

# **The intergenerational transmission of worklessness in Europe.**

## **The role of fathers and mothers.**

### **Abstract**

The paper investigates the intergenerational transmission of worklessness in a cross-country comparative analysis. Our aim is to show whether this transmission varies in different groups of countries, characterised by distinct labour market institutions and welfare regimes, and according to the gender of parents and the gender of their children. Using the 2011 EU-Silc ad-hoc module on the intergenerational transmission of disadvantages, we estimate the extent to which parents' employment during young people's adolescence affect their employment status at around 30 years of age. Our empirical findings show that having had a working mother during adolescence reduces the likelihood of being workless for both sons and daughters in all country groups, except in Nordic countries, while the effects of fathers' working condition are less widespread across countries. This suggests that the consequences of different labour market institutions, family models and welfare regimes on the intergenerational transmission of worklessness are not so clear-cut. In all country groups (except in Nordic countries), policies should pay attention to mothers' employment, not only when their children are in their early years of life, but also during their adolescence. Helping mothers to remain or re-enter into the labour market might have important consequences for the future employment prospects of both their daughters and sons.

**Keywords:** family background; youth worklessness; intergenerational mobility; inequalities; welfare regimes.

**JEL classification codes:** J16, J62, J64

## **1. Introduction**

The analysis of intergenerational inequality and social mobility has attracted increasing attention in the past few decades. Several contributions have analysed the influence of family background on educational and occupational attainments to highlight intergenerational income inequality (Corak 2006; d'Addio 2007; Bjorklund and Jäntti 2009; Blanden 2013; Raitano and Vona 2014), or the intergenerational correlation in jobs and occupations between fathers and sons (Black and Devereux 2011; Solon 1992).

A number of studies have focused on the intergenerational transmission of worklessness. From these contributions a robust consensus is found on the existence of a positive correlation between the worklessness of fathers and their sons (O'Neill and Sweetman 1998; Corak et al. 2004; Oreopoulos et al. 2008; Macmillan 2010, 2013; Mader et al. 2014), between fathers and all their children (Johnson and Reed 1996; Bratberg et al. 2008; Ekhaugen 2009; Gregg et al. 2012; Zwysen 2015), and between mothers and their daughters' labour market participation (Del Boca, Locatelli and Pasqua 2000; Fortin 2005; Farré and Vella 2013; Fernandez 2007). Some of these studies have tested whether there exists a causal effect, while others have sought to disentangle the different transmission mechanisms, e.g. transmission of preferences and attitudes towards gender roles, financial constraints on human capital investments, wellbeing and mental health, attitudes towards unemployment, etc. However, almost all of these studies focus on a single country and on the influence of the occupational condition of either the father or the mother on their children's labour market outcomes.

This paper analyses the intergenerational transmission of worklessness in a cross-country comparative perspective. The aim is to investigate whether this transmission varies in different groups of countries, characterised by distinct labour market institutions and welfare regimes, and according to the gender of parents and the gender of their children. Our study is based on EU-Silc data which encompass extensive comparable cross-sectional microdata both at the household and individual level for all EU-27 countries (plus Norway and Switzerland). We exploit the 2011 wave because an ad-hoc module on intergenerational transmission of disadvantages provides substantial information on parental educational and occupational characteristics for all individuals aged 25-60 when they were around 14.

The contribution of this paper is threefold. First, to the best of our knowledge, this is the first comparative study at the European level on the effect of parental employment on the risk of worklessness among young people. A cross-country comparison is important not only to assess the degree of this specific type of inequality, but also to understand its link with different labour market institutions and welfare regimes. Thus, this paper contributes to the understanding of how labour market institutions and welfare regimes affect labour market outcomes in a comparative perspective (Halleröd, Ekbrand and Bengtsson 2015; Gallie 2007; Scruggs and Allan 2006).

Second, we consider the employment condition of both parents. When controlling for the employment status of a single parent, the estimated effect might capture also the spouse's effect due to assortative mating in marriage. Controlling for the employment condition of both parents may limit this type of problem. Further, controlling for the labour market experience of both parents makes it possible to study the extent to which the youth probability of being workless varies according to the family employment structure. For instance, we may test whether children who have grown up in a work-poor family have a substantially higher risk of being workless compared with young people who have grown up in a work-rich family. Similarly, we can compare the youth probability of being workless for children who have grown up with two parents or only one.

Third, we consider also the effect of the mother in-law's employment condition. Indeed, there may exist a positive correlation between the labour participation in employment of women and that of their mother-in-law via their sons/husbands' attitudes toward domestic work and female labour market participation (Del Boca, Locatelli and Pasqua 2000; Fernandez, Fogli and Olivetti 2004; Farré and Vella 2007; Kawaguchi and Miyazaky 2009).

The rest of the paper is structured as follows. Section 2 reviews the relevant literature. Section 3 presents the data and estimation methodology. Section 4 discusses the main empirical findings, and Section 5 concludes.

## **2. Literature review**

In the literature, many aspects of the intergenerational correlation of outcomes have been studied. They include IQ (Anger and Heineck 2009; Black, Devereux and Salvanes

2009; Bjorklund, Eriksson and Jantti 2010), participation in welfare programmes (Gottschalk 1992; Pacheco and Maloney 2003; Beaulieu et al. 2005), consumption behaviour and wealth (Charles and Hurst 2003; Waldkirch et al. 2004), transfers of time and money (Albertini, Kohli and Vogel 2007; Albertini and Kohli 2012), education (Antonovics and Goldberger 2005; Bauer and Riphahn 2006; Carneiro et al. 2013), health (Akbulut and Kugler 2007; Coneus and Spieß 2008), personality traits, preferences, beliefs, attitudes and social behaviour (Altonji and Dunn 2000; Mayer et al. 2005; Wilhelm et al. 2008; Almond, Edlund, and Milligan 2009). Several studies regarding labour market outcomes consider the intergenerational transmission of jobs and occupations (Carmichael 2000; Ermish and Francesconi 2002; Di Pietro and Urwin 2003; Corak and Piraino 2010), or the intergenerational correlation in incomes and earnings (Peters 1992; Corak 2006; Ermisch et al. 2006). The overall objective of these studies is to quantify the extent to which parents and child outcomes are correlated. Indeed, knowledge of the determinants and the dynamic of the intergenerational correlation in outcomes is important to understand social mobility and to design policies aimed at reducing societal inequalities.

Only few studies have dealt with the intergenerational correlation in worklessness (Johnson and Reed 1996; O'Neill and Sweetman 1998; Corak et al. 2004; Bratberg et al. 2008; Oreopoulos et al. 2008; Ekhaugen 2009; Macmillan 2010; Gregg et al. 2012; Mader et al. 2014; Zwysen 2015).<sup>1</sup> It is important to establish empirically the sign of this correlation (controlling for individual characteristics), because from a theoretical point of view this sign is ambiguous. Indeed, experiencing parental unemployment may increase the worklessness risk of children, by reducing their non-cognitive skills or the sense of stigma associated with not working. It might also decrease their worklessness risk, by inducing children to try harder to avoid unemployment or inactivity. It is noteworthy that all aforementioned studies find evidence of a positive intergenerational correlation in worklessness.

However, almost all these studies focus on the effect of fathers' unemployment on their sons' worklessness. Only Ekhaugen (2009) considers the unemployment status of both parents, but he does not distinguish between father's and mother's unemployment

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<sup>1</sup> See Black and Devereux (2011) for a survey.

experience.<sup>2</sup> In the literature, there also exists evidence on the intergenerational link between mothers' and daughters' labour market participation. Daughters of working women are more likely to be in paid employment than daughters who have grown up with non-working mothers (Del Boca, Locatelli and Pasqua 2000; Fernandez 2007; Farré and Vella 2013). Fortin (2005) argues that the remarkable change in female labour supply over time can be explained by changes in attitudes towards gender roles.<sup>3</sup>

This paper contributes to the existing literature on the intergenerational correlation of worklessness by distinguishing between the effect of mothers' and fathers' worklessness on both their sons' and daughters' employment status (considered separately). A second important contribution of this paper is a cross-country perspective. Indeed, all previous studies focus on single countries. Instead, we examine how the intergenerational transmission of worklessness varies in different groups of countries, characterised by distinct labour market institutions and welfare regimes. Our hypothesis is that the extent of the intergenerational correlation in worklessness is larger in countries characterized by a low degree of social mobility, social norms based on traditional gender roles and a familistic welfare system (where women are expected to provide care to frail family members), less efficient and/or developed public employment services, education and training institutions, and youth support services. In particular, we expect the extent of the intergenerational correlation in worklessness to be lower in Nordic and Continental countries and larger in Mediterranean and Eastern countries.

From the various studies in the literature, we also expect that having had a working mother reduces female worklessness, while having had a working father reduces male worklessness. Both these effects should be larger in countries where female participation is low, the availability of affordable care services is scant, and where public employment services and youth support services are less efficient, as in the Mediterranean countries. However, we have no prior hypothesis about the effect of

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<sup>2</sup> Some of these studies are interested in checking whether there is a causal link between fathers and children worklessness. Empirical evidence for Norway (Ekhaugen 2009), Sweden (Corak et al. 2004), the United Kingdom (Johnson and Reed 1996, O'Neill and Sweetman 1998, Macmillan 2010) and Germany (Mader et al. 2014) find a positive intergenerational correlation in unemployment but not a clear causal effect. Differently, Corak et al. (2004) and Oreopoulos et al. (2008) find evidence of a causal intergenerational effect in Canada.

<sup>3</sup> Also in this case, it is difficult to disentangle the extent to which the link between mothers' and daughters' labour market participation is explained by the mother-to-daughter transmission of preferences and beliefs or by technological changes and increasing investments in human capital over time.

fathers' working condition on their daughters' employment and about the effect of mothers' on their sons' employment.

Besides parental gender role attitudes, also husbands' attitudes can influence female participation in paid employment. There is evidence in the literature of a link between the labour market participation of women and that of their mother-in-law via their sons/husbands (Fernandez, Fogli and Olivetti 2004; Farré and Vella 2007; Kawaguchi and Miyazaky 2009). In other words, women married to men whose mother worked are also more likely to be employed. Fernandez et al. (2004) identify two possible channels: growing up with a working mother may either shape men's preferences for a working wife or provide men with a set of household skills and attitudes towards housework that make them better partners for working women. In this paper, we examine whether the working condition of the mother-in-law plays a role in explaining female employment in all European countries or only in some of them.

### **3. Data and estimation methodology**

This study is based on EU-SILC data which encompass extensive comparable cross-sectional and longitudinal microdata both at the household and individual level for all EU-27 countries. We exploit the 2011 wave because it provides substantial information on parental educational and occupational backgrounds through the ad-hoc module on the intergenerational transmission of disadvantages. We select a sample of young people aged 25-34.<sup>4</sup> For all young individuals we model their employment status (employed, NEET<sup>5</sup>, in education) as a function of individual characteristics at the time of the interview and family educational and occupational background characteristics, that refer to the period when the individual was around 14 years old. The descriptive and econometric analyses are carried out separately for five groups of countries representative of the great heterogeneity of European labour market institutions and welfare regimes: Nordic (DK, FI, NO and SE), Continental (AT, BE, FR, DE, CH and NL), English-speaking (IE and UK), Mediterranean (CY, EL, IT, MT, ES and PT) and Eastern European (BG, CZ, EE, HU, HR, PL, RO and SK) countries. The five groups of

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<sup>4</sup> Our sample does not include individuals younger than 25 because all variables about family characteristics, that refer to the period when the individual was around 14 years old, are collected only for individuals aged between 25 and 60 at the time of the interview.

<sup>5</sup> NEET is the acronym for "not in employed, education or training", i.e. young people who are unemployed or inactive.

countries are representative of the great heterogeneity of labour market institutions and welfare regimes.

We model the individual choice with respect to employment status as a multinomial logit model.<sup>6</sup> Given that fathers' and mothers' employment conditions during adolescence may impact differently on the labour market outcomes of their sons and daughters, we run separate analysis for young males and females. The set of control variables includes:

- i) individual characteristics: age, educational attainment (at most lower secondary, at most upper secondary and tertiary education), citizenship (individuals from non-EU countries) and motherhood status<sup>7</sup> (young females with at least one child);
- ii) partner's educational attainment (at most lower secondary, at most upper secondary and tertiary education);
- iii) cohabitation with parents at the time of the interview;
- iv) presence of parents when the young individual was 14 (both parents present, only one parent present or no parents present);
- v) parents' characteristics when the young individual was 14: employment status (employed), occupation (in a high status occupation, i.e., manager, professional, technician or associate professional) and educational level (tertiary education);
- vi) mother in-law's employment status (employed) when the husband/wife was around 14;<sup>8</sup>
- vii) country and quarter of the interview dummies.<sup>9</sup>

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<sup>6</sup> Information about the individual employment condition is based on the self-reported current status and on variables capturing individuals' search behaviour at the time of the interview. These variables detect whether the individual was actively looking for a job during the last four weeks preceding the reference week, i.e., the week of the interview, and whether s/he was available for employment (either self-employment or paid employment) before the end of the two weeks following the reference week.

<sup>7</sup> We do not control for fatherhood status because of the very low percentage of young fathers in education and NEET.

<sup>8</sup> The information is not available for Nordic countries because only the respondent reports parental background information.

<sup>9</sup> We control for the quarter of the interview because how people self-declare their economic status, especially in the summer, differs slightly across country groups. In Mediterranean countries undergraduate students tend to report themselves as in education also during the summer, though some may take up seasonal jobs. In Nordic and Continental countries, young people enrolled in education are much more likely to declare themselves employed during the summer.

Table 1 shows some descriptive statistics of our sample of analysis. Cross-country differences in individual characteristics are in line with what is expected from official statistics. Nordic and Continental countries exhibit the highest shares of employed young people: more than 80% of males and more than 70% of females are in employment. They also show the lowest shares of NEETs. By contrast, Mediterranean and Eastern European countries record the highest shares of NEET, about 20% of males and more than 30% of females, while English-speaking countries are somewhere in between, with high shares of employed young men and high shares of young women as NEETs. The five groups of countries are quite different in terms of youth educational attainments: Nordic and English-speaking countries record the highest shares of highly educated young people, whereas Mediterranean and Eastern countries show remarkably high shares of young individuals with low education. Generally, females are more educated than males. Mediterranean countries stand out for the lowest share of young people with at least one child and for a very high proportion of young individuals living with their parents.

[Insert table 1 here]

Our main interest is to examine the way in which young people employment outcomes vary with their parents' working condition when they were about 14. First, we consider both one- and two-parent families, because it is a policy-relevant distinction, and the share of young people who grew up with only one parent is not negligible. Indeed, as shown in table 1, in Nordic, English-speaking and Continental countries, for almost one out of five individuals in our sample only one parent was present when the individual was around 14. However, for this group we consider only lone-mother households, distinguishing between working and non-working ones, because the share of lone-father families is very low and generally the lone-father is employed.

Second, for two-parent households, we distinguish between dual-earner (or work-rich) families (where both parents were working), male breadwinner families (where only the father was working), female breadwinner families (where only the mother was working), and workless (or work-poor) families (where neither parent was working).<sup>10</sup>

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<sup>10</sup> In the literature, two main methods are adopted to classify households according to the employment status of household members: the first distinguishes between workless and non-workless households (as in our approach); the second classifies households according to a work-intensity indicator. This indicator



Table 1 confirms the findings of Anxo et al. (2007) and Van Dongen (2009), showing that the dual-earner model predominates in Nordic and Eastern countries, while the male breadwinner model predominates in Mediterranean countries.

Table 2 reports the key descriptive statistics for our subsequent empirical analysis: it shows the shares of young people employed, NEET, and in education, by household employment structure during adolescence and group of countries. As expected, the share of NEETs increases, for both males and females, moving from work-rich to work-poor households (in both one- and two-parent households). Three other stylised facts emerge from table 2, however, which are not so well-known. First, no systematic differences emerge in the shares of students (in this age group) across household employment structures. Second, within workless families, youth employment condition appears more problematic in two-parent than in one-parent families (with the sole exception of males in Nordic countries). Third, in all country groups, daughters of lone working mothers display better employment outcomes than those who grew up in a male-breadwinner family. For sons, this is not always the case: sons of lone working mothers are better off in English-speaking countries, while no relevant differences emerge in the other country groups. In the next paragraph, we verify whether these differences remain also after controlling for individual and country characteristics.

[Insert table 2 here]

## **4. Results**

This section presents the estimated marginal effects of the multinomial logit models and predicted outcome probabilities.

### *4.1 Marginal effects*

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is defined as the ratio between the total number of months in employment for all working-age members during the income reference year, and the total number of months that the same members could theoretically have worked in the same period (Cantillon and Vandenbroucke 2014), allowing compensations between months worked by different members. We cannot use the work intensity indicator in our analysis because retrospective information on hours and months worked is not available. But also from a theoretical perspective the classification of households according to the occupational status of family members is more appropriate. Indeed, the type of compensation allowed by the work-intensity indicator is not relevant in our approach because it is the labour market experience of each parent as such (not the quantity of hours/months worked in a year) that may play a role in influencing children's attitudes towards unemployment and the availability of family networks to be used in their job searches. For this reason, we use a classification based on the employment condition (irrespectively of hours/months of work) of parents.

The estimated marginal effects of the multinomial logit models for the five country groups are shown in tables S1-S5 (see Supplementary material). Selected results about the effect of parents' working status on youth employment outcomes are reported in table A1 (in the Appendix). Regarding individual characteristics, in all country groups, age increases females' employment probability and reduces their probability of being NEET, while it has only small effects on male employment outcomes. Educational attainments have, as expected, very large and significant effects in all country groups for both men and women: the higher the education level, the higher is the employment probability and the lower is the probability of being NEET. It is worth noting that the marginal effects are larger for females than for males, suggesting that education plays a more crucial role for women in avoiding poor labour market outcomes and accessing employment.<sup>11</sup> For females, living in a couple and having children generally reduce the probability of being employed and increase that of being NEET. However, while the effects of motherhood are significant in all country groups, those associated with living in a couple are significant only in Mediterranean and Eastern countries.<sup>12</sup> For young men, living in a couple either has no effects on their employment outcomes or the effects go in the opposite direction than for women. English-speaking countries are the only exception: here young males living with a partner have a higher probability of being NEET. Young individuals who still live with their family of origin are less likely to be employed and more likely to be NEETs in all country groups, although the magnitude of the effect is smaller for men than for women.<sup>13</sup>

The cultural and social capital of parents, captured by their educational level and type of occupation when their children were about 14, do not appear to have systematic effects on the employment status of individuals.<sup>14</sup> The working conditions of parents during adolescence, instead, seems to play a more decisive role, with noticeable differences between young women and young men across Europe. For women, having had a

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<sup>11</sup> For women, we find an additional positive effect on the probability of being still in education in Mediterranean and Eastern countries, probably linked to the longer duration of tertiary education in these countries. This effect is observed also for men in all country groups, except for English-speaking countries.

<sup>12</sup> In Continental, Mediterranean and Eastern countries, motherhood also reduces the probability of being in education.

<sup>13</sup> Generally, young people still living with their parents are also more likely to be in education.

<sup>14</sup> When results are significant, they generally increase the probability that the young person is still in education.

working mother increases the probability of being employed and reduces that of being NEET in all country groups, except in Nordic countries. In English-speaking, Mediterranean and Eastern countries, the father's employment condition reinforces the effect of the mother's working condition by further increasing the employment probability and reducing the probability of being NEET. For men, having had a working father during adolescence matters only in Nordic, Mediterranean and Eastern countries, where it increases the probability of being employed and decreases that of being NEET. These effects are reinforced, in Mediterranean and Eastern countries, if the individual had also a working mother. Interestingly, having had a working mother positively affects male labour market outcomes also in English-speaking and Continental countries, where the working status of the father has no significant effects.

In other words, having had a working mother during adolescence reduces the likelihood of being workless for both sons and daughters in all country groups, except in Nordic countries. The effects of fathers' working condition, instead, are less widespread. Fathers' employment is important for both sons and daughters in Mediterranean and Eastern countries, only for daughters in English-speaking countries and only for sons in Nordic countries.

Interestingly, we find evidence of a significant "mother in-law effect" for women in Continental, Mediterranean and Eastern countries. Being married to a partner whose mother was working during his adolescence is associated with a higher probability of being employed and a lower probability of being NEET, with larger effects in Mediterranean countries. As expected, the effect associated with the working condition of the mother in-law is generally not significant for men, with the exception of Eastern countries, where having a mother in-law who was working during her spouse's adolescence increases male employment probability and decreases the probability of being NEET.

#### *4.2 Predicted outcome probabilities*

Considering only marginal effects does not allow us fully to capture the differences between young people with respect to their parents' work experience when they were around 14. In order to proceed in the analysis, we need to compare, *coeteris paribus*, the overall effect of having lived in a specific household type, let us say in a two-parent

work-rich household, or in a two-parent work-poor household or with a non-working lone mother. To do this, first we predict the probability of being NEET for “fictitious” individuals who have all the individual characteristics equal to the sample mean of their country group, except for the presence and work experience of parents.<sup>15</sup> Second, we test whether the probability associated with a particular household type is larger or smaller than the others, and we compute the odds of being NEET for young people who grew up in two different household types.<sup>16</sup> Table A2 (in the Appendix) reports the estimated NEET probabilities, while table 3 shows some selected odds ratios.

[Insert table 3 here]

Inspection of Table 3 shows that, *coeteris paribus*, the probability of being NEET is substantially higher for young people who grew up in two-parent work-poor households than in work-rich ones. Females whose parents were workless during their adolescence have about a 40% to 60% higher probability of being NEET than those whose parents were working (except in Nordic countries). For males the difference is much larger: it goes from 50% to more than 100% (being very large even in Nordic countries).

The odds between work-poor and male-breadwinner families, and between the latter and dual-earner households, reveal the significant and widespread effect of the mother working condition, and the less generalized (but relevant where it occurs) effect of fathers’ employment. Young people grown up in male-breadwinner families have, independently of their gender, a 20% to 50% higher probability of being NEET than those grown-up in dual-earner households, in all country groups except in Nordic countries. In other words, having had a working mother reduces the NEET probability by 15% to 35% for both males and females.

Fathers’ employment has more differentiated effects both over gender and across countries. In English-speaking, Mediterranean and Eastern countries, females grown up in work-poor households have a 15% to 30% larger probability of being workless than those grown up in male-breadwinner families. In other words, having had a working

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<sup>15</sup> For these variables, we set the relevant dummies equal to either one or zero according to the type of family that we want to consider. To compute the probabilities, we use the estimated coefficients of the multinomial logit models, independently of their significance level.

<sup>16</sup> We perform a series of one-sided tests, because the direction of the difference between two probabilities is relevant for the analysis. For those pairs of household types whose probabilities were not statistically different, we report an odds ratio equal to 1.

father reduces females' NEET probability by 13% to 25% in these countries, while it has no significant effects in Nordic and Continental countries. For males, fathers' worklessness has very large effects in Nordic and Mediterranean countries, moderate effects in Eastern countries and no effects in English-speaking and Continental countries. In the first two country groups, males' probability of being NEET is 80% to 100% higher if they grew up in a work-poor household, compared to those grown up in a male-breadwinner family. In Eastern countries, this difference is about 45%.

Among children of lone-mothers, in all country groups no significant differences emerge in females' risk of being NEET according to the mother's working condition. Sons of workless lone- mothers, instead, have a much higher risk of being workless than sons of working lone-mothers in English-speaking and Eastern countries (about 100% and 40% respectively).

Finally, we can compare the situation of children grown up in one- and two-parent households. Two comparisons deserve attention: first, between work-poor families with one and two parents, and second, between lone working mothers and male-breadwinner families. *Coeteris paribus*, children grown up in work-poor families have the same probability of being NEET, independently of whether both parents or only one was present. The only exception regards females in Eastern countries, for whom the presence of only the mother actually reduces their probability of being workless. More interestingly, children grown up with a lone working mother are not disadvantaged compared to those who grew up in a male-breadwinner two-parent household, except males in Mediterranean countries. Daughters of lone working mothers are even less likely to be workless than those grown up in male-breadwinner families in Eastern countries. These results suggest that the relative advantage of children of lone-mothers, compared to those in two-parent families, that emerged from the descriptive analysis, is generally explained by different individual characteristics. When controlling for the latter, no residual difference remains between these two household types.

To summarise, some unexpected qualitative results emerged from our analysis. First, male worklessness is affected only by mothers' employment in English-speaking and Continental countries, and only by fathers' employment in Nordic countries. Both parents play a role in Eastern and Mediterranean countries. They have similar effects in

Eastern countries, while fathers' employment is much more relevant in Mediterranean countries. Second, female worklessness depends on the working condition of both parents in English-speaking, Mediterranean and Eastern countries, while only mothers' employment seems to matter in Continental countries. Third, the presence of only one parent does not lead to a systematic disadvantage. In particular, no differences emerge in children worklessness risk between one- and two-parent work-poor households, and between lone-working mothers and male-breadwinner families (with very few exceptions).

In order to compare the magnitude of these effects, we consider the percentage increase in the NEET risk associated with the worklessness status of parents (*coeteris paribus*). We use this percentage increase as our measure of the extent of the intergenerational transmission of worklessness in the various countries. In Section 2, we stated to expect a larger intergenerational correlation in worklessness in Mediterranean and Eastern countries, and a smaller one in Nordic and Continental countries. Our empirical results are partly in line with these expectations, and partly they contradict them.

As expected, the intergenerational transmission of worklessness is small, actually null, in Nordic countries, but only for daughters. Surprisingly, the transmission of worklessness between fathers and sons is particularly large in this country group (males' NEET risk increases by 80% if the father was workless during their adolescence compared to the case in which he was working). As expected, the intergenerational transmission of worklessness is larger in Mediterranean countries, but only for sons, and only with respect to fathers' employment. For daughters, the effect of mothers' worklessness (and of both parents) is actually lower in Mediterranean countries than in other country groups.

Considering the two types of relationship that received more attention in the literature (that between mothers and daughters and that between fathers and sons), our results show that, unexpectedly, the transmission of worklessness between mothers and daughters is similar in all country groups (except Nordic), slightly larger in Eastern and Continental countries. The transmission between fathers and sons, instead, is more differentiated: higher in Mediterranean and Nordic countries, null in English speaking and Continental countries.

Finally, our analysis shed some light also on the types of relationship less analysed in the literature. Interestingly, the transmission of worklessness between mothers and sons is present in all country groups (except Nordic), highest in English-speaking countries and lowest in Mediterranean countries. The transmission of worklessness between fathers and daughters is less widespread: null in Continental and Nordic countries, highest in English-speaking and somewhat lower in Mediterranean and Eastern countries.

## **5. Conclusions**

This paper has examined how the intergenerational transmission of worklessness varies in different groups of European countries, characterised by distinct labour market institutions and welfare regimes, and according to the gender of parents and the gender of their children. To this end, we have used a sample of young males and females aged 25-34 from the EU-SILC cross-sectional data (2011), and information about the working condition of their parents, when young people were about 14, from the ad-hoc module on the intergenerational transmission of disadvantages.

Our empirical analysis has revealed that, *coeteris paribus*, having had a workless mother during adolescence increases the likelihood of being workless at around 30 years of age, for both sons and daughters in all country groups, except in Nordic countries. The magnitude of the effect is quite similar in all country groups: the NEET risk for both males and females increases by about 20% to 30% if the mother was workless, with somewhat larger effects in Eastern countries (by 40%), and between mothers and sons in English-speaking countries (by 55%).

Conversely, the effects of fathers' working condition are less widespread. Fathers' employment is important for both sons and daughters in Mediterranean and Eastern countries, only for daughters in English-speaking countries and only for sons in Nordic countries. Also the magnitude of the effect is more differentiated: the males NEET risk increases by 80% to 100% if the father was workless in Mediterranean and Nordic countries, and only by 45% in Eastern countries. The transmission between fathers and daughters is much smaller: about 15% to 20% in Mediterranean and Eastern countries, and 30% in English-speaking countries.

Unexpectedly, the percentage increase in the NEET risk associated with fathers' worklessness (*coeteris paribus*) is very large in Nordic countries, and quite similar to that in Mediterranean countries. Again unexpectedly, the effect of mothers' worklessness is quite similar in all country groups (except in Nordic countries), and actually lower in Mediterranean countries. These results suggest that the consequences of different labour market institutions, family models and welfare regimes on the intergenerational transmission of worklessness are not so clear-cut. In particular, more work is needed to understand the link between fathers' and sons' employment experience in Nordic and Mediterranean countries.

Another interesting result of our analysis is that the presence of only one parent does not lead to a systematic disadvantage. In particular, no differences emerge in the probability of being workless for young people grown up in one- and two-parent work-poor households, and for those grown up with lone-working mothers or in male-breadwinner families (with very few exceptions). These results suggest that a key challenge for policy makers is that policies should not be limited to enhance the employment probability of disadvantaged youth, but they should consider in parallel the difficulties faced by parents of young children. As a matter of fact, the adolescents having grown up in the years of the Great Recession with workless parents, in particular workless mothers, might suffer in the future when they will start their working life. Perhaps the strongest policy implication that can be drawn from our analysis is that policy makers should pay attention to mothers' employment, not only when their children are in their early years of life, but also during their adolescence. Helping mothers to remain or re-enter into the labour market might have important consequences for their children future employment prospects.



## Compliance with Ethical Standards

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Conflict of Interest: The authors declare that they have no conflict of interest.

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## Tables

**Table 1. Descriptive statistics by country group and gender (young people aged 25-34 in 2011)**

	Nordic Countries		English-speaking Countries		Continental countries		Mediterranean counties		Eastern countries	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
<b>Employment status</b>										
Employed	0.84	0.73	0.81	0.66	0.85	0.72	0.75	0.63	0.80	0.65
NEET	0.10	0.18	0.16	0.31	0.09	0.23	0.21	0.32	0.17	0.33
In education	0.07	0.09	0.07	0.03	0.05	0.04	0.05	0.05	0.02	0.02
<b>Education</b>										
Low	0.12	0.07	0.09	0.09	0.10	0.10	0.33	0.25	0.14	0.25
Medium	0.51	0.37	0.39	0.40	0.52	0.47	0.40	0.37	0.62	0.37
High	0.37	0.56	0.52	0.52	0.38	0.43	0.27	0.38	0.24	0.38
<b>Parenthood status</b>										
Parent	0.37	0.56	0.40	0.63	0.33	0.51	0.22	0.42	0.35	0.60
<b>Cohabiting with parents (at the time of the interview)</b>										
Yes	0.05	0.02	0.14	0.08	0.18	0.09	0.56	0.40	0.59	0.42
<b>Presence of parents (when the young person was around 14)</b>										
Two parents	0.81	0.79	0.82	0.78	0.82	0.81	0.90	0.89	0.85	0.84
One parent	0.18	0.19	0.16	0.19	0.16	0.17	0.07	0.08	0.13	0.14
No parents	0.02	0.01	0.02	0.03	0.02	0.02	0.02	0.02	0.01	0.02
<b>Household occupational structure (when the young person was around 14)</b>										
<b>- two-parent households (%)</b>										
Both parents working	0.80	0.80	0.58	0.56	0.59	0.62	0.43	0.45	0.82	0.81
Only father working	0.12	0.13	0.35	0.36	0.36	0.33	0.53	0.51	0.14	0.14
Only mother working	0.04	0.05	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02
Neither parent working	0.03	0.03	0.05	0.05	0.03	0.03	0.02	0.03	0.03	0.03
<b>-one-parent households (%)</b>										
Lone working mother	0.71	0.70	0.43	0.42	0.64	0.70	0.58	0.55	0.77	0.77
Lone non-working mother	0.12	0.14	0.23	0.27	0.20	0.20	0.23	0.25	0.08	0.10

Legend: Nordic countries: DK, FI, NO, SE; Continental countries: AT, BE, FR, DE, CH, NL; English-speaking countries: IE, UK; Mediterranean countries: CY, EL, IT, MT, ES, PT; Eastern European countries: BG, CZ, EE, HU, HR, PL, RO, SK.

Source: Authors' calculation based on EU-silc 2011 cross-sectional data.

**Table 2. Youth employment status by household employment structure, country group and gender (2011)**

	Nordic countries		English-speaking Countries		Continental countries		Mediterranean countries		Eastern countries	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
<b>Two-parent household with both parents working</b>										
Employed	0.85	0.77	0.88	0.72	0.88	0.77	0.76	0.68	0.83	0.68
NEET	0.08	0.14	0.09	0.25	0.09	0.18	0.19	0.26	0.14	0.29
In education	0.07	0.09	0.03	0.03	0.03	0.04	0.06	0.06	0.02	0.02
<b>Two-parent household with only father working</b>										
Employed	0.87	0.63	0.76	0.64	0.85	0.67	0.76	0.61	0.75	0.55
NEET	0.09	0.27	0.21	0.34	0.10	0.29	0.21	0.36	0.23	0.44
In education	0.04	0.10	0.03	0.02	0.05	0.04	0.03	0.03	0.02	0.01
<b>Two-parent household with only mother working</b>										
Employed	0.75	0.66	0.87	0.55	0.84	0.67	0.59	0.55	0.74	0.61
NEET	0.18	0.20	0.13	0.45	0.11	0.27	0.33	0.35	0.24	0.38
In education	0.07	0.14	0.00	0.00	0.05	0.06	0.09	0.09	0.02	0.01
<b>Two-parent household with neither parent working</b>										
Employed	0.77	0.61	0.57	0.42	0.68	0.59	0.58	0.52	0.66	0.45
NEET	0.18	0.31	0.40	0.50	0.23	0.37	0.38	0.43	0.32	0.51
In education	0.05	0.08	0.03	0.08	0.09	0.04	0.04	0.04	0.02	0.04
<b>One-parent household with working mother</b>										
Employed	0.83	0.70	0.84	0.75	0.82	0.72	0.75	0.64	0.76	0.63
NEET	0.11	0.20	0.14	0.25	0.12	0.23	0.19	0.32	0.22	0.34
In education	0.06	0.10	0.02	0.10	0.06	0.05	0.05	0.04	0.03	0.03
<b>One-parent household with no working mother</b>										
Employed	0.72	0.57	0.66	0.54	0.80	0.64	0.70	0.57	0.65	0.56
NEET	0.16	0.36	0.31	0.43	0.17	0.33	0.28	0.40	0.33	0.44
In education	0.13	0.07	0.03	0.03	0.03	0.03	0.02	0.03	0.02	0.00

Legend (for country groups): see tab. 1.

Notes: Household employment structure refers to when young people were about 14.

Source: Authors' calculation based on EU-silc 2011 cross-sectional data.

**Table 3. NEET odds ratios by household employment structure, gender and country groups**

	$\frac{2P-0W}{2P-2W}$	$\frac{P(N 2P-FW)}{P(N 2P-2W)}$	$\frac{P(N 2P-0W)}{P(N 2P-FW)}$	$\frac{P(N 1P-0W)}{P(N 1P-1W)}$	$\frac{P(N 1P-0W)}{P(N 2P-0W)}$	$\frac{P(N 1P-1W)}{P(N 2P-FW)}$
<b>Females</b>						
Nordic countries	1.00	1.00	1.00	1.00	1.00	1.00
English-speaking countries	<b>1.63</b>	<b>1.24</b>	<b>1.31</b>	1.00	1.00	1.00
Continental countries	<b>1.62</b>	<b>1.34</b>	1.00	1.00	1.00	1.00
Mediterranean countries	<b>1.43</b>	<b>1.20</b>	<b>1.19</b>	1.00	1.00	1.00
Eastern countries	<b>1.60</b>	<b>1.38</b>	<b>1.16</b>	1.00	<b>0.82</b>	<b>0.82</b>
<b>Males</b>						
Nordic countries	<b>1.93</b>	1.00	<b>1.81</b>	1.00	1.00	1.00
English-speaking countries	<b>1.68</b>	<b>1.55</b>	1.00	<b>1.99</b>	1.00	1.00
Continental countries	<b>1.52</b>	<b>1.33</b>	1.00	1.00	1.00	1.00
Mediterranean countries	<b>2.29</b>	<b>1.17</b>	<b>1.97</b>	1.00	1.00	<b>1.38</b>
Eastern countries	<b>2.06</b>	<b>1.42</b>	<b>1.45</b>	<b>1.39</b>	1.00	1.00

Legend (for country groups): see tab. 1.

Notes: Household employment structure refers to when young people were about 14. 2P-2W means two-parent households with both parents working; 2P-FW means two-parent households with only the father working; 2P-MW means two-parent households with only the mother working; 2P-0W means two-parent households with neither parent working; 1P-MW means lone-mother households with working mother; 1P-0W means lone-mother households with non-working mother.

Source: Authors' calculation based on EU-silc 2011 cross-sectional data.

## Appendix

**Table A1. Predicted outcome probabilities (P) and marginal effects (M) for selected variables from the estimation of multinomial logit models (EU-Silc 2011 data for young people aged 25-34; see the text for details)**

Country group	Estimate (E)	Females						Males					
		Employed		NEET		In education		Employed		NEET		In education	
		E	St. Err.	E	St. Err.	E	St. Err.	E	St. Err.	E	St. Err.	E	St. Err.
<b>Nordic</b>	P	0.798 ***	0.013	0.139 ***	0.011	0.063 ***	0.008	0.907 ***	0.009	0.066 ***	0.007	0.028 ***	0.005
	M: Working father	0.023	0.042	0.006	0.035	-0.029	0.025	0.059 **	0.023	-0.040 **	0.020	-0.019 *	0.011
	M: Working mother	0.027	0.033	-0.036	0.026	0.009	0.020	-0.003	0.022	-0.004	0.018	0.006	0.012
	M: Working lone mother	0.022	0.070	-0.031	0.051	0.009	0.046	0.049	0.041	-0.009	0.035	-0.040 **	0.020
	M: Working mother in-law	-		-		-		-		-		-	
<b>English-speaking</b>	P	0.710 ***	0.015	0.160 ***	0.015	0.022 ***	0.004	0.886 ***	0.012	0.110 ***	0.012	0.005 ***	0.002
	M: Working father	0.090 *	0.052	-0.086 *	0.052	-0.003	0.007	0.010	0.032	-0.009	0.032	0.000	0.004
	M: Working mother	0.061 *	0.035	-0.059 *	0.035	-0.002	0.006	0.047 *	0.027	-0.048 *	0.027	0.001	0.003
	M: Working lone mother	0.024	0.073	-0.014	0.072	-0.010	0.011	0.041	0.053	-0.036	0.052	-0.005	0.006
	M: Working mother in-law	0.039	0.036	-0.033	0.036	-0.006	0.007	0.045	0.030	-0.036	0.030	-0.008 *	0.005
<b>Continental</b>	P	0.759 ***	0.006	0.187 ***	0.006	0.018 ***	0.002	0.921 ***	0.005	0.063 ***	0.004	0.016 ***	0.002
	M: Working father	0.031	0.029	-0.037	0.028	0.006	0.008	0.011	0.016	-0.008	0.015	-0.003	0.006
	M: Working mother	0.059 ***	0.013	-0.055 ***	0.013	-0.004	0.003	0.024 ***	0.008	-0.018 **	0.008	-0.005 *	0.003
	M: Working lone mother	-0.033	0.033	0.026	0.032	0.007	0.009	-0.028	0.018	0.015	0.017	0.013 *	0.007
	M: Working mother in-law	0.032 **	0.013	-0.034 ***	0.013	0.002	0.004	0.007	0.011	-0.008	0.011	0.001	0.004
<b>Mediterranean</b>	P	0.682 ***	0.006	0.306 ***	0.006	0.012 ***	0.002	0.808 ***	0.006	0.184 ***	0.006	0.009 ***	0.002
	M: Working father	0.069 **	0.030	-0.060 **	0.030	-0.010 ***	0.004	0.144 ***	0.025	-0.140 ***	0.024	-0.004	0.003
	M: Working mother	0.056 ***	0.014	-0.056 ***	0.014	0.000	0.002	0.031 ***	0.012	-0.028 **	0.012	-0.003 *	0.002
	M: Working lone mother	0.008	0.045	-0.010	0.045	0.002	0.006	0.023	0.041	-0.022	0.041	-0.001	0.004
	M: Working mother in-law	0.099 ***	0.018	-0.089 ***	0.017	-0.011 *	0.006	0.000	0.022	0.000	0.021	0.000	0.008
<b>Eastern</b>	P	0.691 ***	0.005	0.307 ***	0.005	0.002 ***	0.000	0.859 ***	0.004	0.139 ***	0.004	0.002 ***	0.000
	M: Working father	0.053 *	0.027	-0.055 **	0.027	0.002	0.002	0.057 ***	0.017	-0.057 ***	0.017	-0.001	0.001
	M: Working mother	0.104 ***	0.015	-0.104 ***	0.015	0.000	0.001	0.050 ***	0.010	-0.049 ***	0.010	0.000	0.000
	M: Working lone mother	-0.056	0.038	0.053	0.038	0.003 *	0.001	0.002	0.024	-0.003	0.024	0.001	0.001
	M: Working mother in-law	0.033 **	0.015	-0.033 **	0.015	0.000	0.001	0.036 ***	0.012	-0.035 ***	0.012	-0.001	0.001

Notes: Dummies for country, quarter of interview and missing information about parents' working status and educational level are introduced. (-) means not controlled for. Marginal effects are computed at the sample mean of the variables. \*\*\* means statistically significant at 1 percent level; \*\* means statistically significant at 5 percent level; \* means statistically significant at 10 percent level.

**Table A2. Predicted NEET probabilities by household employment structure, gender and country group**

Country group	Household employment structure	Females		Males	
		Pr	St. Err.	Pr	St. Err.
<b>Nordic countries</b>	2P-2W	0.132 ***	0.013	0.060 ***	0.008
	2P-FW	0.171 ***	0.030	0.064 ***	0.017
	2P-MW	0.126 ***	0.031	0.109 ***	0.031
	2P-0W	0.163 ***	0.041	0.116 ***	0.036
	1P-MW	0.135 ***	0.041	0.091 **	0.037
	1P-0W	0.213 ***	0.082	0.102 **	0.050
<b>English-speaking countries</b>	2P-2W	0.246 ***	0.021	0.082 ***	0.014
	2P-FW	0.305 ***	0.028	0.127 ***	0.022
	2P-MW	0.333 ***	0.057	0.089 ***	0.031
	2P-0W	0.401 ***	0.060	0.138 ***	0.042
	1P-MW	0.312 ***	0.067	0.137 ***	0.046
	1P-0W	0.394 ***	0.068	0.273 ***	0.075
<b>Continental countries</b>	2P-2W	0.164 ***	0.008	0.054 ***	0.005
	2P-FW	0.220 ***	0.012	0.072 ***	0.007
	2P-MW	0.200 ***	0.028	0.061 ***	0.015
	2P-0W	0.265 ***	0.035	0.082 ***	0.019
	1P-MW	0.206 ***	0.032	0.084 ***	0.021
	1P-0W	0.238 ***	0.044	0.089 ***	0.026
<b>Mediterranean countries</b>	2P-2W	0.272 ***	0.010	0.163 ***	0.008
	2P-FW	0.327 ***	0.010	0.190 ***	0.008
	2P-MW	0.330 ***	0.031	0.332 ***	0.036
	2P-0W	0.390 ***	0.032	0.374 ***	0.037
	1P-MW	0.343 ***	0.047	0.262 ***	0.048
	1P-0W	0.416 ***	0.053	0.330 ***	0.058
<b>Eastern countries</b>	2P-2W	0.285 ***	0.006	0.124 ***	0.005
	2P-FW	0.394 ***	0.026	0.176 ***	0.011
	2P-MW	0.340 ***	0.027	0.185 ***	0.020
	2P-0W	0.457 ***	0.032	0.255 ***	0.027
	1P-MW	0.323 ***	0.031	0.217 ***	0.028
	1P-0W	0.376 ***	0.047	0.301 ***	0.050

Notes: Household employment structure refers to when young people were about 14. 2P-2W means two-parent households with both working parents; 2P-FW means two-parent households with only working father; 2P-MW means two-parent households with only working mother; 2P-0W means two-parent households with none working parent; 1P-MW means lone-mother households with working mother; 1P-0W means lone-mother households with non-working mother. \*\*\* means statistically significant at 1 percent level; \*\* means statistically significant at 5 percent level; \* means statistically significant at 1.

Source: Authors' calculation based on EU-silc 2011 cross-sectional data.



## Supplementary material

**Table S1. Predicted outcome probability (Pr) and marginal effects (Mfx) in Nordic countries by gender**

	Females									Males								
	Employed			NEET			In education			Employed			NEET			In education		
	Pr	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.		
<i>Predicted outcome probability</i>	0.798	***	0.013	0.139	***	0.011	0.063	***	0.008	0.907	***	0.009	0.066	***	0.007	0.028	***	0.005
	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>		
<i>Individual characteristics at the time of the interview:</i>																		
Age	0.027	***	0.004	-0.011	***	0.003	-0.016	***	0.002	0.009	***	0.003	0.000		0.002	-0.010	***	0.001
Own education: medium	0.158	***	0.041	-0.147	***	0.035	-0.012		0.023	0.060	***	0.021	-0.088	***	0.015	0.028	**	0.014
Own education: high	0.217	***	0.043	-0.180	***	0.036	-0.037		0.024	0.072	***	0.022	-0.106	***	0.016	0.034	**	0.015
Partner's education: medium	0.059		0.041	-0.055	*	0.033	-0.005		0.026	0.021		0.036	-0.050	**	0.023	0.029		0.028
Partner's education: high	0.036		0.042	-0.034		0.034	-0.002		0.027	0.021		0.037	-0.048	**	0.024	0.028		0.029
Citizenship	-0.298	***	0.067	0.189	***	0.054	0.109	***	0.030	-0.052		0.051	0.081	**	0.040	-0.029		0.028
Living with parents	-0.167	***	0.057	0.162	***	0.047	0.005		0.032	-0.017		0.024	0.039	**	0.020	-0.022		0.014
Living in couple	-0.024		0.044	0.056		0.037	-0.033		0.026	0.075	**	0.035	-0.026		0.021	-0.049	*	0.028
Motherhood	-0.129	***	0.024	0.140	***	0.021	-0.010		0.013	-		-	-		-	-		-
<i>Presence of parents when the young was 14:</i>																		
Lone parent family	-0.005		0.069	0.039		0.049	-0.034		0.046	-0.035		0.037	-0.003		0.030	0.039	*	0.021
Parentless	0.050		0.066	-0.023		0.050	-0.027		0.043	0.028		0.037	-0.004		0.031	-0.023		0.019
<i>Family background information:</i>																		
Working father	0.023		0.042	0.006		0.035	-0.029		0.025	0.059	**	0.023	-0.040	**	0.020	-0.019	*	0.011
Working mother	0.027		0.033	-0.036		0.026	0.009		0.020	-0.003		0.022	-0.004		0.018	0.006		0.012
Working lone mother	0.022		0.070	-0.031		0.051	0.009		0.046	0.049		0.041	-0.009		0.035	-0.040	**	0.020
Working mother in-law	-		-	-		-	-		-	-		-	-		-	-		-
Father's occupation	-0.036		0.032	0.038		0.028	-0.002		0.017	0.006		0.021	-0.022		0.019	0.016	*	0.008
Mother's occupation	0.058	*	0.031	-0.053	*	0.027	-0.005		0.015	-0.019		0.021	0.012		0.019	0.008		0.009
Father's education	-0.016		0.029	0.001		0.026	0.015		0.016	-0.005		0.019	0.006		0.018	-0.001		0.008
Mother's education	-0.071	***	0.027	0.038		0.024	0.033	**	0.014	-0.003		0.019	-0.010		0.017	0.013		0.008

Notes: Dummies for country, quarter of interview and missing information about parents' working status and educational level are introduced. (-) means not controlled for. Marginal effects are computed at the sample mean of the variables. \*\*\* means statistically significant at 1 percent level; \*\* means statistically significant at 5 percent level; \* means statistically significant at 10 percent level.

**Table S2. Predicted outcome probability (Pr) and marginal effects (Mfx) in English-speaking countries by gender**

	Females								Males									
	Employed		NEET		In education		Employed		NEET		In education		Employed		NEET		In education	
	Pr	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.
<i>Predicted outcome probability</i>	0.710	***	0.015	0.160	***	0.015	0.022	***	0.004	0.886	***	0.012	0.110	***	0.012	0.005	***	0.002
	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>
<i>Individual characteristics at the time of the interview:</i>																		
Age	0.016	***	0.006	-0.013	**	0.006	-0.003	**	0.001	0.001		0.004	0.000		0.004	-0.001	*	0.001
Own education: medium	0.187	***	0.055	-0.189	***	0.053	0.002		0.008	0.120	***	0.035	-0.123	***	0.034	0.003		0.006
Own education: high	0.386	**	0.058	-0.384	***	0.056	-0.001		0.009	0.156	***	0.034	-0.157	***	0.033	0.001		0.005
Partner's education: medium	0.104	**	0.052	-0.080		0.051	-0.024	***	0.009	0.110	*	0.065	-0.160	***	0.058	0.051	*	0.030
Partner's education: high	0.065		0.054	-0.050		0.053	-0.015		0.010	0.188	***	0.067	-0.241	***	0.060	0.053	*	0.029
Citizenship	-0.206	***	0.065	0.186	***	0.064	0.020	**	0.009	-0.110	**	0.055	0.097	*	0.054	0.014	**	0.007
Living with parents	-0.049		0.064	0.056		0.063	-0.007		0.007	-0.049	*	0.029	0.048	*	0.029	0.001		0.002
Living in couple	-0.035		0.053	0.039		0.052	-0.004		0.008	-0.083		0.065	0.144	**	0.057	-0.061	*	0.032
Motherhood	-0.320	***	0.037	0.314	***	0.037	0.006		0.005	-		-	-		-	-		-
<i>Presence of parents when the young was 14:</i>																		
Lone parent family	0.003		0.054	-0.006		0.053	0.003		0.008	-0.086	**	0.040	0.083	**	0.039	0.002		0.005
Parentless	0.565		0.404	-0.411		0.389	-0.155	***	0.052	-0.240	**	0.101	0.299	***	0.095	-0.058	*	0.032
<i>Family background information:</i>																		
Working father	0.090	*	0.052	-0.086	*	0.052	-0.003		0.007	0.010		0.032	-0.009		0.032	0.000		0.004
Working mother	0.061	*	0.035	-0.059	*	0.035	-0.002		0.006	0.047	*	0.027	-0.048	*	0.027	0.001		0.003
Working lone mother	0.024		0.073	-0.014		0.072	-0.010		0.011	0.041		0.053	-0.036		0.052	-0.005		0.006
Working mother in-law	0.039		0.036	-0.033		0.036	-0.006		0.007	0.045		0.030	-0.036		0.030	-0.008	*	0.005
Father's occupation	-0.017		0.035	0.013		0.034	0.004		0.006	0.075	***	0.029	-0.076	***	0.028	0.001		0.002
Mother's occupation	0.008		0.045	-0.015		0.045	0.007		0.007	-0.001		0.033	-0.002		0.032	0.002		0.003
Father's education	-0.025		0.045	0.022		0.045	0.003		0.008	-0.035		0.033	0.037		0.032	-0.003		0.003
Mother's education	-0.017		0.049	0.028		0.049	-0.011		0.009	-0.069	**	0.030	0.064	**	0.029	0.005		0.003

Notes: Dummies for country, quarter of interview and missing information about parents' working status and educational level are introduced. (-) means not controlled for. Marginal effects are computed at the sample mean of the variables. \*\*\* means statistically significant at 1 percent level; \*\* means statistically significant at 5 percent level; \* means statistically significant at 10 percent level.

**Table S3. Predicted outcome probability (Pr) and marginal effects (Mfx) in Continental countries by gender**

	Females									Males								
	Employed			NEET			In education			Employed			NEET			In education		
	Pr	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.		
<i>Predicted outcome probability</i>	0.759	***	0.006	0.187	***	0.006	0.018	***	0.002	0.921	***	0.005	0.063	***	0.004	0.016	***	0.002
	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>	<b>Mfx</b>	<b>St. Err.</b>		
<i>Individual characteristics at the time of the interview:</i>																		
Age	0.011	***	0.002	-0.006	***	0.002	-0.005	***	0.001	0.004	***	0.001	0.001		0.001	-0.005	***	0.001
Own education: medium	0.119	***	0.020	-0.136	***	0.019	0.017	**	0.008	0.035	***	0.011	-0.060	***	0.009	0.026	***	0.007
Own education: high	0.192	***	0.022	-0.203	***	0.021	0.011		0.008	0.061	***	0.013	-0.081	***	0.010	0.020	***	0.008
Partner's education: medium	0.063	***	0.022	-0.057	***	0.020	-0.007		0.008	0.037	**	0.017	-0.048	***	0.013	0.011		0.012
Partner's education: high	0.020		0.023	-0.027		0.022	0.007		0.008	0.043	**	0.018	-0.060	***	0.015	0.017		0.011
Citizenship	-0.189	***	0.026	0.170	***	0.025	0.020	***	0.006	-0.076	***	0.014	0.048	***	0.013	0.028	***	0.006
Living with parents	-0.063	***	0.024	0.054	**	0.024	0.010	***	0.004	-0.031	***	0.009	0.025	***	0.008	0.007	***	0.003
Living in couple	-0.036		0.025	0.052	**	0.024	-0.016	*	0.008	0.055	***	0.016	-0.023	*	0.013	-0.032	***	0.011
Motherhood	-0.254	***	0.014	0.263	***	0.013	-0.009	**	0.004	-		-	-		-	-		-
<i>Presence of parents when the young was 14:</i>																		
Lone parent family	0.023		0.029	-0.022		0.028	-0.002		0.008	0.006		0.016	0.005		0.014	-0.011	*	0.007
Parentless	-0.096	*	0.050	0.084	*	0.048	0.012		0.013	-0.024		0.031	0.006		0.028	0.018	*	0.010
<i>Family background information:</i>																		
Working father	0.031		0.029	-0.037		0.028	0.006		0.008	0.011		0.016	-0.008		0.015	-0.003		0.006
Working mother	0.059	***	0.013	-0.055	***	0.013	-0.004		0.003	0.024	***	0.008	-0.018	**	0.008	-0.005	*	0.003
Working lone mother	-0.033		0.033	0.026		0.032	0.007		0.009	-0.028		0.018	0.015		0.017	0.013	*	0.007
Working mother in-law	0.032	**	0.013	-0.034	***	0.013	0.002		0.004	0.007		0.011	-0.008		0.011	0.001		0.004
Father's occupation	0.003		0.014	-0.007		0.014	0.004		0.003	0.001		0.009	-0.007		0.008	0.006	**	0.003
Mother's occupation	-0.002		0.018	-0.001		0.018	0.003		0.003	-0.006		0.010	0.005		0.010	0.002		0.003
Father's education	-0.021		0.017	0.012		0.017	0.009	***	0.004	-0.010		0.010	0.002		0.010	0.008	**	0.003
Mother's education	0.017		0.020	-0.022		0.020	0.005		0.003	-0.004		0.011	-0.004		0.010	0.008	***	0.003

Notes: Dummies for country, quarter of interview and missing information about parents' working status and educational level are introduced. (-) means not controlled for. Marginal effects are computed at the sample mean of the variables. \*\*\* means statistically significant at 1 percent level; \*\* means statistically significant at 5 percent level; \* means statistically significant at 10 percent level.

**Table S4. Predicted outcome probability (Pr) and marginal effects (Mfx) in Mediterranean countries by gender**

	Females									Males								
	Employed			NEET			In education			Employed			NEET			In education		
	Pr	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	P	St. Err.
<i>Predicted outcome probability</i>	0.682	***	0.006	0.306	***	0.006	0.012	***	0.002	0.808	***	0.006	0.184	***	0.006	0.009	***	0.002
	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.
<i>Individual characteristics at the time of the interview:</i>																		
Age	0.014	***	0.002	-0.011	***	0.002	-0.003	***	0.001	0.010	***	0.002	-0.007	***	0.002	-0.003	***	0.001
Own education: medium	0.088	***	0.016	-0.106	***	0.016	0.018	***	0.004	0.076	***	0.012	-0.089	***	0.012	0.014	***	0.003
Own education: high	0.181	***	0.018	-0.190	***	0.017	0.009	***	0.003	0.104	***	0.015	-0.116	***	0.014	0.012	***	0.003
Partner's education: medium	0.049	***	0.019	-0.053	***	0.018	0.004		0.006	0.074	***	0.023	-0.074	***	0.022	-0.001		0.010
Partner's education: high	0.062	***	0.024	-0.071	***	0.024	0.009		0.007	0.149	***	0.030	-0.147	***	0.029	-0.001		0.010
Citizenship	-0.095	***	0.022	0.104	***	0.022	-0.009	*	0.005	-0.044	**	0.023	0.061	***	0.022	-0.017	*	0.009
Living with parents	-0.141	***	0.018	0.128	***	0.018	0.013	***	0.004	-0.097		0.014	0.088	***	0.014	0.009	***	0.003
Living in couple	-0.110	***	0.022	0.119	***	0.022	-0.009	*	0.005	0.034		0.021	-0.018		0.020	-0.016	*	0.009
Motherhood	-0.175	***	0.016	0.187	***	0.016	-0.012	***	0.003									
<i>Presence of parents when the young was 14:</i>																		
Lone parent family	-0.012		0.038	0.021		0.037	-0.009		0.006	0.028		0.032	-0.029		0.032	0.001		0.003
Parentless	0.047		0.048	-0.053		0.047	0.006		0.006	0.098	***	0.037	-0.095	***	0.037	-0.003		0.005
<i>Family background information:</i>																		
Working father	0.069	**	0.030	-0.060	**	0.030	-0.010	***	0.004	0.144	***	0.025	-0.140	***	0.024	-0.004		0.003
Working mother	0.056	***	0.014	-0.056	***	0.014	0.000		0.002	0.031	***	0.012	-0.028	**	0.012	-0.003	*	0.002
Working lone mother	0.008		0.045	-0.010		0.045	0.002		0.006	0.023		0.041	-0.022		0.041	-0.001		0.004
Working mother in-law	0.099	***	0.018	-0.089	***	0.017	-0.011	*	0.006	0.000		0.022	0.000		0.021	0.000		0.008
Father's occupation	0.022		0.018	-0.028		0.018	0.006	***	0.002	-0.029	**	0.014	0.026	**	0.013	0.003	*	0.002
Mother's occupation	-0.009		0.026	0.002		0.026	0.008	***	0.003	-0.009		0.020	0.003		0.020	0.006	**	0.002
Father's education	-0.034		0.028	0.028		0.028	0.006	**	0.003	-0.028		0.020	0.020		0.020	0.008	***	0.002
Mother's education	-0.039		0.031	0.041		0.031	-0.001		0.003	0.000		0.024	-0.001		0.024	0.001		0.002

Notes: Dummies for country, quarter of interview and missing information about parents' working status and educational level are introduced. (-) means not controlled for. Marginal effects are computed at the sample mean of the variables. \*\*\* means statistically significant at 1 percent level; \*\* means statistically significant at 5 percent level; \* means statistically significant at 10 percent level.

**Table S5. Predicted outcome probability (Pr) and marginal effects (Mfx) in Eastern countries by gender**

	Females									Males								
	Employed			NEET			In education			Employed			NEET			In education		
	Pr	St. Err.	P	St. Err.	P	St. Err.	P	St. Err.	Mfx	St. Err.	P	St. Err.	Mfx	St. Err.	P	St. Err.	Mfx	St. Err.
<i>Predicted outcome probability</i>	0.691	***	0.005	0.307	***	0.005	0.002	***	0.000	0.859	***	0.004	0.139	***	0.004	0.002	***	0.000
	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.	Mfx	St. Err.
<i>Individual characteristics at the time of the interview:</i>																		
Age	0.019	***	0.002	-0.018	***	0.002	-0.001	***	0.000	0.002		0.001	-0.001		0.001	-0.001	***	0.000
Own education: medium	0.219	***	0.018	-0.222	***	0.018	0.003	***	0.001	0.125	***	0.009	-0.127	***	0.009	0.002	***	0.001
Own education: high	0.310	***	0.020	-0.313	***	0.020	0.002	*	0.001	0.198	***	0.013	-0.200	***	0.013	0.002	**	0.001
Partner's education: medium	0.008		0.021	-0.037	*	0.020	0.029	***	0.005	0.053	***	0.015	-0.070	***	0.015	0.017	***	0.004
Partner's education: high	0.002		0.025	-0.033		0.025	0.030	***	0.005	0.098	***	0.020	-0.118	***	0.019	0.020	***	0.004
Citizenship	-0.076	*	0.045	0.078	*	0.045	-0.002		0.002	-0.063	***	0.021	0.062	***	0.021	0.001		0.001
Living with parents	-0.056	***	0.012	0.055	***	0.012	0.001	**	0.000	-0.039	***	0.010	0.038	***	0.009	0.001	***	0.000
Living in couple	-0.053	**	0.025	0.084	***	0.025	-0.031	***	0.005	0.026	*	0.015	-0.005		0.015	-0.020	***	0.005
Motherhood	-0.265	***	0.014	0.267	***	0.014	-0.001	**	0.000									
<i>Presence of parents when the young was 14:</i>																		
Lone parent family	0.073	**	0.034	-0.070	**	0.034	-0.004	***	0.001	-0.027		0.023	0.027		0.023	0.000		0.001
Parentless	0.002		0.035	-0.007		0.035	0.004	***	0.002	0.054	**	0.022	-0.054	**	0.022	0.000		0.001
<i>Family background information:</i>																		
Working father	0.053	*	0.027	-0.055	**	0.027	0.002		0.002	0.057	***	0.017	-0.057	***	0.017	-0.001		0.001
Working mother	0.104	***	0.015	-0.104	***	0.015	0.000		0.001	0.050	***	0.010	-0.049	***	0.010	0.000		0.000
Working lone mother	-0.056		0.038	0.053		0.038	0.003	*	0.001	0.002		0.024	-0.003		0.024	0.001		0.001
Working mother in-law	0.033	**	0.015	-0.033	**	0.015	0.000		0.001	0.036	***	0.012	-0.035	***	0.012	-0.001		0.001
Father's occupation	-0.008		0.017	0.007		0.017	0.001		0.001	0.012		0.012	-0.013		0.012	0.001	***	0.000
Mother's occupation	0.005		0.015	-0.006		0.015	0.000		0.000	0.009		0.011	-0.009		0.011	0.001	*	0.000
Father's education	-0.008		0.021	0.007		0.021	0.001		0.001	0.010		0.015	-0.011		0.015	0.000		0.000
Mother's education	0.005		0.021	-0.006		0.021	0.001	*	0.000	-0.026	*	0.014	0.025	*	0.014	0.001	*	0.000

Notes: Dummies for country, quarter of interview and missing information about parents' working status and educational level are introduced. (-) means not controlled for. Marginal effects are computed at the sample mean of the variables. \*\*\* means statistically significant at 1 percent level; \*\* means statistically significant at 5 percent level; \* means statistically significant at 10 percent level.