

Youth Employment and Social Capital in Europe

A. Arnorsson and G. Zoega

Abstract We estimate social capital by region in Europe and relate it to youth unemployment and youth labor force participation. Social capital is measured by the level of trust to fellow citizens as well as the set of shared values that have to do with behavior in the labor market. The results show a clear relationship between social capital and youth unemployment and participation, also when differences in institutions and the state of the business cycle between countries are taken into account.

Keywords Youth unemployment · Values and attitudes · Trust

JEL codes J6

1 Introduction

Youth unemployment ranks among Europe's biggest problems. Unemployed young people are a waste of resources but their unemployment is also likely to affect the rest of their lives, as well as their outlook on society. The unemployed do not have the opportunity to develop their skills, to learn the habits of productive employment nor to discover their talents. Unemployment may also hamper their social life, ability to have and raise a family and find happiness in life. Persistent youth

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unemployment may even create a threat to political stability and the future of the European Union since the unemployed may become disillusioned and vote for extreme political parties.¹

The standard approach to explaining youth unemployment is to invoke institutions and institutional differences. In this paper we follow an alternative path by exploring to what extent the regional variation observed in Europe can be explained by differences in what we call social capital. We define social capital as consisting of several layers of trust and values that have to do with employment. We explore the inter-country variation in youth unemployment rates and rates of youth labor force participation and relate it to differences in social capital.

2 How Big Is the Problem?

The data speak volumes. The youth unemployment rate was on average 22.4% in the euro zone in 2015, 20.4% in the European Union as a whole while it was significantly lower or 13.9% in the OECD. In Europe, youth unemployment in 2015 ranged from 7.3% in Germany to a staggering 48.4% in Spain and 49.8% in Greece. The actual number of unemployed individuals between the ages of 15 and 24 in the European Union ranges between four and five million, roughly equivalent to the population of Denmark.²

The youth unemployment rates for 2015 in 27 OECD countries are shown in Table 1. Note the difference between the EU countries and the non-EU countries. The highest rate outside the EU is in New Zealand, 14.7%, but that is only marginally higher in one of the European Union's best performer, which is the United Kingdom. Unemployment is lower in only six countries that belong to the European Union.

A mitigating factor, though, is the large fraction of this age group still registered in the school system. The unemployment rates clearly only apply to those who are not in school. The table also shows the rate of youth labor force participation and the ratio of employment to the working-age population. According to ILO, the labor force participation rate for the 15–24 years age group was 30% in Greece, 37% in Spain and 50% in Germany. In comparison it is 51% for the United States and 59% for the United Kingdom. Thus the participation rate is also lower in the high youth unemployment countries. The employment to working-age population rate was lowest in Greece at 15%, then 16.1% in Italy and 18.9% in Spain. In contrast, it was

¹Scarpetta et al. (2010) discuss the scarring effects of youth unemployment and list measures that could be applied to ease the transition from school to work. Bell et al. (2011) find significant effects at the age of 50 from early adulthood unemployment in the form of lower wages and reduced happiness.

²The exact figure was 4.3 million in March 2016. Source: Eurostat.

Table 1 Youth unemployment, participation and employment-to-population rate in 2015

European union				Non-EU countries			
Country	U (%)	LFP (%)	E/P (%)	Country	U (%)	LFP (%)	E/P (%)
Austria	10.6	58.2	52.0	Australia	13.1	66.4	57.7
Belgium	22.1	30.4	23.7	Canada	13.2	64.4	55.9
Czech R.	12.6	32.2	28.1	Iceland	8.8	74.2	67.7
Denmark	10.9	61.6	54.9	Japan	5.6	43	40.6
Estonia	13.2	40.0	34.7	New Zeal.	14.7	59.1	50.4
Finland	22.0	52.5	41.0	Norway	9.9	55.5	50.0
France	24.7	36.7	27.6	Switzerland	8.6	67.7	61.9
Germany	7.3	49.7	46.1	United States	11.6	51.4	45.4
Greece	49.8	29.8	15.0				
Hungary	17.3	29.9	24.7				
Ireland	20.9	38.4	30.4				
Italy	40.3	26.9	16.1				
Netherlands	11.3	68.1	60.4				
Poland	20.8	34.4	27.2				
Portugal	32.0	34.1	23.2				
Slovakia	26.4	31.1	22.9				
Spain	48.4	36.7	18.9				
Sweden	20.3	56.4	45.0				
United Kingdom	14.6	59.1	50.5				

Source OECD (2016) and International Labour Office (2016)

45.4% in the United States and 50.5% in the United Kingdom. In the Eurozone it was 46.1% in Germany.³

Many reasons have been proposed for this problem, including the effect of minimum wages, insider-outsider relations and a lack of opportunities for vocational training. Minimum wages may reduce employment among the young as explored by, amongst others, Neumark et al. (2004). These authors estimated the effects of changes in national minimum wages on employment using a pooled cross-section time-series data set including 17 OECD countries for the period 1975–2000 and found adverse effects on youth employment. Moreover, they found that the adverse effects depended on other institutions such as unions and employment protection, both of which mitigate the adverse employment effects. In a recent paper, Herwartz et al. (2015) analyze differences in labor markets between European regions for *Nomenclature des unités territoriales statistiques 2 (NUTS 2)*

³The recent crisis years in Europe have increased the problem significantly, as described by Eichhorst et al. (2013), who describe the increase in youth unemployment due to the financial crisis in the euro zone.

regions, as we do in this paper, for the period 1980–2008. They find differences in wage elasticities of employment across regions and countries that depend on institutions in addition to finding that some characteristics of regional labor markets matter.

Insider-outsider relations may protect the jobs of entrenched, established workers and reduce the demand for entrants. The idea, originally proposed by Lindbeck and Snower (1988), is that established, entrenched workers are expensive to replace because of mandatory redundancy payments and the cost of training replacement workers. These workers then take advantage of their position by demanding higher wages and also keeping young entrants into the labor market out of work by not cooperating with them in the workplace, which reduces their productivity, or harassing them, which increases their disutility of work. This framework can be used to explain the emergence of temporary contracts that give jobs to young workers without the prospects of long-term employment with adverse effects on the employment outlook of these workers. According to Cahuc et al. (2013) 90% of employees in France are hired on fixed-term contracts. Dual labor markets may sentence young workers to an apparently endless sequence of fixed term jobs without ever having the prospects of stable employment. This may affect their accumulation of skills on the job as shown by Arulampalam et al. (2010) who find a negative effect of fixed-term contracts on on-the-job training using the European Community Household Panel.

Finally, there is a lack of training opportunities in many countries for the unskilled young workers. The lower youth unemployment rate in the European Union is in Germany where an established system of apprenticeship has managed to divert the unskilled away from unemployment into productive jobs in industries. Wolberts (2007) finds that national institutional differences in employment protection legislation and vocational training systems affect cross-national differences in labor market entry patterns, although the impact of both institutional features varies considerably by level of education. As an empirical fact, youth unemployment is lowest in Germany where the vocational training system is most advanced although attempts to introduce such a system in other OECD countries have been met with mixed success.

We do not deny that high unemployment and low participation rates among the young may be due to institutions. However, in this paper we study the relationship between values and trust and labor market outcomes for young workers. These values may affect the design of institutions as well as having an independent effect on labor market outcomes.

3 Social Capital and Labor Market Outcomes

Coleman (1990) explained how social capital is created when individuals find it in their self-interest to cooperate with others and form relationships. The different ingredients of social capital, such as trust, can then help individuals achieve their goals. It follows that social capital exists at the micro level in people's lives but also at the macro level for society as a whole. An economy's level of output depends not only on the stock of physical capital, the level of education, human capital, and technology but also on the quality of its social capital. Social capital may both affect economic performance directly as well as indirectly through the choice of institutions.

We are not the first to relate economic performance to social capital measured by a set of shared values and the level of trust. There are studies that find an effect of trust on output and income, such as Knack and Keefer (1997), Zak and Knack (2001), Algan and Cahuc (2013) and Bjørnskov (2012).⁴ Tabellini (2010) explains the variation in output per capita and the growth of output in European regions by cultural variables. The cultural variables are based on responses to three questions from the World Values Survey that are supposed to have a positive effect on output and growth: one measured trust towards other people, another tolerance and respect for others and the third the extent to which people feel they can control their own lives. There is one cultural trait that is thought to affect output and growth negatively, the extent to which parents try to teach their children to be obedient. Tabellini found that the principal components of these four variables could explain output and growth.

In Arnorsson and Zoega (2016) we explore social capital and labor market outcomes in European regions. We found that social capital depends positively on parents wanting to teach their children to be independent, imaginative and tolerant; it also depends positively on trust towards fellow citizens. Social capital measured in this way is positively correlated with male labor force participation, and negatively with unemployment and the average hours of work across regions. In this paper we focus on youth unemployment and youth labor force participation and extend our measure of social capital to include confidence in institutions, measures of traditional Versus modern values and participation in voluntary organizations. Modern Versus traditional values may be important for youth unemployment. The family is important in a traditional society and the family may serve a social insurance purpose in providing income to unemployed young workers and thus discouraging them from taking part in the labor market. Putnam (2000) argues that participation in voluntary organizations is important because social networks were created through voluntary work. A good example in the United States is voluntary fire departments, which bring people together on a regular basis to serve a common purpose.

⁴Delhey and Newton (2003) explored the origins of trust using survey data from the *Euromodule*. They found that social trust is higher where the public feels safe. Informal social networks are also associated with trust and those who are successful in life tend to be more trusting.

4 Statistical Methods

We use a method proposed by Hotelling in (1936). While Hotelling is primarily known for his location theory as well as the theory about the optimal extraction of natural resources, he also contributed in a very significant way to the development of modern statistical methods. One contribution was principal-components analysis. Another one was the use of what has been called canonical correlations. In principal components analysis the information given in a matrix is summarized by a set of principal components, each being a weighted sum of the variables in the matrix where the weights are chosen so as to maximize the variance explained. The method of canonical correlations is related to principal components analysis in that the information contained in a matrix is summarized by a set of derived variables. The difference lies in these variables being separated into two groups so that the weights are chosen so as to maximize the correlation between two latent variables, each latent variable summarizing the information contained in one group of variables. In our context, we take measures of values, trust, confidence in institutions and participation in voluntary organizations taken from surveys, and relate them to measures of labor market performance, in particular youth unemployment and youth participation. Thus we hypothesize that there are two latent variables; social capital and labor market performance, each of which depends on a set of variables describing values and labor market outcomes. Hotelling's method can then be used to calculate the latent variables by taking a weighted average of the underlying variables so as to maximize the correlation between the two latent variables, which are social capital S and labor market performance L . The canonical correlation is the bivariate correlation between two multivariate latent variables. The estimated model consists of several observed measures, which are summarized by two different variable sets, S and L , and represent the latent variables.

The results of the analysis report several statistics, defined in an appendix. These include the *Canonical correlation coefficient*, which measures the correlation between the two latent variables S and L on a given canonical function; the *Canonical function*, defined as a set of standardized coefficients from the observed variable sets; the *Standardized coefficient*, defined as the set of weights attached to observed variables in the two variable sets to yield the linear combinations that maximize the correlation between the two latent variables, i.e., the canonical correlation;⁵ and the *Structure coefficient*, defined as the bivariate correlation between an observed variable and a latent variable, S^* or L^* , which help to define the structure of the latent variable by estimating which observed variables contribute to the creation of the latent variable; the *Squared structure coefficient*, measuring the proportion of variance an observed variable linearly shares with a latent variable and, finally, the *Communality coefficient* that gives the proportion of variance in

⁵They are standardized due to the constraint that the variance of the pair of canonical variables in a canonical function are equal, $\text{var}(S_i^*) = \text{var}(L_i^*) = 1 \forall i$ where i represents the number of canonical functions. This is vital in order to obtain unique values for the coefficients.

each variable that is explained by all the canonical functions that are interpreted. It informs the researcher about the usefulness of the observed variable for the whole model.

The interpretation of each canonical correlation depends on the sign and size of both the standardized coefficient and the structured coefficient. When they have opposite signs one pays more attention to the structured coefficient because if a given variable is positively correlated with the latent variable but has a negative weight (standardized coefficient) then this implies that there is multicollinearity, i.e., the variable is correlated with some of the other variables that are included.⁶

5 Results from the Canonical Correlation Analysis

We study the relationship between social capital and youth unemployment and other labor market outcomes in 224 NUTS2 regions in Europe (*Nomenclature des unités territoriales statistiques*). Both variables are non-observable but we use Hotelling's canonical correlation method to construct them on the basis on observable variables. We denote our measure of social capital by S^* and our measure of labor market outcomes by L^* .

The components of social capital fall into three categories. First, there are two variables that measures confidence in public institutions, on the one hand, and trust towards fellow citizens, on the other hand. The second group of variables is included to capture the distinction between traditional and modern values and measure attitudes towards employment and parenting. The third group includes variables that measure work ethics and other values related to working, including what people like to teach their children. The fourth group has variables that measure group participation⁷ and an emphasis on resolving problem through discussions. There are two variables that are used to measure labor market outcomes. These are the rate of youth (15–24 years) unemployment and the rate of youth labor force participation.

The observed measures for social capital—the S^* variable—are measured in 2008 and include *Confidence* (the average percentage of those who reported that they had a great deal of confidence in various organisations), *Trust* (the percentage of respondents that believe most people can be trusted), *Importance of family* (the percentage of those who listed family as a very important factor in their life), *Children need both parents* (the percentage of respondents that tend to agree that children need both a father and mother to grow up happily), *Warm relationship of working mothers* (the percentage of those who agree strongly that working mother can establish as worm relationship with her child as a mother who doesn't work), *Fulfilling being housewife* (the percentage of those who agree strongly that being

⁶See Sherry and Henson (2005) on interpreting canonical correlation analysis.

⁷See Putnam (2000).

housewife as fulfilling as paid job), *Discuss problems* (the percentage of those who believe it is very important to be willing to discuss problems between husband and wife), *Group participation* (the average percentage of those who reported that they belong to voluntary organizations and activities).

The observed measures for the L^* variable set are: *Youth unemployment* (average unemployment percentage from 2001 to 2012 from 15 to 24 years old and the *Labor force participation rate* (average participation rate from 2001 to 2012 from 15 to 24 years old).

Table 2 Results of canonical correlation analysis

Variable	Function 1			Function 2			Com. Coef (%)
	Std. Coef	Str. Coef	Str. Coef ² (%)	Std. Coef	Str. Coef	Str. Coef ² (%)	
Input—values conducive or detrimental to labor market performance							
Trust	0.165	0.670	44.84	0.178	0.123	1.51	46.35
Importance of work	−0.200	−0.526	27.64	−0.277	−0.118	1.39	29.03
Job security	0.097	0.021	0.04	0.080	0.074	0.55	0.60
Job initiative	−0.102	0.292	8.53	0.057	0.025	0.06	8.59
Job achieve	0.129	0.173	3.00	−0.223	−0.110	1.21	4.21
Children obedience	−0.179	−0.162	2.63	−0.063	−0.217	4.71	7.34
Children independence	0.053	0.354	12.56	0.517	0.530	28.04	40.60
Children hard work	−0.262	−0.576	33.17	0.530	0.243	5.89	39.06
Children imagination	0.073	0.418	17.48	0.046	0.272	7.41	24.90
Children tolerance	0.197	0.355	12.59	0.050	−0.057	0.33	12.91
Children determination	−0.053	0.051	0.26	0.088	0.297	8.79	9.05
Children responsibility	−0.237	−0.110	1.22	−0.127	0.134	1.79	3.01
Warm relationship of working mothers	−0.144	−0.113	1.27	0.458	0.305	9.33	10.59
Fulfilling being housewife	0.052	−0.097	0.93	0.317	0.109	1.19	2.12
Children need both parents	−0.141	−0.645	41.65	0.520	0.306	9.36	51.02
Confidence	0.076	−0.057	0.32	−0.269	−0.317	10.07	10.39
Group participation	0.483	0.768	58.91	0.279	0.204	4.17	63.07
Output—consequences—benefits							
Youth unemployment	−0.117	−0.687	47.18	1.266	−0.727	52.81	99.99
Youth participation	0.924	0.996	99.16	0.873	−0.092	0.85	100.01
Canonical correlation coefficients				Squared canonical correlation coefficients			
1	2			1	2		
0.804(<i>F</i> = 11.85)	0.529(<i>F</i> = 5.00)			0.646	0.280		

The results of the canonical correlation analysis are shown in Table 2 below where two canonical correlations—each independent of the others—are found to be statistically significant. We find that social capital depends positively on trust (structure correlation equal to 0.670) and on teaching children to be independent (structure correlation equal to 0.354), imaginative (structure correlation equal to 0.418) and tolerant (structure correlation equal to 0.355). It depends negatively on teaching children to be obedient (structure correlation equal to -0.162), valuing hard work (structure correlation equal to -0.576) and finding work to be important (structure correlation equal to -0.526). The last two may be due to reverse causality, that bad employment outcomes may make people value work while the negative weight on obedience is consistent with our earlier findings in Agustsson and Zoega (2016) and Tabellini (2010). In effect, instilling obedience in children may have a stifling effect on them later in life. We now find, in addition, that social capital depends positively on participation in voluntary organizations (structure correlation equal to 0.768) and negatively on traditional values, the latter measured by the share of respondents who agree with the statement that children need both parents (structure correlation equal to -0.645). Other variables are not significant.⁸

Labor market outcomes depend positively on youth participation (structure correlation equal to 0.996) and negatively (structure correlation equal to -0.687). It follows that social capital is positively correlated with outcomes, in particular positively with productivity and negatively with unemployment.

To summarize our results so far, we have found that better labor market performance—lower youth unemployment and higher youth participation rates—is positively correlated with trust, teaching children to be independent, imaginative and tolerant and taking part in voluntary associations. It is negatively correlated with finding work important and teaching children to be obedient and hard working. Moreover, traditional values, captured by agreeing with the statement that children need both parents, are negatively correlated with labor market performance measured by youth unemployment and youth participation.

The relationship between S^* (social capital) and L^* (labor market performance) is shown in Fig. 1 below, first for each region and then as simple averages for each country. In the upper right-hand corner, we have mostly countries in northern Europe as well as Switzerland, Austria and Germany while in the bottom left-hand corner we have Eastern European countries and countries in southern Europe. It is interesting that France is one of the low S^* countries in the bottom left-hand corner, alongside Italy, Spain and Portugal. However, the Mediterranean countries appear to perform slightly better than countries in Eastern Europe. The laggards are Slovakia, Romania, Hungary, Bulgaria and Slovenia.

⁸The table reports two canonical function, each giving a relationship between the latent variables S^* and L^* . The standardized coefficients are the weights used on each underlying variable, the structured coefficient is the correlation between each of these variables and the latent variable, S^* or L^* . The *squared structure coefficient* measures the proportion of the variance an observed variable linearly shares with a latent variable (S^* or L^*) and the *communality coefficient* gives the proportion of the variance in each variable that is explained by all three canonical functions.

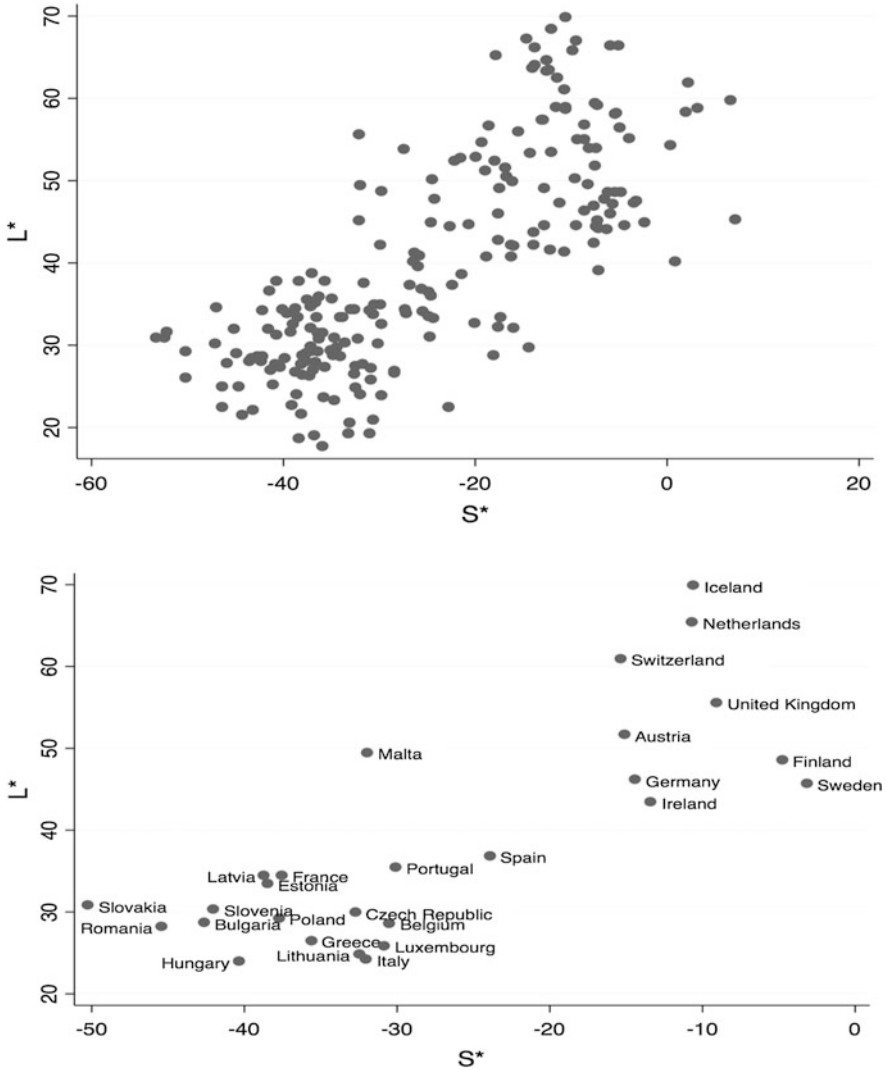


Fig. 1 Social capital and labor market performance

Figures 2 and 3 show the relationship between social capital and youth labor force participation and youth unemployment, first for the regions and then for averages for each country. Figure 2 shows a very strong relationship between labor force participation and S^* . There is a clear upward-sloping relationship and the country groupings are similar to Fig. 1. In Fig. 3 there is a downward-sloping relationship so that higher social capital generates lower youth unemployment. Note

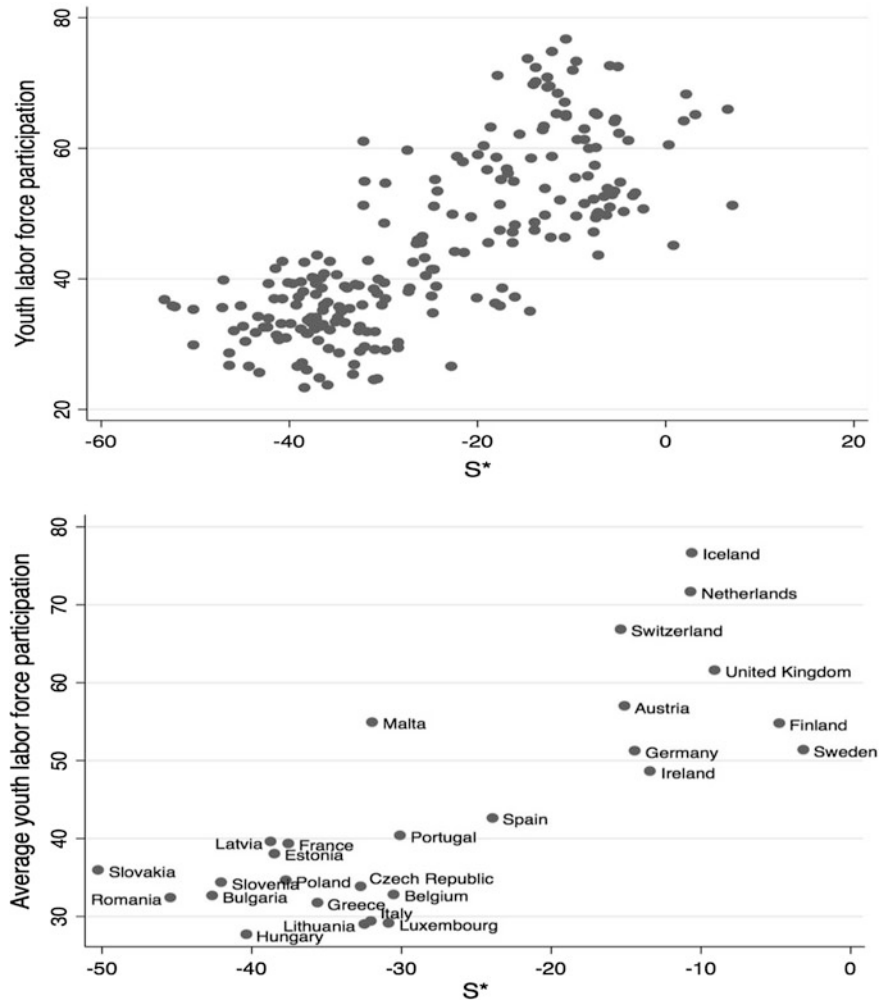


Fig. 2 Social capital (inverse of S^*) and youth labor force participation

that Greece, Spain and Italy (and also Poland) are outliers in that their youth unemployment rates are higher than their level of S^* would predict. This may indicate that institutions hurt youth employment in these countries and cannot be explained by social capital. For example, the entrenched insiders may have influenced politics so as to make governments pass laws that protect their insider status

at the expense of young entrants. Thus laws may make it difficult to fire insider workers by imposing mandatory redundancy payments on young workers and

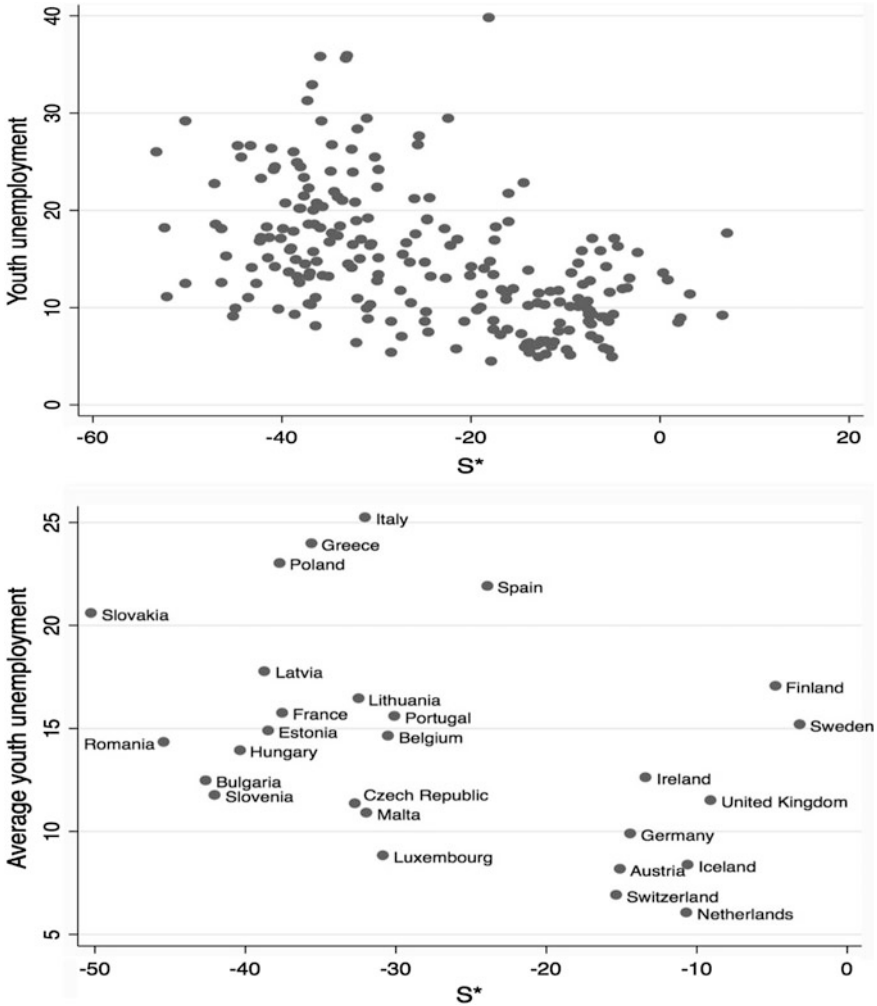


Fig. 3 Social capital (inverse of S^*) and the rate of youth unemployment

forcing firms to justify firing workers in a court of law. Such costs are included in the expected cost of employing young workers were they to be given permanent contracts.⁹

It is important to consider that the pattern revealed in Figs. 1, 2 and 3 can possibly stem from differences in shared values within each country as well as institutions. In order to test whether differences in social capital within countries are important, we used our measure of S^* as an explanatory variable in a cross-country

⁹See Bertola and Bentolila (1990) and Chen and Zoega (1999).

Table 3 Youth unemployment explained by social capital

Variable	Unemployment	Participation
S^*	-0.152 (3.25 ^{***})	0.134 (2.57 ^{**})
Austria	-3.635	16.021
Belgium	0.479	-6.005
Bulgaria	-3.522	-4.625
Czech Republic	-3.138	-4.751
France	0.536	1.393
Germany	-1.811	10.180
Greece	9.057	-6.456
Hungary	-1.677	-9.606
Ireland	-0.193	16.667
Italy	10.879	-9.290
Netherlands	-5.055	30.098
Poland	7.781	-3.319
Portugal	1.497	1.458
Romania	-2.092	-4.498
Slovakia	3.438	-0.285
Slovenia	-4.149	-2.982
Spain	8.769	2.920
Sweden	5.209	8.822
Switzerland	-4.951	25.992
United Kingdom	0.625	19.868
<i>Observations</i>	224	224
<i>Adjusted R-squared</i>	0.643	0.880

*** significant at 1% level, ** significant at the 5% level

regression for youth unemployment as well as for youth labor force participation rates. The equation has, in addition to S^* , dummy variables for countries that have more than one region and also a constant term. If the coefficient of S^* turns out not to be statistically insignificant we would conclude that the within-country differences are less important than the between-country differences, which would justify a focus on countries. If, in contrast, social capital is important then we can conclude that there are not only differences between countries but also between regions within countries. The results are reported in Table 3 below.

Social capital turns out to be statistically significant for both youth unemployment and youth labor force participation.

In Table 4 we list the youth unemployment rates for the Italian regions, as well as for the top ten highest and lowest regions in Europe and decompose it into the constant term in Table 3, the effect of differences in S^* , the country dummies from Table 3 (which can also measure differences in social capital) and an unexplained

Table 4 Decomposition of youth unemployment; Italy and the top highest and lowest regions

Italy						
Country	Region	Youth unemployment	Constant	$-0152 \times S^*$	Country dummy	Residual
Italy	Sicilia	35.833	9.478	5.038	10.879	10.438
Italy	Calabria	35.775	9.478	5.454	10.879	9.964
Italy	Campania	35.592	9.478	5.049	10.879	10.185
Italy	Sardegna	31.208	9.478	5.669	10.879	5.182
Italy	Basilicata	29.4	9.478	4.713	10.879	4.329
Italy	Puglia	28.283	9.478	4.856	10.879	3.07
Italy	Molise	25.4	9.478	6.732	10.879	-1.689
Italy	Abruzzo	18.008	9.478	3.46	10.879	-5.809
Italy	Liguria	14.925	9.478	4.833	10.879	-10.266
Italy	Piemonte	13.208	9.478	3.039	10.879	-10.188
Italy	Lombardia	9.858	9.478	4.718	10.879	-15.217
Highest						
Country	Region	Youth unemployment	Constant	$-0152 \times S^*$	Country dummy	Residual
Spain	Sur-Ciudad Aut. de Ceuta	39.789	9.478	2.749	8.769	18.793
Italy	Sicilia	35.833	9.478	5.038	10.879	10.438
Italy	Calabria	35.775	9.478	5.454	10.879	9.964
Italy	Campania	35.592	9.478	5.049	10.879	10.185
Greece	Dytiki Makedonia	32.892	9.478	5.598	9.057	8.759
Italy	Sardegna	31.208	9.478	5.669	10.879	5.182
Spain	Andalucía	29.425	9.478	3.407	8.769	7.771
Italy	Basilicata	29.4	9.478	4.713	10.879	4.329
Slovakia	Východné Slovensko	29.133	9.478	7.638	3.438	8.579
Greece	Ipeiros	29.125	9.478	5.44	9.057	5.15
Lowest						
Country	Region	Youth unemployment	Constant	$-0152 \times S^*$	Country dummy	Residual
Germany	Oberpfalz	5.742	9.478	3.264	-1.811	-5.189
Germany	Freiburg	5.65	9.478	0.812	-1.811	-2.829
Netherlands	Noord-Holland	5.625	9.478	1.491	-5.055	-0.29
Czech Rep.	Praha	5.375	9.478	4.327	-3.138	-5.292
Switzerland	Ostschweiz	5.317	9.478	2.08	-4.951	-1.291
Netherlands	Noord-Brabant	5.158	9.478	1.829	-5.055	-1.094
Netherlands	Gelderland	5.067	9.478	1.429	-5.055	-0.785
Netherlands	Utrecht	4.9	9.478	0.756	-5.055	-0.279
Germany	Oberbayern	4.883	9.478	1.935	-1.811	-4.718
Switzerland	Zentralschweiz	4.4	9.478	2.704	-4.951	-2.831

The table show the actual youth unemployment rate in 2015, the constant term from Table 2, the effect of social capital S^* , the country dummy for countries with more than one regions and the unexplained residual

Table 5 Decomposition of youth participation; Italy and the top highest and lowest regions

Italy						
Country	Region	Youth labor force part.	Constant	$0134 \times S^*$	Country dummy	Residual
Italy	Lombardia	38.3	42.863	-4.156	-9.29	8.883
Italy	Piemonte	37.033	42.863	-2.677	-9.29	6.137
Italy	Sardegna	32.292	42.863	-4.994	-9.29	3.713
Italy	Liguria	31.767	42.863	-4.258	-9.29	2.452
Italy	Puglia	29.533	42.863	-4.278	-9.29	0.239
Italy	Sicilia	26.75	42.863	-4.438	-9.29	-2.384
Italy	Abruzzo	26.5	42.863	-3.048	-9.29	-4.025
Italy	Molise	26.5	42.863	-5.93	-9.29	-1.142
Italy	Campania	25.317	42.863	-4.448	-9.29	-3.808
Italy	Basilicata	24.45	42.863	-4.152	-9.29	-4.971
Italy	Calabria	23.675	42.863	-4.804	-9.29	-5.093
Highest						
Country	Region	Youth labor force part.	Constant	$0134 \times S^*$	Country dummy	Residual
Netherlands	Noord-Brabant	74.708	42.863	-1.611	30.098	3.359
Netherlands	Drenthe	73.675	42.863	-1.957	30.098	2.672
Netherlands	Gelderland	73.158	42.863	-1.259	30.098	1.457
Netherlands	Overijssel	72.517	42.863	-0.789	30.098	0.345
Netherlands	Utrecht	72.4	42.863	-0.666	30.098	0.106
Switzerland	Ostschweiz	72.267	42.863	-1.833	25.992	5.245
Netherlands	Noord-Holland	71.85	42.863	-1.314	30.098	0.203
Switzerland	Zentralschweiz	71.058	42.863	-2.382	25.992	4.586
Netherlands	Limburg (NL)	70.717	42.863	-1.683	30.098	-0.561
Netherlands	Friesland (NL)	70.075	42.863	-1.843	30.098	-1.042
Lowest						
Country	Region	Youth labor force part.	Constant	$0134 \times S^*$	Country dummy	Residual
Italy	Abruzzo	26.5	42.863	-3.048	-9.29	-4.025
Italy	Molise	26.5	42.863	-5.93	-9.29	-1.142
Hungary	Alföld és Észak-Észak-Mag.	25.967	42.863	-5.115	-9.606	-2.175
Hungary	Alföld és Észak-Dél-Alföld	25.608	42.863	-5.777	-9.606	-1.872
Italy	Campania	25.317	42.863	-4.448	-9.29	-3.808
Greece	Dytiki Makedonia	24.7	42.863	-4.931	-6.456	-6.775
Belgium	Brabant Wallon	24.642	42.863	-4.096	-6.005	-8.12
Italy	Basilicata	24.45	42.863	-4.152	-9.29	-4.971
Italy	Calabria	23.675	42.863	-4.804	-9.29	-5.093
Greece	Kentriki Makedonia	23.267	42.863	-5.138	-6.456	-8.002

The table shows the actual youth participation rate in 2015, the constant term from Table 2, the effect of social capital L^* , the country dummy for countries with more than one regions and the unexplained residual

residual. Then in Table 4 we explore the similar decomposition of differences in youth labor force participation. Appendix A2 has the results of the decomposition for all regions in our sample while Tables 4 and 5 show the results for Italian regions and the top ten and bottom ten regions.

We start with Table 4. The first column has the name of the country, the second column has the name of each region, the third has the rate of youth unemployment (average from 2001 to 2012), the fourth has the constant in the equation in Table 3, the fifth has the effect of social capital (calculated as the product of the estimated coefficient of S^* in Table 3 and the level of S^* in each region), the sixth has the country dummy for each country from Table 3 and the seventh and final column has the residual, or the unexplained part. We should note that the country dummy captures country-specific social capital so that the total effect of social capital depends on both the direct effect at the regional level in column five as well as the country dummy. In addition, the country dummy captures the effect of institutions and the country-wide business cycle. In column five we can see that the social capital is better in the northern regions of Italy than in the south. The difference between the best social capital in Italy, which is region Piemonte, and the worst, which is in Molise, implies a difference of about 3.7% in the rate of unemployment. Interestingly, the social capital of Molise, which is just south-east of Rome, is worse than that in the regions further south, such as in Sicily. In addition, the country dummy for Italy is quite large, 10.9%, which suggests that either the social capital or institutions of Italy are contributing to youth unemployment.

Looking further down Table 4, we see the ten regions with the highest youth unemployment rates and the ten having the lowest youth unemployment rates. Youth unemployment is highest in the regions of southern Europe; it is highest in the Spanish regions of Ceuta, which is an autonomous Spanish region on the African side of the Strait of Gibraltar; it is followed by the Italian regions of Sicily, Calabria and Campania, the Greek region of Makedonia, Sardinia, Andalusia and the Italian region Basilicata. The regions having the lowest youth unemployment rates are in Northern Europe: It is lowest in Central Switzerland, then in Oberbayern in Germany, followed by the Dutch regions of Utrecht, Gelderland, and Noord-Brabant, and Eastern Switzerland. The difference between the effects of social capital at the regional level—ignoring country differences—is around 3–5%. Thus social capital would lead us to predict that youth unemployment was about 5% higher on Sicily than in Freiburg, Germany. We should also note the large differences in the country dummy variables. The difference between the Italian and the German country dummies is more than 12%, which can indicate the role of institutions but also average social capital at the country level as shown in Fig. 3 above. Finally, there is a very significant unexplained component that cannot be explained by either differences in social capital, institutions or the business cycle.

We now turn to Table 4, which analyses differences in the rate of youth labor force participation in the same way. The same pattern in Italy emerges—

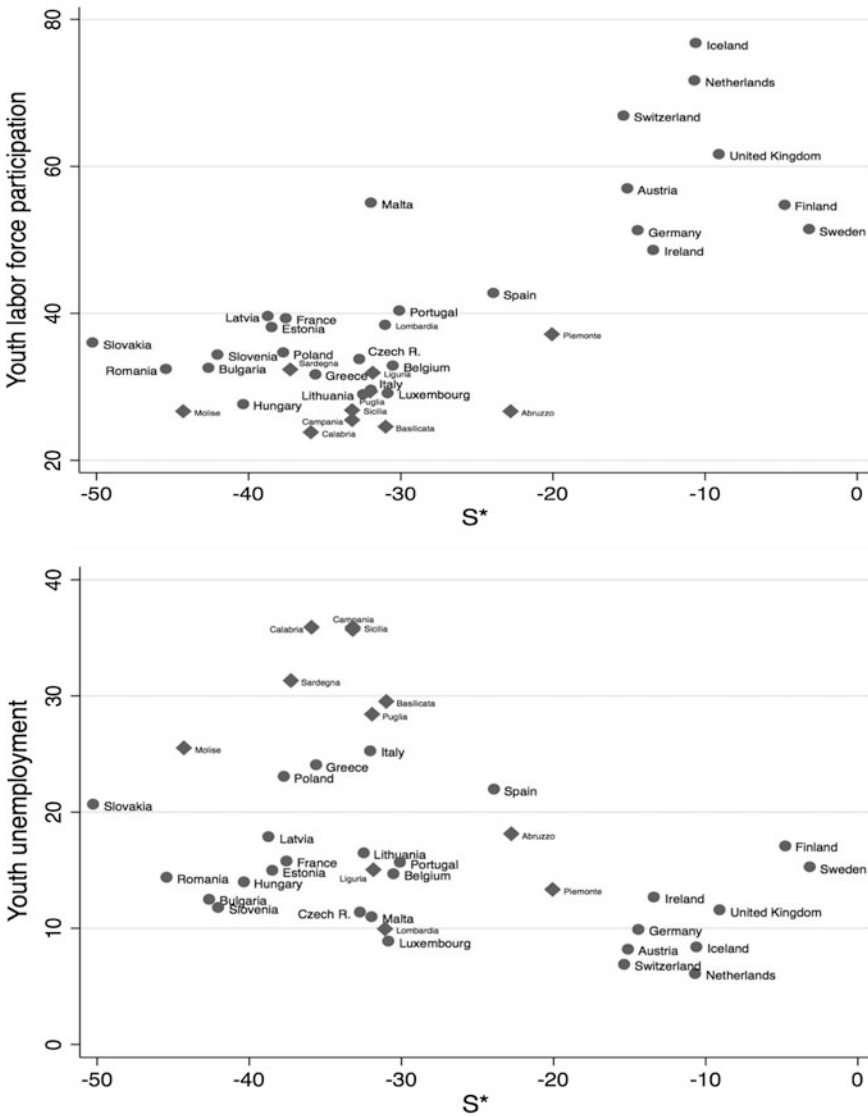
participation tends to be lower in the south than in the north. The country dummy for Italy is very high, it -9.3% while the effect of social capital at the regional level predicts a lower participation rate of between 2.7% in Piemonte and 5.9% in Molise.

The highest youth labor force participation rates are in the Netherlands (country effect is 30%) and in Switzerland (country effect 25%). The difference between the country dummy for Italy and the Netherlands is huge, almost 40% while the difference between the regional social capital effect is around 6% . But do note that the country dummy variable can also capture differences in social capital across countries—not just institutions and the business cycle—as shown in Fig. 3.

The lowest youth labor force participation rates are in Greece, Italy, Wallonia in Belgium and Hungary. Kentriki Makedonia in Greece has a participation rate of 23.3% , which can be explained by the Greek country dummy (-6.5%), the regional social capital effect (-5.1%) and an unexplained residual of -8.0% . For Calabria in Italy with a youth participation rate of 23.7% we have an even more negative country effect (-9.3%) and a significant regional social capital effect (-4.8%) and a somewhat smaller unexplained effect of -5.0% . Social capital explains almost all of the low participation rate in Molise, Italy, where the effect of social capital is -5.9% and the country dummy -9.3% leaving only -1.1% unexplained. Two Hungarian regional with low youth labor force participation are in North Hungary (*Észak-Magyarország*), where the effect of social capital and the country dummy are -5.1 and -9.6% respectively, and in Southern Transdanubia (*Dél-Dunántúl*), where the effect of social capital is -5.8% and the country dummy is -9.6% leaving only -1.9% unexplained.

Comparing Tables 4 and 5 we find that the unexplained component is much larger for the unemployment rates. Moreover, a similar pattern emerges that unemployment rates are high in Southern Europe and lower in Northern Europe and participation rates high in the north and lower in the south. There is one exception to this rule, the French-speaking Wallonia in Belgium. This used to be the center of heavy industry in Belgium due to extensive coal mines and deposits of iron. However, with the decline of heavy industry in the post-war period, Wallonia became a high-unemployment region that has lower per-capita output than the German-speaking Flemish regions. There is a large unexplained component for Wallonia (-8.1%), which may capture the effect of the declining industries, on top of a regional social capital effect of -4.1% and a country effect of -6.0% .

In Fig. 4 we superimpose the Italian regions on the country averages from Figs. 2 and 3 above in order to compare the social capital at the regional level to the country averages for the other countries. The regions with the highest level of social capital are Piemonte and Abruzzo and social capital in these two regions is higher than the simple average for Spain, Portugal and Belgium but lower than in Scandinavia. The worst Italian region, which is Molise, has social capital between that of Romania and Hungary. In terms of labor force participation, Piemonte and



regions but youth unemployment is lower. This applies, for example to many of the countries of Eastern Europe. An exception is Piemonte where youth unemployment is relatively low and the level of social capital high.

In the countries of Scandinavia, Iceland, Ireland, the U.K., the Netherlands, Austria, Germany and Switzerland social capital is high, youth participation is higher than in the other countries and unemployment is lower.

6 Conclusions

Macroeconomics, the study of unemployment and youth unemployment is hampered by a neglect of differences in social capital. Instead the focus is on macroeconomic aggregates and sometimes institutions. We have found a strong relationship between social capital, on the one hand, and youth unemployment and youth labor force participation, on the other hand, which implies that omitting social capital from the economic analysis may lead to incorrect policy recommendations. Thus institutions may reflect values, trust and social networks and be difficult to import from one country to another. Similarly, persistently high unemployment may be more difficult to eradicate in one country to another.

Paying particular attention to Italy, we have found significant variation in the level of capital between regions within Italy as well as between Italy as a whole and most of the countries of northern Europe. The regions in northern Italy come closest to having the social capital of northern Europe while the southern Italian regions have social capital that is comparable to the most backward Eastern European countries.

Appendix A1

Canonical correlation—main concepts

- *Canonical correlation coefficient*: the correlation between the two latent variables S and L on a given canonical function.
- *Squared canonical correlation*: represents the proportion of variance shared by the two latent variables. It indicates the amount of shared variance between the variable sets.
- *Canonical function*: Set of standardized coefficients from the observed variable sets.
- *Standardized coefficient*: the weights attached to observed variables in the two variable sets to yield the linear combinations that maximize the correlation between the two latent variables, i.e., the canonical correlation. They are standardized due to the constraint that the variance of the pair of canonical variables in a canonical function are equal, $var(S_i^*) = var(L_i^*) = 1 \forall i$ where i represents

Table 6 Variable descriptions

Variable	Measure	Details	Identifier	Source
Trust	Row percentage	Those who replied that most people can be trusted after being asked: Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?	Q7	EVS (2011)
Importance of work	Row percentage	Those who listed work as a very important in their life	Q1	EVS (2011)
Job security	Row percentage	The percentage of people who mentioned job security as an important aspect of a job	Q14	EVS (2011)
Job initiative	Row percentage	The percentage of people who mentioned the opportunity to use initiative as an important aspect of a job	Q14	EVS (2011)
Job achieve	Row percentage	The percentage of people who mentioned the feeling you can achieve something as an important aspect of a job	Q14	EVS (2011)
Children obedience	Row percentage	Those who listed obedience as a quality to learn children at home	Q52	EVS (2011)
Children independence	Row percentage	Those who listed independence as a quality to learn children at home	Q52	EVS (2011)
Children hard work	Row percentage	Those who listed value of hard work as a quality to learn children at home	Q52	EVS (2011)
Children imagination	Row percentage	Those who listed imagination as a quality to learn children at home	Q52	EVS (2011)
Children tolerance	Row percentage	Those who listed tolerance and respect as a quality to learn children at home	Q52	EVS (2011)
Children determination	Row percentage	Those who listed determination as a quality to learn children at home	Q52	EVS (2011)
Children responsibility	Row percentage	Those who listed responsibility as a quality to learn children at home	Q52	EVS (2011)
Warm relationship of working mothers	Row percentage	Those who agree strongly with the following statement: Working mother can establish as worm relationship with her child as a mother who doesn't work	Q48A	EVS (2011)

(continued)

Table 6 (continued)

Variable	Measure	Details	Identifier	Source
Fulfilling being housewife	Row percentage	Those who agree strongly with the following statement: Being a housewife is just as fulfilling as working for pay	Q48D	EVS (2011)
Children need both parents	Row percentage	Children need both parents to grow up happily	Q43	EVS (2011)
Confidence	Average row percentage	Those who stated that they had a great deal of confidence in organizations	Q63	EVS (2011)
Group participation	Average row percentage	Belong to voluntary organizations and activities	Q5	EVS (2011)
Youth unemployment	Average row percentage	The average unemployment rate, % of total population from age 15 to 24, from 2001 to 2012		Eurostat (2016b)
Youth participation	Row percentage	The average labor force participation rate, % of total population from age 15 to 24, from 2001 to 2012		Eurostat (2016a)

the number of canonical functions. This is vital in order to obtain unique values for the coefficients.

- *Structure coefficient*: the bivariate correlation between an observed variable and a latent variable, S or L. They help to define the structure of the latent variable by estimating which observed variables contribute to the creation of the latent variable.
- *Squared structure coefficient*: the proportion of variance an observed variable linearly shares with a latent variable.
- *Communality coefficient*: the proportion of variance in each variable that is explained by all the canonical functions that are interpreted. It informs the researcher about the usefulness of the observed variable for the whole model.

Appendix A2 Variables and Regions

See Table 6

See Table 7

See Table 8

See Table 9.

Table 7 List of regions

Country	Region	Country	Region	Country	Region	Country	Region
Austria	Niederösterreich	France	Picardie	Germany	Unterfranken	Greece	Ipeiros
Austria	Wien	France	Haute-Normandie	Germany	Schwaben	Greece	Ionía nísai
Austria	Kärnten	France	Centre(FR)	Germany	Berlin	Greece	Dytiki Elláda
Austria	Steiermark	France	Basse Normandie	Germany	Bremen	Greece	Peloponnisos
Austria	Oberösterreich	France	Bourgogne	Germany	Hamburg	Greece	Attiki
Belgium	Bruxelles/Brussels Gewest	France	Nord-Pas-de-Calais	Germany	Darmstadt	Greece	Voreio Aigáio
Belgium	Antwerpen	France	Lorraine	Germany	Gießen	Greece	Notio Aigáio
Belgium	Limburg(BE)	France	Alsace	Germany	Kassel	Greece	Kriti
Belgium	Oost-Vlaanderen	France	Franche-Comté	Germany	Mecklenburg-Vorpommern	Hungary	Közép-Magyarország
Belgium	Vlaams Brabant	France	Pays de la Loire	Germany	Braunschweig	Hungary	Dunántúl-Közép-Dunántúl
Belgium	West-Vlaanderen	France	Bretagne	Germany	Hannover	Hungary	Dunántúl-Nyugat-Dunántúl
Belgium	Brabant Wallon	France	Poitou-Charentes	Germany	Lüneburg	Hungary	Dunántúl-Dél-Dunántúl
Belgium	Hainaut	France	Aquitaine	Germany	Weser-Ems	Hungary	Alföld és Észak- Észak-Magyarország
Belgium	Liège	France	Midi-pyrénées	Germany	Düsseldorf	Hungary	Alföld és Észak-Észak- Alföld
Belgium	Namur	France	Limousin	Germany	Köln	Hungary	Alföld és Észak- Dél Alföld
Bulgaria	Yugozapaden	France	Rhône-Alpes	Germany	Münster	Iceland	Island
Czech Republic	Praha	France	Auvergne	Germany	Detmold	Ireland	Border, Midland and Western
Czech Republic	Strední Cechy	France	Languedoc-Roussillon	Germany	Arnsberg	Ireland	Southern and Eastern
Czech Republic	Jihozápad	France	Provence-Alpes Côte d' Azur	Germany	Koblenz	Italy	Piemonte

(continued)

Table 7 (continued)

Country	Region	Country	Region	Country	Region	Country	Region
Czech Republic	Severozápad	Germany	Stuttgart	Germany	Saarland	Italy	Liguria
Czech Republic	Severovýchod	Germany	Karlsruhe	Germany	Dresden	Italy	Lombardia
Czech Republic	Jihovýchod	Germany	Freiburg	Germany	Sachsen-Anhalt	Italy	Abruzzo
Czech Republic	Střední Morava	Germany	Tübingen	Germany	Schleswig Holstein	Italy	Molise
Czech Republic	Moravskoslezsko	Germany	Oberbayern	Germany	Thüringen	Italy	Campania
Estonia	Eesti	Germany	Niederbayern	Greece	Anatoliki Makedonia, Thraki	Italy	Puglia
Finland	Länsi-Suomi	Germany	Oberpfalz	Greece	Kentriki Makedonia	Italy	Basilicata
France	Ile de France	Germany	Oberfranken	Greece	Makedonia	Italy	Calabrai
France	Champagne-Ardenne	Germany	Mittelfranken	Greece	Thessalia	Italy	Sicilia
Country	Region	Country	Region	Country	Region	Country	Region
Italy	Sardegna	Poland	Kujawsko-Pomorskie	Spain	Aragón	United Kingdom	Northumberland and tyne and wear
Latvia	Latvija	Poland	Waminsko-Mazurskie	Spain	Comunidad de Madrid	United Kingdom	Greater Manchester
Lithuania	Lietuva	Poland	Pomorskie	Spain	Castilla y León	United Kingdom	Lancashire
Luxembourg	Luxembourg	Portugal	Norte	Spain	Castilla-la Mancha	United Kingdom	East Yorkshire and Northern Lincolnshire
Malta	Malta	Portugal	Algarve	Spain	Extremadura	United Kingdom	North Yorkshire

(continued)

Table 7 (continued)

Country	Region	Country	Region	Country	Region	Country	Region
Netherlands	Groningen	Portugal	Centro(PT)	Spain	Cataluña	United Kingdom	South Yorkshire
Netherlands	Friesland(NL)	Portugal	Lisboa	Spain	Valenciana	United Kingdom	West Yorkshire
Netherlands	Drenthe	Portugal	Alentejo	Spain	Illes Balears	United Kingdom	Derbyshire and Nottinghamshire
Netherlands	Overijssel	Romania	Nord-Vest	Spain	Andalucia	United Kingdom	Leicestershire, Rutland and Northamptonshire
Netherlands	Gelderland	Romania	Centru	Spain	Región de Murcia	United Kingdom	Shropshire and Staffordshire
Netherlands	Utrecht	Romania	Nord-Est	Spain	ES Sur-Ciudad Autonoma De Ceuta	United Kingdom	West Midlands
Netherlands	Noord-Holland	Romania	Sud-Est	Spain	Canarias(ES)	United Kingdom	East Anglia
Netherlands	Zuid-Holland	Romania	Sud-muntenia	Sweden	Stockholm	United Kingdom	Bedfordshire and Hertfordshire
Netherlands	Noord-Brabant	Romania	Bucuresti-illfov	Sweden	Östra Mellansverige	United Kingdom	Essex
Netherlands	Limburg(NL)	Romania	Sud-Vest Oltenia	Sweden	Småland medöarna	United Kingdom	Inner London
Poland	Łódzkie	Romania	Vest	Sweden	Sydsverige	United Kingdom	Outer London
Poland	Mazowieckie	Slovakia	Bratislavskýkraj	Sweden	Väst sverige	United Kingdom	Berkshire, Buckinghamshire and Oxfordshire
Poland	Malopolskie	Slovakia	Západné Slovensko	Sweden	Norra Mellansverige	United Kingdom	Surrey, East and West Sussex

(continued)

Table 7 (continued)

Country	Region	Country	Region	Country	Region	Country	Region
Poland	Slaskie	Slovakia	Stredné Slovensko	Sweden	Mellersta Norrland	United Kingdom	Hampshire and Isle of Wight
Poland	Lubelskie	Slovakia	Východné Slovensko	Sweden	Övre Norrland	United Kingdom	Kent
Poland	Podkarpackie	Slovenia	Vzhodna Slovenija	Switzerland	Région lémanique	United Kingdom	Gloucestershire, Wiltshire and Bristol/Bath area
Poland	Swietokrzyskie	Slovenia	Zahodna Slovenija	Switzerland	Espace Mittelland	United Kingdom	Dorset and Somerset
Poland	Podlaskie	Spain	Galicia	Switzerland	Nordwestschweiz	United Kingdom	Devon
Poland	Wielkopolskie	Spain	Principado de Asturias	Switzerland	Zürich	United Kingdom	West Wales and The Valleys
Poland	Zagodniopomorskie	Spain	Cantabria	Switzerland	Ostschweiz	United Kingdom	East Wales
Poland	Lubuskie	Spain	País Vasco	Switzerland	Zentralschweiz	United Kingdom	Eastern Scotland
Poland	Dolnoslaskie	Spain	Foral de	Switzerland	Ticino	United Kingdom	Scotland
Poland	Opolskie	Spain	La Rioja	United Kingdom	Tees Valley and Durham	United Kingdom	Northern Ireland (UK)

Table 8 The decomposition of youth unemployment

Country	Region	Youth unemployment	$/-0152 \times S^*$	Country dummy	Residual
Spain	Ciudad Autonoma de Ceuta	39,789	2749	8769	28,271
Italy	Sicilia	35,833	5038	10,879	19,916
Italy	Calabria	35,775	5454	10,879	19,442
Italy	Campania	35,592	5049	10,879	19,663
Greece	Dytiki Makedonia	32,892	5598	9057	18,237
Italy	Sardegna	31,208	5669	10,879	14,660
Spain	Andalucía	29,425	3407	8769	17,249
Italy	Basilicata	29,400	4713	10,879	13,808
Slovakia	Východné Slovensko	29,133	7638	3438	18,058
Greece	Ipeiros	29,125	5440	9057	14,628
Italy	Puglia	28,283	4856	10,879	12,548
Spain	Extremadura	27,592	3863	8769	14,959
Spain	Canarias (ES)	26,717	3890	8769	14,058
Greece	Dytiki Ellada	26,642	5280	9057	12,305
Poland	Warminsko-Mazurskie	26,617	6799	7781	12,037
Poland	Swietokrzyskie	26,583	6580	7781	12,222
Poland	Podkarpackie	26,350	6241	7781	12,328
Poland	Zachodniopomorskie	26,183	4960	7781	13,442
Greece	Thessalia	25,950	5896	9057	10,997
Slovakia	Stredné Slovensko	25,933	8104	3438	14,391
Italy	Molise	25,400	6732	10,879	7789
Poland	Dolnoslaskie	25,392	4590	7781	13,021
Greece	Kentriki Makedonia	24,867	5832	9057	9978
Belgium	Hainaut	24,433	5783	0479	18,172
Poland	Kujawsko-Pomorskie	24,367	6187	7781	10,399
Greece	Peloponnisos	24,175	6217	9057	8901
Belgium	Bruxelles/Brussels Gewest	24,142	4528	0479	19,135
Poland	Lubelskie	23,917	5289	7781	10,847
Greece	Anatoliki Makedonia, Thraki	23,900	4931	9057	9912
Poland	Lubuskie	23,308	5731	7781	9796
France	Languedoc-Roussillon	23,218	6418	0536	16,264
Spain	Principado de Asturias	22,750	2192	8769	11,789
Poland	Opolskie	22,658	7175	7781	7702
Spain	Comunidad Valenciana	22,308	4535	8769	9005
France	Nord-Pas-de-Calais	22,200	5648	0536	16,016
Greece	Voreio Aigaio	21,858	5244	9057	7557
Spain	Región de Murcia	21,692	2428	8769	10,495
Poland	Slaskie	21,417	5715	7781	7920
Spain	Galicia	21,333	5182	8769	7382
Spain	Castilla y León	21,258	3708	8769	8782

(continued)

Table 8 (continued)

Country	Region	Youth unemployment	$-0.152 \times S^*$	Country dummy	Residual
Spain	Castilla-la Mancha	21,158	3949	8769	8440
Poland	Malopolskie	20,992	5110	7781	8100
Poland	Lódzkie	20,808	4893	7781	8134
Poland	Pomorskie	20,692	5527	7781	7384
Poland	Wielkopolskie	20,642	6024	7781	6837
Greece	Attiki	20,350	5418	9057	5875
Greece	Ionía Nisia	20,175	5774	9057	5344
Hungary	Alföld és Észak-Magyarország	20,125	5806	-1677	15,996
Poland	Podlaskie	19,967	5581	7781	6605
Belgium	Liège	19,150	4684	0479	13,987
Greece	Notio Aigaio	19,025	3745	9057	6223
Spain	Cataluña	18,933	3744	8769	6421
Spain	Illes Balears	18,900	4884	8769	5247
Spain	Cantabria	18,742	2419	8769	7554
Portugal	Algarve	18,513	5557	1497	11,458
Greece	Kriti	18,483	5643	9057	3783
France	Picardie	18,464	7154	0536	10,774
Czech Rep.	Severozápad	18,350	5145	-3138	16,344
Spain	País Vasco	18,233	2629	8769	6835
Romania	Sud-Muntenia	18,217	6323	-2092	13,985
Slovakia	Západné Slovensko	18,133	7972	3438	6724
Poland	Mazowieckie	18,125	5466	7781	4878
Belgium	Namur	18,083	6056	0479	11,548
Hungary	Alföld és Észak-Alföld	18,058	7055	-1677	12,680
Italy	Abruzzo	18,008	3460	10,879	3669
Sweden	Mellersta Norrland	17,617	-1090	5209	13,497
France	Provence-Alpes-Côte d'Azur	17,550	5276	0536	11,738
Germany	Berlin	17,467	3919	-1811	15,359
Czech Rep.	Moravskoslezsko	17,325	5172	-3138	15,291
France	Haute-Normandie	17,170	6412	0536	10,222
Romania	Centru	17,158	6295	-2092	12,955
Sweden	Norra Mellansverige	17,075	1069	5209	10,796
France	Champagne-Ardenne	17,040	6103	0536	10,400
Spain	La Rioja	16,975	4808	8769	3398
Spain	Comunidad de Madrid	16,917	3243	8769	4905
Germany	Sachsen-Anhalt	16,858	2658	-1811	16,012
Romania	Sud-Est	16,808	6440	-2092	12,460
France	Lorraine	16,642	5307	0536	10,798
Spain	Aragón	16,600	4078	8769	3753

(continued)

Table 8 (continued)

Country	Region	Youth unemployment	$-0.152 \times S^*$	Country dummy	Residual
Portugal	Alentejo	16,542	4630	1497	10,414
Germany	Mecklenburg-Vorpommern	16,367	3355	-1811	14,823
Belgium	Brabant Wallon	16,360	4650	0479	11,231
Sweden	Sydsverige	16,208	0661	5209	10,338
France	Aquitaine	16,042	5928	0536	9578
Hungary	Dunántúl-Dél-Dunántúl	15,825	5944	-1677	11,558
United Kingdom	West Midlands	15,783	1245	0625	13,914
Sweden	Östra Mellansverige	15,750	0942	5209	9599
France	Franche-Comté	15,700	5575	0536	9589
Sweden	Övre Norrland	15,558	0352	5209	9997
Portugal	Lisboa	15,400	4136	1497	9767
Romania	Sud-Vest Oltenia	15,275	6974	-2092	10,393
Germany	Dresden	15,058	4533	-1811	12,336
France	Bourgogne	15,030	6303	0536	8191
Italy	Liguria	14,925	4833	10,879	-0788
United Kingdom	Tees Valley and Durham	14,725	2727	0625	11,374
France	Poitou-Charentes	14,660	5524	0536	8600
Spain	Comunidad Foral de Navarra	14,608	3776	8769	2064
Portugal	Norte	14,567	4010	1497	9059
United Kingdom	East Yorkshire and Northern Lincolnshire	14,550	1299	0625	12,627
France	Basse-Normandie	14,390	5011	0536	8843
France	Centre (FR)	14,370	5709	0536	8125
France	Auvergne	14,180	6199	0536	7445
Sweden	Västssverige	14,175	0860	5209	8105
United Kingdom	West Wales and The Valleys	14,100	3030	0625	10,445
Hungary	Alföld és Észak-Dél-Alföld	14,083	6557	-1677	9203
France	Midi-Pyrénées	14,036	4951	0536	8549
United Kingdom	South Western Scotland	13,958	2811	0625	10,522
Ireland	Border, Midland and Western	13,783	2108	-0193	11,868
Slovenia	Vzhodna Slovenija	13,583	5964	-4149	11,768
France	Alsace	13,540	5636	0536	7368
United Kingdom	South Yorkshire	13,533	-0061	0625	12,970
United Kingdom	Northumberland and Tyne and Wear	13,467	1415	0625	11,427
France	Bretagne	13,327	4530	0536	8261
Austria	Wien	13,300	2669	-3635	14,266

(continued)

Table 8 (continued)

Country	Region	Youth unemployment	$/-0152 \times S^*$	Country dummy	Residual
France	Limousin	13,243	5425	0536	7282
Italy	Piemonte	13,208	3039	10,879	-0709
France	Rhône-Alpes	13,167	5654	0536	6976
France	Pays de la Loire	13,142	5829	0536	6776
France	Ile de France	13,117	5334	0536	7247
Germany	Thüringen	13,100	3678	-1811	11,233
Sweden	Småland med öarna	12,975	0483	5209	7283
United Kingdom	Inner London	12,925	3437	0625	8864
Germany	Bremen	12,809	-0130	-1811	14,751
Portugal	Centro (PT)	12,733	4544	1497	6692
United Kingdom	Greater Manchester	12,658	1120	0625	10,914
Romania	Bucuresti-Ilfov	12,517	7061	-2092	7547
Czech Rep.	Střední Morava	12,483	5795	-3138	9826
Bulgaria	Yugozapaden	12,442	6485	-3522	9478
Romania	Vest	12,400	7633	-2092	6858
United Kingdom	West Yorkshire	12,308	1227	0625	10,456
Sweden	Stockholm	11,933	0514	5209	6210
United Kingdom	Derbyshire and Nottinghamshire	11,842	0589	0625	10,628
United Kingdom	Lancashire	11,836	2360	0625	8852
United Kingdom	Outer London	11,825	2546	0625	8655
Germany	Arnsberg	11,717	1628	-1811	11,900
United Kingdom	East Wales	11,691	4160	0625	6906
United Kingdom	Kent	11,575	1759	0625	9191
United Kingdom	Eastern Scotland	11,492	0792	0625	10,075
Germany	Saarland	11,418	2472	-1811	10,758
Ireland	Southern and Eastern	11,392	1943	-0193	9642
United Kingdom	Devon	11,340	-0498	0625	11,214
Germany	Braunschweig	11,333	2857	-1811	10,288
Romania	Nord-Est	11,033	7935	-2092	5190
Romania	Nord-Vest	10,975	6629	-2092	6437
Czech Rep.	Jihovýchod	10,967	5531	-3138	8574
United Kingdom	North Yorkshire	10,875	1309	0625	8941

(continued)

Table 8 (continued)

Country	Region	Youth unemployment	$/-0152 \times S^*$	Country dummy	Residual
Germany	Düsseldorf	10,800	2458	-1811	10,153
Germany	Schleswig-Holstein	10,567	1150	-1811	11,228
United Kingdom	Essex	10,536	1603	0625	8309
United Kingdom	Shropshire and Staffordshire	10,508	1608	0625	8275
Germany	Detmold	10,433	3996	-1811	8249
United Kingdom	Leicestershire, Rutland and Northamptonshire	10,375	1959	0625	7792
Czech Rep.	Severovýchod	10,317	5656	-3138	7799
Germany	Hannover	10,283	1850	-1811	10,244
Hungary	Dunántúl-Közép-Dunántúl	10,267	5620	-1677	6323
Belgium	Limburg (BE)	10,258	4662	0479	5117
Germany	Lüneburg	10,175	2104	-1811	9,882
Germany	Gießen	10,050	1426	-1811	10,435
United Kingdom	Northern Ireland (UK)	10,017	1304	0625	8088
Switzerland	Ticino	10,009	2878	-4951	12,081
Italy	Lombardia	9858	4718	10,879	-5738
Slovenia	Zahodna Slovenija	9858	6819	-4149	7188
Germany	Münster	9783	1152	-1811	10,442
Hungary	Dunántúl-Nyugat-Dunántúl	9750	6136	-1677	5291
Switzerland	Région lémanique	9683	2926	-4951	11,708
Germany	Kassel	9600	1116	-1811	10,295
Belgium	Antwerpen	9533	3761	0479	5293
United Kingdom	Bedfordshire and Hertfordshire	9267	0736	0625	7907
Germany	Oberfranken	9217	1132	-1811	9896
Hungary	Közép-Magyarország	9217	5874	-1677	5020
Germany	Köln	9200	1080	-1811	9932
United Kingdom	East Anglia	9158	-1016	0625	9550
Slovakia	Bratislavský kraj	9042	6864	3438	-1260
Germany	Hamburg	9008	0896	-1811	9924
Germany	Koblenz	8991	0923	-1811	9880
United Kingdom	Dorset and Somerset	8833	-0337	0625	8545
Germany	Weser-Ems	8633	2674	-1811	7771
Germany	Darmstadt	8542	3143	-1811	7210
Belgium	Vlaams-Brabant	8525	4310	0479	3736
United Kingdom	Berkshire, Buckinghamshire and Oxfordshire	8492	0810	0625	7057

(continued)

Table 8 (continued)

Country	Region	Youth unemployment	$/-0152 \times S^*$	Country dummy	Residual
Belgium	Oost-Vlaanderen	8483	3776	0479	4229
United Kingdom	Hampshire and Isle of Wight	8475	1134	0625	6716
United Kingdom	Surrey, East and West Sussex	8467	-0299	0625	8141
United Kingdom	Gloucestershire, Wiltshire and Bristol/Bath area	8233	1097	0625	6512
Czech Rep.	Jihozápad	8042	5541	-3138	5639
Czech Rep.	Střední Čechy	7692	2664	-3138	8166
Austria	Kärnten	7691	2439	-3635	8887
Germany	Unterfranken	7608	1455	-1811	7965
Netherlands	Groningen	7508	1614	-5055	10,949
Germany	Mittelfranken	7400	3717	-1811	5495
Netherlands	Drenthe	7242	2222	-5055	10,075
Austria	Niederösterreich	7133	2553	-3635	8216
Germany	Karlsruhe	7083	1099	-1811	7796
Belgium	West-Vlaanderen	6970	4158	0479	2333
Germany	Stuttgart	6717	0991	-1811	7537
Austria	Steiermark	6542	1833	-3635	8343
Netherlands	Limburg (NL)	6492	1910	-5055	9636
Switzerland	Zürich	6433	1870	-4951	9514
Germany	Tübingen	6409	1693	-1811	6527
Germany	Niederbayern	6309	4873	-1811	3248
Netherlands	Friesland (NL)	6292	2092	-5055	9254
Netherlands	Zuid-Holland	6292	1905	-5055	9442
Switzerland	Espace Mittelland	6208	2127	-4951	9032
Austria	Oberösterreich	6025	1982	-3635	7678
Switzerland	Nordwestschweiz	5958	1730	-4951	9179
Germany	Schwaben	5858	2157	-1811	5512
Netherlands	Overijssel	5800	0895	-5055	9960
Germany	Oberpfalz	5742	3264	-1811	4289
Germany	Freiburg	5650	0812	-1811	6649
Netherlands	Noord-Holland	5625	1491	-5055	9189
Czech Rep.	Praha	5375	4327	-3138	4186
Switzerland	Ostschweiz	5317	2080	-4951	8187
Netherlands	Noord-Brabant	5158	1829	-5055	8384
Netherlands	Gelderland	5067	1429	-5055	8693
Netherlands	Utrecht	4900	0756	-5055	9199
Germany	Oberbayern	4883	1935	-1811	4760
Switzerland	Zentralschweiz	4400	2704	-4951	6647

Table 9 The decomposition of youth labor force participation

Country	Region	Youth labor force participation	$0134 \times S^*$	Country dummy	Residual
Netherlands	Noord-Brabant	74,708	-1611	30,098	46,222
Netherlands	Drenthe	73,675	-1957	30,098	45,534
Netherlands	Gelderland	73,158	-1259	30,098	44,319
Netherlands	Overijssel	72,517	-0789	30,098	43,208
Netherlands	Utrecht	72,400	-0666	30,098	42,968
Switzerland	Ostschweiz	72,267	-1833	25,992	48,107
Netherlands	Noord-Holland	71,850	-1314	30,098	43,066
Switzerland	Zentralschweiz	71,058	-2382	25,992	47,448
Netherlands	Limburg (NL)	70,717	-1683	30,098	42,302
Netherlands	Friesland (NL)	70,075	-1843	30,098	41,820
Switzerland	Espace Mittelland	69,625	-1874	25,992	45,507
Switzerland	Zürich	69,467	-1648	25,992	45,122
Netherlands	Zuid-Holland	69,292	-1678	30,098	40,872
Switzerland	Nordwestschweiz	68,325	-1524	25,992	43,857
United Kingdom	Dorset and Somerset	68,125	0296	19,868	47,961
Netherlands	Groningen	66,992	-1422	30,098	38,316
United Kingdom	East Anglia	65,808	0895	19,868	45,045
United Kingdom	Hampshire and Isle of Wight	65,367	-0999	19,868	46,498
United Kingdom	Kent	65,250	-1550	19,868	46,932
United Kingdom	Shropshire and Staffordshire	65,075	-1417	19,868	46,624
United Kingdom	Gloucestershire, Wiltshire and Bristol/Bath area	65,008	-0967	19,868	46,107
United Kingdom	Devon	64,992	0439	19,868	44,685
United Kingdom	Essex	64,833	-1412	19,868	46,377
United Kingdom	Eastern Scotland	64,367	-0698	19,868	45,196
United Kingdom	Surrey, East and West Sussex	64,125	0263	19,868	43,994
United Kingdom	Berkshire, Buckinghamshire and Oxfordshire	63,908	-0714	19,868	44,754
United Kingdom	Leicestershire, Rutland and Northamptonshire	63,317	-1725	19,868	45,174
United Kingdom	South Western Scotland	63,075	-2477	19,868	45,684
United Kingdom	North Yorkshire	62,858	-1153	19,868	44,144

(continued)

Table 9 (continued)

Country	Region	Youth labor force participation	$0134 \times S^*$	Country dummy	Residual
Austria	Oberösterreich	62,792	-1746	16,021	48,517
United Kingdom	Bedfordshire and Hertfordshire	62,250	-0648	19,868	43,030
United Kingdom	Lancashire	62,033	-2079	19,868	44,244
United Kingdom	East Yorkshire and Northern Lincolnshire	61,300	-1144	19,868	42,576
United Kingdom	Northumberland and Tyne and Wear	61,200	-1247	19,868	42,579
United Kingdom	Derbyshire and Nottinghamshire	61,083	-0519	19,868	41,734
Germany	Niederbayern	60,983	-4293	10,180	55,096
United Kingdom	South Yorkshire	60,375	0054	19,868	40,453
Switzerland	Région lémanique	60,275	-2577	25,992	36,861
United Kingdom	Greater Manchester	59,967	-0987	19,868	41,086
United Kingdom	West Yorkshire	59,875	-1081	19,868	41,088
United Kingdom	East Wales	59,625	-3665	19,868	43,422
United Kingdom	West Wales and The Valleys	58,950	-2669	19,868	41,751
Germany	Mecklenburg-Vorpommern	58,692	-2955	10,180	51,467
Austria	Steiermark	58,583	-1615	16,021	44,178
United Kingdom	Tees Valley and Durham	58,517	-2402	19,868	41,051
Germany	Schwaben	58,408	-1900	10,180	50,129
Germany	Oberpfalz	57,767	-2875	10,180	50,462
Germany	Oberfranken	57,233	-0997	10,180	48,051
Austria	Niederösterreich	56,692	-2249	16,021	42,920
Switzerland	Ticino	56,592	-2536	25,992	33,135
United Kingdom	Outer London	56,073	-2243	19,868	38,447
United Kingdom	West Midlands	55,617	-1097	19,868	36,845
Germany	Unterfranken	55,367	-1282	10,180	46,468
Germany	Sachsen-Anhalt	55,158	-2341	10,180	47,319
Germany	Mittelfranken	55,142	-3274	10,180	48,236
Austria	Kärnten	54,900	-2148	16,021	41,027
Germany	Dresden	54,550	-3993	10,180	48,363
Germany	Koblenz	53,727	-0813	10,180	44,360
Germany	Oberbayern	53,683	-1704	10,180	45,208

(continued)

Table 9 (continued)

Country	Region	Youth labor force participation	$0134 \times S^*$	Country dummy	Residual
Germany	Thüringen	53,308	-3240	10,180	46,368
Germany	Freiburg	53,275	-0715	10,180	43,810
Sweden	Småland med öarna	53,067	-0425	8822	44,671
Sweden	Västsverige	52,800	-0758	8822	44,736
Sweden	Stockholm	52,608	-0453	8822	44,239
Germany	Stuttgart	52,558	-0873	10,180	43,251
Germany	Schleswig-Holstein	52,142	-1013	10,180	42,974
Germany	Tübingen	51,908	-1491	10,180	43,220
United Kingdom	Northern Ireland (UK)	51,367	-1149	19,868	32,648
Austria	Wien	51,342	-2351	16,021	37,672
Sweden	Mellersta Norrland	51,192	0960	8822	41,410
Spain	Illes Balears	51,150	-4302	2920	52,532
Spain	Cataluña	50,958	-3298	2920	51,336
Germany	Hamburg	50,867	-0789	10,180	41,476
Sweden	Övre Norrland	50,558	-0310	8822	42,047
Sweden	Sydsverige	50,208	-0582	8822	41,969
Sweden	Norra Mellansverige	50,000	-0942	8822	42,121
Germany	Karlsruhe	49,742	-0968	10,180	40,530
United Kingdom	Inner London	49,727	-3028	19,868	32,887
Sweden	Östra Mellansverige	49,700	-0830	8822	41,708
Ireland	Southern and Eastern	49,667	-1712	16,667	34,712
Germany	Gießen	49,500	-1256	10,180	40,576
Germany	Darmstadt	49,375	-2769	10,180	41,964
Germany	Kassel	49,275	-0983	10,180	40,078
Germany	Lüneburg	48,617	-1854	10,180	40,290
Spain	Comunidad Valenciana	48,458	-3995	2920	49,533
Spain	Región de Murcia	48,167	-2139	2920	47,385
Ireland	Border, Midland and Western	47,333	-1857	16,667	32,524
Germany	Weser-Ems	47,292	-2356	10,180	39,467
Germany	Münster	47,100	-1015	10,180	37,935
Germany	Saarland	47,100	-2177	10,180	39,097
Germany	Berlin	46,367	-3452	10,180	39,639
Germany	Hannover	46,300	-1630	10,180	37,750
Germany	Arnsberg	46,242	-1434	10,180	37,496
Germany	Detmold	45,892	-3520	10,180	39,231
Spain	Castilla-la Mancha	45,500	-3479	2920	46,059
Germany	Braunschweig	45,442	-2517	10,180	37,778
Germany	Düsseldorf	45,400	-2166	10,180	37,385
Portugal	Norte	45,275	-3533	1458	47,350

(continued)

Table 9 (continued)

Country	Region	Youth labor force participation	$0134 \times S^*$	Country dummy	Residual
Germany	Bremen	45,050	0115	10,180	34,755
Spain	Andalucía	44,100	-3001	2920	44,181
Spain	Comunidad de Madrid	43,933	-2856	2920	43,869
France	Alsace	43,583	-4964	1393	47,155
Germany	Köln	43,467	-0951	10,180	34,238
Spain	Canarias (ES)	43,183	-3427	2920	43,690
Spain	La Rioja	42,750	-4236	2920	44,065
France	Auvergne	42,642	-5461	1393	46,710
France	Limousin	42,545	-4779	1393	45,932
Spain	Aragón	42,483	-3593	2920	43,156
France	Pays de la Loire	42,467	-5135	1393	46,209
France	Bourgogne	41,442	-5553	1393	45,601
Greece	Notio Aigaio	41,325	-3299	-6456	51,081
Spain	Comunidad Foral de Navarra	41,283	-3326	2920	41,689
France	Poitou-Charentes	40,708	-4867	1393	44,182
France	Lorraine	40,600	-4675	1393	43,883
Spain	Extremadura	40,358	-3403	2920	40,841
France	Centre (FR)	40,192	-5029	1393	43,828
France	Franche-Comté	40,050	-4911	1393	43,568
Portugal	Alentejo	39,892	-4079	1458	42,512
France	Picardie	39,667	-6302	1393	44,576
Portugal	Centro (PT)	39,333	-4003	1458	41,878
France	Champagne-Ardenne	39,275	-5377	1393	43,259
Poland	Wielkopolskie	39,217	-5306	-3319	47,842
France	Haute-Normandie	39,175	-5648	1393	43,431
France	Rhône-Alpes	39,117	-4981	1393	42,705
France	Basse-Normandie	38,975	-4415	1393	41,997
France	Midi-Pyrénées	38,925	-4361	1393	41,894
Spain	Galicia	38,750	-4565	2920	40,395
Spain	Castilla y León	38,700	-3266	2920	39,046
Portugal	Lisboa	38,492	-3643	1458	40,677
Portugal	Algarve	38,458	-4895	1458	41,896
Czech Republic	Severozápad	38,450	-4532	-4751	47,733
Spain	País Vasco	38,450	-2316	2920	37,846
Italy	Lombardia	38,300	-4156	-9290	51,746
Belgium	West-Vlaanderen	37,950	-3663	-6005	47,617
Belgium	Limburg (BE)	37,717	-4107	-6005	47,828
France	Nord-Pas-de-Calais	37,500	-4975	1393	41,082
Belgium	Oost-Vlaanderen	37,292	-3326	-6005	46,622

(continued)

Table 9 (continued)

Country	Region	Youth labor force participation	$0134 \times S^*$	Country dummy	Residual
France	Aquitaine	37,192	-5222	1393	41,021
Spain	Cantabria	37,067	-2131	2920	36,277
Italy	Piemonte	37,033	-2677	-9290	49,000
Poland	Kujawsko-Pomorskie	36,917	-5450	-3319	45,685
Romania	Sud-Muntenia	36,892	-5570	-4498	46,960
France	Bretagne	36,833	-3991	1393	39,431
Slovakia	Stredné Slovensko	36,675	-7139	-0285	44,099
Poland	Mazowieckie	36,308	-4815	-3319	44,442
Spain	ES Sur-Ciudad Autónoma de Ceuta	36,142	-2422	2920	35,643
Poland	Pomorskie	35,917	-4868	-3319	44,104
Slovenia	Vzhodna Slovenija	35,900	-5254	-2982	44,136
Poland	Łódzkie	35,883	-4310	-3319	43,512
Poland	Dolnoslaskie	35,850	-4043	-3319	43,212
Czech Republic	Střední Čechy	35,767	-2347	-4751	42,864
Slovakia	Bratislavský kraj	35,750	-6047	-0285	42,081
Slovakia	Západné Slovensko	35,733	-7023	-0285	43,040
France	Provence-Alpes-Côte d'Azur	35,650	-4647	1393	38,904
Romania	Nord-Est	35,617	-6990	-4498	47,105
Poland	Opolskie	35,475	-6320	-3319	45,114
Poland	Małopolskie	35,342	-4501	-3319	43,162
Slovakia	Východné Slovensko	35,217	-6729	-0285	42,230
Czech Republic	Jihozápad	35,025	-4881	-4751	44,657
Spain	Principado de Asturias	34,975	-1931	2920	33,986
Greece	Voreio Aigaio	34,900	-4620	-6456	45,976
Belgium	Antwerpen	34,708	-3313	-6005	44,026
Poland	Świętokrzyskie	34,092	-5797	-3319	43,207
Poland	Ślaskie	34,050	-5034	-3319	42,403
Poland	Lubelskie	34,042	-4659	-3319	42,019
Greece	Kriti	33,967	-4971	-6456	45,394
France	Languedoc-Roussillon	33,825	-5654	1393	38,086
Greece	Ionian Islands	33,600	-5087	-6456	45,143
Czech Republic	Severovýchod	33,533	-4982	-4751	43,266
France	Ile de France	33,358	-4699	1393	36,664
Poland	Lubuskie	33,217	-5049	-3319	41,584
Czech Republic	Moravskoslezsko	33,133	-4556	-4751	42,440

(continued)

Table 9 (continued)

Country	Region	Youth labor force participation	$0134 \times S^*$	Country dummy	Residual
Greece	Peloponnisos	33,033	-5477	-6456	44,967
Belgium	Namur	33,008	-5335	-6005	44,348
Czech Republic	Jihovýchod	32,975	-4872	-4751	42,598
Greece	Anatoliki Makedonia, Thraki	32,700	-4344	-6456	43,500
Poland	Podlaskie	32,667	-4916	-3319	40,902
Slovenia	Zahodna Slovenija	32,600	-6007	-2982	41,589
Bulgaria	Yugozapaden	32,525	-5713	-4625	42,863
Romania	Sud-Est	32,458	-5673	-4498	42,630
Italy	Sardegna	32,292	-4994	-9290	46,575
Greece	Thessalia	32,233	-5194	-6456	43,884
Greece	Attiki	32,142	-4772	-6456	43,370
Romania	Sud-Vest Oltenia	31,933	-6143	-4498	42,575
Poland	Zachodniopomorskie	31,892	-4369	-3319	39,580
Belgium	Liège	31,817	-4126	-6005	41,948
Italy	Liguria	31,767	-4258	-9290	45,314
Romania	Nord-Vest	31,650	-5840	-4498	41,988
Belgium	Hainaut	31,550	-5094	-6005	42,649
Czech Republic	Strední Morava	31,517	-5105	-4751	41,373
Romania	Centru	31,333	-5545	-4498	41,377
Hungary	Dunántúl-Nyugat-Dunántúl	30,800	-5405	-9606	45,811
Poland	Podkarpackie	30,558	-5498	-3319	39,375
Hungary	Dunántúl-Közép-Dunántúl	30,483	-4951	-9606	45,041
Poland	Warminsko-Mazurskie	30,350	-5989	-3319	39,658
Belgium	Vlaams-Brabant	30,158	-3797	-6005	39,960
Romania	Vest	29,750	-6724	-4498	40,972
Italy	Puglia	29,533	-4278	-9290	43,101
Czech Republic	Praha	29,408	-3812	-4751	37,971
Greece	Ipeiros	29,200	-4792	-6456	40,449
Belgium	Bruxelles/Brussels Gewest	28,892	-3989	-6005	38,885
Romania	Bucuresti-Ilfov	28,575	-6220	-4498	39,293
Greece	Dytiki Ellada	28,533	-4651	-6456	39,641
Hungary	Közép-Magyarország	27,075	-5175	-9606	41,856
Italy	Sicilia	26,750	-4438	-9290	40,478
Hungary	Alföld és Észak-Alföld	26,600	-6215	-9606	42,421
Hungary	Dunántúl-Dél-Dunántúl	26,517	-5236	-9606	41,359
Italy	Abruzzo	26,500	-3048	-9290	38,838

(continued)

Table 9 (continued)

Country	Region	Youth labor force participation	$0134 \times S^*$	Country dummy	Residual
Italy	Molise	26,500	−5930	−9290	41,720
Hungary	Alföld és Észak-Észak-Magyarország	25,967	−5115	−9606	40,687
Hungary	Alföld és Észak-Dél-Alföld	25,608	−5777	−9606	40,991
Italy	Campania	25,317	−4448	−9290	39,054
Greece	Dytiki Makedonia	24,700	−4931	−6456	36,087
Belgium	Brabant Wallon	24,642	−4096	−6005	34,742
Italy	Basilicata	24,450	−4152	−9290	37,892
Italy	Calabria	23,675	−4804	−9290	37,769
Greece	Kentriki Makedonia	23,267	−5138	−6456	34,860

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