

DISCUSSION PAPER SERIES

IZA DP No. 17437

**The Reversal of the Gender Gap in  
Education: Exploring its Consequences  
for Partnering, Employment and Voting  
Behaviour**

Martin Nordin  
Maria Stanfors

NOVEMBER 2024

## DISCUSSION PAPER SERIES

IZA DP No. 17437

# The Reversal of the Gender Gap in Education: Exploring its Consequences for Partnering, Employment and Voting Behaviour

**Martin Nordin**

*Lund University and Centre for Economic Demography*

**Maria Stanfors**

*Centre for Economic Demography, Lund University and IZA*

NOVEMBER 2024

Any opinions expressed in this paper are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but IZA takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The IZA Institute of Labor Economics is an independent economic research institute that conducts research in labor economics and offers evidence-based policy advice on labor market issues. Supported by the Deutsche Post Foundation, IZA runs the world's largest network of economists, whose research aims to provide answers to the global labor market challenges of our time. Our key objective is to build bridges between academic research, policymakers and society.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

ISSN: 2365-9793

**IZA – Institute of Labor Economics**

Schaumburg-Lippe-Straße 5–9  
53113 Bonn, Germany

Phone: +49-228-3894-0  
Email: [publications@iza.org](mailto:publications@iza.org)

[www.iza.org](http://www.iza.org)

## ABSTRACT

---

# The Reversal of the Gender Gap in Education: Exploring its Consequences for Partnering, Employment and Voting Behaviour

Women have made substantial gains in education and outperform men regarding educational attainment across the OECD, but the consequences of this reversal of the gender gap in education (RGE) have not been well researched. We address the association between the RGE and partnering, employment, and support for a right-wing populist party in Sweden. We explore the differential impacts of women's educational advancements versus men's lagging by using cross-sectional register data and within-area age variation in RGE. Results show that RGE is negatively associated with partnering and employment prospects among individuals with a low level of education. Results suggest that men's educational disadvantage may contribute to growing support for right-wing populist parties and that shifting gender gaps in education may foster frustration in various areas of life and anti-egalitarian values.

**JEL Classification:** J12, I24, Z13

**Keywords:** gender gap in education, partnership, employment, political opinion

**Corresponding author:**

Martin Nordin  
Agrifood Economics Centre and Department of Economics  
Lund University  
P. O. Box 730  
220 07 Lund  
Sweden  
E-mail: [Martin.Nordin@agrifood.lu.se](mailto:Martin.Nordin@agrifood.lu.se)

## 1. Introduction

Men have historically received more education on average than women (Goldin and Katz, 2009). While gender inequalities run deep and remain in most societies, women have made substantial gains in education worldwide in recent decades. Today, women are more educated than men as a group, and more likely to attain tertiary education across the OECD (Vincent-Lancrin, 2008; Parro, 2012; DiPrete and Buchmann, 2013; Van Bavel, Schwartz, and Esteve, 2018; Bertocchi and Bozzano, 2020). This phenomenon is often referred to as the reversal of the gender gap in education (RGE), and it accompanies growth in educational attainment. Much of this growth is due to the increase in women's educational attainment, a long-term process that has been attributed to several factors such as improvements in women's perceived labour market opportunities (Goldin, Katz, and Kuziemko, 2006), girls outperforming boys in terms of school grades (Fortin, Oreopoulos, and Phipps, 2015), rising age at first marriage, and the reduced costs of a lengthy professional education thanks to the "pill" (Goldin and Katz, 2002). However, the reversal of the gender gap in education can result from both increasing investments in education made by women and low investments in education among men. In many contexts a reversed gender gap existed because women's educational attainment continued to rise faster than men's and continued beyond convergence, which led to a growing gender gap between women and men at higher levels of education. Why men fell behind in terms of educational attainment and aspirations is still an open question. In addition, the consequences of this reversal of the educational gender gap (henceforth RGE) on a structural level remain largely unexplored. However, it is important to distinguish whether it is the advances made by women or the men falling behind in education that is affecting the gender gap, because the consequences may differ according to the root cause.

There is a growing body of research in economics and sociology which focuses on the gender gap in education and its development over time and across countries.<sup>1</sup> This literature has established that education transforms both individuals and societies in that it provides individuals with economic and social opportunities, improves well-being and independence, and leads to personal fulfilment, and also fosters economic development and growth and facilitates social mobility in societies. It is well documented that increasing levels of

---

<sup>1</sup> For a survey of the research on this topic, see, for example, Goldin and Katz (2009); DiPrete and Buchman (2006); Bertocchi and Bozzano (2020).

education, especially among women, have many benefits, though the violation of gender norms, including RGE, may be problematic. The structural consequences of RGE are, however, less well researched, though these are relevant for both the labour and marriage markets (Autor, Dorn, and Hanson, 2019; Lichter, Price, and Swigert, 2019) and potentially also for social norms (Off, 2023). In this study, we examine the impact of RGE on partnership formation, employment, and voting behaviour in support of a right-wing populist party.

Previous research on RGE has focused on exploring its effects on economic growth and partnership formation, with limited attention paid to its potential impact on political views, norms, and behaviour. The literature focusing on economic growth reveals controversy about whether a gender gap in education harms or boosts economic performance. According to Becker (1981), a gender gap in education, typically to the advantage of men, is in line with a traditional gender division of labour and specialization that benefits household well-being as well as economic growth. The contrary standpoint maintains that this gender gap typically inhibits economic growth because it reduces the pool of talent in the economy by restricting women realizing their full potential (Dollar and Gatti, 1999; Cuberes and Teignier, 2016). A meta-study by Minasyan and co-authors (2019) proposes that gender equality in education increases economic growth. However, the growth literature has investigated a historical context where the gender gap in education was closing, not a period in which economic growth coincided with its reversal. An increased demand for female labour (Cortes, Jaimovich, and Siu, 2018)<sup>2</sup> in combination with increasing gender complementarity in production (Ostry et al., 2018) may allow us to revise the finding from the growth literature and establish that a new type of gender *inequality* related to RGE may boost growth.

A mainly sociological literature has investigated whether a surplus of highly educated women affects partnership formation. With increased assortative mating (Goldin, 2006; DiPrete and Buchmann, 2013), RGE may stifle marriage opportunities generally. However, this literature primarily addresses the individual impact of education on marriage rates and not the structural impact of RGE on marriage opportunities, i.e., few studies have explored whether average educational differences between men and women affect partnership formation. Two exceptions are De Hauw et al. (2017) and Rodríguez-González (2021). De Hauw et al. (2017)

---

<sup>2</sup> Findings in the psychology and neuroscience literatures show that women have a comparative advantage in tasks requiring social and interpersonal skills (Cortes, Jaimovich, and Siu, 2018).

used data from 28 European countries to investigate whether the sex ratio in higher education (i.e., the number of women with higher education related to the number of men with the same level of education) affects the likelihood of singlehood. They found that RGE increases singlehood among less educated women. Rodríguez-González (2021) studied a major school reform in Finland to document causal relationships and found in the case of men a negative effect of RGE on both partnering and the number of children.

There is no established theory on the implications of RGE for different outcomes and hence, we have outlined a conceptual framework, drawing on economic theory (Becker, 1973) and previous research, on which to base the present study. We propose that RGE has a structural impact on both partnership formation and employment chances in a distinct (and negative) way which may generate frustration and discontent that influences one's general satisfaction with life and one's political preferences, especially if individuals tend to see the world in zero-sum terms (Chinoy et al., 2024).

In many ways the marriage market is like the labour market – they both involve competition (for mates or jobs), search costs, match quality, etc. In brief, if the labour market is tight, those who look for a job become less choosy and their reservation wage or minimum price level to accept goes down. Regarding the marriage market, RGE reduces the pool of suitable partners for women across the educational distribution but does so particularly for women with a tertiary education, as fewer men meet the minimum reservation quality for women's partner choices. This leads either to increasing singlehood and lower partnership formation rates (Abramitzky, Delavande and Vasconcelos, 2011)<sup>3</sup> or to women partnering below their reservation quality in terms of partner education, which may result in unsatisfactory matches, poorer marital quality, and divorce (Oppenheimer, 1997). Both outcomes generate dissatisfaction among both men and women. In the labour market, the structural impact is felt

---

<sup>3</sup> Abramitzky, Delavande and Vasconcelos (2011) investigate marriage pre-and post-WWI France, where more than 15% of the French male population died or went missing. The missing men were not evenly spread across the country, so the authors use spatial variation in the resultant sex ratios. The hollowing out of men meant that many women who would have married stayed single. While women at marriageable age around WWI stayed single, there was an increase in marriage for men because those who perhaps not have been chosen, got a better position in the marriage market due to the shortage of men. Uecker and Regnerus (2010) report similar results regarding relationship and dating experiences among college students, particularly for women in female-dominated institutions.

on the demand side. RGE creates more competition in some segments as highly educated women venture into previously male-dominated professions, but it also creates a more heterogeneous workforce, with widening gaps in education and skills between men and women. As more women attain higher education, women as a group get an advantage in the labour market, but this also fuels a transformation toward more female-dominated sectors. The outcome of such a development depends on complementarity and substitution effects. If high-skilled sectors are complementary, highly skilled labour benefits overall. However, following the substitution of low with high-skilled labour (see Machin and Van Reenen, 1998), RGE likely affects low-skilled labour negatively. This also risks generating dissatisfaction among groups that are adversely affected in the labour market.

Surprisingly few studies investigate the structural impacts of RGE, although RGE may have several important societal consequences. Western societies are moving in opposite directions at the same time: a progressive direction on the one hand where egalitarian values are gaining ground, and a populist anti-egalitarian direction<sup>4</sup> on the other. For Sweden it has been observed that gender values predict populist radical right voting (Off, 2023), and recently a Swedish study based on survey data found that 12 percent of male respondents agreed with the statement that feminism is a threat to Swedish security (Olsson Gardell, Wagnsson and Wallenius, 2022). It has also been found that young men, especially those in regions with rising unemployment and job competition, are most likely to perceive advances in women's rights as a threat to men's opportunities (Off, Charron and Alexander, 2022). A relevant question is thus whether RGE is related to this and whether it potentially increases support for right-wing populist parties that commonly propagate against the rights of women and sexual minorities.

The present study is set against the backdrop of women making substantial gains in education so that they now outperform men in this regard across the OECD. In Sweden, the gender gap in tertiary education (college or university) was reversed as early as the 1980s. In 1990, 3 percentage points (pp) more women than men had a tertiary education, yet the gender gap increased rapidly and was pronounced in 2017 when 14pp more women than men held this level of degree. Furthermore, the disparity between rural and urban areas in Sweden is also

---

<sup>4</sup> See also, for example, the special issue on Feminisms in Times of Anti-genderism, Racism and Austerity in *Women's Studies International Forum* (2018).

notable, with the gender gap in tertiary education being 5pp larger in rural than in urban areas (see Figure 1). This gap is largely due to the fact that men in rural areas are less likely to have a tertiary education than urban men and women in both rural and urban areas.<sup>5</sup> Such discrepancies have implications for the general rural-urban educational divide, which is a concern in many European countries and North America (Marré, 2017; van Maarseveen, 2021).<sup>6</sup> Thus, RGE is as much about women's educational improvement as it is about men falling behind (Autor and Wasserman, 2013).

To address the consequences of this, we investigated the association between RGE and partnering, employment in 2017, and support for a right-wing populist party – the Sweden Democrats (*Sverigedemokraterna*, henceforth SD) in 2022. By using cross-sectional register data, we explored within-area age variation in RGE and identified effect differences between rural and urban areas. We also investigated whether RGE stems from women's advancement in education or from men falling behind. To the best of our knowledge, this has not been explored before in the empirical literature on RGE. Our findings indicate an association between RGE and support for SD. This may be linked to the negative impact of a larger gender gap on low-educated individuals in both the marriage and labour markets. Our findings highlight the importance of continually addressing gender inequalities in education to promote a more equitable and inclusive society.

## **2. Data**

This study has used the Longitudinal Integration Database for Health Insurance and Labour Market Studies (LISA), matched with residence data on the 250×250 (for urban areas) and 1000×1000 (for rural areas) meter grid square level used for locating rural areas and election districts. Both data sources are provided by Statistics Sweden (SCB). LISA contains a broad range of indicators on demographics, labour market outcomes and level of education for the entire Swedish population (16 years and older) living in Sweden. These data were used to study almost 2.2 million individuals aged 25-45 in 2017. Election data on election districts for 2022 were merged using election district and grid square coordinates.

---

<sup>5</sup> In 2017, the share of men with tertiary education in rural areas was at the level of women 20 years earlier.

<sup>6</sup> In the US, RGE is also larger among minorities than white (Murnane, 2013; Snyder and Dillow, 2013).

## *2.1 Measuring RGE*

RGE is measured as the difference between the share of women with a tertiary education and the share of men with the same.<sup>7</sup> For the identification of RGE effects we used cohort and area variation in RGE. To achieve cohort variation, we calculated the difference in the share of men and women with a tertiary education in cohorts born +/- 5 years around the individual's birth year. We measured RGE by region for cohorts living in the same municipality and measured it separately for rural and urban areas within the same municipality.

The areal +/- 5 years pooling of individuals used for measuring RGE in each cell provides different interpretations for different outcomes. For partnership formation (i.e., marriage or cohabitation) the age variation is intended to capture the relevant pool of potential partners. For the labour market it captures the local labour supply for those close in age.<sup>8</sup> For the voting result it captures the population that likely influence an individual's political opinions.

The true pool of potential partners and the areal labour supply are not of course restricted to rural and urban areas. However, our data show that rural-urban patterns are important. The population in rural areas is largely overrepresented for those finding partners from rural areas,<sup>9</sup> and almost a third of the partners were in the same municipality at age 19. Labour markets are also more local than expected (Manning and Petrongolo, 2017): In Wales and England, a job offer 5 km away is much less attractive than a more local one. Workers are also hesitant to search for jobs in areas with strong job competition. In Sweden, two in three work and live in the same municipality (SCB, 2017).

---

<sup>7</sup> De Hauw et al., (2017) used the ratio in the number of women with a higher education to the number of men with the same instead of using the difference in shares. We prefer the difference over the ratio, for otherwise an equally large gap in percentage points results in different ratios when educational attainment increases generally.

<sup>8</sup> Cohort effects on the labour market are documented in several studies (Beadry, Green and Sand, 2014; Kahn, 2010; Oreopoulos, von Wächter and Heisz, 2012).

<sup>9</sup> Our data show that for women living in rural areas at age 19, the probability is 33.9 percent that her partner is also from a rural area. For men living in rural areas at age 19, the probability is even higher at 37.4 percent. The share is substantially higher for those who stay in rural areas: more than 50 percent of rural stayers partner with an individual from a rural area. These figures should be compared with the random incidence of rural partnerships which is 15 percent – the same as the share defined as living in a rural area at age 19. For men and women living in urban areas at age 19, the probability of finding a partner from a rural area is about half compared to the random incidence (7.7 percent for women and 8.4 percent for men).

## 2.2 Defining rural areas

In Sweden, the most common method for identifying rural areas typically relies on administrative boundaries, such as counties or municipalities. However, in our approach, we follow Eurostat's (2021) recommendation, which is based on population density. Nevertheless, because Sweden is generally much more sparsely populated than the EU, we use a population density threshold that is significantly lower than that applied in the EU. Otherwise, a considerable portion of Sweden would be classified as rural. The population density level has been chosen so that the rural population is roughly equivalent to the population living in rural areas based on administrative boundaries.<sup>10</sup> According to our method, rural areas are therefore defined as the 15 percent of the population residing in the least densely populated areas of Sweden. The advantage of this approach is that we could locate the rural and urban population *within* municipalities and base the identification of effects on a more granular level. Compared to a municipality-based approach of the rural population, our approach results in a 3 percent higher RGE in rural areas.

When calculating population density in each grid square (250 m<sup>2</sup> or 1000 m<sup>2</sup>), we based this on a wider circle around the square (15 km), which resulted in a measure that varies between squares but has less measurement error. This approach avoids having a small population in some squares driving the measure.<sup>11</sup>

## 2.3 Election data

We used data from the 2022 election, measured at the election district level. We could have used election data from 2018, but because norms and political views are likely to change slowly, an expected RGE effect on support for SD was more likely to show up in 2022 than in 2018. Additionally, the urban-rural difference in support for SD was more pronounced in 2022 than in 2018. In rural election districts, support for SD was 45 percent (or 8.1 percentage points) higher than in urban election districts.<sup>12</sup>

---

<sup>10</sup> Usually, 15-25 percent of the Swedish population is classified as living in rural areas (SCB, 2016; The Swedish Government Offices, 2017).

<sup>11</sup> For more information about the method, see Nordin (2020).

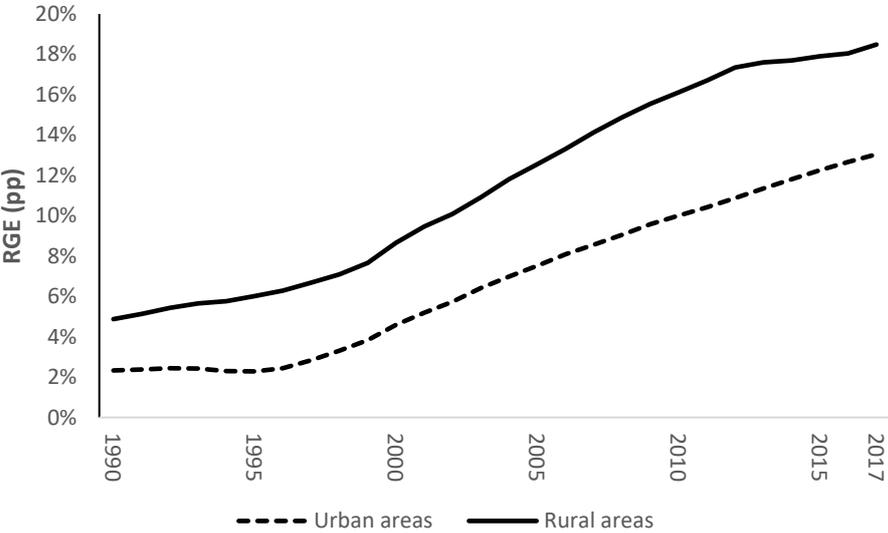
<sup>12</sup> Our within-municipality classification of urban and rural areas shows a much larger urban-rural election gradient for SD than does a comparison of rural and urban municipalities (see, for example, <https://infostat.se/content/uploads/2022/09/sveriges-politiska-geografi-2022.pdf>).

There were 6,265<sup>13</sup> election districts for the 2022 election. By matching the grid squares to the election districts using coordinates, we could determine the district in which voters resided. Each municipality consists of many election districts, and each district contained around 1,000-2,000 voters. An election district does not overlap municipal borders, but it may contain both rural and urban areas. However, 77.1 percent of the districts contain only urban areas and 11.3 percent contain only rural. For the 11.5 percent of the districts containing both rural and urban areas, most are either predominantly rural or predominantly urban (in 75 percent of the mixed districts, three-fourths of the voters live in either a rural or urban area).

**3. RGE over time, space, and age**

*3.1 RGE developments over time and for rural and urban areas*

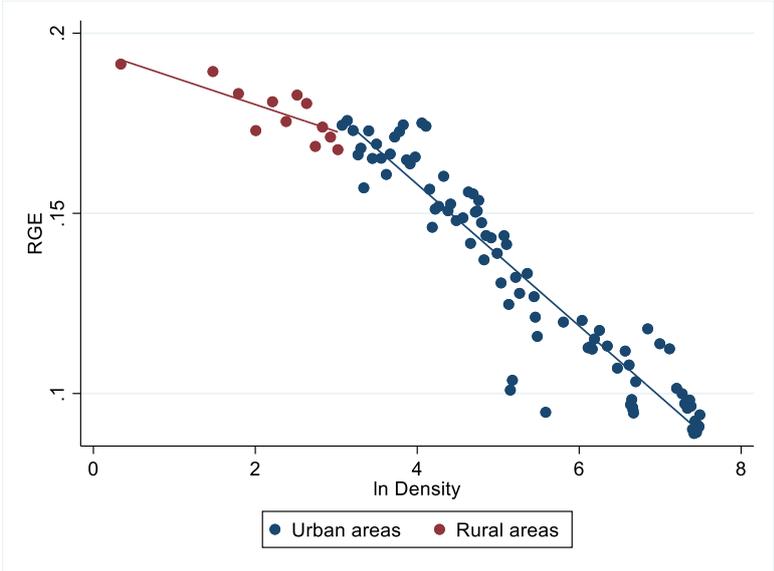
Figure 1 shows the change in RGE between 1990 and 2017 for rural and urban areas. In the early 1990s, 5pp and 2pp more women than men had a tertiary education in rural and urban areas respectively. The end of the 1990s saw an increase in RGE, and in 2017 18.5pp and 13pp more women than men had a tertiary education in rural and urban areas respectively.



**Figure 1.** Developments in RGE (in percentage points) for urban and rural areas between 1990 and 2017.

<sup>13</sup> There are also 315 districts representing external votes posted by Swedish citizens living abroad.

As further motivation for our approach, Figure 2 shows the relationship between RGE and population density (measured as the natural logarithm of population per km at grid level) in 2017. There is a clear (negative) relationship between these with a stronger reversal in the gender gap of education in less densely populated, rural areas.



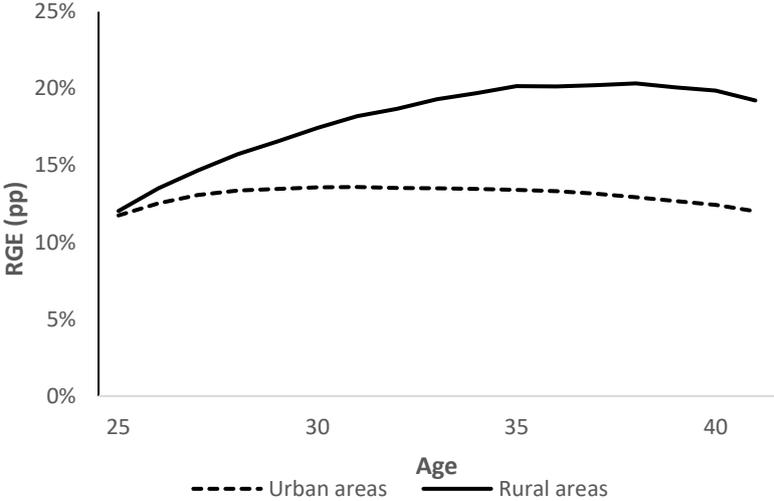
**Figure 2.** The relationship between RGE and population density (measured as the natural logarithm of population per km at grid level) in 2017.

*3.2 The age gradient in RGE*

In section 2.1, we specified that the RGE variation used in this study is the local (rural or urban areas within municipalities) age gradient in RGE. An understanding of the drivers for this variation is important from both an empirical and a policy perspective. In Figure 3, we show the age gradient in RGE for 2017. Since RGE increased over time (see Figure 1), a decreasing age gradient may be expected because older cohorts undertook their education when RGE was smaller, while younger cohorts participated in a more gender-equal system regarding both level and field of education (Stanfors 2003, Ch. 6). However, there is only a clear decrease in RGE for urban areas, and only in the case of ages 39-41.

Instead, late investments in education are the main drivers behind the positive age gradient in RGE in rural areas. For the cohorts studied, 11 and 17 percent of men and women respectively attained their highest level of education after age 30. More importantly, however, late educational investments are much more common (by 132 percent) among women than

men in rural areas. In urban areas, investments in education after age 30 are 43 percent more common among women than men. Thus, a positive age gradient in RGE in rural areas is the result of women’s late educational investments. Some women may invest in more education because partnership opportunities are limited, but also because jobs requiring only a basic education are limited or because career opportunities improve the higher the level of education. This is especially true for the education and care sectors, which hire a large proportion of women and are important employers in both rural and urban areas.



**Figure 3.** Age-related variation in RGE for urban and rural areas in 2017.

Another explanation for the rural-urban gradient in RGE is migration. Because women are more likely to migrate from rural to urban areas, and internal migrants are generally more educated than individuals who stay in one region, migration patterns may affect the age gradient in RGE. Thus, an outflow of individuals with a tertiary education from rural areas may decrease the age gradient in RGE in rural areas. However, migration pushes this age gradient down further. This is because RGE increases with age for stayers more than it does for migrants due to the stayers’ late education investments. In fact, without an inflow of migrants into rural areas, the age increase in RGE (as seen in Figure 3) would be larger, about 10pp instead of 8pp. In urban areas, RGE only increases with age for stayers and not for internal migrants.<sup>14</sup>

<sup>14</sup> The composition of movers and stayers may also impact RGE. In rural areas, this does not affect RGE because the gender difference in the share of internal migrants is constant across ages. That is, even if internal migrants

To sum up, the positive age gradient in RGE in rural areas depends on women being more likely than men to engage in late educational investments and upgrade their skills as they age, although to some extent this trend is counteracted by an inflow of older internal migrants for which RGE is lower. The same trends are found in urban areas, but here it is less common for women to study at an older age and there is an inflow of older (highly educated) male internal migrants, which decreases RGE further. In a sensitivity analysis where we controlled for the share of immigrants as well as internal migrants, we concluded that women's propensity to engage in education throughout the life course is the important variation affecting our dependent variables, i.e., the results do not change when taking migration into account.

#### 4. Empirical specification

We have specified a model where the dependent variable,  $y$ , is regressed on age fixed effects,  $\alpha_j$  for age group  $j$ , and on dual municipality fixed effects (one for urban areas and one for rural areas in a municipality),  $\delta_k$  for area  $k$ <sup>15</sup>. The dual municipality fixed effects are intended to capture spatial variation in educational opportunities, labour market characteristics and norms. For identification of the RGE coefficient, we used the age variation in RGE within areas. To distinguish between RGE variation linked to a relatively high level of education among women and that linked to a relatively low level of education among men (see explanation of the two below), we specified two similar equations:

$$y_{ijk} = \alpha_j + \delta_k + \beta^U RGE_{jk}^U + \beta^R RGE_{jk}^R + \gamma^U \text{Male education}_{jk}^U + \gamma^R \text{Male education}_{jk}^R + X_i + \varepsilon_{ijk} \quad (1)$$

$$y_{ijk} = \alpha_j + \delta_k + \beta^U RGE_{jk}^U + \beta^R RGE_{jk}^R + \gamma^U \text{Female education}_{jk}^U + \gamma^R \text{Female education}_{jk}^R + X_i + \varepsilon_{ijk} \quad (2)$$

The main independent variable, the age variation in  $RGE$ , was estimated separately for urban,  $U$ , and rural,  $R$ , areas. To achieve separate effects,  $RGE^U$  is zero for rural areas, and vice

---

make up a larger share of the population at age 40 than 25, the female population constitutes approximately 10 percent more internal migrants than the male population at both age 40 and 25. However, in urban areas female migrants are more common than male at a young age: at age 25 the female population constitutes 8 percent more internal migrants than the male population, but at age 40 the difference is only 3 percent. This indicates that men move to urban areas at an older age than women.

<sup>15</sup> However, while the number of municipalities is 290, only 168 of them contain both rural and urban areas, which implies that  $k$  equals 458.

versa. To control for differences in average education levels (between cohorts) within areas, we added either that of men, *Male education*<sup>U</sup>, or that of women, *Female education*<sup>U</sup>, separately for urban, *U*, and rural, *R*, areas. We also controlled for the share of women in *jk*, and for individual characteristics,  $X_i$  (years of schooling, having a tertiary education, annual labour income<sup>16</sup>, and whether the individual was foreign-born).

Because both *Female education* and *Male education* capture differences in the level (and not the size) of *RGE*,  $\gamma^{U/R}$  is the same in models (1) and (2)<sup>17</sup>. That said, controlling for *Female education* or *Male education* affects  $\beta$ . When keeping the level of education for men fixed, *RGE* varies with women's level of education, and when keeping the level of education for women fixed, *RGE* varies with that of men. Thus, equations (1) and (2) capture different variations in *RGE*, i.e., in (1) we identified the association between  $y$  and a relatively *high* level of education among women, and in (2), we identified the association between  $y$  and a relatively *low* level of education among men.

For individual outcomes in terms of partnership formation and employment, the *RGE* effect was identified from the age variation in *RGE* within areas. It was identified as the relationship between the individual probability of partnership or employment and the age variation in *RGE*. For the election result, the *RGE* effect was instead identified from the *distribution* of age variation in *RGE* as seen in the election result. Specifically, it shows whether the election result for the SD party is higher (or lower) if many voters in a district belong to a gender-age cell with a high *RGE*. Hence, we could estimate different models for men and women with the same dependent variable. This should not be interpreted to mean we were capturing male and female voting patterns but seen rather as an indication of whether the net effect on the election outcome is influenced by including men's or women's individual characteristics.

## 5. Results

### 5.1 Partnership formation

---

<sup>16</sup> Labour income is not included when investigating the relationship between *RGE* and employment because of endogeneity.

<sup>17</sup> When *RGE* is fixed, measures of female and male education capture the same change in average education levels.

Table 1 reports the main results by gender. Column (1) for men and column (2) for women show the association between RGE and partnership for partnership (both marriage and non-marital cohabitation, which is common in Sweden). An increase in RGE due to an increase in women's average education level means a decrease in the individual probability of being partnered in both rural and urban areas. This negative association is larger for women, at around 0.6-0.7, than for men, at around 0.2-0.4, and is somewhat larger for rural areas than for urban.

**Table 1.** The association between RGE and partnership, employment, and the election result for SD.

	Partnership		Employment		SD vote	
	Women	Men	Women	Men	Women	Men
<b>Change in RGE</b>						
<i>Change due to women's education:</i>						
Rural area	-0.718** (0.115)	-0.386** (0.090)	0.069* (0.035)	-0.001 (0.039)	-0.053** (0.012)	-0.046** (0.012)
Urban area	-0.600** (0.173)	-0.179** (0.089)	0.020 (0.041)	0.103 (0.069)	-0.022 (0.018)	-0.011 (0.014)
<i>Change due to men's education:</i>						
Rural area	0.119 (0.124)	0.059 (0.110)	0.077 (0.048)	0.062 (0.050)	0.030** (0.008)	0.030** (0.008)
Urban area	-0.425* (0.215)	-0.130 (0.154)	0.005 (0.047)	0.040 (0.085)	0.055** (0.019)	0.054** (0.013)
<b>Change in level of education</b>						
Rural area	-0.836** (0.167)	-0.444** (0.121)	-0.008 (0.040)	-0.0625 (0.041)	-0.083** (0.016)	-0.076** (0.016)
Urban area	-0.174 (0.160)	-0.049 (0.124)	0.014 (0.027)	0.063 (0.033)	-0.076** (0.015)	-0.065** (0.015)
Observations	1,073,275	1,114,489	1,073,275	1,114,489	1,073,276	1,114,489
R-squared	0.122	0.170	0.128	0.058	0.014	0.020
Number of areas	458	458	458	458	458	458

Notes: Partnership includes both formal marriage and non-marital cohabitation. Employment is defined as having a positive annual income from work or business. *SD vote* refers to the election result for the Sweden Democrats party at the election district level. Models control for age and area fixed effects and share of women at area level, and years of schooling, having a tertiary education, annual labour income, and foreign-born at individual level. \*\* p<0.01, \* p<0.05. Robust standard errors in parentheses.

Figure A1, which plots the estimated relationship between RGE and partnership, shows a particularly clear relationship for women in rural areas. A one percentage point higher share of women with tertiary education (holding the share of men with tertiary education constant) resulted in a lower probability of being in a partnership for women in rural areas at 0.7 percentage points. In comparison, if the individual has a tertiary education this resulted in a lower probability of partnership for women by 6 percentage points (result not reported but available from authors). That said, an increase in RGE due to a lower education level among men has a negative effect only on women in urban areas. However, even if the RGE coefficient is relatively large at -0.4 in this case, Figure A1 shows no clear relationship. In combination with the insignificant results for women in rural areas and for men in both urban and rural areas, we conclude that RGE variation due to changes in men's education level does not generally affect partnership formation.

The significant RGE coefficient reported (where there was an increase in women's education level) could be related to a relationship between migration and partnership formation. However, two sensitivity tests (see Table A1 and Table A2) show that the association was unaffected by the inclusion of the share of immigrants and internal migrants and was likewise unaffected by the removal of foreign-born individuals. Our results are also robust to the inclusion of other control variables. Moreover, Table A3 shows that when we omit individual-level control variables and the share of women the coefficients are generally of the same size.<sup>18</sup>

## *5.2 Employment*

For women in rural areas (column (3)), a positive relationship between RGE and employment is found where there was an increase in women's education level. Figure A2, which plots the relationship, supports this result. However, the inclusion of migration controls (see Table A1) renders the relationship insignificant. Nevertheless, heterogeneous effects may mask a

---

<sup>18</sup> An exception is found for men in urban areas. In an unadjusted model without controls, the RGE effect on partnership (due to women's higher level of education) is not significant.

relationship between RGE and employment: conditioning on the individual's level of education reveals significant coefficients, as shown below (Table 2).<sup>19</sup>

### *5.3 Election result for SD*

An increase in RGE in rural areas due to a higher level of education among women is associated with lower support for SD, measured as election results in 2022. However, in 2022 an increase in RGE in both rural and urban areas due to a lower level of education among men was associated with stronger support for the party (and was twice as large in urban areas). These significant results are clearly supported by Figure A3 and are robust to the adjustment by different sets of control variables and by removing the foreign-born share of the population (see columns 5 and 6 in Tables A1-A3). We expected similar results for men and women because the dependent variable is the same but, apparently, different impacts of the control variables and large differences in gender compositions generate somewhat different point estimates.

In sum: RGE variation due to a higher level of education among women means fewer cases of partnership formation. As regards employment, RGE is found to have a positive impact on women in rural areas, but the findings below show that conditioning on own education affects the result. As regards the election result for SD, RGE has a varying impact depending on whether the result of changes in level of education apply to women or men: changes in RGE related to women's education mean a poorer election result, while changes in RGE related to men's education mean a better one and more support for SD. Also, women seem to be more affected than men by RGE. Finally, when it comes to the impact of general changes in education level (when RGE is consequently unchanged), the expected results are found for partnership formation and the election result for SD, i.e., higher education is associated with a lower level of partnership formation and lower support for SD. However, for employment no expected positive association is found.

### *5.4 RGE effects for individuals with a low or high level of education*

---

<sup>19</sup> Notably, without the use of control variables, positive RGE coefficients are found where there is an increase in women's level of education (see Table A3).

In Table 2 the relationships between RGE and partnership or employment<sup>20</sup> are estimated separately for individuals with a low level of education (i.e., lower than a three-year high school degree) and those with a higher education (three-year high school degree or more). For partnership, the RGE coefficients (when there is an increase in women's education level) are significantly more negative for those with a low level of education than for those with a higher education. A negative impact of RGE in general (regardless of level of education) indicates a preference for homogamy, i.e., finding a partner with the same level of education. Van Bavel, Schwartz and Esteve (2018) referred to this as *compositional change*. A significantly larger impact of RGE on partnership for individuals with a low education indicates a preference for partners with a higher education, which Van Bavel, Schwartz and Esteve referred to as *preference shifting*. Our results suggest that both explanations are valid: compositional change (a general increase in mismatch), and preference shifting (which is more negative for women with a low education level).

For employment, the results differ from the general results presented in Table 1. RGE has a positive impact on employment for more highly educated individuals, indicating complementarity between men's and women's levels of education. This means that when the share of women with a tertiary education is higher than that of men, this benefits both more highly educated men and women in terms of employment.<sup>21</sup> In addition, a negative impact of RGE on employment for individuals with a low education indicates labour substitution between more highly educated women and individuals (both men and women) with a low education. Moreover, this substitution effect is larger than the complementarity effect among more highly educated individuals. To summarise, RGE benefits those with a higher education and disadvantages those with a lower level.

---

<sup>20</sup> Without individual variation in the dependent variable, the relationship between RGE and SD voting cannot be estimated for different educational groups.

<sup>21</sup> Of note, the results presented in Table 2 are the same for both urban and rural areas, irrespective of an increase in RGE due to changes in men's and women's level of education.

**Table 2.** The association between RGE and outcomes for individuals with a low or high level of education.

	Partnership		Employment	
	Women	Men	Women	Men
<b>Change in RGE:</b>				
<i>Change in women's education:</i>				
Rural area: low education	-1.188** (0.121)	-0.529** (0.094)	-0.356** (0.052)	-0.358** (0.048)
Rural area: high education	-0.623** (0.119)	-0.318** (0.087)	0.170** (0.036)	0.100* (0.039)
Urban area: low education	-1.061** (0.184)	-0.284** (0.091)	-0.499** (0.052)	-0.284** (0.0724)
Urban area: high education	-0.522** (0.176)	-0.133 (0.0872)	0.124** (0.0424)	0.215** (0.070)
<i>Change in men's education:</i>				
Rural area: low education	-0.138 (0.112)	-0.0983 (0.110)	-0.339** (0.064)	-0.283** (0.057)
Rural area: high education	0.149 (0.113)	0.112 (0.111)	0.187** (0.047)	0.175** (0.050)
Urban area: low education	-0.551* (0.227)	-0.250 (0.158)	-0.514** (0.061)	-0.354** (0.089)
Urban area: high education	-0.390 (0.209)	-0.0983 (0.154)	0.109* (0.049)	0.145 (0.088)
Observations	1,073,276	1,114,704	1,073,275	1,114,704
R-squared	0.120	0.170	0.132	0.062
Number of areas	458	460	458	460

Notes: See Table 1.

### 5.5 Limitations

We come by the results by acknowledging the following limitations. First, we cannot claim causality, and the main threat to our identification strategy is the presence of cohort-specific spatial trends that differentially affect men's and women's educational investments and our outcomes. This may stem from demographic changes in the population, but since migration patterns do not affect the results, we do not believe that other types of demographic changes pose a significant problem. It is also possible that primary schools are failing to improve boys' academic performance, which could simultaneously create a value-based gap between the sexes. Such a mechanism is essentially the focus of this study and could start earlier than that we have modeled in this study. Moreover, a longitudinal study could provide a more nuanced understanding of how the effects of RGE evolve over time. However, it should be

noted that our cross-sectional approach incorporates a time dimension through age-based cohort variation, minimizing concerns about specific yearly trends interfering with identification. Finally, the optimal method for defining the pool of individuals that influence each person at a certain point in time is unclear, and there may well be a better approach than the one we have pursued here, though it is not clear what a more effective strategy would have been given our focus on differences between rural and urban areas.

## **6. Conclusions**

This study was motivated by the general trend in women outperforming men in educational attainment, which is a remarkable advance that challenges gender norms and creates a new type of gender inequality with potential implications for both labour and marriage markets. However, the consequences of this reversal of the gender gap in education (RGE) remain understudied. We addressed this knowledge gap by investigating the association between the RGE and partnership formation, employment, and support for a right-wing populist party called the Sweden Democrats (*Sverigedemokraterna* or SD) in present-day Sweden. The latter has increased in parallel with the reversal of the gender gap in education in Sweden as well as in many other countries. One important finding is that support for SD is linked to the gender gap in education. Specifically, in Sweden, a larger gender gap resulting from women's investments in tertiary education reduces the support for such parties, while relatively low investments in tertiary education by men increases that support. It is worth noting that this study conditions for the overall amount of tertiary education in the population, thus identifying gender difference as the explanatory factor.

The potential explanations for these results include mechanisms related to processes in both marriage and labour markets. In the marriage market, relatively high levels of education among women decrease the likelihood of both men and women being in a heterosexual partnership. This is due to preferences for partners with a similar level of education (assortative mating) or more highly educated partners, which implies a greater negative impact on individuals with a low education. Lower probability of partnership among women with a low education is in line with a shifting education gradient in marriage in the U.S. and other high-income countries. In the past, research emphasized female independence from men as their education levels increased. Today, we know that more highly educated women are more likely than those with a low education to marry or perhaps even marry "economically attractive" partners. In the labour market, a large gender gap in education leads to the

increased employment of individuals with high education, indicating labour complementarity between highly educated men and women. Conversely, labour substitution is documented between individuals with a higher level of education and those with a lower level, i.e., a larger gender gap in education level means a decrease in the employment of individuals with a lower level.

If increased support for right-wing parties is interpreted as political discontent and a reaction to frustration in different domains of life, the findings from the present study suggest that men falling behind in education and failing in the marriage and labour markets may provide an important explanation. When those who have a lower level of education experience that gender differences in education are associated with negative consequences, they may become more receptive to the traditional or even anti-egalitarian values expressed by right-wing populist parties, especially if they interpret the world in zero-sum terms. This phenomenon is prevalent across groups but has different within-group implications (Chinoy et al., 2024). Although scientists as well as politicians often see that it is possible to have an economy and markets where all groups rise and gain agency and independence, and where relative position matters less than absolute growth, it is not how all individuals perceive reality, especially not in times of stagnation or perceived loss of status. However, it is worth noting that the relationship between political discontent and the gender gap in education is twofold, with support for such parties being primarily related to men falling behind women, and the consequent difficulties of finding a partner or employment.

It is also important to note that the gender gap in education in rural areas is driven mainly by women being more prone than men to invest in education after age 30. This may explain why the consequences of this gap are larger in rural than in urban areas. Additionally, late investments in education may have impacts that are qualitatively different from those of tertiary education investments made directly after high school. Finally, we argue that men falling behind is an explanation fundamentally different from that of women's advanced academic achievements.

In terms of values, we believe RGE amplifies existing gender differences rather than creating new ones. Women have historically been more left-leaning politically and have prioritized welfare issues more than men (Oskarson and Ahlbom, 2021). Further research on this development and the direct consequences of a reversal of the gender gap in education is vital.

**Acknowledgment**

This research was conducted within the project 'Educational assortative mating and inequality. Consequences of changing family dynamics in Sweden, 1970-2020' funded by the Swedish Research Council for Health, Working Life and Welfare (Forte (Dnr 2020-00323)). The funding agency played no role in the research process.

## References

- Abramitzky, R., Delavande, A. and Vasconcelos, L. (2011). "Marrying up: The Role of Sex Ratios in Assortative Mating." *American Economic Journal: Applied Economics* 3(3): 124–157.
- Autor, D. and Wasserman, M. (2013). *Wayward Sons. The emerging gender gap in labor markets and education*. Washington, D.C.: The Third Way.
- Autor, D., Dorn, D. and Hanson, G. (2019). "When Work Disappears: Manufacturing Decline and the Falling Marriage Market Value of Young Men." *AER: Insights* 1(2): 161–178.
- Beadry, P., Green, D. and Sand, N. (2014). "The Declining Fortunes of the Young Since 2000." *American Economic Review* 104(5): 381–386.
- Becker, G. S. (1973). "A Theory of Marriage: Part I." *Journal of Political Economy* 81(4): 813–846.
- Becker, G. (1981). *A Treatise on the Family*. Chicago: University of Chicago Press.
- Bertocchi, G. and Bozzano, M. (2020). "Gender Gaps in Education." In K. F. Zimmermann (Ed.), *Handbook of Labor, Human Resources and Population Economics*, (pp. 1–31). Cheltenham: Springer.
- Chinoy, S., Nunn, N., Sequeira, S. and Stantcheva, S. (2024). "Zero-Sum Thinking and the Roots of U.S. Political Divides." NBER Working Paper No. 31688.
- Cortes, G. M., Jaimovich, N. and Siu, H. (2018). "The "End of Men" and Rise of Women in the High-Skilled Labor Market." NBER Working Paper No. 24274.
- Cuberes, D. and Teignier, M. (2016). "Aggregate effects of gender gaps in the labor market: A quantitative estimate." *Journal of Human Capital* 10(1): 1–32.
- De Hauw, Y., Grow, A. and Van Bavel, J. (2017). "The reversed gender gap in education and assortative mating in Europe." *European Journal of Population* 33(4): 445–474.
- DiPrete, T. and Buchmann, C. (2013). *The Rise of Women. The Growing Gender Gap in Education and What It Means for American Schools*. New York: Russell Sage Found.
- Dollar, G. and Gatti, R. (1999). "Gender inequality, income and growth: Are good times good for women?" The World Bank. Policy research report on gender and development. World Bank Working Paper.
- Eurostat (2021), Applying the Degree of Urbanisation. A methodological manual to define cities, towns and rural areas for international comparisons, 2021 edition.
- Fortin, N., Oreopoulos, P. and Phipps, S. (2015). "Leaving Boys Behind: Gender disparities in high academic achievement." *Journal of Human Resources* 50(3): 549–557.

- Olsson Gardell, E-K., Wagnsson, C. and Wallenius, C. (2022). "The Evolving Security Landscape: Citizens' Perceptions of Feminism as an Emerging Security Threat." *European Journal for Security Research* 7: 67–86.
- Goldin, C. (2006). "The Quiet Revolution That Transformed Women's Employment, Education, and Family." *American Economic Review* 96(2): 1–21.
- Goldin, C. and Katz, L. (2002). "The Power of the Pill: Oral contraceptives and women's career and marriage decisions." *Journal of Political Economy* 110: 730–770.
- Goldin, C. and Katz, L. (2009). *The Race Between Education and Technology*. Cambridge: Belknap Press.
- Goldin, C., Katz, L. and Kuziemko, I. (2006). "The Homecoming of American College Women: The Reversal of the College Gender Gap." *Journal of Economic Perspectives* 20(4): 133–156.
- Kahn, L. B. (2010). "The Long-Term Labor Market Consequences of Graduating from College in a Bad Economy." *Labour Economics* 17(2): 303–316.
- Lichter, D., Price, J. P. and Swigert, J. M. (2020). "Mismatches in the Marriage Market." *Journal of Marriage and Family* 82(2): 796–809.
- Machin, S. and Van Reenen, J. (1998). "Technology and Changes in Skill Structure: Evidence from Seven OECD Countries." *The Quarterly Journal of Economics* 113(4): 1215–1244.
- Marré, A. (2017). "Rural Education at a Glance." Economic Information Bulletin No. 171. United States Department of Agriculture, Economic Research Service.
- Manning, A. and Petrongolo, B. (2017). "How Local Are Labor Markets? Evidence from a Spatial Job Search Model." *American Economic Review* 107(10): 2877–2907.
- Minasyan, A., Zenker, J., Klasen, S. and Vollmer, S. (2019). "Educational Gender Gaps and Economic Growth: A systematic review and meta-regression analysis." *World Development* 122: 199–217.
- Murnane, R. (2013). "U.S. High School Graduation Rates: Patterns and Explanations." *Journal of Economic Literature* 51(2): 370–422.
- Nordin, M. (2020). Att leva i land och stad – ett djupare perspektiv på inkomstfördelning. Agrifood Economics Centre rapport 2020:2.
- Off, G. (2023). "Gender equality salience, backlash and radical right voting in the gender-equal context of Sweden." *West European Politics* 46(3): 451–476.

- Off, G., Charron, N. and Alexander, A. (2022). “Who perceives women’s rights as threatening to men and boys? Explaining modern sexism among young men in Europe.” *Frontiers in Political Science* 4: 1–15.
- Oppenheimer, V. K. (1997). Women’s employment and the gain to marriage: The specialization and trading model. *Annual Review of Sociology*, 23(1): 431–453.
- Oreopoulos, P., von Wächter, T. and Heisz, A. (2012). “The Short- and Long-Term Career Effects of Graduating in a Recession.” *American Economic Journal: Applied Economics* 4(1): 1–29.
- Oskarson, M. and Ahlbom, J. (2021). “Trender i könsskillnader bland svenska väljare.” Valforskningsprogrammets rapportserie 2021:1. University of Gothenburg: The Department of Political Science.
- Ostry, J., Alvarez, J., Espinoza, R. and Papageorgiou, C. (2018). “Economic Gains from Gender Inclusion: New Mechanisms, New Evidence.” IMF Discussion Note SDN/18/06.
- Parro, F. (2012). “International Evidence on the Gender Gap in Education over the Past Six Decades: A Puzzle and an Answer to It.” *Journal of Human Capital* 6(2): 150–185.
- The Swedish Government Offices (2017). Sweden – Rural Development Programme (National).
- Rodríguez-González, A. (2021). “The Impact of the Female Advantage in Education on the Marriage Market.” Working Paper 2021:5. Department of Economics, Lund University School of Economics and Management.
- SCB (2016). Tätorter, befolkning och arealer. Sveriges officiella statistik, Statistiska meddelande MI 38 SM 1601.
- Snyder, T. and Dillow, S. (2015). “Digest of Education Statistics 2013.” National Center for Education Statistics, U.S. Department of Education. Washington, D. C.
- Stanfors, M. (2003). *Education, Labor Force Participation and Changing Fertility Patterns. A Study of Women and Socioeconomic Change in Twentieth Century Sweden*. Stockholm: Almqvist & Wiksell International.
- Uecker, J. E. and Regnerus, M. D. (2010). “Bare Market: Campus Sex Ratios, Romantic Relationships, and Sexual Behavior.” *Sociological Quarterly* 51(3): 408–435.
- Van Bavel, J., Schwartz, C. and Esteve, A. (2018). “The Reversal of the Gender Gap in Education and Its Consequences for Family Life.” *Annual Review of Sociology* 44: 341–360.

van Maarseveen, R. (2021). “The urban–rural education gap: Do cities indeed make us smarter?” *Journal of Economic Geography* 21: 683–714.

Vincent-Lancrin, S. (2008). “The Reversal of Gender Inequalities in Higher Education: An On-Going Trend” in *Higher Education to 2030*. Paris: OECD Centre for Educational Research and Innovation.

Special Issue on Feminisms in Times of Anti-Genderism, Racism and Austerity (2018). *Women’s Studies International Forum* 68: 1–182.

## Appendix

**Table A1.** The association between RGE and partnership, employment, and the election result for SD, controlling for immigration and internal migration.

	Partnership		Employment		SD vote	
	Women	Men	Women	Men	Women	Men
<b>Change in RGE:</b>						
<i>Change in women's education:</i>						
Rural areas	-0.864** (0.010)	-0.459** (0.079)	0.044 (0.036)	-0.065 (0.042)	-0.051** (0.014)	-0.047** (0.013)
Urban areas	-0.740** (0.117)	-0.267** (0.091)	-0.0228 (0.037)	0.022 (0.045)	-0.020 (0.015)	-0.013 (0.013)
<i>Change in men's education:</i>						
Rural area	0.300* (0.135)	0.145 (0.119)	0.090 (0.048)	0.098 (0.053)	0.023* (0.010)	0.024* (0.010)
Urban area	-0.161 (0.178)	-0.0329 (0.177)	-0.008 (0.045)	0.0575 (0.070)	0.047* (0.018)	0.047** (0.014)
<b>Change in education level:</b>						
Rural area	-1.163** (0.160)	-0.604** (0.122)	-0.047 (0.040)	-0.163** (0.051)	-0.074** (0.020)	-0.071** (0.019)
Urban area	-0.580** (0.154)	-0.234 (0.126)	-0.015 (0.030)	-0.035 (0.044)	-0.067** (0.020)	-0.059** (0.018)
Migration controls	yes	yes	yes	yes	yes	yes
Observations	1,073,27	1,114,48	1,073,27	1,114,48	1,073,27	1,114,48
R-squared	0.123	0.171	0.128	0.058	0.014	0.020
Number of areas	458	458	458	458	458	458

Notes: See Table 1.

**Table A2.** The association between RGE and partnership, employment, and the election result for SD. Excluding foreign-born individuals from the sample.

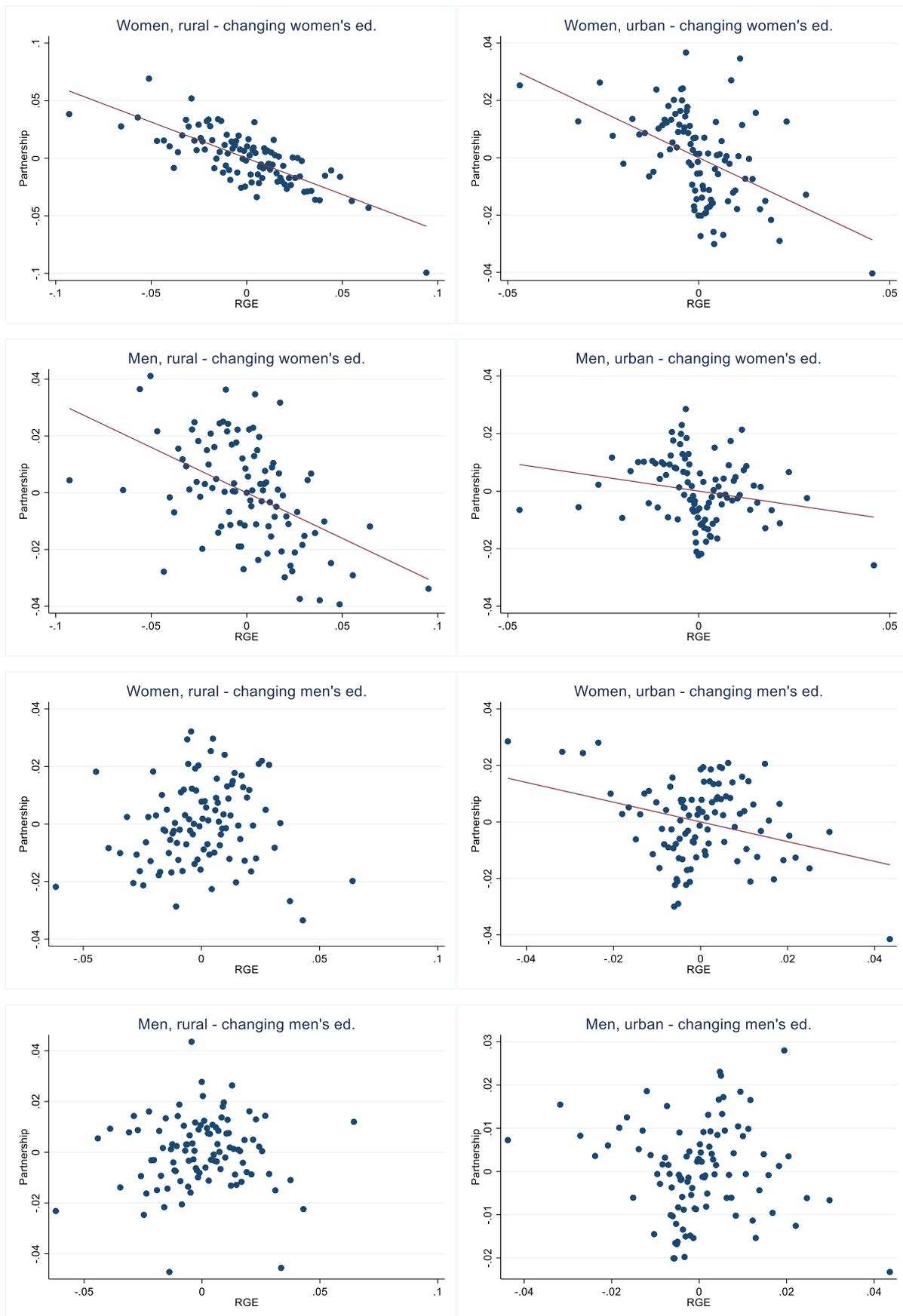
	<b>Partnershi</b>		<b>Employment</b>		<b>SD vote</b>	
	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>
<b>Change in RGE:</b>						
<i>Change in women's</i>						
<i>Education:</i>						
Rural area	-0.865** (0.113)	-0.463** (0.010)	0.110** (0.031)	0.050 (0.034)	-0.062** (0.014)	-0.059** (0.014)
Urban area	-0.866** (0.158)	-0.298** (0.010)	0.048 (0.033)	0.126** (0.037)	-0.028 (0.020)	-0.013 (0.016)
<i>Change in men's</i>						
<i>Education:</i>						
Rural area	0.224 (0.134)	0.0930 (0.122)	0.085 (0.047)	0.102* (0.044)	0.039** (0.010)	0.032** (0.010)
Urban area	-0.563* (0.226)	-0.223 (0.169)	0.005 (0.039)	0.0772 (0.040)	0.061** (0.019)	0.0643** (0.014)
<b>Change in education level:</b>						
Rural area	-1.089** (0.169)	-0.556** (0.135)	0.0252 (0.038)	-0.052 (0.034)	-0.100** (0.018)	-0.091** (0.018)
Urban areas	-0.303 (0.173)	-0.075 (0.137)	0.043* (0.020)	0.049* (0.024)	-0.090** (0.016)	-0.078** (0.017)
Observations	790,955	832,788	790,955	832,788	790,956	832,788
R-squared	0.154	0.191	0.052	0.036	0.018	0.023
Number of areas	458	458	458	458	458	458

Notes: See Table 1.

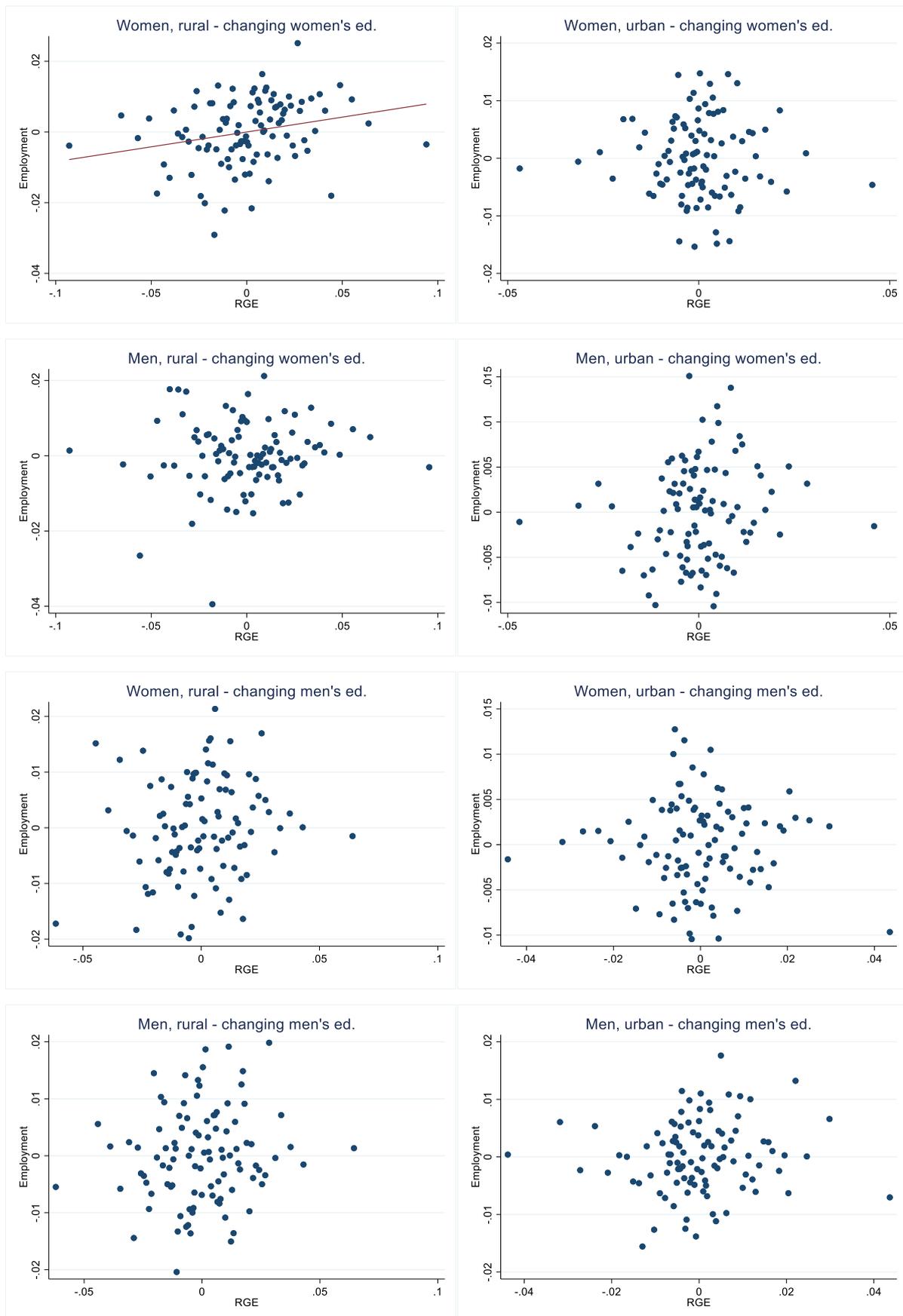
**Table A3.** The association between RGE and partnership, employment, and the election result for SD. Unadjusted model without control variables.

	Partnership		Employment		SD vote	
	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>
<b>Change in RGE:</b>						
<i>Change due to women's education</i>						
Rural area	-0.724** (0.119)	-0.329** (0.086)	0.268** (0.047)	0.118** (0.043)	-0.060** (0.014)	-0.039** (0.013)
Urban area	-0.595** (0.158)	-0.066 (0.134)	0.329** (0.083)	0.281* (0.120)	-0.028 (0.027)	0.001 (0.019)
<i>Change due to men's education:</i>						
Rural areas	0.101 (0.124)	-0.013 (0.113)	0.004 (0.055)	0.027 (0.051)	0.032** (0.009)	0.038** (0.009)
Urban areas	-0.408* (0.189)	-0.255 (0.222)	0.0748 (0.088)	0.0853 (0.124)	0.0563* (0.023)	0.070** (0.016)
<b>Change in education level:</b>						
Rural area	-0.824** (0.171)	-0.316** (0.116)	0.263** (0.057)	0.091 (0.049)	-0.092** (0.018)	-0.077** (0.017)
Urban area	-0.187 (0.175)	0.189 (0.145)	0.254** (0.047)	0.196** (0.037)	-0.084** (0.016)	-0.069** (0.016)
Observations	1,073,27	1,114,48	1,073,27	1,114,489	1,073,276	1,114,489
R-squared	0.109	0.146	0.001	0.001	0.002	0.002
Number of areas	458	458	458	458	458	458

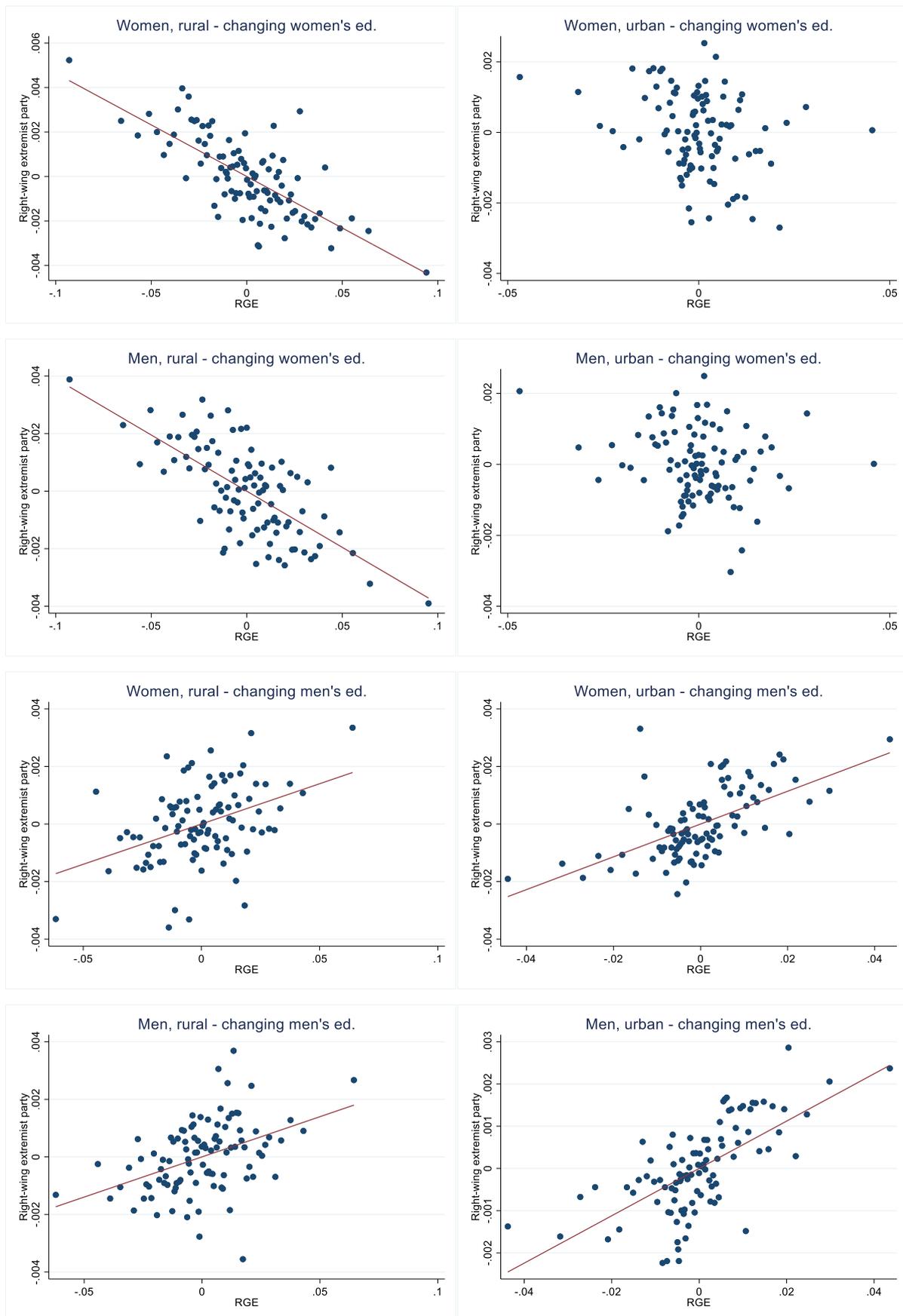
Notes: See Table 1.



**Figure A1.** Relationship between partnership and RGE (controlling for area fixed effects and control variables). Significant relationships are indicated by a fitted line.



**Figure A2.** Relationship between employment and RGE (controlling for fixed effects and control variables). Significant relationships are indicated by a fitted line.



**Figure A3.** Relationship between election result for SD and RGE (controlling for area fixed effects and control variables). Significant relationships are indicated by a fitted line.