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1

1.   Introduction

Aggregate statistics and previous studies in economics have shown that education and degrees have labor market consequences in terms of earnings, employment, and labor supply (e.g., OECD, 2011: 116-157). There are two main explanations for this phenomenon. First, education increases productivity and, therefore, leads to higher earnings and employment. According to this explanation, education increases individuals' human capital (Becker, 1964). Second, screening theories of education suggest that education serves as a signal of greater productivity, and this is rewarded in the labor market (Spence, 1973). The screening theory also implies that individuals with a diploma have greater labor market success than their peers with the same number of years of schooling who do not possess a diploma (the so-called "sheepskin effect"). Empirical studies provide support for both of these explanations. As illustrated and reviewed by Oreopoulos (2007), there are significant returns to education for those who are required to remain in school longer because of compulsory schooling laws. Supporting the second explanation, and particularly the sheepskin effect, Card and Krueger (1992), Jaeger and Page (1996), and Ferrer and Riddell (2002) report significant earnings advantages related to diplomas.

Despite the positive effects of schooling, there are individuals who for different reasons ultimately drop out at some education level. The reasons for dropping out vary, such as a lack of understanding of the future benefits of education (Oreopolous, 2007; Jensen, 2010). It is also possible that personality characteristics are related to the dropout decision. The potential importance of personality characteristics is illustrated by Heckman and Rubinstein (2001), who study the earnings of GED recipients, i.e., high school dropouts who passed a test to certify that their skills are equivalent to those of high school graduates. Heckman and Rubinstein show that after controlling for cognitive ability, GED recipients earn less than other high school dropouts, i.e., dropouts without a GED degree. They argue that this trend is the result of the lower level of non-cognitive skills held by GED recipients. GED recipients are more intelligent than other high school dropouts, but they lack some non-cognitive skills that contribute to productivity and, thus, labor market success (Araujo et al., 2004; Heckman et al., 2002). Heckman et al. (2006) also find support for this hypothesis.

Previous studies have demonstrated that personality characteristics are related to both educational and labor market outcomes. Connections have been documented between personality characteristics and years of schooling (for a review, see Almlund et al., 2011), the probability of obtaining a degree (Almlund et al., 2011; Carneiro et al., 2007; Coleman and DeLeire, 2003) and the probability of dropping out (Báron and Cobb-Clark, 2010; Coneus et al., 2008; Segal, 2006). In terms of labor market outcomes, significant linkages have been found between personality characteristics and earnings, occupational choices, labor force participation and employment (for example, Borghans et al., 2008; Bowles et al., 2001a,b; Braakmann, 2009; Heckman et al., 2006; Heineck, 2011; Linz and Semykina, 2009; Mueller and Plug, 2006; Nyhus and Pons, 2005; Osborne Groves, 2005; Semykina and Linz, 2007; Uysal and Pohlmeier, 2011; Viinikainen et al., 2010; Viinikainen and Kokko, 2012).

This paper explores the labor market performance of dropouts in terms of earnings, employment and unemployment. The novelty of the paper is straightforward: we analyze how the impact of dropping out on labor market outcomes changes when differences in personality characteristics

are taken into account. The recognition of personality characteristics might affect the results for two reasons. First, to the extent that personality characteristics contribute to an individual's probability of becoming a dropout and these same characteristics contribute to productivity, dropping out may serve as an adverse signal in the labor market. Second, it is possible that the same personality characteristics are related to both the dropout decision and an individual's choices regarding his or her working career, such as occupational choices and orientation towards the labor market.

We use two alternative definitions for a dropout in this study. The first defines a dropout as a person who for some reason decides to discontinue his or her studies at any level of education. Dropouts include those who have permanently interrupted their studies, who have later returned to their studies, or who have changed their field of study. The second definition of a dropout is used as a robustness check. It defines a dropout as a person who has dropped out at any level of education but has not completed vocational (ISCED levels 3-6) education by the age of 42. These broad definitions enable us to investigate how dropping out in general is related to labor market success. While previous studies have focused on high school dropouts, our focus on dropouts in general represents an expansion of the research literature: we examine whether dropouts as a whole have or lack personality characteristics that are associated with labor market success. It is possible, for example, that an individual with a high IQ but unfavorable personality characteristics may be able to complete lower levels of education because they can compensate for their personality disadvantages with intelligence. However, they may drop out later in their lives, for example, at the university level. Therefore, the study augments the findings of Heckman and Rubinstein (2001) by providing evidence on the role of personality in dropouts' professional careers.

The empirical analysis is based on data from a longitudinal Finnish study called JYLS (Jyväskylä Longitudinal Study of Personality and Social Development) (Pulkkinen, 2006). The JYLS is exceptional by virtue of its broad scope and 40-year follow-up period. The panel aspect of the data allows us to estimate how dropping out is associated with earnings and one's labor market career over a longer period of time. The personality characteristics of individuals are assessed at ages 8 and 14 before the outcome variables are determined or any labor market experience is obtained. Therefore, the inference is not affected by potential reverse causality. Furthermore, the personality characteristics are measured prior to dropping out and hence are not affected by the dropout decision. We also assess the robustness of the results by employing alternative dropout definitions and testing whether the estimated effects vary depending on the level of education at which the person dropped out.

The remainder of this paper is organized as follows. Section 2 reports the data in detail, providing descriptive statistics on earnings, socio-economic status, personality, school achievement and working careers by dropout status. Section 3 reports the estimation results, and Section 4 provides conclusions.

1.1   Longitudinal data on working careers, personality and dropping out of school

The longitudinal data used in the empirical section of this study are drawn from the JYLS conducted by Pulkkinen (see Pitkänen, 1969; Pulkkinen, 2006). This study began in 1968 when 12 entire school classes from the Jyväskylä area were randomly selected to participate in the study. The 369 children in the original sample were born in 1959; in 1968, they were in the second grade and thus 8 years old. The sample represented approximately 40 per cent of the second graders in the area. Since 1968, data were collected in 1974, 1980, 1986, 1992, 1995, 2001 and 2009. Our study utilizes the data collected at ages 8, 14 and 42 and income information from tax authority registers that spans the years 2005-2009.

Teacher ratings on school achievement were available at age 8, and information on personality characteristics, also based on teacher ratings, were available at ages 8 and 14. The dataset collected in adulthood, which used personal interviews and inventories, provides information on, among other things, educational attainment, work experience, and unemployment. Furthermore, at age 42, the participants, in collaboration with an interviewer, completed a Life History Calendar that included the individual's education and work history from age 15 to 42. Information about earnings was acquired from the tax authorities' registers between age 45 and 50.

Despite some attrition over the years, the participation rate has been high, and the representativeness of the sample has remained good. A comparison between the participants and non-participants at age 42 revealed that the participants continued to represent the initial random sample with respect to socio-emotional behavior in childhood and school achievement in adolescence (Pulkkinen, 2006). Furthermore, the participants were representative of the Finnish age cohort born in 1959 with respect to marital status, number of children, employment, and unemployment as determined by the statistics of Statistics Finland. In terms of the length of education, the male participants did not differ from their age cohort; female participants, however, were slightly more likely to have had a vocational college education (e.g., nurse, ISCED level 5B) than other females in their age cohort. Both in the age cohort and the present sample, women had a higher level of education than men: more men had vocational education (ISCED level 3) than women, while more women had upper vocational education (ISCED level 5B) than men. No significant gender difference existed in terms of higher education. As a result of a lack of information for some variables, the subsamples we used were smaller than the total sample from 2001 (n = 285). We tested the randomness of this attrition using a two-group test of proportions. According to the results, attrition between the total sample of 2001 and our sub-samples in tables 5 and 6 was random. In Table 4, there were more individuals with stable careers and fewer individuals with unstable careers compared to total sample from 2001 (83 % vs. 74 % and 11 % vs. 18 %, respectively). In this section, the descriptive statistics are based on a sample where n = 243, which is the estimation sample in tables 5 and 6.

We use two different definitions for dropouts. The first, a broad definition, defines a dropout as a person who has decided to discontinue his or her studies at any level of education regardless of the reason. Dropouts may have continued their studies later in their lives, and some of the dropouts had already completed a vocational or university degree, or they might have completed such education subsequently. According to this definition, 16.5 % of the participants were defined as dropouts in these data, and in this section we use this definition for dropouts for

when describing the data. The second definition of a dropout is more restricted and is used as a robustness check. This defines a dropout as a person who dropped out at any level of education but has not completed vocational (ISCED levels 3-6) education by the age of 42. The dropout percentage defined in this manner was 7 %.

In Finland, students enter the education system at age 7 when they begin comprehensive school (ISCED 2). This compulsory schooling lasts for 9 years, until the pupils are 16 years old. Dropping out at this level of education is rare, and in our data only 2.1 % of participants dropped out at this level. After comprehensive school, the students can either enter the labor market or continue and pursue 3-year upper secondary education (ISCED 3) where they can choose between vocational and general programs. The general program does not award vocational qualifications but confers eligibility for university studies. In JYLS, the dropout percentages at this level of education were 3.3 and 5.3 % for the vocational and general programs, respectively. For JYLS participants it was possible to continue on and pursue tertiary education either in a lower level vocational program (ISCED 5B) or at the university level (ISCED 5A). The dropout percentages in JYLS were 2.5 % for level 5B and 2.9 % for level 5A. In addition, some JYLS participants took brief, non-degree vocational courses, and the dropout percentage at this stage was 0.8 %.

Table 1 presents the descriptive statistics based on the dropout status of the participants. According to a t-test, there were no significant differences between dropouts and non-dropouts with respect to school achievement, family socio-economic status at age 8 or the sum of annual earnings between age 45 and 50. A test on the equality of proportions also failed to reveal a significant difference in the proportion of women between dropouts and non-dropouts. The only significant difference appeared in the level of education. According to a test of proportions, dropouts were more likely to have only completed a vocational course than non-dropouts. Previous studies have shown that a low socio-economic status of the family is a strong predictor of dropping out at the high school level (for a review, see Suh et al., 2007). As Table 1 indicates, this trend was not true in our case. The reason for this is likely the heterogeneity of our dropout population compared to high school dropouts. The broad dropout definition might also explain why there were no differences in school achievement at age eight, although poor academic achievement typically indicates a higher risk of becoming a high school dropout (Suh et al., 2007).

<Table 1 >

This study uses three child personality assessments that indicate a high level of self-control, namely constructiveness (e.g., attempts to behave reasonably even in annoying situations, negotiates), compliance (e.g., is peaceable and patient, never quarrels) and emotional stability. Based on the study of the children of the JYLS participants, the teacher ratings demonstrated that emotional stability had correlation coefficients of 0.65 with constructiveness and 0.74 with compliance (Pulkkinen, 1995) and that correlations between self-control inventory scores and teacher-rated adaptive behaviors were 0.33 for girls and 0.65 for boys. Adaptive behaviors were indicated by constructive and compliant behaviors (Kokkonen and Kinnunen, 2006). In the present study, these personality measures, based on a teacher's assessment, were obtained at ages 8 and 14. Each of the personality measures is a composite score based on 1 to 4 statements.

5

At age 8, the measures take values between 0 and 3, with 0 indicating the lowest and 3 indicating the highest score, while at age 14, the score ranges from 0 to 100. Because these personality measures were obtained before the outcome variables of interest in Section 3, potential reverse causality should not affect the estimation results. The personality characteristics were also measured prior to dropping out, ensuring that they are not affected by the dropout incident. The mean scores for constructiveness, compliance and emotional stability at ages 8 and 14 by dropout status are tabulated in Table 2. According to the results, non-dropouts had higher scores in constructiveness and emotional stability at age 14. Otherwise, the differences were not statistically significant. However, overall, the average levels of the three personality measures suggest that non-dropouts had higher levels of self-control than their dropout peers in childhood and adolescence.

<Table 2>

Table 3 reports the average years of work experience and the average duration of unemployment between ages 15 and 42, information about the stability of one's career (ages 37-42), and the average number of employment contracts (ages 15-42) by dropout status. According to Table 3, dropouts had more unemployment, less work experience, greater instability and less stability in their working careers than non-dropouts. Otherwise, there were no significant differences between these two groups.

<Table 3 >

1.2 Labor market performance of dropouts: empirical results

In this section, we examine the longitudinal labor market performance of dropouts. We illustrate how dropping out is associated with cumulative earnings, employment and unemployment both before and after controlling for non-cognitive skills.

To obtain evidence on the relationship between dropping out and subsequent earnings, we estimated a model in which the logarithm of the sum of annual earnings between ages 45 and 50 was regressed on gender, school achievement (age 8), and two alternative dropout indicators - broad and restricted. In the second specification, we extended the model with measures of personality at ages 8 and 14. The personality measures are standardized and orthogonalized because of correlation between these traits. The estimated model is

$$(1) \quad \log(Sy_{t,i}) = b_0 + bX_i + e_i, \qquad i = 1,2,...,n$$

where i refers to an individual, to earnings in year t, X is a vector of individual characteristics including a dropout indicator and is a random error term with white noise properties. The OLS results are tabulated in Table 4.

In columns (1)-(3), we used the broad definition of a dropout, i.e., dropouts might have discontinued their studies at any level of education regardless of the reason. In the baseline model (Table 4, column 1), the sum of earnings was regressed on a dropout dummy, gender and school achievement. The augmented models include personality measures at ages 8 (column 2) and 14 (column 3) in addition to the baseline model. In all specifications, the dropout coefficient was negative but insignificant. However, when personality was included in the model, the coefficient was reduced. In column (2) constructiveness and in column (3) emotional stability became positive and statistically significant. The control variables were consistent with our prior assumptions: higher school achievement was associated with higher earnings, and women earned on average 20 % less than men.

Columns (4)-(6) present the results from models that use the restricted definition of a dropout, which defines a dropout as a person who has interrupted his or her studies at any level of education but has not completed vocational (ISCED levels 3-6) education by age 42. The dropout coefficient in this case is larger, which might be partially explained by the lower average level of education of the dropouts in this dropout group. Qualitatively, the results remained similar: when the model was augmented to include personality, the dropout coefficient was reduced. According to the F-test, the personality measures in column (5) were jointly significant while they were found to be insignificant in column (6).

As a robustness check, we augmented the models in Table 4 by including the level of vocational educational education at age 42. In this case, the dropout coefficients were also smaller when the baseline models were augmented to include personality. With the broad dropout definition, the dropout coefficient in the baseline specification was -0.183, and when the model was augmented to include personality characteristics at ages 8 and 14, the dropout coefficients were -0.168 and -0.157, respectively. In the case of the restricted dropout definition, the dropout coefficient in the baseline specification was -0.503*, and when the model was augmented to include personality at ages 8 and 14, the dropout coefficients were -0.477 and -0.466, respectively.

We also examined whether the estimated effects of the dropout dummy varied depending on the level of education at which the person dropped out. The individuals who were defined as dropouts under the broad definition were divided into three subgroups: comprehensive level, upper secondary level and tertiary level dropouts. Model (1) was augmented to include these three dropout dummies and indicators for the level of vocational education at age 42. Regarding comprehensive and upper secondary level dropouts, the results indicated that dropping out was associated with lower earnings and the coefficient decreased when the model was augmented to include personality. Contrary to our a priori assumption, the tertiary level dropout indicator was positive. However, the dropout indicator was not significant in any of these specifications.

<Table 4 >

7

To examine how dropping out is associated with employment status, we performed OLS regressions in which total years of employment and total years of unemployment between ages 15 and 42 were used as the dependent variable. The estimated model is

$$(2) \quad y_i = b_0 + bX_i + e_i \quad , \qquad\qquad i = 1,2,...,n$$

where yi is the dependent variable (i.e., total years of employment or unemployment), is a vector of individual characteristics including a dropout indicator with estimated parameters β, and εi is a stochastic error term with white noise properties.

Table 5 tabulates the results of a model in which years of employment between ages 15 and 42 were used as the dependent variable. Columns (1)-(3) report the results using the broad dropout definition and columns (4)-(6) use the restricted definition. In both specifications, we first estimated the baseline model and then augmented the model to include personality characteristics. Here, the dropout coefficient was negative and statistically significant in all six specifications. The baseline results in column (1) with the broad dropout definition indicate a 2.126**–year reduction in work experience for dropouts, while under the restricted dropout definition, the coefficient was -4.300*** (column 4). In both cases, the dropout coefficient declined when the model was augmented to include personality. With respect to individual personality measures, a higher score in child constructiveness at age 8 was associated with more years of employment in adulthood. Otherwise, the personality measures were insignificant. Women were likely to have less work experience than men, which may result from the fact that women spend more time out of the labor market and in education, both of which reduce the years of work experience.

As a robustness check, the models in Table 5 were augmented to include the level of vocational education at age 42. The dropout coefficient was also reduced in this case when personality characteristics were added to the model. Under the broad dropout definition, the dropout coefficient in the baseline specification was -2.447**. When the model was augmented to include personality at ages 8 and 14, the dropout coefficients were -2.360** and -2.411**, respectively. Under the restricted dropout definition, the coefficient in the baseline model was -6.205*** and it was reduced to -6.065*** when the model was augmented to include personality at age 8 and to -6.195*** when personality measures at age 14 were added to the model.

We also examined whether the estimated effects of the dropout dummy were qualitatively different depending on the level of education at which the person dropped out. The results suggested that dropping out at the upper secondary education level was associated with more employment, but the coefficient was not significant. Dropping out at the comprehensive or tertiary level was associated with less employment, and the coefficient was slightly reduced when the model was augmented to include personality. In the case of tertiary education, the dropout coefficient was significant at the 1 % level. Therefore, the results concerning comprehensive and tertiary level dropouts were qualitatively similar to those in Table 5.

<Table 5 >

Table 6 tabulates the results of models with total unemployment as the dependent variable. In all model specifications, the dropout coefficient was positive, and in most cases significant, suggesting that dropouts spend more time being unemployed than their non-dropout counterparts. This result is in line with that of Caspi, Wright, Moffit and Silva (1998) and Coneus et al. (2008), who found that dropping out is associated with a higher risk of unemployment. For both the broad and restricted dropout definitions, the dropout coefficient decreased when the model was augmented to include personality. Constructiveness, turned out significant in columns (3) and (6), suggesting that a higher score in adolescent constructiveness was associated with fewer years of unemployment in adulthood. Regarding the other explanatory variables, higher school achievement was negative and significant in all model specifications, but no significant gender differences appeared in the results.

When the models were augmented to include education variables, the results were qualitatively similar to those in Table 6, i.e., augmenting the model to include personality reduced the dropout coefficient relative to the baseline model. Under the broad dropout definition the dropout coefficient in the baseline model was 0.454. When the model was augmented to include personality at age 8, the coefficient was 0.409 and with personality characteristics obtained at age 14, the dropout coefficient was 0.315. When the restricted dropout definition was used, the dropout coefficient in the baseline model was 1.153, and when personality characteristics at ages 8 and 14 were added to the model, the dropout coefficients were 1.031 and 0.979, respectively.

As before, we tested whether the estimated effects of the dropout dummy varied depending on the level of education at which the person dropped out. Concerning dropouts at comprehensive and tertiary level, the results were in line with those in Table 6, i.e., dropping out was associated with more years of unemployment in adulthood, but the coefficient is smaller when the model is augmented to include personality. In the case of upper secondary level dropouts, the results suggested that dropping out was associated with a reduction in years of unemployment.

<Table 6 >

Overall, the results in this section suggest that dropping out is negatively related to the labor market career over a long period of time. When the models were augmented to include personality, however, the relationship was weaker. This result suggests that dropouts vary in terms of personality characteristics that are associated with labor market success. The first explanation for this is that dropping out is an adverse signal of personality characteristics. The second explanation is that the personality characteristics of dropouts are related to their preferences regarding work orientation and career choices.

1.3   Conclusions

This study examined the relationship between dropping out of school and an individual's success in the labor market. The empirical analysis was based on the JYLS, which provides data on an individual's schooling, work career, and personality from ages 8 to 50. This study is exceptional by virtue of its long follow-up period and the assessment of personality and other characteristics, such as school and educational achievement from early school age to middle age.

In contrast to previous studies, which primarily used data from high school dropouts, JYLS includes dropouts with various levels of education ranging from comprehensive school to the university. The longitudinal nature of the data enabled us to investigate how dropping out in general is related to labor market success. Over their careers, 16.5 % of the participants in our sample dropped out of the educational system at least once. According to our results, dropping out is associated with weaker labor market performance over a long period of time. Dropping out had a negative relationship with cumulative earnings and years of employment, but a positive relationship was observed between dropping out and unemployment. When the models were augmented to include personality, the relationship was weakened. Overall, dropouts seem to have or lack certain personality characteristics that are associated with labor market success.

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TABLE 1   Descriptive statistics by dropout status.

	N	Wo-men	Sum of annual earnings between ages 45 and 50[a] € (mean)	Socio-economic status in 1968 (mean)	School achieve-ment (mean)	Level of vocational education at age 42[b] (% of observations)			
						1	2	3	4
Non-dropout	203	49,2 %	175 034 (108 459)	1.36 (0.61)	3.00 (1.00)	14.8	38.4	31.5	15.3
Dropout	40	42,5 %	163 228 (109 283)	1.40 (0.63)	3.00 (1.06)	42.5	25.0	25.0	7.5

Standard deviations are shown in parenthesis.

a) The number of observations is the same as in Table 4, i.e., n=188.

b) 1= Comprehensive education or vocational course; 2=vocational education; 3 = upper vocational education; 4 = university education. Individuals with 3-year upper secondary education general program (ISCED 3) are placed in group 1 because this program does not provide vocational qualifications.

TABLE 2   Personality characteristics by dropout status.

	N	Constructiveness		Compliance		Emotional stability	
		age 8	age 14	age 8	age 14	age 8	age 14
Non-dropout	203	1.38	58.95	1.47	57.34	1.48	65.09
Dropout	40	1.36	50.73	1.38	54.48	1.55	54.08
t-statistics[a]		0.117	1.864	0.599	0.608	-0.498	2.524
(p-value)		(0.907)	(0.064)	(0.550)	(0.544)	(0.619)	(0.012)

a) We performed independent group t-tests to compare the means of the personality traits between two groups.

TABLE 3   Description of work-related variables by dropout status.

	N	Work experien-ce (years)	Duration of unemployment (months)	Stability of career			Number of employment contracts
				Stable	Changeable	Unstable	
Non-dropout	203	19.5 (4.66)	11.9 (26.45)	79.8 %	6.4 %	13.8 %	5.4 (3.76)
Dropout	40	17.6 (5.67)	20.7 (30.32)	64.5 %	7.5 %	30.0 %	5.2 (3.98)

Standard deviations are shown in parenthesis.

TABLE 4   Dropouts and the cumulative earnings (OLS).

	Wide definition of a dropout			Restricted definition of a dropout		
	(1) Baseline	(2) Personality measured at age 8	(3) Personality measured at age 14	(4) Baseline	(5) Personality measured at age 8	(6) Personality measured at age 14
Dropout	-0.258	-0.234	-0.223	-0.776***	-0.724**	-0.738**
	(0.200)	(0.207)	(0.193)	(0.288)	(0.300)	(0.285)
Female	-0.220**	-0.219**	-0.244**	-.234**	-0.232***	-0.256***
	(0.093)	(0.091)	(0.098)	(0.090)	(0.088)	(0.095)
School achievement	0.171***	0.117*	0.175***	0.175***	0.125*	0.178***
at age 8	(0.061)	(0.070)	(0.060)	(0.056)	(0.066)	(0.056)
Personality measures						
- Constructiveness		0.120*	0.015		0.039	0.016
		(0.067)	(0.037)		(0.060)	(0.036)
- Compliance		-0.075	-0.018		-0.068	-0.019
		(0.064)	(0.047)		(0.066)	(0.048)
- Emotional stability		-0.106	0.064*		-0.073	0.058
		(0.069)	(0.038)		(0.046)	(0.039)
Adjusted R2	0.082	0.095	0.076	0.118	0.128	0.113
N	188	188	188	188	188	188

The dependent variable is the log of summed annual earnings between ages 45 and 50. Robust standard errors are shown in parentheses. Significant at the * 10%, ** 5%, or *** 1% level.

TABLE 5   Dropouts and cumulative years of employment (OLS).

	Wide definition of a dropout			Restricted definition of a dropout		
	(1) Baseline	(2) Personality measured at age 8	(3) Personality measured at age 14	(4) Baseline	(5) Personality measured at age 8	(6) Personality measured at age 14
Dropout	-2.126**	-2.089**	-2.104**	-4.300***	-4.230***	-4.293***
	(0.925)	(0.920)	(0.936)	(1.585)	(1.558)	(1.603)
Female	-3.180***	-3.503***	-3.149***	-3.327***	-3.643***	-3.286***
	(0.586)	(0.593)	(0.590)	(0.583)	(0.585)	(0.586)
School achievement	0.252	-0.138	0.249	0.252	-0.134	0.252
at age 8	(0.292)	(0.366)	(0.301)	(0.291)	(0.363)	(0.302)
Personality measures						
- Constructiveness		0.711**	-0.039		0.654**	-0.057
		(0.326)	(0.318)		(0.323)	(0.310)
- Compliance		0.083	-0.151		0.092	-0.167
		(0.275)	(0.279)		(0.274)	(0.276)
- Emotional stability		-0.216	0.027		-0.301	0.026
		(0.333)	(0.334)		(0.336)	(0.320)
Adjusted R2	0.119	0.125	0.109	0.144	0.149	0.134
N	243	243	243	243	243	243

The dependent variable is years of employment between ages 15 and 42. Robust standard errors are shown in parentheses. Significant at the * 10%, ** 5%, or *** 1% level.

TABLE 6   Dropouts and cumulative years of unemployment (OLS).

	Wide definition of a dropout			Restricted definition of a dropout		
	(1) Baseline	(2) Personality measured at age 8	(3) Personality measured at age 14	(4) Baseline	(5) Personality measured at age 8	(6) Personality measured at age 14
Dropout	0.721*	0.703	0.586	1.721**	1.686**	1.579**
	(0.432)	(0.437)	(0.424)	(0.746)	(0.729)	(0.721)
Female	-0.287	-0.164	-0.170	-0.223	-0.105	-0.117
	(0.286)	(0.269)	(0.297)	(0.288)	(0.272)	(0.297)
School achievement at age 8	-0.463***	-0.354**	-0.429***	-0.463***	-0.356**	-0.431***
	(0.141)	(0.173)	(0.140)	(0.141)	(0.172)	(0.139)
Personality measures						
- Constructiveness		-0.225	-0.235*		-0.202	-0.220*
		(0.137)	(0.122)		(0.126)	(0.118)
- Compliance		-0.090	0.087		-0.091	0.089
		(0.142)	(0.152)		(0.142)	(0.149)
- Emotional stability		0.034	-0.186		0.066	-0.178
		(0.147)	(0.165)		(0.145)	(0.150)
Adjusted R2	0.049	0.046	0.055	0.073	0.069	0.077
N	243	243	243	243	243	243

The dependent variable is years of unemployment between ages 15 and 42. Robust standard errors are shown in parentheses. Significant at the * 10%, ** 5%, or *** 1% level.