners as singles. Particularly the omission of cohabiting couples without joint children is unfortunate, because these comprise an important part of couples in Sweden. It should be noted, however, that cohabitants without children form a very heterogeneous group and to include them into the analysis could be complicated.

A great advantage of the data is that there are no missing values, except for level of education which is mainly missing for immigrants. This is not to say all information in the data is necessarily correct – because the data are based on registrations, data quality is determined by the quality of the registers.

Variables

The dependent variable is whether the couple had moved a distance of 50 kilometers or more between December 2004 and December 2005. Distance was measured along a straight line. In the Swedish context, 50 kilometers is a good approximation of the threshold above which daily commutes are rare (Sandow, 2008).

All independent variables were measured in December 2004, before a potential move. Part of the independent variables were measured for each individual partner; these variables are denoted as 'individual variables'. To indicate ties to work, we used unemployment (measured as having experienced a period of unemployment in the past year) and distance to the place of work. We distinguished four categories of distance, with not working as the reference category: within 100 meters or from home; between 100 meters and 2 kilometers; between 2 and 50 kilometers; over 50 kilometers. The threshold of two kilometers was chosen to indicate a 20-minute walk or a 10-minute bike ride, whereas distances under 50 kilometers were considered commuting distance. Level of education was categorized as high school or below, less than three years of higher education, and university. A separate dummy measures whether an individual was enrolled in education. We also included individual measures of disposable income in 100,000 Swedish Crown (SEK) increments per annum (with negative incomes recoded to 0 and outliers over 6,000,000 to that amount).

To measure local ties to family, we used information about the residential locations of parents and siblings of each partner and whether they lived at a close distance (within two kilometers). This was possible using the Swedish multigenerational register including links to parents and siblings for most adults who were born after 1932 and grew up in Sweden. We also included information about whether a person was living in the county of birth, as an indication of other ties to the residential location.

The variable indicating the presence of children in the household was coded as: no common children in the household, youngest common child aged 0-6, 7-15, 16+. A dummy for home-ownership was coded 1 if the home was owned by the couple or one of the partners. Degree of urbanization was categorized as living in a rural area; living in one of the three large cities Stockholm, Göteborg or Malmö; and living in other urban areas. Age was measured as 2004 minus year of birth. A dummy indicates if a person was born outside Sweden. Married couples were distinguished from cohabiting couples.

Descriptive statistics of the dependent and independent variables are given in Table 1. For the categorical variables, the percentage moved is also shown.

<Table 1 about here>

Method
We used logistic regression of whether a couple moved a distance of 50 kilometers or more. In a first model, we included separate variables for the local ties of male and the female partner. In a second set of models we used a different specification of the variables for local ties: we distinguished between couples in which none of the partners had the specific tie, only the male partner, only the female partner, or both. These models provide better opportunities to compare these four situations, but we sacrifice detail in the measurement of the local ties. We estimated a model for all couples, and for couples with and without children separately. Because of the very large number of observations in our models, we only report significance levels of below 0.001.

Results

As can be seen from Table 1, 0.7 percent of Swedish couples moved a distance over 50 kilometers between December 2004 and December 2005 (see variable 'Migrated' among the couple variables). The percentage of movers was particularly high among couples with both partners unemployed (2.1%) and those with the male partner (3.2%) or both partners (5.9%) enrolled in education, and particularly low when either the male or the female partner (0.4%) or both partners (0.2%) had parents and/or siblings living within two kilometers.

Ties to work
Unemployment and distance to work clearly mattered to family migration, but not completely in the way we hypothesized. Unemployment was indeed associated with a greater likelihood of migration, but no difference in its impact was found between the male and the female partner in a couple. In the model in which separate variables for the male and the female partner ('individual variables') are included (Table 2), the parameter estimates for the man's and the woman's unemployment are the same. Accordingly, in the model in which the alternative specification of the variables was used – unemployment of only the man, neither partner, only the woman, both partners – a small and statistically insignificant effect was found of unemployment of only the woman rather than only the man (Model for all couples in Table 3). As expected, a workplace close to home of either partner decreased the chances of migration. Surprisingly, however, the probability of migrating was not smaller (in fact even larger) for workplaces within 100 meters or within 2 kilometers than for those within 2 to 50 kilometers (Table 2). Distances over 50 kilometers were associated with a markedly greater probability of migration. In the alternative model (Table 3), no significant difference was found between couples in which only the woman versus only the man worked close to home. So, the findings for unemployment and distance to work did not lend support to the gender role model of family migration.

<Tables 2 and 3 about here>

For education and income, the results were more in line with expectations. Particularly university education of either partner increased the likelihood of migration, but significantly more so for the male than the female partner. The male partner's enrolment in education enhanced the likelihood of migration, but the female partner's hardly did (Table 2). Enrolment of both partners rather than just the male partner seems to increase the likelihood of migration, however (B = 0.257; Table 3).

The significance of this effect did not reach the 0.001 level, but given the small number of couples in which both partners were enrolled (around 5,000, or 0.3%) its significance level of 0.002 seems small enough to reject the null hypothesis of no effect. The man's disposable income was positively associated with the probability of migration, but for the woman's income no effect was found in the model with individual variables (Table 2) and in the alternative specification the effect was even negative (Table 3). Although the gender differences were not as strong as expected, these findings reveal how gender relations have influenced family migration.

A look at the differences between couples with and without children (Table 3, second and third models) is revealing. For unemployment and distance to work (for which no difference in impact was found between men's and women's local ties), the results for those with and without children were quite similar to those for all couples. But for education and income there are substantial differences. In the model for couples without children, small and insignificant differences were found between couples in which only the man and in which only the woman was university educated or enrolled in education. In the model for couples with children, in contrast, the difference in impact between the man's and the woman's university education and enrolment in education was substantial. This finding confirms the idea that gender differences in the impact of education are particularly pronounced for couples with children. The results for income are also worth noting. Among couples without children, income was positively associated with the probability of migration for both sexes, although the association was stronger for men and insignificant for women. Among couples with children, the association between income and migration was positive but not even significant for the male partner, whereas the association was negative for the female partner. This negative association for women suggests that mothers in well-paid jobs are indeed keen on staying where they are, as we hypothesized based on Cooke's (2001) finding that a negative impact of migration on women's labor force participation was mainly found for mothers.

Ties to family and other individual ties to the location

The presence of family members nearby has a marked negative impact on a couple's likelihood of migrating. This is not only true of parents, but also of siblings, and this holds net of whether the couple members live in their county of birth (Table 2). As an extra check, we also estimated models for those couples in which at least one partner lived in the county of birth and those couples for which this was not the case, and we found statistically significant effects for both categories. It may seem strange at first sight that the parameter estimate for both parents and siblings living close is less negative than the estimates for parents only and siblings only. It may, however, be a larger step to move away from parents or siblings if no other relatives are around. But this effect might also be artificial. It is likely that many who have both parents and siblings living close live in their county of birth, so the indicators 'Both within 2 km' and 'Living in county of birth' may partly take over each other's effects. Living in the county of birth was also associated with a smaller probability of migration. All these effects are substantial. The odds of migrating for a couple in which the man had siblings living close, for example, were estimated to be only exp(-.900) or .41 times the odds for a couple for which this was not the case.

For ties to family, no differences whatsoever are found depending on whether they pertain to the male or the female partner. The effects seem to be additive: the difference between couples in which only the man or only the woman has family living close and in which none of the partners has, is just as large as between couples

in which both have family living close and in which only the man has. Our hypothesis from the male-dominance perspective that the man's family ties would have a greater impact than the woman's is not supported, but neither is our alternative hypothesis based on gender differences in the strength of family ties. This suggests that either none of these hypotheses is true, or they both are for different sub-populations of couples and this is not visible for the whole population. Apparently, couples with and without children are not such sub-populations: no notable differences between them are found in the effect of family living close. So, there are no signs that local ties to family would be a stronger deterrent of migration among couples with than among those without children, as we hypothesized. For other individual ties to the residential location, indicated by living in the county of birth, the picture is a little different. Here, the ties of the male partner seem to be more influential than those of the female partner, which is in line with the male-dominance perspective. This might be because part of these ties are work-related (knowledge of the local labor market, for example), but this is just a speculation.

Ties of the couple and other factors

Not surprisingly, couples with children were found to be less likely to migrate than those without, particularly if the child was of school age. Couples who own their home were much less likely to migrate than those who do not. Those living in urban areas migrated more frequently than those living in rural areas, but the large cities Stockholm, Göteborg and Malmö formed an exception, with low migration probabilities. The age of either partner was negatively associated with the likelihood of migration, and so was being foreign-born. Finally, married couples were estimated to be more likely to migrate than couples cohabiting unmarried. This finding should not be interpreted substantively, however, because of the lack of representation in the data of cohabiting couples without joint children.

Conclusions and discussion

With this article, we aim to contribute to the family migration literature by opening the 'black box' of ties to the residential location of the male and female partner in two-gender couples and their role in preventing migration. Although such ties are implicit in the tied-stayer concept, thus far they have not been subject to study in the family migration literature. Thanks to the availability of rich micro data on couples' migration in Sweden including detailed information about partners work and family ties, we have had unique opportunities to investigate relations between migration propensities and the local ties of partners.

To explore how family ties of partners influence migration propensities, we analyzed the impact of having parents or siblings living close and found a substantially decreased likelihood of migration. This effect was strikingly large. It was about twice the magnitude of the effect of university education rather than compulsory education. And perhaps even more surprisingly, it was in the same order of magnitude as the effect of having school-aged children. We cannot know with certainty to what extent the statistical effect of family living close is really caused by the importance of these family members in the social network and a preventing impact of that social network on migration. The local presence of family members might also indicate something else, for example the presence of friends. The fact that these effects were found irrespective of whether someone lived in the county of birth,

however, provides a strong indication that they represent a true impact of local ties to family.

Altogether, our findings clearly show the importance for family migration of partners' family ties. Although the importance of the extended family, especially in societies with a strong welfare state, has been debated (see e.g. Daatland, 1990; 1997), our findings indicate significant influences of family ties on migration also in the Swedish context. Even in Sweden, families are likely to be important to social life in general, to caregiving between generations but also for example to support and assistance exchange between siblings. But siblings, parents and adult children may have other roles than providing care and support. Local family ties could also improve the chances of finding employment, provide important contacts in working life, or influence the opportunities to combine family life with work. Moreover, our results indicate an impact of these ties on migration propensities.

To further explore the role of partners' local ties to work on migration propensity we included unemployment and distance to the workplace. As expected, unemployment was associated with more migration, while working not too far from home with less. This indicates that work-oriented location-specific ties prevent out-migration; but an alternative interpretation of the observed association could be that immobile people develop closer local ties to work or family.

One key aim of this paper was to scrutinize how partner's local ties differently influenced the migration propensities of couples. We hypothesized that women's local ties to family would be more important, whereas men's local ties to work would be more important. However, our findings were rather nuanced. Perhaps the most marked finding from our study was the absence of gender differences for many of the factors we took into account. No differences were found for unemployment, working close to home, and having family members living close. In line with the male-dominance hypothesis, however, university-level education, enrolment in education had a greater impact for the male than for the female partner.

Living in the county of birth also had a greater impact for the male than for the female partner. This result is in line with some previous results on gender differences in migration patterns, since young Swedish women are more likely than men to move away from the more rural regions in order to find education and work in the cities (Nilsson, 2001). It is also in line with the idea that, after accounting for family living close, living in one's home county mainly stands for work-related location-specific capital. Or alternatively, a patri-local structure might still be prevalent in contemporary Swedish society. For disposable income, opposite effects were found for the man and the woman in the model with couple variables. In accordance with the idea that high-income jobs are spatially more dispersed than low-income jobs, a higher income of the man was associated with a greater likelihood of migration. In contrast, women with high incomes seemed to be likely to prevent migration in order to keep their high-income jobs. Further research is needed to explore why women with high incomes are more tied to the place of residence than are men; for instance whether this association reflects a higher propensity of high-income women to stay in the larger urban areas, or high-income women are less prone than men to trade local ties for labor-market careers, or high-income women tend to prefer a well-paying local job over an uncertain future elsewhere.

Interestingly, our findings show that the gender differences in the importance of work-oriented local ties were mainly confined to couples with children, whereas for couples without children, the gender differences were small and statistically insignificant. The effect of income was estimated to be positive for both men and

women among these couples, even though it was insignificant for women. This is in line with the idea that gender differences in family roles become more pronounced after a couple has children. Gender differences in the impact of migration are greater after family formation: As Cooke (2001) asserted, the impact of family migration on women's incomes is mainly confined to mothers. Furthermore, gender-specific data on time use in Sweden show rather small gender differences among young childless couples, while the gap increases substantially when children enter into the household (Statistics Sweden, 2010). Obviously, the relative gender equality in the Scandinavian context remains as long as young men and women are not mothers and fathers and this seems to be reflected in the way local work-oriented ties influence migration. Still, the near absence of gender differences among couples without children is remarkable.

Even though a sizeable impact of the presence of family was found, our main recommendation for further family migration research is not to try to include indicators of family ties routinely. Such indicators are not frequently available, and there are no signs that the impact of family ties confounds other findings. Performing separate analyses for couples with and without children, however, is advisable as a standard strategy in family migration research. By taking all couples together, a picture is painted of moderate gender differences that might hide greater differences among couples with children and an absence of differences among couples without children.

We were lucky to have access to high-quality, detailed register data from the ASTRID database for Sweden. These data have numerous advantages. The number of observations is comfortably large, allowing detailed analyses with great statistical power. Data for individuals can be linked to data for their partners (albeit with restrictions), parents and siblings. There is no non-response, no refusal to answer particular questions, no memory error, no socially acceptable answer patterns. Consequently, there is no response bias and there are hardly any missing values. There are no respondents who have to be burdened with time-consuming questionnaires.

Of course, the data also have disadvantages. The information in the data is confined to whatever happens to be recorded in registers. Data quality depends on the degree to which these registers are accurate, and this in turn depends on people's willingness to report changes in their situation. Even though biases owing to false reporting are not very likely in the highly organized Swedish society, there could be incentives not to report certain changes of address or not to report certain income components. A serious drawback of the data is the lack of information about unmarried cohabitants without joint children. This is particularly unfortunate for Sweden, with its high share of unmarried couples. It is hardly possible to predict how the results would differ, had we had data about such couples. It is likely that the married couples without children in our data are among the most committed couples: those wanting to have children, homeowners and those planning to purchase homes, those with joint businesses. Possibly, family ties and other local ties are more important among these than among unmarried couples. Indications that family ties are more important to married than cohabiting people can be found from Clarkberg, Stolzenberg and Waite (1995) who found for the United States that those who thought living close to parents and relatives was important were less likely to cohabit (rather than marry) than those who did not, and Hogerbrugge and Dykstra (2009) who found for the Netherlands that cohabitants maintain less contact with family than married people.

Some of our results may be specific for Sweden or Northern Europe. Because Sweden is about the most egalitarian society in the world, and has generous facilities for parents, gender differences might be smaller in Sweden than in other countries. Apart from the slightly different gender structure, Sweden is also specific when it comes to the role of the welfare state. Care and support are considered to be among the tasks of the welfare state. Even so, even though family contacts are less frequent in Sweden than in many other European countries (Hank, 2005), interaction with family members is very important even in Sweden (Hjälm, 2011), although the forms and motives for this interaction may be different. This study seems to provide additional support for this idea. For further research, it would be interesting to investigate the impact of local ties and local social networks in more detail, for example by probing into actual contacts with family members or by extending the investigation of the presence of network members to friends and acquaintances.

Further, it would therefore be instructive to replicate the analyses for other countries. Since the kind of register data used in this study is available only in few countries (for now: Denmark, Norway, Finland and the Netherlands), international comparison based on this kind of information is difficult to carry out. Using cross-national surveys may be a way to unfold the impact of family ties of partners and the gender-specific pattern in different socio-economic contexts to broaden the knowledge about how partner's ties to work and family influence the patterns of migration.

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Table 1. Descriptive statistics of the independent and dependent variables (N = 1,712,871 couples)

	% in data	% migrated	% in data	% migrated
Individual Variables	*Male*		*Female*	
Unemployed: no	93.8	0.6	91.4	0.6
Yes	6.2	1.3	8.6	1.1
Workplace: does not work	40.6	0.7	42.6	0.8
Within 100 m	4.7	0.5	1.8	0.6
Within 2 km	10.1	0.7	14.2	0.6
Within 50 km	38.7	0.5	38.4	0.5
Farther away	6.0	1.6	2.9	2.0
Level of education: compulsory	20.8	0.5	18.1	0.6
Tertiary < 3 years	53.2	0.6	56.7	0.6
University >= 3 years	15.6	1.3	17.8	1.1
Unknown	10.5	0.4	7.5	0.5
In education: no	98.9	0.7	96.2	0.6
Yes	1.1	3.9	3.8	1.8
Parents or siblings within 2 km: no	80.3	0.8	80.5	0.8
Parent(s) within 2 km	6.5	0.3	6.5	0.3
Sibling(s) within 2 km	7.4	0.3	7.2	0.4
Both within 2 km	5.7	0.4	5.8	0.3
Living in county of birth: no	51.6	1.0	53.5	1.0
Yes	48.4	0.3	46.5	0.3
Foreign born: no (ref)	86.4	0.6	85.3	0.6
Yes	13.6	1.1	14.7	1.1
	Mean	Std Dev	Mean	Std Dev.
Disposable income[1]	2.1	1.9	1.5	1.0
Age	53.0	15.0	50.4	14.8
Couple Variables				
Migrated: no	99.3			
Yes	0.7			
Unemployed: neither partner	86.4	0.6		
Man only (ref)	5.0	1.2		
Woman only	7.5	1.0		
Both	1.1	2.1		
Works within 2 km: neither partner	78.4	0.7		
Man only (ref)	5.5	0.6		
Woman only	10.9	0.6		
Both	5.1	0.5		
University education: neither partner	75.0	0.5		
Man only (ref)	7.2	1.1		
Woman only	9.4	0.8		
Both	8.4	1.5		
In education: neither partner	95.4	0.6		
Man only (ref)	0.8	3.2		
Woman only	3.6	1.5		
Both	0.3	5.9		
Family within 2 km: neither partner	66.8	0.8		
Man only (ref)	13.7	0.4		
Woman only	13.5	0.4		
Both	6.0	0.2		
Living in county of birth: neither partner	37.6	1.2		
Man only (ref)	15.9	0.6		

Woman only	14.0	0.6
Both	32.5	0.2
Children: no (ref)	46.5	0.7
Youngest child 0-6	22.8	1.2
Youngest child 7-15	18.2	0.3
Youngest child >= 16	12.4	0.3
Homeowner: no (ref)	35.9	1.5
Yes	64.1	0.2
Urbanization: rural (ref)	85.0	0.7
Urban	1.7	0.9
Large city	13.3	0.8
Married: no (ref)	16.0	0.7
Yes	84.0	0.7

[1]In 100,000s of Swedish crowns per annum

Table 2. Logistic regression of couples' moves over 50 km, model with individual variables

	B	S.E.	B	S.E.
Individual Variables		*Male partner*		*Female partner*
Unemployed	0.165	0.030	0.165	0.028
Workplace: does not work (ref)				
Within 100 m	-0.306	0.057	-0.105 [a]	0.075
Within 2 km	-0.405	0.035	-0.426	0.033
Within 2-50 km	-0.543	0.026	-0.475	0.026
> 50 km away	0.383	0.038	0.430	0.038
Level of education: compulsory (ref)				
High education < 3 years	0.105	0.029	0.034 [a]	0.029
University >= 3 years	0.428	0.034	0.217	0.035
Unknown	-0.194	0.054	0.032 [a]	0.053
In education	0.315	0.044	0.083 [a]	0.034
Disposable income	0.022	0.004	0.000 [a]	0.009
Parents or siblings within 2 km: no (ref)				
Parent(s) within 2 km	-0.771	0.055	-0.741	0.055
Sibling(s) within 2 km	-0.900	0.057	-0.793	0.054
Both within 2 km	-0.527	0.048	-0.637	0.050
Living in county of birth	-0.577	0.024	-0.715	0.025
Age	-0.025	0.002	-0.022	0.002
Foreign born	-0.434	0.032	-0.493	0.032
Couple variables				
Children: no (ref)				
Youngest child 0-6	-0.179	0.027		
Youngest child 7-15	-0.719	0.036		
Youngest child >= 16	-0.432	0.041		
Homeowner	-1.721	0.024		
Urbanization: rural (ref)				
Urban	0.921	0.065		
Large city	-0.475	0.026		
Married	0.297	0.028		
Constant	-1.018	0.073		
Model -2 log likelihood	119625.89			
χ^2	21210.25			
Df	39			
Significance model	0.000			
Pseudo R^2 (Nagelkerke)	0.156			
N	1712871			

[a] p >= 0.001 (parameter not significant at the 0.001 level)

Table 3. Logistic regression of couples' moves over 50 km, models with couple variables

	All		Without children		With children	
	B	S.E.	B.	S.E.	B.	S.E.
Unemployed (ref. Man only)						
Neither partner	-0.235	0.035	-0.231	0.059	-0.226	0.043
Woman only	-0.041 [a]	0.043	-0.002 [a]	0.076	-0.047 [a]	0.053
Both	0.345	0.061	0.326 [a]	0.117	0.356	0.071
Works within 2 km (ref. Man only)						
Neither partner	0.232	0.046	0.296	0.076	0.187	0.057
Woman only	0.021 [a]	0.054	0.087 [a]	0.088	-0.023 [a]	0.068
Both	-0.058 [a]	0.064	-0.084 [a]	0.107	-0.042 [a]	0.081
University education (ref. Man only)						
Neither partner	-0.362	0.031	-0.251	0.050	-0.446	0.040
Woman only	-0.186	0.040	-0.071 [a]	0.064	-0.252	0.051
Both	0.156	0.036	0.170 [a]	0.060	0.156 [a]	0.046
In education (ref. Man only)						
Neither partner	-0.447	0.052	-0.377	0.101	-0.451	0.061
Woman only	-0.291	0.060	-0.059 [a]	0.114	-0.367	0.072
Both	0.257 [a]	0.082	0.466 [a]	0.137	0.171 [a]	0.105
Disposable income man	0.020	0.004	0.028	0.005	0.008 [a]	0.007
Disposable income woman	-0.042	0.012	0.012 [a]	0.048	-0.133	0.020
Family within 2 km (ref. Man only)						
Neither partner	0.706	0.035	0.612	0.058	0.758	0.044
Woman only	0.001 [a]	0.046	0.017 [a]	0.076	-0.013 [a]	0.058
Both	-0.770	0.084	-0.772	0.152	-0.753	0.101
Living in county of birth (ref. Man only)						
Neither partner	0.559	0.029	0.507	0.043	0.612	0.039
Woman only	-0.124	0.038	-0.092 [a]	0.058	-0.146 [a]	0.052
Both	-0.812	0.038	-0.686	0.055	-0.942	0.054
No child (ref)						
Youngest child 0-6 [b]	-0.215	0.027				
Youngest child 7-15	-0.805	0.035			-0.455	0.041
Youngest child >= 16	-0.516	0.041			-0.100 [a]	0.062
Homeowner	-1.779	0.024	-1.509	0.034	-1.985	0.033
Urbanization: rural (ref)						
Urban	1.047	0.065	0.971	0.096	1.099	0.128
Large city	-0.533	0.026	-0.489	0.040	-0.551	0.087
Age man	-0.022	0.002	-0.023	0.003	-0.023	0.003
Age woman	-0.020	0.002	-0.018	0.003	-0.133	0.003
Man foreign born	-0.385	0.032	-0.333	0.048	-0.442	0.042
Woman foreign born	-0.454	0.031	-0.348	0.046	-0.552	0.042
Married	0.304	0.028	0.720	0.135	0.312	0.030
Constant	-1.909		-2.725		-1.583	
Model -2 log likelihood	121582.65		55522.14		65787.35	
χ^2	19253.49		7140.92		12357.09	
Df	31		28		30	
Significance model	0.000		0.000		0.000	
Pseudo R^2 (Nagelkerke)	0.142		0.118		0.164	
N	1712871		797186		915685	

[a] $p >= 0.001$ (parameter not significant at the 0.001 level)
[b] = reference in model for couples with children