WHO PARTNERS UP? EDUCATIONAL ASSORTATIVE MATCHING AND THE DISTRIBUTION OF INCOME IN NZ

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SUMMARY HAIKU

Falling in love with
one as educated boosts
inequality.

INTRODUCTION

The phenomenon whereby the highly-educated have partners who are also highly-educated has gained attention in popular media and academic research as a driver of inequality.

Assortative matching is the selection of partners based on how similar they are in respect to certain characteristics. Traditionally, the pattern of partnering is selective on characteristics such as age and ethnicity. Educational assortative matching is the partnering of people with similar educational levels. Since education is often a significant predictor of income, patterns of partnering and changes to these patterns may influence the distribution of income at the family or household level.

We chose to examine New Zealand as it has experienced rising inequality, increased educational attainment and a relatively low, and falling, wage premium for higher levels of education.

The study of assortative matching and its effect on the distribution of income is important because the process of partnering not only holds implications for cross-sectional inequality but is important for the future of inequality as well. If couples are sorting on characteristics that are increasingly correlated with income, this will affect the current distribution of income as well. It may also influence the inter-generational transmission of inequality, depending on how resources are passed down on to the next generation and the extent to which any form of observable or unobservable advantage is conferred on offspring.

REASONS FOR THIS STUDY

This study makes four important contributions:

1. It is the first to formally examine the effect of assortative matching on the distribution of income in New Zealand.
2. We take a spatial approach which is unique in the extant literature.
3. We show the influence of population proportions on the ratio of actual matching to random matching.
4. We address the changing educational distribution issue through a counterfactual randomisation methodology and try to limit the possibility of joint labour supply responses by focusing on couples working full-time.

Access to the data used in this study was provided by Statistics New Zealand (SNZ) under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975.

DATA AND METHODOLOGY

The data used is from the unit records of the usually resident New Zealand population from each of the six Censuses of Population and Dwelling between 1986 and 2013. To test our results, we follow the additional randomisation counterfactual methodology.

Couples

Our target population are male-female partners who are usually resident in the same household. We focus on male-female couples because the census (especially the earlier ones) did not ask questions on the gender of partners.

Couples typically make joint decisions to participate in the labour force. Incomes are determined not only by education level (as a proxy for earning potential) but also by hours worked. The individual decision on hours worked may be influenced by the income or education level of a partner.

We therefore limit our analysis to those in the 25 to 64 age group working full-time and earning positive income. This helps limit joint labour supply responses through hours worked that may affect our estimates of the effect of assortative matching.

Location

Our subjects live in New Zealand's main and secondary urban areas. The rural population (14 percent) is excluded from the data. In addition to examining all urban areas together, we look at metropolitan areas (the six largest cities in New Zealand) as well as non-metropolitan areas (all other urban areas). Metropolitan areas account for about three quarters of all urban population.

Because bigger cities attract more people, especially educated people in their prime, more assortative matching may be expected in bigger cities. In addition, in New Zealand, all eight universities, which may function as a "meet market", are in the largest urban areas. These patterns may translate to higher inequality in metropolitan areas. Differences in rates of assortative matching may also explain some of the variation in inequality across space already documented in New Zealand.

Education

Education is measured in terms of qualification achievement. We have three categories:

- High-educated (those with a Bachelor degree and above),
- Other-educated (those with other forms of qualification but below the Bachelor level) and
- Low-educated (those with no qualification).

Income

Our income measure is the sum of personal income of individuals in couples. Our measure of inequality is the Mean Log Deviation, which is a measure of income inequality. The Mean Log Deviation is zero when everyone has the same income and takes larger positive values as incomes become more unequal, especially at the high end.

We assume each individual earns the average of the income band he or she belongs to, and we assume a Pareto distribution for the top open-ended band. Household income is assumed to be fixed and the effect of assortative matching on the distribution of income is estimated by comparing the observed distribution of income with a counterfactual distribution where matching is random. Although the method can be criticised for not accounting for labour supply responses determined within the model, we limit some of the impact of this issue in our study by focusing only on couples where both partners are working full-time.

RESULTS - EDUCATION

For all couples working full-time (regardless of educational level) , real average income increased by 28 percent between 1986 and 2013. As measured by the Mean Log Deviation, overall inequality for all couples working full time grew by around 49 percent although it varies considerably across different types of couple.

In 1986, only 9 percent of the individuals who were married or in a de facto relationship could be classified as high-educated. By 2013, this proportion was 32 percent. Educational attainment rose faster for women. In 1986, 51 percent more males than females were high-educated. By 2013 this proportion reversed with 36 percent more females than males. These changes in the educational distribution are significant and imply that even if underlying rates of assortative matching are un-changed, there will be more couples where both are high-educated simply because there is a huge increase in the number of educated individuals.

Education-matched couples represent about 60-63% of all couples. Interestingly, there is no clear upward trend in this percentage. Even without assortative matching, changes in the educational distribution would have led to a large increase in the proportion of couples with a high level of education attainment and a reduction of those with low level of education attainment.

Unsurprisingly, couples where both partners are highly educated had the highest mean incomes while couples with two low educated partners had the lowest average incomes in all periods. The gap between high-educated and low-educated couples widened over time; between 1986 and 2013, high-educated couples had the highest growth in average incomes at 19 percent compared to 6 percent for low-educated couples. The average income in couples with two high-educated partners was more than double that of low-educated partners (for all periods except 1986).

Inequality between couples grew 55 percent for couples with two high-educated partners, compared to only 1 percent growth for couples with a mix of one high-educated and a low-educated partner.

RESULTS - LOCATION

In all urban areas combined, inequality in total income of couples working full-time grew by around 49 percent between 1986 and 2013 whereas national total household income inequality grew around 14 percent. Income inequality for full-time couples earning positive income grew in both metropolitan and non-metropolitan areas, with growth between 1986 to 2013 in metropolitan areas (51 percent) higher than in non-metropolitan areas (30 percent).

Post 1986, in each educational group, assortative matching was higher in metropolitan areas than non-metropolitan areas and the difference across areas seem to be growing over time especially for high-educated and other-educated. This is unsurprising given that educated young people are attracted to metropolitan areas, which in New Zealand are also where universities are located.

In all urban areas, educational assortative matching increases over time driven by increases in the assortative matching for the other-educated. By educational group, assortative matching has declined for both the high-educated and low-educated groups. Spatially, we find higher and increasing rates of assortative matching in metropolitan areas compared to non-metropolitan areas.

RESULTS - OCCUPATION

As well as educational assortative matching, we examine assortative matching by occupation over the 1986 to 2013 period, as this is a strong predictor of income. Occupation assortative matching has decreased over time in all areas and is higher in non-metropolitan areas than metropolitan areas. This result possibly reflects the diversity of economic opportunities in the metropolitan areas compared to non-metropolitan areas.

POLICY IMPLICATIONS

Our results have implications for policies meant to address inequality. If people falling in love is a driver of significant differences in inequality across areas, then we might want to revise our expectations of the capability of government policies to address inequality. Policy may be more effective if it aims at enhancing geographic labour mobility to the extent that immobility imposes an economic disadvantage.

CONCLUSION

We find that educational assortative matching has increased but, contrary to some evidence overseas, this increase was driven by increased matching in the middle of the educational distribution.

Spatially, we find higher and increasing levels of educational assortative matching in metropolitan areas compared to non-metropolitan areas where assortative matching was lower and decreasing.

We find that educational assortative matching increased inequality in the distribution of income. For the full-time employed assortative matching is responsible for around 20 percent of observed inequality in each period.

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