Spaniards around the World

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Abstract

This paper examines the relationship between the educational level of Spanish emigrants and the country of destination. Since Spanish immigrants were born under the same laws, economic conditions and institutions, the differences in the location choice of emigrants can be due to dissimilarities in the educational level of the Spanish emigrants. To analyze this issue, we use microdata from the Census of 21 countries for the period 2000-2007. We observe that more educated Spanish emigrants are more likely to live in countries where the official language is English, with greater GDP per capita, GDP growth and lower unemployment rate. They are also more probably to live in more remote countries. Additional evidence, using census data from each decade since 1960 to 2010, shows that these results do not vary over time.

Keywords: Education, Emigrants, Destination Country

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1. Introduction

During the 2013 Christmas period, in almost all Spanish TV Channels the audience could watch in their TV´s an advertisement whose slogan was "Become a foreigner".[1] As reflected by the Spanish Statistical Office (Instituto Nacional de Estadística), this is not an isolated phenomenon. In 2008, around 33000 individuals whose nationality was Spanish emigrated from Spain to other countries, whereas in 2012, the number of emigrants reached 57000. This pattern was maintained in 2013, since during the period covered from January to June almost 40000 Spaniards migrated. When analyzing this phenomenon, not only the decision to emigrate is relevant, but so is the location choice, as explained by Bauer *et al.* (2005). The countries of destination of these individuals are mainly European and South American countries, although there are considerable variations. Several researchers have tried to study the mechanisms involved in immigrant´s selection of location, including economic incentives, immigration policy barriers, and constraints operating in countries of origin. In this paper, we explore whether the choice of the country of destination varies depending on the educational level of Spanish emigrants.

Previous literature on the relationship between educational level and migration focuses on the high-skilled migration from poor to rich countries, which can impact on the education incentives in poor countries (Beine *et al*. 2001, 2008; Docquier *et al*. 2007; Docquier and Rapoport 2009). We can also find other papers that concentrate on the educational selectivity of emigrants, finding that the cultural similarities and the physical distance between countries have more relevance in the educational selectivity process than wages or immigration policies (Belot and Hatton 2012).

[1] In Spanish, the slogan from the advertisement was "Hazte Extranjero", and the company was Campofrío.

In our case, we use the Census from 21 countries of destination of Spanish emigrants in the period 2000 to 2007. This data come from the Integrated Public Use Microdata Series-International (Ruggles *et al.* 2010). This dataset provides information on socio-demographics characteristics of Spanish emigrants, which allows us to study the relationship between educational level of Spanish emigrants and several characteristics of their destination country. Results show that Spanish emigrants with at least some college are more likely to move to countries where the official language is English. They also settle in countries with greater per capita GDP, GDP growth and lower unemployment rate. For these high-educated individuals, the physical distance between the home country and the host country is less relevant than for low-educated emigrants. Our findings are quite robust to the inclusion of several socio-demographic characteristics of the Spanish emigrants and to the use of different sub-samples.

Additionally, we check whether the relationship between the level of education and the location choice is maintained over time. In this case, we use Census data from 1960 to 2010. Results show no variation, suggesting an important role of the educational level in the process of selection of the destination country of Spanish emigrants.

The remainder of the paper is organized as follows. Section 2 presents the empirical strategy, and Section 3 describes the data. Results are discussed in Section 4. Section 5 concludes.

2. Empirical Strategy

We study the relationship between destination countries of Spanish emigrants and their level of education. The following equation forms the empirical framework of this analysis:

$$\ln \phi_{m|b} = \ln \frac{\Pr(y=m|\mathbf{x})}{\Pr(y=b|\mathbf{x})} = \mathbf{x}'\boldsymbol{\beta}_{m|b} \qquad \text{for} \qquad m = 1 \ \text{ to } \ J$$

We run a Multinomial Logit Model (MNLM), estimating a separate binary logit for each pair of outcome categories (Nerlove and Press 1973), where b is the base category and $\mathbf{x}$ is a vector that includes the educational variables (secondary completed; some college or more; and primary completed or less than primary completed, which is the omitted one), and other socio-demographic characteristics that can affect the country of destiny choice for reasons unrelated to education, such as the age of the individuals considered in the analysis, the gender, whether they live in a rural area, the marital status or the employment status of the Spanish emigrants.

We first consider as dependent variable the official language of the destination countries, using data from the US Central Intelligence Agency (CIA). Languages are classified in the following categories: English, Spanish, and other.[2] We would expect that more educated individuals, that is, those with greater human capital, are more easily capable of living in non-Spanish speaking countries. We also extend the analysis using as dependent variables other characteristics of the host countries that can impact on the location choice of individuals, such as the per capita GDP, the GDP growth, the unemployment rate and the physical distance between the home country and the country of destination.[3] In this case, as previously, since more educated individuals are those with higher human capital, we would expect them to settle in countries with higher per capita GDP and GDP growth, and lower unemployment rate.

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[2] We have observed that those categories are indistinguishable by testing whether none of the independent variables significantly affect the odds of alternative m versus alternative n (Anderson 1984). Formally, we test:

$$H_0 : \beta_{1,m|n} = \ldots = \beta_{i,m|n} = \ldots = \beta_{I,m|n} = 0$$

with β_i being the coefficient associated with the explanatory variable x_i. Results show that we cannot reject the hypothesis that those categories are indistinguishable when using Wald tests and LR tests.

[3] Note that we checked for the validity of the MNL model in this setting by testing the property of the independence of irrelevant alternatives (IIA). This property is convenient as regards estimation in MNL models, since if alternatives are not truly independent, then the parameter estimates will be inconsistent (Hausman and McFadden 1984). Results suggest that the MNL model is appropriate since we find evidence that the odds are independent of other alternatives by using two of the most common tests: Hausman's specification test (Hausman and McFadden 1998), and the Small-Hsiao test (Small and Hsiao 1985).

Results are shown in two different ways. First, we present the average of the J discrete changes (or of the one standard deviation centered on the base values for those variables that are not binary) across all outcome categories, for each explanatory variable $\overline{\Delta} = \frac{1}{J}\sum_{j=1}^{J}\left|\frac{\Delta \Pr(y=j|\mathbf{x})}{\Delta x_i}\right|$. We take the absolute value because the sum of the changes, without taking this absolute value, is necessarily zero (see Long and Freese 2006). This measure of the impact of the explanatory variables should be interpreted as follows: when the average of the absolute values of the discrete changes obtained for x_i is greater than that estimated for x_j, the impact of x_i on location choices is greater.

Then, we explore the dynamics among the outcomes by utilizing the odds ratios (also known as factor change coefficients). Odds ratios are a more intuitive method of interpreting the results obtained (Long and Freese 2006). Formally, holding other variables constant, the changed factor in the odds of outcome m versus outcome n, as increased by δ equals:

$$\frac{\phi_{m|n}(\mathbf{x}, x_i + \delta)}{\phi_{m|n}(\mathbf{x}, x_i)} = e^{\boldsymbol{\beta}_{i,m|n}\delta}$$

If the amount of change is $\delta = 1$, the odds ratio can be interpreted as follows: for a unit change in x_i, the odds of m versus n are expected to change by a factor of $\exp(\beta_{i,m|n})$, holding all other variables constant. In contrast, when $\delta = s_{x_i}$, then the odds ratio can be understood in the following way: for a standard deviation change in x_i, the odds of m versus n are expected to change by a factor of $\exp(\beta_{i,m|n} \times s_{x_i})$, holding all other variables constant. To simplify the odds analysis, we have developed odds-ratio plots (see Result Section). These plots reveal a great deal of information (for more details, see Long and Freese 2006). If a category is to the right of another

category, it indicates that increases in the independent variable make the outcome to the right more likely. In addition, the distance between each pair of categories indicates the magnitude of the effect, and when a line connects a pair of categories, this means a lack of statistical significance for this particular coefficient.

3. Data

In order to implement this analysis, we use data from the Integrated Public Use Microdata Series-International of the 2000-2007 Censuses, Ruggles *et al.* (2010). This survey contains information of 238 Censuses of 74 countries from 1960 to 2010. These Censuses, although not all, include a question relative to the birth place of the individuals living in that country, in addition to other socio-economic characteristics of these individuals. Our sample consists of emigrants from Spain who moved to 21 countries, those containing information on the birth place of immigrants. These Spanish emigrants were all born and lived under the Spanish laws, institutions and economic conditions, but they decided to migrate to different countries, which can be due to differences in their educational level. We keep individuals who are between the ages of 25 and 60, since everyone in this sample is likely to have completed schooling and is below retirement age. Our final sample consists of 54323 Spanish emigrants.

Table 1 shows summary statistics of the relevant variables by destination country. Our individuals are 44 years old on average, with those living in Argentina being older than other groups (51), and those in Ireland being the youngest (30). The 50% of the sample are men, although there are differences, as can be seen in Column 2, with more men than women in those countries of South and Central America. Most of our emigrants live in urban areas, are married and employed. With respect to the educational level of Spanish emigrants, Table 1 also presents considerable differences, with these less educated individuals living in Argentina, Portugal and Philippines,

whereas these more educated live in Ireland, Bolivia and Chile. These considerable differences in the educational level point to a potential relevant role of education on the location choice of Spanish emigrants.

To explore the relationship between education and the choice of destination country, we have to classify the host countries. Table 2 presents the summary statistics of the characteristics of the destination countries used in our analysis. The first column includes the official or the most spoken language in each host country, using data from the CIA. 12 countries have Spanish as official language, 3 have English, and the rest, 6 countries, have other languages (Portuguese, Greek, German, French and Filipino). Since the greater the human capital the greater the gift for languages, we would expect that those individuals with greater educational level live in countries where the Spanish is not the official language. We also use information on the per capita GDP and on the GDP growth, since more educated individuals are expected to live in countries where they can obtain a greater salary. Data come from the World Data Bank. In Table 2, we only include information on the GDP per capita and on the GDP growth of the year in which the Census was collected in each country. We have also repeated the analysis using the average GDP per capita and the GDP growth from 1980 to 2000 and from 1990 to 2000. Similarly, we consider the unemployment rate. Finally, we also consider the physical distance between the home and the host country to study again the relationship between the educational level and the location choice of Spanish emigrants.

4. Results

Table 3 reports the results for the main specification. For binary variables, we present the average of the absolute values of the discrete changes across all the outcome categories. For the remaining variables, we show the average of the absolute change of one standard deviation, centered on the base values. These results allow us to compare

the impact of each variable on the choice of destination country, classifying the countries by official or most spoken language. In the first column, we observe that the educational variables are quite relevant in location choices. We find that the average of the absolute values of the discrete changes across outcome categories is around 25 percentage points in the case of the educational variables, with those with some college or more education having the greater impact. Note that this does not imply that the educational level of Spanish emigrants is meaningful for the analysis of the dynamics among the outcome categories, since the average of the absolute values of the discrete changes gives no information about the dynamics among the choice of country of destination. As can be seen in Column 2, more socio-economic characteristics are included to the main specification. The inclusion of these variables slightly changes the magnitude of the average of the absolute discrete change for the educational variables. Consistent with the migration literature, the age of the emigrants, gender, marital status and employment status also are relevant in destination country choices. We revisit the dynamics of the outcomes below.

In order to study the dynamics among the location choices, the MNLM adds a number of coefficients that present difficulties of interpretation of the effects on all pairs of outcome categories. Then, to easily compare our results, we develop odds-ratio plots (Long and Freese 2006). Figure 1 shows our findings for the main specification, Column 1 of Table 3. In the odds-ratio plot, the independent variables are represented in a separate row. The horizontal axis indicates the relative magnitude of the coefficients associated with each outcome. The numbers correspond to the outcome categories, that is to say, "1" denotes English as official language, "2" indicates others languages, and "3" corresponds to Spanish as the official language, which is the base category. The additive scale on the bottom axis measures the value of $\beta_{i,m|n}\delta$. The multiplicative

scale on the top axis measures $\exp(\beta_{i,m|n})\delta$, which are the odds of a person to choice between the outcome categories. The distance between a pair of outcomes indicates the magnitude of the effect, and the statistical significance is added by drawing a line between categories for which there is no significant coefficient.

Results suggest that the educational level of emigrants is important in the destination country choice. We find that for those individuals having secondary completed the odds of choosing a country with English as the official language versus a country with Spanish as the official language or other languages are 51% and 89% greater, respectively, whereas, for those having at least some college the odds of choosing a country with English as the official language versus a country with Spanish as the official language or other languages are 73% and 91% greater, respectively, (the omitted educational variable is less than secondary completed).[4] Results are maintained even when we add other characteristics of the individuals considered in the analysis, see Figure 2. This points to an important role of the educational level of Spanish emigrates in the destination country choice. Results with respect to the rest of the variables are consistent with the literature.

To provide even more convincing evidence, we have also classified the destination countries using the GDP per capita, the GDP growth and the unemployment rate. As explained above, we would expect that those having greater educational level choose living in a country with greater GDP per capita and lower unemployment rate. If we consider all countries containing information on the per capita GDP results suggest that those less educated are more likely to live in countries with greater per capita GDP. However, if we exclude France and Portugal, neighboring countries of Spain, as the

[4]The percent changes are obtained as follows: $100(\exp(\beta_{i,m|n} \times \delta) - 1), \quad \delta = 1$ except when we note the contrary.

destination country results are as expected. We find that for those individuals having secondary completed the odds of choosing a high income country versus an upper middle income country or a lower income country are 86% and 70% greater, respectively, whereas, for those having at least some college the odds of choosing a high income country versus an upper middle income country or a lower income country are 268% and 73% greater, respectively. Similarly, the odds of choosing a country with higher GDP growth are greater for those Spanish emigrants with at least some college, see Figure 4. We have also re-run the analysis using the average GDP per capita and the GDP growth from 1980 to 2000 and from 1990 to 2000. Results do not vary. In the same line, using data on the unemployment rate of each host country, see Figure 5, results show that for those having at least some college the odds of choosing a country with low unemployment rate versus a country with middle unemployment rate or a higher unemployment rate are 63% and 56% greater, respectively, again pointing to the important role of the educational level in the choice of the destination country.

We have also classified the countries by physical distance. As we explain above, results on the choice of destination country by per capita GDP change once neighboring countries are not considered in the analysis. This suggests that the physical distance is also a relevant characteristic of the destination countries. Results are presented in Figure 6. In this case, results suggests that the higher the educational level the more likely are Spanish emigrants to live in more remote countries.

Finally, we check whether the relationship between the level of education and the location choice is maintained over time. In this case, we use Census data from 1960 to 2010. Figure 7. Results do not substantially change, suggesting an important role of the educational level in the process of selection of the destination country of Spanish

emigrants. Our findings are also maintained for the rest of characteristics of the destination countries considered in this work.

5. Conclusions

This paper explores the relationship between the educational level of Spanish emigrants and the country of destination. Since Spanish immigrants were born under the same laws, economic conditions and institutions, the differences in the location choice of emigrants can be due to dissimilarities in the educational level of the Spanish emigrants. To analyze this issue, we use microdata from the Census of 21 countries for the period 2000-2007.

Results show that Spanish emigrants with at least some college are more likely to move to countries where the official language is English. They also settle in countries with greater GDP per capita, GDP growth and lower unemployment rate. For these high-educated individuals, the physical distance between the home country and the host country is less relevant than for low-educated emigrants. Our findings are quite robust to the inclusion of several socio-demographic characteristics of the Spanish emigrants and to the use of different sub-samples. Additionally, our findings show that the relevant role of the educational level in choosing the country of destination is maintained over time, since 1960 to 2010.

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Table 1. Summary Statistics by Destination Country

Country	Age	Male	Secondary Completed	College or more	Rural	Never Married	Married	Divorced/Separated	Employed	Unemployed	Observations
Argentina	51.97	0.49	0.31	0.17	0.03	0.12	0.73	0.09	0.58	0.12	3,372
Austria	38.8	0.37	0.28	0.34	0	0.48	0.37	0.15	0.73	0.03	132
Bolivia	41.06	0.56	0.32	0.64	0.06	0.45	0.47	0.08	0.64	0.03	77
Brazil	50.44	0.58	0.27	0.36	0.01	0.08	0.8	0.1	0.65	0.05	737
Chile	41.65	0.57	0.24	0.69	0.06	0.25	0.69	0.04	0.7	0.03	379
Colombia	42.15	0.6	0.12	0.85	0.03	0.24	0.62	0.14	0.76	0.02	96
Costa Rica	42.55	0.57	0.21	0.67	0.16	0.22	0.64	0.14	0.7	0.02	86
Cuba	50.36	0.45	0.4	0.33	0	0.16	0.67	0.13	0.55	0.02	55
El Salvador	42.24	0.52	0.16	0.72	0.04	0.12	0.84	0	0.8	0	25
France	47.01	0.47	0.12	0.21	0.19	0.21	0.66	0.11	0.74	0.08	41,193
Greece	39.87	0.22	0.31	0.5	0	0.24	0.72	0.04	0.54	0.04	68
Ireland	30.43	0.36	0.3	0.66	0.04	0.79	0.18	0.03	0.79	0.07	343
Mexico	43.65	0.59	0.3	0.51	0.02	0.11	0.82	0.05	0.7	0	849
Nicaragua	41.56	0.44	0.26	0.7	0.11	0.26	0.67	0.07	0.78	0	27
Panama	43.52	0.58	0.26	0.49	0.04	0.16	0.76	0.07	0.79	0	96
Peru	42.42	0.61	0.22	0.74	0.02	0.29	0.57	0.12	0.57	0.01	195
Philippines	38.68	0.4	0.1	0.41	0	0.34	0.66	0	0	0	19
Portugal	39.56	0.44	0.2	0.34	0.26	0.2	0.75	0.03	0.69	0.06	259
South Africa	47.07	0.57	0.6	0.21	0	0.04	0.79	0.16	0.65	0.04	23
United States	38.8	0.48	0.23	0.66	0	0.21	0.66	0.13	0.73	0.03	3,248
Venezuela	48.53	0.53	0.34	0.29	0.01	0.11	0.77	0.09	0.66	0.03	3,033
Mean	45.34	0.49	0.21	0.36	0.09	0.19	0.68	0.1	0.7	0.06	
Std. Dev.	9.69	0.5	0.41	0.48	0.29	0.39	0.47	0.31	0.46	0.24	

Notes: Data come from the IPUMS-International microdata for the period 2000-2002.

Table 2 Characteristics of the Destination Countries

Country	Official/ Most Spoken Language	Per Capita GDP	GDP Growth	Unemployment Rate	Physical Distance
Argentina	Spanish	9738.71	-4.41	18.3	10044.58
Austria	German	31925.73	0.86	3.6	1809.21
Bolivia	Spanish	3475.67	1.68	5.4	9171.59
Brazil	Portuguese	7905.65	4.31		7849.61
Chile	Spanish	11336.58	2.17	8.9	10693.19
Colombia	Spanish	7280.29	4.71	12	8019.79
Costa Rica	Spanish	8115.65	1.8	5.1	8481.88
Cuba	Spanish		1.43	3.3	7441.68
El Salvador	Spanish	6079.98	3.84	6.3	8648.67
France	French	29969.54	2.47	8.8	1052.69
Greece	Greek	21106.65	4.2	10.2	2368.38
Ireland	English	35726.31	5.64	4.2	1450.33
Mexico	Spanish	11810.13	5.3	2.6	9062.44
Nicaragua	Spanish	3013.21	4.28	5.6	8511.28
Panama	Spanish	7869.24	2.72	13.5	8301.21
Peru	Spanish	7288.07	8.87	4.5	9507.47
Philippines	Filipino	2685.56	4.41	11.2	11654.58
Portugal	Portuguese	21431.9	1.97	4	503.07
South Africa	English	7690.99	2.74	25.4	8061.62
United States	English	40965.03	4.09	4	6088.67
Venezuela	Spanish	9666.66	3.39	12.8	6992.98
Mean		25957.38	2.43	8.75	4612.79
Std. Dev.		12098.3	2.57	4.47	3452.08

Table 3. Average Absolute Change in the Destination Country Choice

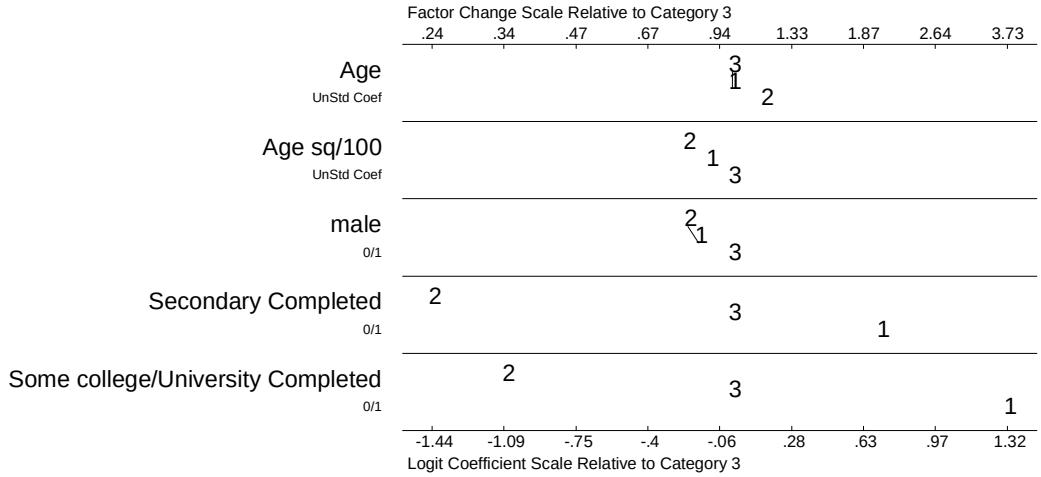
(Dep. Var.: Languages (English, Spanish, Others)

	1	2
Age	0.216***	0.200***
Age sq/100	0.226***	0.200***
Male	0.027***	0.058***
Secondary Completed	0.266***	0.257***
Some College/University Completed	0.254***	0.241***
Rural		0.236***
Never Married		0.143***
Married		0.064***
Divorced/Separated		0.082***
Employed		0.106***
Unemployed		0.090***
Observations	54,323	54,312

Notes: For binary variables, it is computed the average of the absolute values of the discrete changes across all the outcome categories. For the rest of the variables, we have computed the average absolute change of one standard deviation centered on the base values. The hypothesis that each variable does not affect the dependent variable is tested with LR test. ***Significant at the 1% level **Significant at the 5% level *Significant at the 10 % level

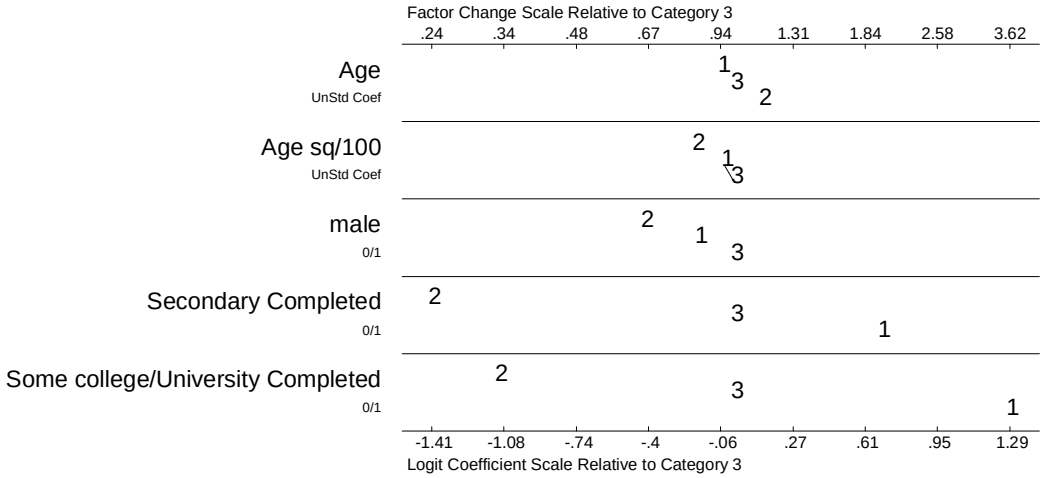
Figure 1

(Dep. Var.: Languages (English, Spanish, Others)



Notes: Robust standard errors. Countries classified using there official or most spoken language. The numbers correspond to the outcome categories: 1 indicates English, 2 indicates Others, and 3 indicates Spanish. The additive scale on the bottom axis measures the value of $\beta_{i,m|n}\,\delta$. The multiplicative scale on the top axis measures $\exp(\beta_{i,m|n})\delta$, which are the odds of a person to devote one amount of caring-time over another. The statistical significance is added by drawing a line between categories for which there is no significant coefficient at the 5% level.

Figure 2



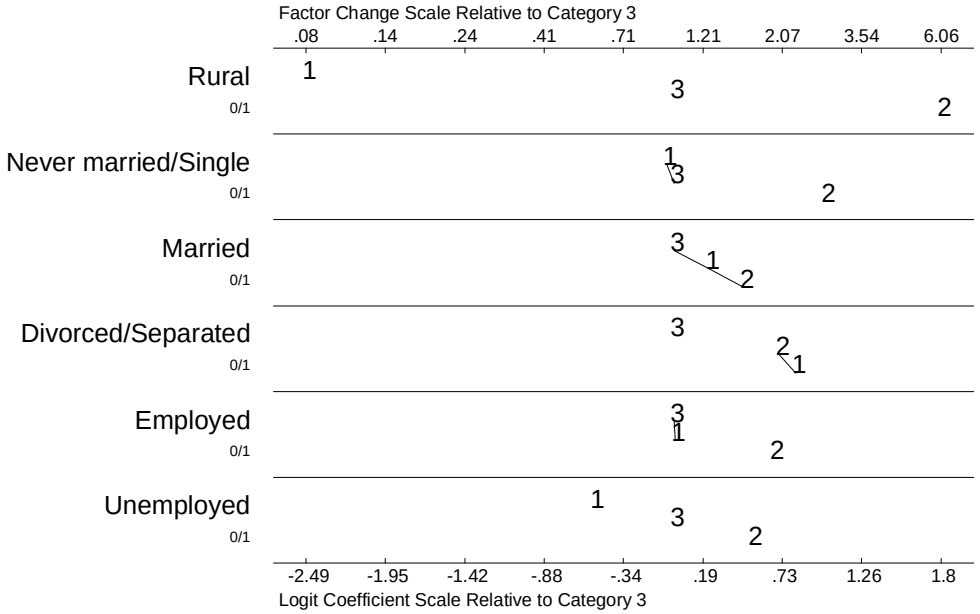


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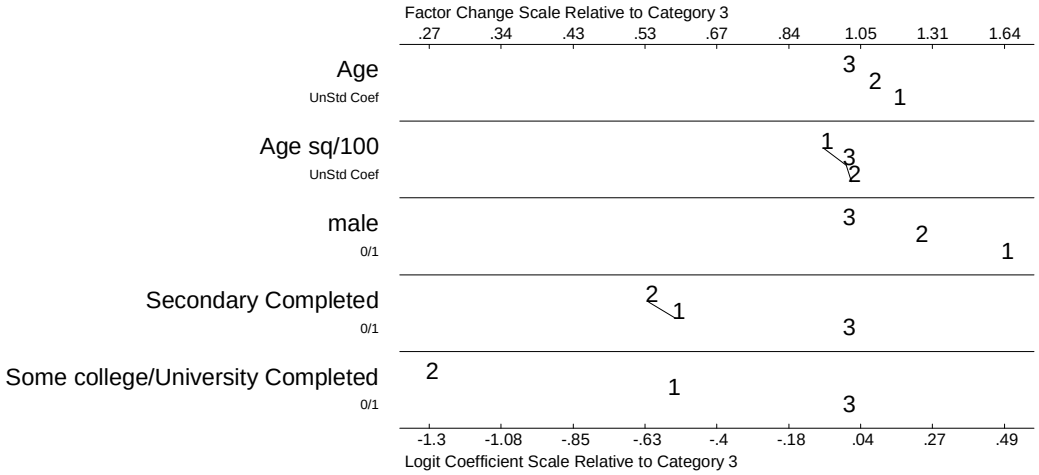
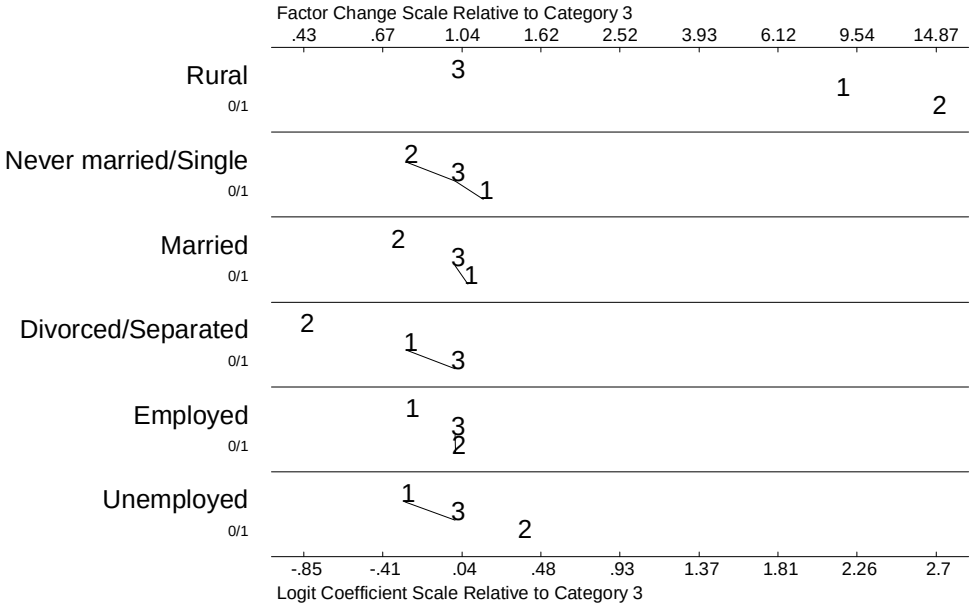
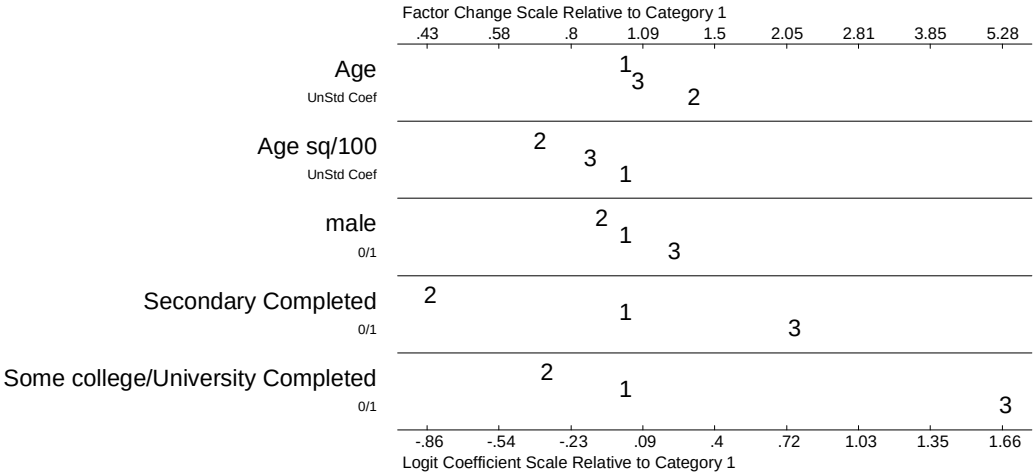
Figure 3

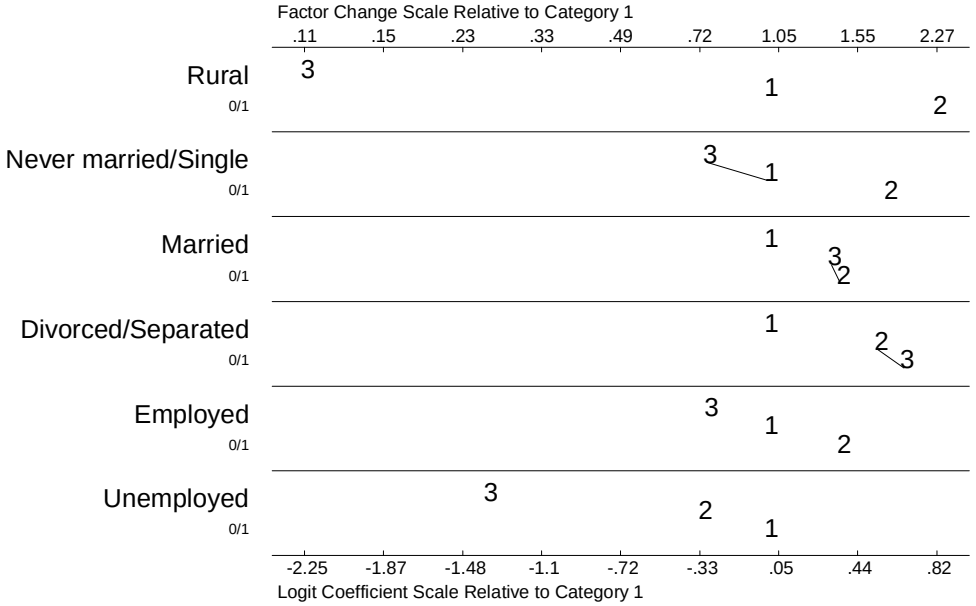




Notes: Robust standard errors. Countries classified by GDP per capita (constant 2005 international dollars) excluding France and Portugal. Data come from the World Bank. The numbers correspond to the outcome categories: 1 indicates lower than 8000 $, 2 indicates between 8000 and 15000 $, and 3 indicates more than 15000. The additive scale on the bottom axis measures the value of $\beta_{i,m|n}\,\delta$. The multiplicative scale on the top axis measures $\exp(\beta_{i,m|n})\delta$, which are the odds of a person to devote one amount of caring-time over another. The statistical significance is added by drawing a line between categories for which there is no significant coefficient at the 5% level.

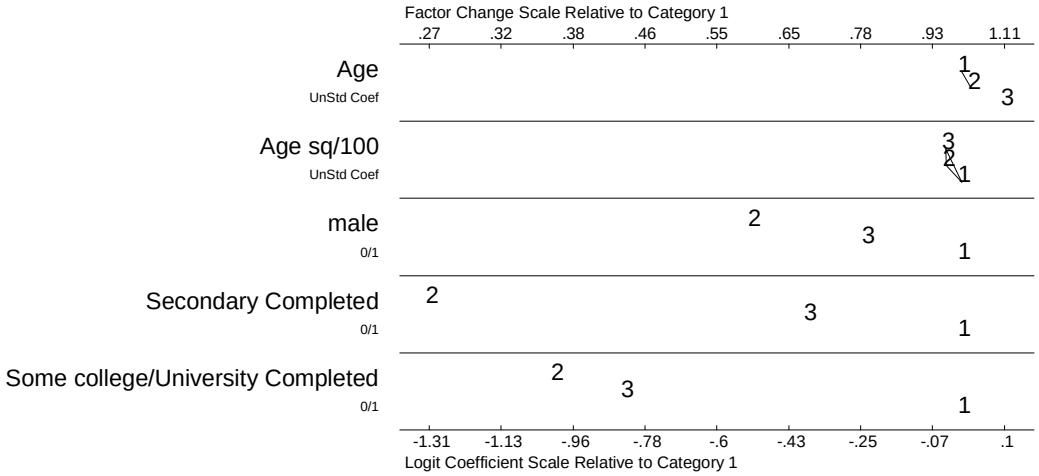
Figure 4

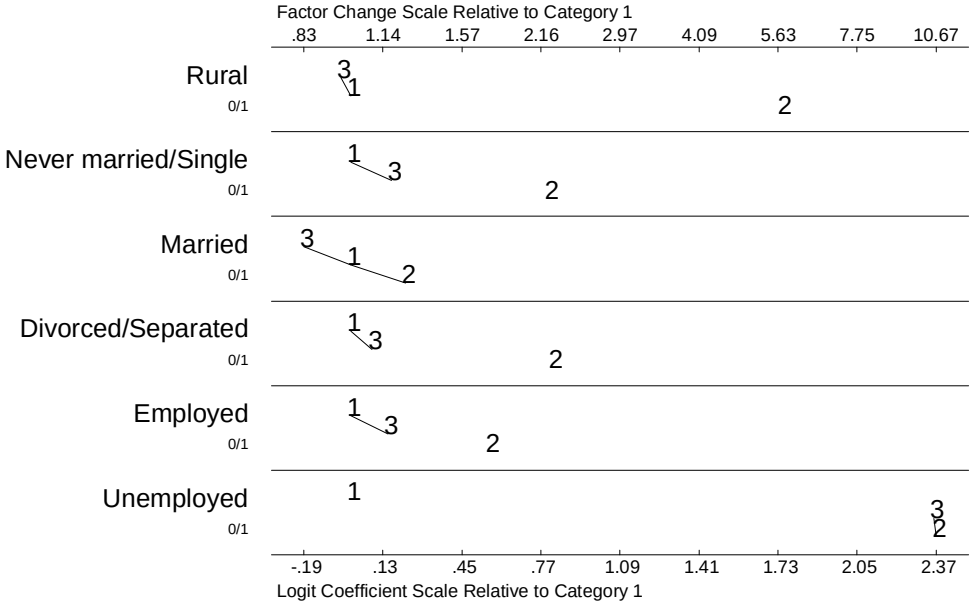




Notes: Robust standard errors. Countries classified by GDP growth. Data come from the World Bank. The numbers correspond to the outcome categories: 1 indicates lower than 2, 2 indicates between 2 and 4, and 3 indicates more than 4. The additive scale on the bottom axis measures the value of $\beta_{i,m|n}\,\delta$. The multiplicative scale on the top axis measures $\exp(\beta_{i,m|n})\delta$, which are the odds of a person to devote one amount of caring-time over another. The statistical significance is added by drawing a line between categories for which there is no significant coefficient at the 5% level.

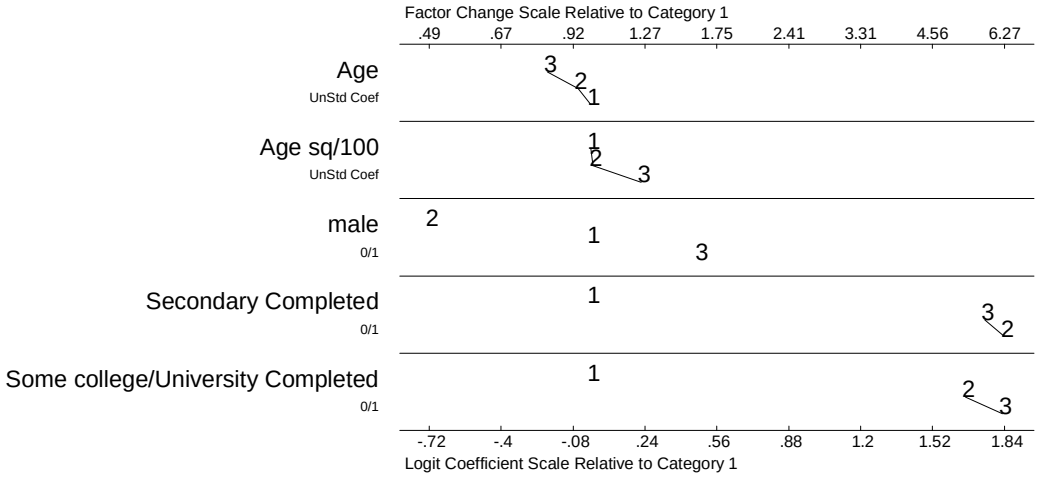
Figure 5

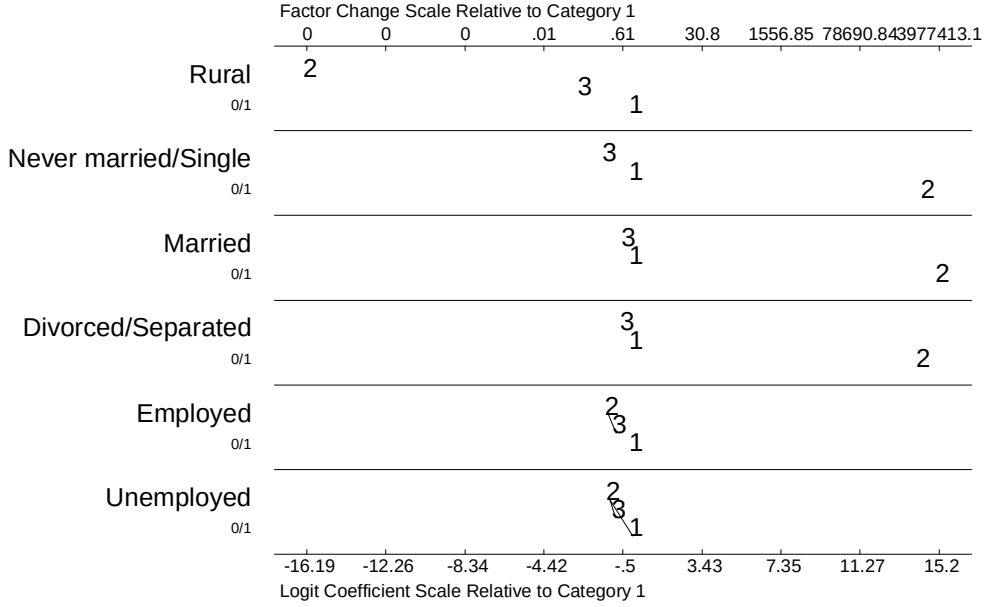




Notes: Robust standard errors. Countries classified by unemployment rate. Data come from the World Bank. The numbers correspond to the outcome categories: 1 indicates lower than 4, 2 indicates between 4 and 10, and 3 indicates more than 10. The additive scale on the bottom axis measures the value of $\beta_{i,m|n}\delta$. The multiplicative scale on the top axis measures $\exp(\beta_{i,m|n})\delta$, which are the odds of a person to devote one amount of caring-time over another. The statistical significance is added by drawing a line between categories for which there is no significant coefficient at the 5% level.

Figure 6





Notes: Robust standard errors. Countries classified by physical distance. The numbers correspond to the outcome categories: 1 indicates lower than 2000 km, 2 indicates between 2000 and 5000, and 3 indicates more than 5000. The additive scale on the bottom axis measures the value of $\beta_{i,m|n}\,\delta$. The multiplicative scale on the top axis measures $\exp(\beta_{i,m|n})\delta$, which are the odds of a person to devote one amount of caring-time over another. The statistical significance is added by drawing a line between categories for which there is no significant coefficient at the 5% level.

Figure 7: Analysis by decade from 1960-2010

Figure 7a: 1960 Censuses

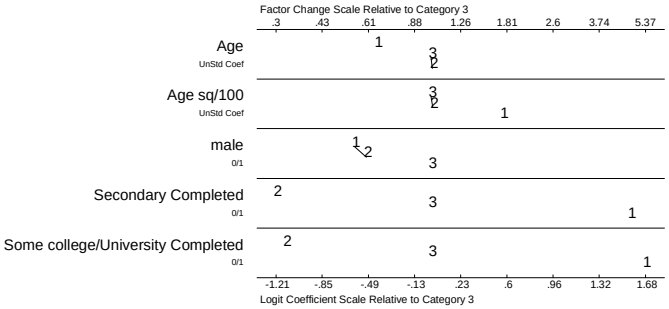


Figure 7b: 1970 Censuses

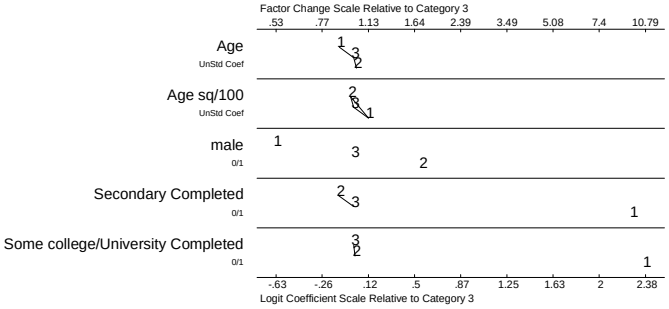


Figure 7c: 1980 Censuses

Figure 7d: 1990 Censuses

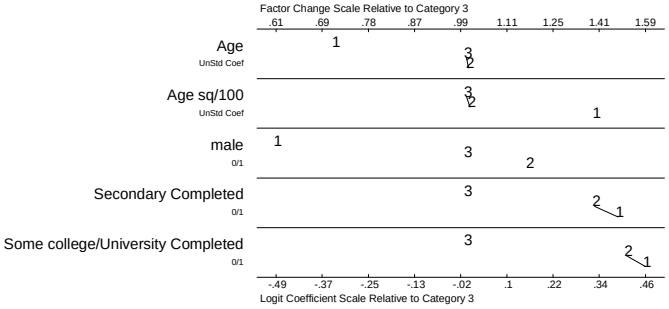
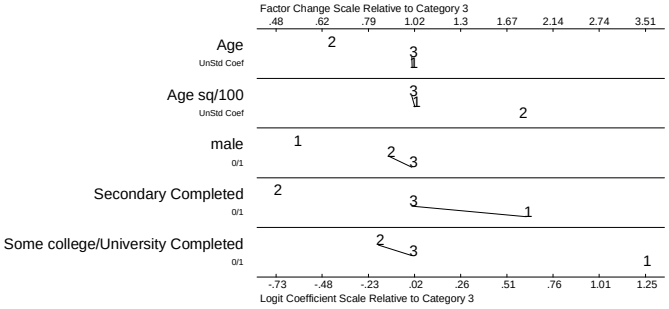


Figure 7e: 2010 Censuses



Notes: Robust standard errors. Countries classified using there official or most spoken language. The numbers correspond to the outcome categories: 1 indicates English, 2 indicates Others, and 3 indicates Spanish. The additive scale on the bottom axis measures the value of $\beta_{i,m|n}\,\delta$. The multiplicative scale on the top axis measures $\exp(\beta_{i,m|n})\delta$, which are the odds of a person to devote one amount of caring-time over another. The statistical significance is added by drawing a line between categories for which there is no significant coefficient at the 5% level.