Migration and Regional Sorting of Skills

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To my Family

Abstract

This thesis consists of an introductory part and four papers.

Paper [I] estimates jointly the choice of whether to enroll in education and the choice of location among young people. Being a particularly mobile group, the location choices of young individuals shape much of the regional distribution of human capital, growth, and local public sector budgets. Applying Swedish register data on nest leavers, we seek to determine factors deciding the education and location choice of young people. The results indicate a systematic selection higher education based on school grades and preferences for locations with higher per capita tax bases and with lower shares of elderly people. The importance of family networks for the choice of location is confirmed.

Paper [II] examines how individual ability, reflected by the grade point average (GPA) from comprehensive school affects the probability of migration among university graduates. The econometric analysis applies detailed micro-data of two entire cohorts of young individuals retrieved from the Swedish population registers. The results indicate that individual abilities are strongly influential both concerning completion of a university degree and for the migration decision. In addition, we find a positive relationship between the GPA and migrating from regions with lower per capita tax bases and/or a relatively small share of highly educated individuals. Analogously, individuals with a high GPA tend to stay in more densely populated regions, suggesting a clustering of human capital vis-à-vis school grades.

Paper [III] estimates the relationship between migration across labour market regions and the subsequent changes in earnings by using the GPA from the final year of comprehensive school as a proxy for ability. This measure aims to capture heterogeneity in the returns to migration for individuals conditional on education attainment. Using Swedish register data on young adults, a difference-in-difference propensity score matching estimator is applied to estimate income differences measured up to seven years after migration. The results show variation between different ability

groups regarding the returns to regional migration. There are indications of larger gains for individuals holding top grades, while the bottom half seems to benefit less, or face slightly negative effects.

Paper [IV] examines whether power couple formation and the location choice of such couples are driven by factors already inherent in young people during their formative school years. The paper also extends the analysis by modeling location choice among different sizes of labor market areas, given different power statuses of the couples. Based on analysis of Swedish register data, we produce evidence that power spouses evolve from the population of high achieving school age individuals; the latter is identified by high academic performance during their years of compulsory school. Regarding location choice, the results indicate that power couples display a relatively high tendency to migrate from their regions of origin to large cities.

Keywords: Agglomeration; early markers; human capital; income; interregional migration; individual ability; location choice; marital matching; propensity score matching; regional clustering; skills; university graduates

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This thesis consists of an introduction and four papers:

[I] Berck, Peter, Sofia Tano, and Olle Westerlund. (2014). Regional Sorting of Human Capital – the Choice of Location among Young Adults in Sweden. Umeå Economic Studies No. 878 (revised and resubmitted – *Regional Studies*).

[II] Tano, Sofia. (2014). Regional Clustering of Human Capital - School Grades and Migration of University Graduates. Umeå Economic Studies No. 879 (revised and resubmitted – *Annals of Regional Science*).

[III] Tano, Sofia. (2014). Internal Migration of Young Adults – Heterogeneity in Effects on Labour Income by School Grades. Umeå Economic Studies No. 880.

[IV] Tano, Sofia, Olle Westerlund, Robert A. Nakosteen, and Michael Zimmer. (2014). Back to the Future: Migration, Matching and the Power Couple Phenomenon in Sweden. Umeå Economic Studies No. 881.

1. Introduction

During the last few decades, many countries have experienced an aging of the population. At the same time, there is a trend of increasing in-migration to metropolitan regions by young adults, especially with a university education (e.g., Tervo, 2000; Faggian and McCann, 2006; Haapanen and Tervo, 2012). The increased in-migration to metropolitan regions contributes to a drain of human capital and slower growth for the more rural regions, making it more difficult for them to support their increasing elderly population due to an insufficient increase in tax bases.[1] Although regional migration has increased in most developed countries over the last decades, migration is more frequent at a young age, before "settling down" (e.g., Fischer and Malmberg, 2001). The motives behind migration decisions of university graduates are essential since they are a particularly mobile group whose migration decisions shape much of the human capital distribution in a given country (e.g., Wozniak, 2006; Gibbons and Vignoles, 2012).

This thesis consists of four papers relating to various aspects of human capital and migration applied to a Swedish context. The aim is to study systematic changes in the regional distribution of human capital as measured by an individual's educational attainment. Emphasis is given to the role of the heterogeneity in individual ability within formal levels of education. The studied population consists of young adults who followed from their late teens to mid-thirties. One of the main contributions is that the notion of human capital is extended from just formal education to include a measure of latent ability reflected by Grade Point Average (GPA) from compulsory school. As such, the thesis examines the heterogeneity of ability among individuals within education levels.

Paper I investigates which factors influence the first location choice of nest leavers jointly with the decision to invest in higher education. In papers II – IV, migration and location choices are linked to the role of GPA from the

[1] In Sweden, the income tax is the most important source of public revenue at the regional and municipal level.

final year of compulsory school. In paper II, the central questions refer to the role of school grades for university graduates and the regional clustering of human capital in Sweden. Paper III studies heterogeneous effects from returns to migration vis-à-vis the individual's GPA. Paper IV examines spousal matching and location choices among couples, also with a focus on human capital.

2. Human Capital and Higher Education

Human capital is defined as the knowledge, skills, and experience attained by an individual. In applied studies, it is typically measured as years of education, and/or work-experience. In the papers included in this thesis, the notion of human capital is extended to include school grades of the individual. More specifically, the school grade used is the Grade Point Average (GPA) from year 9, i.e., the final year of compulsory school in Sweden. An underlying assumption is that GPA is informative about an individual's ability and the heterogeneity in ability within groups defined by conventional measures of human capital such as level of educational attainment. Human capital is attached to the individual, who when migrating brings it to the new location, and may therefore affect the distribution of human capital across regions. The geographical allocation of human capital is of importance since it has been found to be an impetus for regional growth (see, e.g., Lucas, 1988; Barro and Sala-I-Martin, 2004; Ozgen, 2010). Previous studies indicate a positive correlation between education levels and income growth in a region (see, e.g., Glaeser *et al.,* 1995; Clark and Murphy, 1996; Glaeser and Saiz, 2004; Partridge *et al.*, 2008). Furthermore, positive spillover effects on production, entrepreneurship, and the wages of less skilled workers have been found for regions with a high share of human capital (e.g., Moretti, 2004a, 2004b; Glaeser *et al.,* 2014).

Public expenditure on higher education in Sweden increased rapidly during the 1990s. This increase consisted of an increase both in the number of university admission places in existing institutions and in the establishment

of new universities and colleges. This expansion had a large effect on the number of university entrants, which doubled between 1989 and 1999 (OECD, 2006). By establishing universities and colleges outside urban regions, policy makers aimed to make higher education more accessible to individuals who did not come from traditionally academic families to invest in higher education (Holzer, 2007). Previous research shows that the increase in accessibility to higher education institutions has a positive effect on both the enrollment and the mobility of young individuals (see, e.g., Sá *et al.*, 2004; Eliasson, 2006). In contrast to most European and U.S. universities, there are no fees associated with studying at the university level, and study loans are available at a very advantageous interest rate.[2] Overall, this lowers the entry costs where enrollment is not directly dependent on the family's economic situation. Entry to university is selected on the individual's grades from high school or from aptitude tests.[3]

Measuring individual ability through school grades, test scores, or IQ has been done in numerous studies before. Even though no consensus has been established on what these measurements say about the individual, they have been found to positively correlate with labor market outcomes, e.g. investment in education, lifetime earnings, and non-academic success (see, e.g., Boissiere *et al.*, 1985; Jones and Jackson, 1990; Loury and Garman, 1995; Glaeser and Maré, 2001; Heckman *et al.*, 2006; French *et al.*, 2010) These studies find a greater success on the labor market for individuals with higher test scores/grades.

As mentioned above, in this thesis, ability is measured as the GPA obtained in the 9th and last year of compulsory school in Sweden, observed in 1990 and 1992. At the time, the grade system in Sweden was on a scale from 1 to 5, with 5 being the highest grade. The mean grade in a specific subject was nationally regulated in the curriculum to be 3. The individuals were not

[2] There is also a state grant given to students, where both the grant and loan are conditional on taking enough credits per year and not earning over a specific amount annually.

[3] Exceptions are found for more creative educational programs, e.g. dance, theater, film, or art, where special tests are done by the school.

graded on a curve, but the Swedish National Agency for Education recommended that the number of 2s and 4s should exceed the number of 1s and 5s in a specific subject. Centrally regulated curriculums and standardized testing in the core subjects (Swedish, English, and Math) are the foundation for grades. According to this system, GPA is calculated as the average of all grades obtained by the individual in year nine and is a score between 1.0 and 5.0. Wikström and Wikström (2011) use the same type of GPA as in this thesis on returns to education. They find that for individuals in the top quintile of the GPA distribution, the return to education is higher compared to lower quartiles. The same pattern is found for incomes of individuals who do not invest in university education. These findings suggest that individuals with higher school grades seem to do better in the labor market, indicating that the GPA includes an ability/productivity component.

3. Migration

Generally, human migration is classified into three broad categories: international migration, regional migration, and residential migration. In the setting of this thesis, the definition of migration pertains to mobility between labor market regions within a country. This type of migration is typically associated with the change of workplace. Regional mobility is important from both the individuals' and society's perspectives and contributes to better job matches, increased wages, and more efficient labor markets.

The standard theory suggests that individuals undertake migration if the utility in another location is higher than the utility in the present location, subtracting the cost of migration. The human capital model of migration expands this theory by viewing the migration decision as an investment, where the individual maximizes his/her lifetime utility discounted to present value (Sjastaad, 1962). The utility functions include a large number of elements, which can be either monetary or non-monetary. Not all components affecting utility can be observed or considered by the individuals but, all else equal, individuals choose a location where the perceived net benefit of residing is the highest. As individuals are

heterogeneous, the net benefits of residing in a specific region typically varies over age, education levels, labor market experience, and ties to the region. Individuals will therefore make different location and migration choices vis-à-vis their personal attributes.

Mincer (1978) extended the migration decision from just being a choice of the individual to model it as a decision of the family with two individuals. The benefits (and costs) can differ across individuals within a household, both in terms of attachment to the labor market, income, and attachment to the region. Previous research shows that a couple's (re)location is often associated with at least one part being the tied mover or tied stayer (see, e.g., Taylor, 2007; Rabe, 2011; Eliasson *et al.*, 2013). Migration as a decision of spouses/couples is studied in paper IV, where determinants of both the formation of couples and location decisions are examined.

Generally, interregional migration rates are higher in the U.S., compared to Europe (Molloy *et al.*, 2011). In Europe, the migration rates are usually highest before 30, but at specific life-course events, some peaks are found (e.g., Eliasson *et al.*, 2007). Earlier studies indicate that imbalances on regional labor markets affect migration according to economic theory and migration seems to have contributed substantially to adjustment towards regional equilibrium (e.g., Fredriksson, 1999; Eliasson *et al.*, 2007). The next section gives an overview of the applied studies on migration and location choice.

3.1 Previous findings on migration and location choice

Considering the vast literature in this field, the discussion of previous findings will be limited to interregional migration in developed countries, corresponding to the setting of this thesis. An emphasis will be put on discussing micro-level studies of migration and location choice applied to a young population, with some references to findings for dual-earner households.

Much of the earlier migration research focused on determinants of observed migration flows between regions or municipalities. Generally, high unemployment rates, few job vacancies, and higher tax rates have been found to encourage out-migration, while regional wage differentials seem to be of less importance (see, e.g., Clark and Hunter, 1992; Treyz *et al.*, 1993; McCormick, 1997; Westerlund, 1997; Aronsson, Lundberg, and Wikström, 2001). Studies have also found that regional-specific amenities, e.g. the number of sunny days and closeness to the ocean or mountains, increases in-migration to a region (e.g., Knapp *et al.,* 2001; Florida, 2002)

During the latest two decades, the increased availability of micro-data has made it possible to control for individual heterogeneity in the determinants and in the effects of migration. Over the years, some consensus has been reached regarding determinants of migrations. Two of the main determinants are age and education. Typically, regional migration is found to decrease with age and increase with education level (e.g., Antolin and Bover, 1997; Greenwood, 1997; Ritislä and Ovaskainen, 2001; Manchin *et al.*, 2012). It has been found that the highly educated migrate to find jobs that better match their educational attainment but also that migration is motivated by investment in education (Elisasson *et al.*, 2007; Jauhiainen, 2010). The effects of age can be explained by the decrease in (pecuniary) returns as there are fewer years of working left for older individuals while the cost of migration remains the same. People experiencing unemployment in their original location have also been found to migrate at a higher rate (see, e.g., Ritsilä and Tervo, 1999; Böheim and Taylor, 2002). Furthermore, attachment to a region of residence greatly influences the migration decision. Ties can either be viewed as the time of residence in a region, or as having family members in the region. Individuals who have previously migrated are more likely to migrate again (e.g., Kodrzycki, 2001). The other family members' location is also found to influence the migration decision, since it reflects both attachment to and information about a region (see, e.g., Mulder, 2007; Moilanen, 2009; Mulder and Cooke, 2009).

Few studies have examined the importance of the characteristics of the migration destination, although there are some interesting exceptions (e.g., Jackman and Savouri, 1992; Ritsilä and Ovaskainen, 2001). The main findings are that the highly educated and the young prefer large labor markets and metropolitan regions (see, e.g., Ritsilä and Haapanen, 2003; Détang-Dessendre *et al.,* 2008). Kauhanen and Tervo (2002) study migration to declining regions and find that these regions are more likely to be chosen by older and predominantly uneducated workers.

There is a growing literature concerning university graduates and their migration behavior after graduation. The main findings include metropolitan regions and larger labor markets being favorable locations for this group (see, e.g., Faggian and McCann, 2009, Concorian, 2010; Venhorst *et al.*, 2011). Similarly, both Bjerke (2012) and Haapanen and Tervo (2012) find that university graduates tend to migrate from university towns to city regions after graduating, and analogously at a higher rate stay in metropolitan and urban regions. The same trend is also found for couples where both partners have a university degree. Jauhiainen (2008) finds that highly educated couples are more likely to be located around the Helsinki region in Finland. In studies on couples and location choices applied to a U.S. context, a similar tendency is found (Costa and Kahn, 2000; Compton and Pollak, 2007).

In studies on the pecuniary effect of migration, studies generally find a positive effect, where the highly educated typically have higher monetary returns compared to individuals with low educational attainment (see, e.g., Eliasson *et al.*, 2007; Ham *et al.*, 2011). For women, the returns are generally lower compared to men and also depend on marriage status (e.g., Jacobsson and Levin, 1997; Nilsson, 2001). Studies have also been done comparing the location choice of the migrants, employment status, and the type of migrant (see, e.g., Pekkala, 2003; Nakosteen and Westerlund, 2004; Lehmer and Ludsteck, 2011; Knapp *et al.*, 2013). The returns to migration are typically

higher for migrants to city regions, already employed workers, and onward migrants.

4. Methodological Considerations and Data

In this thesis, non-experimental data is used, which means that individuals are likely to be self-selected into investment in human capital and we cannot observe all characteristics that affect migration, education, and location choices. This may entail a potential risk for selection bias in the results. However, a data set with rich information reduces the risk for selection bias. Studies comparing results from non-experimental estimators and experimental evidence finds that for rich and accurate data, as is used in this thesis, the bias is small (e.g., Heckman *et al.*, 1999; Smith and Todd, 2005).[4] Still, the choice of estimation approach is important for producing unbiased estimates. In paper III of this thesis, propensity score matching (a selection-on-observables technique) is applied to identify the returns to migration. A crucial assumption behind this method is that, conditional on the observed characteristics, the unexplained heterogeneity of selection into treatment must be independent of the outcome (Rosenbaum and Rubin, 1983).[5] Therefore, which variables to condition on still require careful consideration. The choice of variables relies on previous findings but is also limited to the available data. Robustness checks in the form of alternative specifications can be used to check for stable results, but the existence of any remaining bias cannot be completely ruled out. In papers I, II, and IV, the selection into education, marriage, and migration is studied. Here, different types of choice-based models are applied to model the migration and location decision. No causal effect is claimed to be attained in these studies, but in papers II and IV, the correlation of unobserved heterogeneity between the studied outcomes is examined explicitly.

4 This evidence refers to estimated effects of education. Naturally, it may be contextual and external validity can always be called into question.

5 Even if this condition is violated, unbiased estimates can still be obtained if the distributions of the unobserved attributes are the same for treated and non-treated.

Data used in this thesis is population register data from the Linnaeus database covering the whole Swedish population.[6] This is a large database connected to the Ageing and Living Conditions program and is administrated by the Demographic Data Base (DDB) at Umeå University. It entails information from three main sources, where the one used in this study is register data produced by Statistics Sweden. The empirical results in this thesis are based on two entire cohorts of the Swedish population born in 1974 and 1976, respectively. The 1974 cohort is the first one containing full information on school grades. The individuals are included in the sample if they were Swedish residents by age 16. The data is longitudinal and it is possible to follow these individuals annually up to around age 35. The dataset also includes rich information on incomes, unemployment benefits, locations of residence, as well as work and education levels for each individual. The individuals are also matched with parents, siblings, and partners, which gives detailed information on characteristics of family members. In addition to the register data, the data on the regional characteristics that are used in the studies comes from Statistics Sweden and are available online.[7] Annual data on population densities, tax bases, education levels, and unemployment levels are retrieved for the relevant years.

5. Summary of the four Papers

Paper [I]: Regional Sorting of Human Capital – the Choice of Location among Young Adults in Sweden.

An aging population and increasing migration to urban and city regions increase the pressure on the declining regions to cope with the burden of support for the remaining population. This is greatly affected by the decisions of young adults due to their higher migration rates and higher rates of investment in education (Haapanen and Tervo, 2012). Therefore, this paper examines the investment in higher education and the location

6 For a more detailed description of the database, see Bonita *et al.* (2011)

7 See, www.scb.se

choice of nest leavers to shed light on the factors and patterns that affect the human capital formation and distribution.

Applying a nested logit model, the choice of enrollment in higher education and location is estimated simultaneously. From the structure of the model, we can distinguish between determinants of the chosen location for students and non-students. Furthermore, we allow the individuals to choose between 17 different locations, grouped by size and regional location, both within and outside the region of origin.

The data comes from the Linnaeus database at Umeå University and the sample encompasses two entire cohorts of young adults who resided in the two most northern counties of Sweden at age 19. Enrollment in education or not and the accompanying location choice are measured at age 22. We include both regional and individual specific characteristics as explanatory variables for the location decision, e.g. past and present regions of residence of parents and siblings, regional tax base per capita, and the share of elderly in the region.

The results suggest a systematic selection into investment in higher education based on school grades. Students tend to choose locations with a higher per capita tax base and a lower share of elderly. The latter tendency is not found as clearly for non-students, indicating differences in location patterns between these groups. The residential locations of family members are found to be important for the location choice. Simulations of increasing university admission places and GPA levels indicate an increased tendency to choose university locations within the northern region as well as an increased outflow from this region.

Paper [II]: Regional Clustering of Human Capital—School Grades and Migration of University Graduates.

In recent years, more attention has been paid to the location choices of university graduates where the findings show a strong preference of urban or

large labor market regions (see, e.g., Faggian and McCann, 2006; Haapanen and Tervo, 2012). This trend might lead to unequal regional growth and increased discrepancies between urban and rural regions (e.g., Barro and Sala-I-Martin, 2004; Ozgen *et al.,* 2010). In previous studies, human capital has been measured in terms of formal education levels, where the heterogeneity within education levels is disregarded. This study examines how heterogeneity in ability, measured as the GPA from year 9 of compulsory school, influences the migration decision of university graduates.

Data comes from the Linnaeus database and the sample consists of two entire cohorts of Swedish residents who by age 23 have entered into higher education. A bivariate probit model is used to estimate the two outcomes of interest. The first outcome is whether the individual obtains at least a bachelor's degree by age 25, while the latter is defined as changing labor market region (LMA) between age 25 and 30. Additional information of three regional characteristics—the share of highly educated individuals, population density, and the tax base—is retrieved from Statistics Sweden.

The results indicate that individual abilities reflected in the GPA are strongly influential when it comes to completing a university degree and on migration decisions after graduation. The effects of the regional characteristics are as expected, where individuals are less likely to migrate out of regions with a higher tax base, higher share of highly educated individuals, and a higher population density. Moreover, there is a negative and strong relationship between an individual's GPA and location in regions with higher per capita tax bases, higher population density, and larger share of highly educated. Descriptive statistics on the locations chosen by the migrants are also presented. This gives an indication of a systematic sorting by GPA within the highly educated group. The estimated correlation coefficient between the error term in the two equations in the bivariate probit model is positive, i.e., unobserved heterogeneity that increases the probability of graduation is associated with a higher probability of migration. In addition, a significant

correlation indicates that the bivariate probit model yields more efficient estimates compared to two separate binomial probit models. The results are very similar for the two cohorts and robust to changes in the specification of the model.

Paper [III]: Internal Migration of Young Adults—Heterogeneity in Effects on Labour Income by School Grades.

This study estimates the relationship between migration across labour market regions and the subsequent changes in earnings. A major purpose is to analyse heterogeneity among individuals in the return to migration by using GPA from the final year of comprehensive school as a proxy for ability. Generally, positive income effects of migration are found in previous studies, especially for highly educated men, while for those with less education and for women the results are more ambiguous (see, e.g., Nilsson, 2001; Eliasson *et al.*, 2007; Ham, 2011). This study extends the previous literature by allowing for heterogeneity in returns to migration within two education groups: university educated and non-university educated.

Swedish register data from the Linnaeus database is used in the econometric analysis. The sample includes two cohorts (born in 1974 and 1976) of individuals who were registered as single by age 26. Migration is observed between age 26 and 28. Different subsamples based on education, gender, and by GPA quartiles are also analysed.

The estimations are based on a difference-in-difference propensity score matching estimator. The parameter to be estimated is the Average Treatment Effect on the Treated in terms of how migration influences subsequent income. The propensity score for migration is estimated with a logit model and includes both individual and regional specific variables. The matching estimator is nearest neighbour matching, where the migrants are matched up with the four closest non-migrants in terms of their propensity score. Differences in income changes between migrants and non-migrants are compared up to seven years after migration.

The results show positive and significant returns to migration for the highly educated, while the low educated initially have a negative return to migration, which after four years following migration becomes insignificant. Furthermore, the results show variation between different ability groups with respect to the return to regional migration. Individuals belonging to the top GPA-quartile in the highly educated group have the highest returns to migration, which is most evident for the females. Generally, for the low educated, the returns to migration are insignificant.

Paper [IV]: Back to the Future: Migration, Matching, and the Power Couple Phenomenon in Sweden.

This study relates to a recent literature on "power couples," which are defined as couples where both partners have a strong human capital attainment, e.g. in the form of academic qualifications. Previous studies show that power couples are over-represented in metropolitan and urban regions, and focus has been put on explaining why they choose these types of locations (see, e.g., Costa and Kahn, 2000; Compton and Pollak, 2007). As an extension to previous literature, we examine the formation of power couples and their location choices to determine possible common traits of these processes. More specifically, one objective is to determine if there are some precursors that exist in the process of power couple formation and the location choices of such couples, which are inherent in young people during their formative school years. Another objective is to extend the analysis by studying what characteristics determine the choice of location in a small LMA, a medium size LMA, and a large LMA.

The econometric analysis is based on Swedish population register registry data from the Linnaeus database. The sample consists of two entire cohorts of individuals born in 1974 and 1976 who have a partner in 2006, i.e. the year of observation of the outcome variables. Two explanatory variables are of key interest: the GPA from the final year of compulsory school and the grade residual. The latter refers to the unobserved factors that explain the GPA when conditioning on parental background and the parish average level

of school achievement. The econometric framework consists of two models. The first is a trivariate probit model that jointly estimates three outcomes: completion of a university degree, matching with a highly educated spouse, and location in a metropolitan area. Secondly, a multinomial logit model with four different outcomes: (1) staying in the original LMA, (2) migration to a small LMA, (3) migration to a medium size LMA, and (4) migration to a large LMA. This follows closely the approach by Compton and Pollak (2007) but extends the analysis with additional controls for both school grades and the respective partner's region of origin.

The result indicates that school achievement is a significant determinant in the formation of power couples as well as in explaining the probability of locating in a metropolitan region. Other factors such as parental education and family income are also important in these processes. The evidence also points to the presence of self-selection arising from unmeasured heterogeneity, especially in couple formation and to a lesser extent in location choice. From the results of the multinomial logit, power couples show a high propensity to migrate from their LMA of origin to large LMAs. In addition, school grades are found to have a positive correlation with the probability of migration to a large LMA, even after controlling for formal educational attainment. One notable difference from the Compton and Pollak (2007) study based on U.S. data is that the educational attainment of the wife seems to have a stronger influence on the location choice.

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Appendix

Figure A. Map of Sweden by type of Labor Market Area.

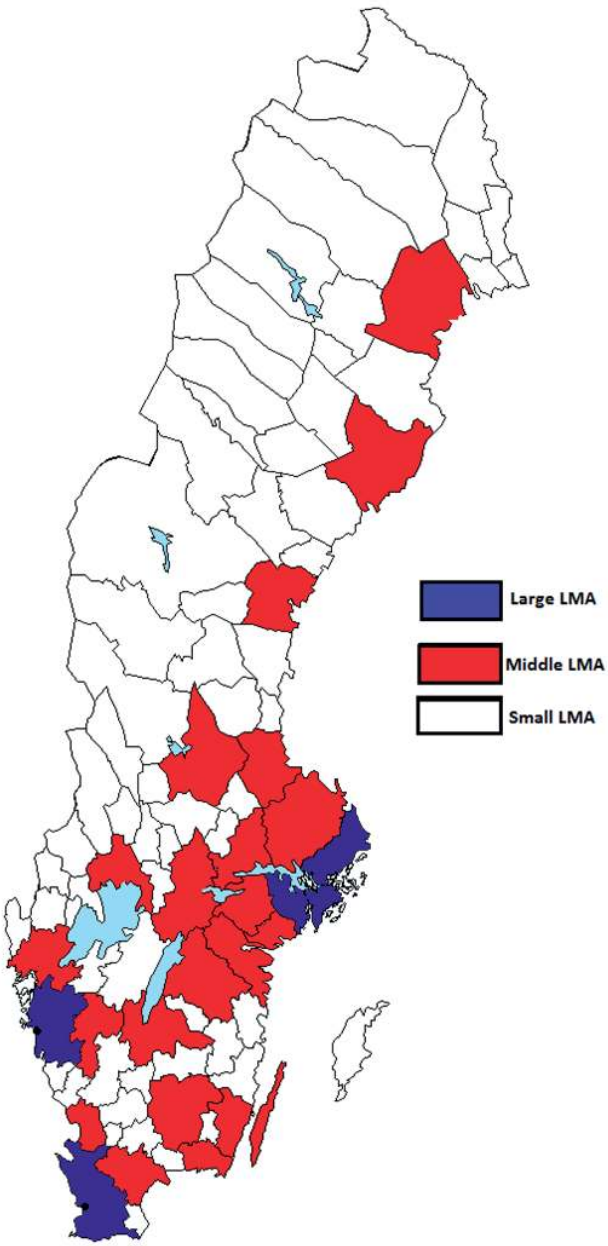
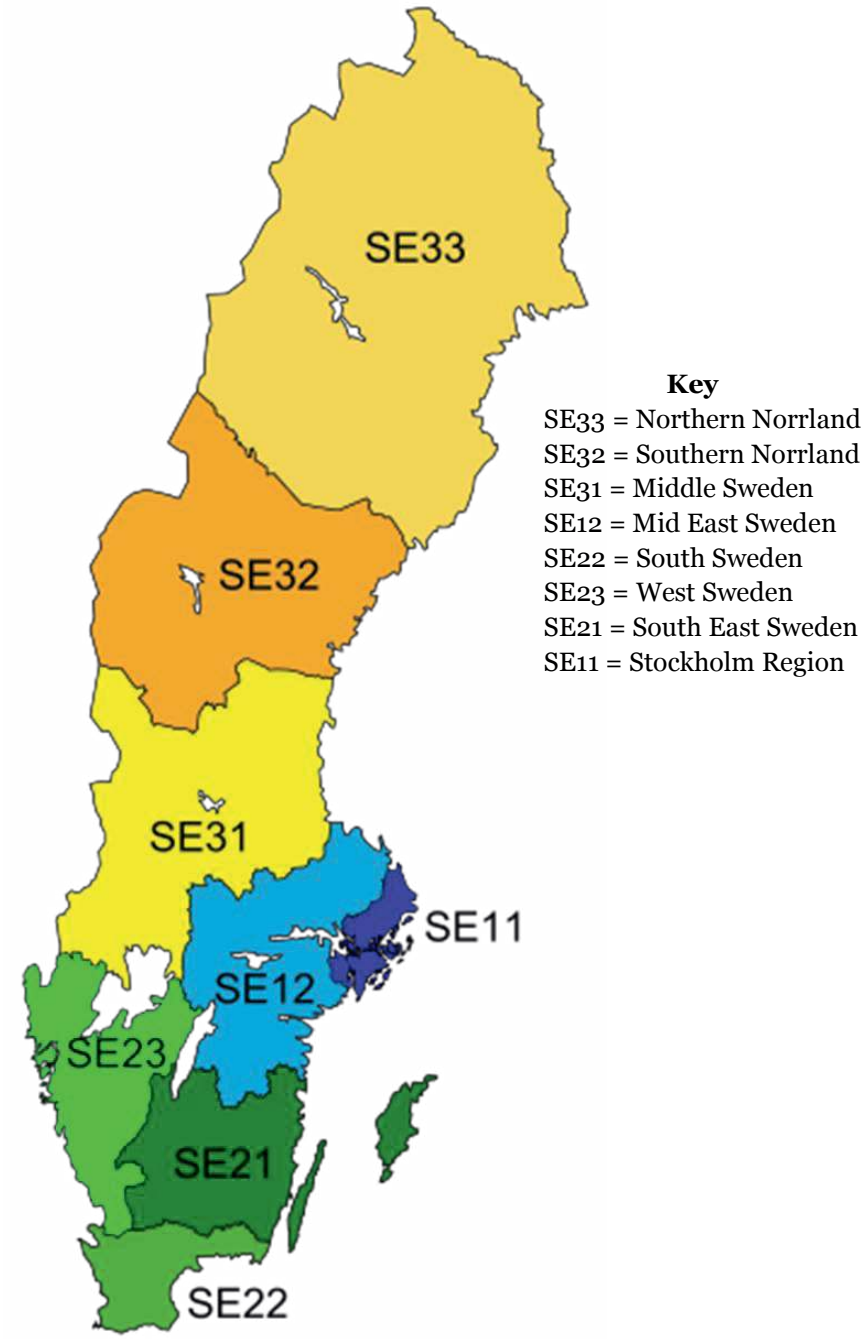


Figure B. Regional Divisions of Sweden according to NUTS2.



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