Locus of Control, Educational Attainment and College Aspirations: The Role of Effort **Online Appendix**

Appendix A. Data sets

Once LoC became an accepted concept in psychology, scholars started to look at how it was associated with different outcomes in different domains, among them academic performance. Most of this research found that students with an internal LoC perform better in school, spend more years in education, and are more likely to go to college. Most of these studies use small samples that are not representative.

More recent research differs from the previous one in (at least) two dimensions. On the one hand, these studies use larger (and hence more representative) data sets. On the other hand, apart from academic performance, more attention has been given to human capital investment decisions that are tightly connected to academic performance. This paper focuses on human capital investment decisions but also takes academic performance into account.

In Table A.1, we summarize information on the studies that use large data sets and are most closely related to our research. As column 2 reveals, most of these papers are based on data from developed parts of the world, such as the United States, Australia, and countries from the European Union. These papers - including this study - concentrate mostly on high school and college students, aged 14-21, as shown in column 3. The sample size ranges from less than 2000 to more than 13000; the present study has the second-largest sample size. In these studies, it is the Rotter's test that is most frequently used to measure the LoC.

Table A.1: Features of the data used in the literature

Study	Data	Grade / age at wave 1	N	LoC test
Coleman and DeLeire (2003)	US, National Educational Longitudinal Study, 1988-1994, 4 waves	8th grade	13720	Rotter's (1996) internal-external scale
Cebi (2007)	US, National Longitudinal Survey of Youth, 1979-2007, annual waves until 1994, after that biannual	10th - 11th grade	1737	Rotter's (1996) internal-external scale
Barón and Cobb-Clark (2010)	Australia, Youth in Focus (YIF) Project, 2006	12th grade, 18 years	2065	7 questions from the Pearlin and Schooler Mastery Scale
Coneus et al. (2011)	Germany, German Socio-Economic Panel, 2000-2007	17-21 years old	2542	Rotter's (1966) scale
Mendolia and Walker (2014)	England, Longitudinal Study of Young People, 2004-2008	9th grade, 14 years	5500	6 questions, test not specified
Kay et al. (2016)	Germany, German Socioeconomic Panel (SOEP) Youth Questionnaires, 2001-2009	17 years	1948	Not a specific LoC test, 15 items (for details, see [?])
This study	Hungary, Life Course Survey, 2006-2012, 6 waves	8th grade	7638	4-question Rotter test (1966)

Appendix B. Descriptive statistics

Table B.2: Summary statistics for the entire sample and by outcome variables

	Full sample				Dropout age		High school graduation		Plans to go to college		Attends college	
	Mean	SD	95% CI		< median	> median	No	Yes	No	Yes	No	Yes
Locus of control (2009, 18y)	0.024	0.004	0.016	0.033	-0.122	0.073	-0.182	0.096	-0.097	0.161	-0.072	0.183
GPA (16y)	3.623	0.004	3.616	3.630	3.213	3.793	3.109	3.826	3.279	4.076	3.335	4.167
Reading test score (15y)	-0.029	0.004	-0.038	-0.021	-0.684	0.193	-0.914	0.287	-0.540	0.570	-0.465	0.694
Math test score (15y)	-0.007	0.004	-0.015	0.002	-0.656	0.224	-0.847	0.297	-0.497	0.579	-0.443	0.738
Female (15y)	0.482	0.002	0.478	0.486	0.429	0.502	0.386	0.520	0.430	0.549	0.450	0.539
Mother's education (15y):												
low	0.458	0.002	0.454	0.462	0.721	0.360	0.785	0.335	0.644	0.231	0.616	0.184
middle	0.336	0.002	0.332	0.340	0.211	0.377	0.179	0.390	0.270	0.403	0.286	0.405
high	0.206	0.002	0.202	0.209	0.067	0.262	0.035	0.275	0.086	0.366	0.098	0.410
Household income (EUR) (15y)	719.085	2.169	714.833	723.337	558.680	778.584	534.318	785.546	600.884	859.243	621.357	889.181
HOME Cognitive (15y)	85.964	0.107	85.753	86.175	70.816	90.889	66.851	92.430	75.627	97.321	77.446	99.083
HOME Emotional (15y)	99.546	0.096	99.358	99.734	96.573	100.282	95.229	100.836	97.530	101.380	97.860	101.687
Future expectations:												
earn more than avg (17y)	0.045	0.004	0.038	0.053	-0.306	0.136	-0.403	0.175	-0.211	0.294	-0.175	0.348
permanent employment (17y)	0.553	0.001	0.550	0.555	0.488	0.565	0.467	0.574	0.501	0.598	0.506	0.611
factor variable of exp.	0.700	0.001	0.698	0.702	0.616	0.715	0.604	0.719	0.646	0.738	0.655	0.743
Effort												
study time (16y)	0.033	0.003	0.027	0.039	-0.287	0.128	-0.389	0.170	-0.218	0.306	-0.172	0.344
diligence grade (16y)	4.709	0.012	4.684	4.733	3.832	4.951	3.573	5.056	4.072	5.353	4.183	5.447
factor variable of eff.	3.872	0.004	3.865	3.879	3.503	4.004	3.415	4.038	3.555	4.261	3.601	4.343
How long can you pay for child's education: university (15y)	0.713	0.002	0.710	0.717	0.456	0.802	0.342	0.849	0.526	0.933	0.568	0.948
Minimum wanted education for child: university (15y)	0.318	0.002	0.314	0.322	0.121	0.379	0.057	0.405	0.137	0.527	0.167	0.563
Ideal education for child: university (15y)	0.648	0.002	0.644	0.652	0.337	0.758	0.188	0.821	0.412	0.932	0.466	0.952

1 EUR $\simeq$ 300 HUF. The statistics are calculated using appropriate weighting.
The full list of variables is presented in Appendix D.

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Appendix C. Structure of data collection

Table C.3: Structure of the data collection

Year of data collection	2006	2006	2007	2008	2009	2010	2011	2012
Month of data collection	May	Oct	Oct	Oct	Oct	Oct	Oct	Oct
Name of survey	NABC	LC wave 1	LC wave 2	LC wave 3	LC wave 4	missing	LC wave 5	LC wave 6
Class	8	9	10	11	12	13	14	15
School	Elem.	High	High	High	High	Univ.	Univ.	Univ.
Age (born in 1991)	14	15	16	17	18	19	20	21
LoC		x			x			
Cognitive abilities	x							
Study time			x	x				
Study at weekend			x	x				
Study after 8PM on weekday			x	x				
Diligence grade in school			x	x	x			
Expectations about the future				x				
Plans to go to college					x			
Attends school		x	x	x	x		x	x
Attends college							x	x
Graduated from high school							x	x

NABC refers to the National Assessment of Basic Competencies, while LC stands for the Life Course survey.
Cognitive abilities comprise standardized math and reading test scores.
Study time is the time the student spends studying on an average school day, and together with diligence grade in school they are used to capture effort.
School-leaving age is calculated based on whether the respondent attends school in a given year.

Appendix D. Variables

Table D.4: Summary statistics of the dependent variables in the regressions

Variable	Obs	Mean	Std. Dev.	Min	Max
School-leaving age (yrs)	6,861	21.3	1.3	15	22
High-school graduation	6,861	0.618	0.486	0	1
College aspiration	6,861	0.350	0.477	0	1
College attendance	6,861	0.272	0.445	0	1
Expectations (2008)	6,861	-0.049	0.939	-2.403	2.544
Effort (2008)	6,861	-0.071	0.716	-1.702	5.230
Effort (2007-8-9)	6,861	-0.094	0.871	-2.436	3.798

School-leaving age measured in years.
High-school graduation is a dummy variable, =1 if the respondent graduated from high school.
College aspiration is a dummy variable, =1 if the respondent planned to apply to university.
College attendance is a dummy variable, =1 if the respondent attended college.

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Table D.5: The locus of control pairs of statements - Rotter-test

Question N=7,638	2006	2009
a.) What happens to me is first of all my own doing. (1p)	7,807	5,980
	(78.11%)	(78.42%)
Sometimes I feel that I don't have enough control over the direction my life is taking. (0p)	2,188	1,646
	(21.89%)	(21.58%)
b.) When I make plans, I am almost certain that I can make them work. (1p)	6,681	5,341
	(66.84%)	(69.93%)
It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow. (0p)	3,315	2,297
	(33.16%)	(30.07%)
c.) In my case getting what I want has little or nothing to do with luck. (1p)	7,945	6,016
	(79.57%)	(79.12%)
Many times we might just as well decide what to do by flipping a coin. (0p)	2,040	1,588
	(20.43%)	(20.88%)
d.) Many times I feel that I have little influence over the things that happen to me. (0p)	3,956	2,968
	(39.70%)	(39.18%)
It is impossible for me to believe that chance or luck plays an important role in my life. (1p)	6,008	4,608
	(60.30%)	(60.82%)

Table D.6: Dictionary of control variables

Variable	Type	N	Mean	SD	Min	Max
LoC score in 2006		6811	2.92	1.04	0	4
LoC score in 2009		6216	2.92	1.1	0	4
Change of LoC score 2006-9		6173	-0.01	1.36	-4	4
Reading score	Cognitive	6861	-0.33	1.05	-3.78	2.87
Mathematics score	Cognitive	6861	-0.2	0.99	-3.16	3.08
Exp.: earn more than avg (2008)	Expectation	6861	0.54	0.26	0	1
Exp.: earn best 10% (2008)	Expectation	6861	0.25	0.24	0	1
Exp.: permanent employment (2008)	Expectation	6861	0.68	0.27	-0.06	1
Exp.: earn less than net HUF100.000 (2008)	Expectation	6861	0.6	0.3	-0.06	1
Exp.: earn less than net HUF200.000 (2008)	Expectation	6861	0.33	0.27	-0.06	2
Positive exp-s in general (2008)	Expectation	6861	2.82	0.57	0.22	4.7
Positive exp-s (school, work) - 2008	Expectation	6861	3.55	1.42	-0.18	7
Hours a week spent studying (2007)	Effort	6861	4.44	2.68	0	52
Hours a week spent studying (2008)	Effort	6861	4.17	2.97	0	44
Effort grade (2007)	Effort	6861	3.78	0.85	1	5
Effort grade (2008)	Effort	6861	3.75	0.85	1	5
Mother's education: less than high school	Pre-determined	6861	0.52	0.5	0	1
Mother's education: high school	Pre-determined	6861	0.3	0.46	0	1
Mother's education: university	Pre-determined	6861	0.17	0.38	0	1
Father's education: less than high school	Pre-determined	6861	0.71	0.45	0	1
Father's education: high school	Pre-determined	6861	0.18	0.38	0	1
Father's education: university	Pre-determined	6861	0.11	0.31	0	1
HOME cognitive scale	Pre-determined	6776	81.23	26.43	0	130
HOME emotional scale	Pre-determined	6699	98.95	22.04	10	140
# of people sleeping in the same room (2006)	Pre-determined	6861	1.53	0.85	1	8
Household size	Pre-determined	6861	4.32	1.36	2	15
Social disadvantage (2006)	Pre-determined	6861	0.36	0.48	0	1
Financial distress (2006)	Pre-determined	6861	0.31	0.46	0	1
Financial distress (2009)	Pre-determined	6861	0.32	0.47	0	1
Female	Pre-determined	6861	0.46	0.5	0	1
Lives with mother	Pre-determined	6861	0.97	0.16	0	1
Lives with father	Pre-determined	6861	0.8	0.4	0	1
Has special education needs (SEN)	Pre-determined	6861	0.09	0.29	0	1
SEN students in the class	Pre-determined	6853	1.16	2.57	0	23
# of students in the class	Pre-determined	6861	22.39	6.03	1	43
Household income (2006)	Pre-determined	6861	2.20E+05	1.30E+05	0	2.66E+06
Time enrolled in childcare	Pre-determined	6861	2.85	0.46	0.5	3
How often did the parents read tales?	Pre-determined	6861	17.06	8.84	0	25
Age of female caretaker	Pre-determined	6861	41.02	6.28	9	78
Age of female caretaker - squared	Pre-determined	6861	1722.31	559.25	81	6084
Mental, physical or sexual abuse before age 14	Pre-determined	6861	1.48	2.52	0	19
Parents divorced	Pre-determined	6861	0.21	0.41	0	1
Roma ethnicity	Pre-determined	6861	0.06	0.23	0	1
Birthweight under 2500g	Pre-determined	6861	0.08	0.27	0	1
Been in social home (2006)	Pre-determined	6861	0.01	0.09	0	1
Has step parents	Pre-determined	6861	0.01	0.09	0	1
Mother's mother: less than elementary school	Pre-determined	6861	0.18	0.39	0	1
Mother's mother: elementary school	Pre-determined	6861	0.5	0.5	0	1
Mother's mother: high school	Pre-determined	6861	0.27	0.45	0	1
Mother's mother: university	Pre-determined	6861	0.05	0.21	0	1
Mother's father: less than elementary school	Pre-determined	6861	0.13	0.34	0	1
Mother's father: elementary school	Pre-determined	6861	0.39	0.49	0	1
Mother's father: high school	Pre-determined	6861	0.4	0.49	0	1
Mother's father: university	Pre-determined	6861	0.07	0.26	0	1

Variable	Type	N	Mean	SD	Min	Max
Father's mother: less than elementary school	Pre-determined	6861	0.15	0.35	0	1
Father's mother: elementary school	Pre-determined	6861	0.64	0.48	0	1
Father's mother: high school	Pre-determined	6861	0.19	0.39	0	1
Father's mother: university	Pre-determined	6861	0.03	0.17	0	1
Father's father: less than elementary school	Pre-determined	6861	0.11	0.31	0	1
Father's father: elementary school	Pre-determined	6861	0.54	0.5	0	1
Father's father: high school	Pre-determined	6861	0.29	0.46	0	1
Father's father: university	Pre-determined	6861	0.06	0.23	0	1
Max. wanted education for child: university (2006)	Pre-determined	6861	0.55	0.5	0	1
Min. wanted education for child: university (2006)	Pre-determined	6861	0.25	0.44	0	1
Can afford to pay university (2006)	Pre-determined	6861	0.64	0.48	0	1
Mental, physical or sexual abuse AFTER age 14	Pre-determined	6861	0.76	1.85	0	18
Death in the family (2008)	Pre-determined	6861	0.06	0.23	0	1
Death in the family (2009)	Pre-determined	6861	0.05	0.22	0	1
Accident in the family (2007)	Pre-determined	6861	0.05	0.21	0	1
Accident in the family (2008)	Pre-determined	6861	0.04	0.19	0	1
Accident in the family (2009)	Pre-determined	6861	1.96	0.19	1	2
Illness in the family (2007)	Pre-determined	6861	0.07	0.26	0	1
Illness in the family (2008)	Pre-determined	6861	0.07	0.26	0	1
Illness in the family (2009)	Pre-determined	6861	1.91	0.29	1	2
Household income (2006)	Pre-determined	6861	2.20E+05	1.30E+05	0	2.66E+06
Household income (2007)	Pre-determined	6861	2.25E+05	3.19E+06	0	2.65E+08
Household income (2008)	Pre-determined	6861	1.96E+05	2.39E+05	0	1.80E+07
Household income (2009)	Pre-determined	6861	1.94E+05	82019.15	27000	8.50E+05
Region	Pre-determined	6861	3.93	2.16	1	7
Central Hungary (%)	Pre-determined	1502	21.89			
Central Transdanubia (%)	Pre-determined	817	11.91			
Western Transdanubia (%)	Pre-determined	696	10.14			
Southern Transdanubia (%)	Pre-determined	687	10.01			
Northern Hungary (%)	Pre-determined	936	13.64			
Northern Great Plain (%)	Pre-determined	1260	18.36			
Southern Great Plain (%)	Pre-determined	963	14.04			
Mother works (2006)	Pre-determined	6853	0.68	0.51	0	2
No (%)	Pre-determined	2318	33.82			
Yes (%)	Pre-determined	4402	64.23			
We did not ask (%)	Pre-determined	133	1.94			
Mother works (2007)	Pre-determined	6861	0.76	0.54	0	2
No (%)	Pre-determined	2032	29.62			
Yes (%)	Pre-determined	4474	65.21			
We did not ask (%)	Pre-determined	355	5.17			
Mother works (2008)	Pre-determined	6861	0.77	0.51	0	2
No (%)	Pre-determined	1846	26.91			
Yes (%)	Pre-determined	4747	69.19			
We did not ask (%)	Pre-determined	268	3.91			
Mother works (2009)	Pre-determined	6861	0.77	0.52	0	2
No (%)	Pre-determined	1877	27.36			
Yes (%)	Pre-determined	4651	67.79			
We did not ask (%)	Pre-determined	333	4.85			
Father works (2006)	Pre-determined	6830	1.01	0.61	0	2
No (%)	Pre-determined	1254	18.36			
Yes (%)	Pre-determined	4286	62.75			
We did not ask (%)	Pre-determined	1290	18.89			
Father works (2007)	Pre-determined	6815	1.07	0.61	0	2
No (%)	Pre-determined	1027	15.07			
Yes (%)	Pre-determined	4284	62.86			

Variable	Type	N	Mean	SD	Min	Max
We did not ask (%)	Pre-determined	1504	22.07			
Father works (2008)	Pre-determined	6717	1.08	0.61	0	2
No (%)	Pre-determined	1009	15.02			
Yes (%)	Pre-determined	4177	62.19			
We did not ask (%)	Pre-determined	1531	22.79			
Father works (2009)	Pre-determined	6647	1.07	0.64	0	2
No (%)	Pre-determined	1167	17.56			
Yes (%)	Pre-determined	3855	58			
We did not ask (%)	Pre-determined	1625	24.45			
Age at 2006 interview	Pre-determined	6840	15.25	0.55	13.51	17.84

Appendix E. Correlation of effort and expectations

Table E.7: Correlation of effort and expectations

		Expectations (2008)						Effort (2008)				
		Earn more than avg	Earn best 10%	Perm. emp.	Earn more than net HUF100.000	Earn more than net HUF200.000	Exp. factor variable	Weekly hours of studying	Diligence grade	Study after 8pm on weekday	Study at the week-ends	Effort factor variable
Exp (2008)	Earn more than avg	1.00										
	Earn best 10%	0.50	1.00									
	Perm. emp.	0.41	0.22	1.00								
	Earn more than net HUF100.000	0.45	0.26	0.67	1.00							
	Earn more than net HUF200.000	0.44	0.39	0.47	0.70	1.00						
	Exp. factor variable	0.69	0.53	0.74	0.90	0.83	1.00					
Eff (2008)	Weekly hours of studying	0.08	0.08	0.07	0.08	0.08	0.10	1.00				
	Diligence grade	0.10	0.12	0.06	0.11	0.15	0.14	0.27	1.00			
	Study after 8pm on weekday	0.14	0.10	0.15	0.17	0.12	0.18	0.31	0.19	1.00		
	Study at the weekends	0.00	0.03	-0.04	-0.01	-0.01	-0.01	0.36	0.15	0.10	1.00	
	Effort factor variable	0.11	0.12	0.09	0.12	0.12	0.15	0.85	0.55	0.56	0.60	1.00

Appendix F. Testing the difference between LoC coefficients between model specifications

Table F.8: Testing for differences of LoC coefficients between model specifications (p-values)

	School-leaving age	Graduating from HS	College aspirations	College attendance
Model 3 vs 4	0.008	0.557	0.412	0.065
Model 3 vs 5	0.469	0.056	0.031	0.040
Model 4 vs 6	0.664	0.128	0.047	0.055
Model 5 vs 6	0.244	0.976	0.582	0.092

The reported statistics are Wald test p-values [?] for the LoC point estimates in models reported in Table ??.

Appendix G. Description of the Home Cognitive and Emotional Scale

Table G.9: Home Cognitive and Emotional Scale

Home Cognitive Scale Question	Freq.	Percent	Home Emotional Scale Question	Freq.	Percent
Has more than 20 books.			I used to tidy up and clean my room.		
Not true	3,402	(34.2%)	Not true	1,512	(15.1%)
True	6,546	(65.8%)	True	8,501	(84.9%)
There is at least one musical instrument at home.			I used to clear away the things in my room.		
Not true	7,239	(72.34%)	Not true	1,581	(15.81%)
True	2,768	(27.66%)	True	8,421	(84.19%)
The family has at least one newspaper subscription.			I usually subsume my time.		
Not true	7,155	(71.63%)	Not true	567	(5.67%)
True	2,834	(28.37%)	True	9,433	(94.33%)
Reads for fun at least weekly.			We meet with relatives and friends at least once in a month.		
Not true	5,592	(56.29%)	Not true	3,071	(30.73%)
True	4,343	(43.71%)	True	6,924	(69.27%)
The family encourages to have a hobby.			I spend time with my father more than once in a week.		
Not true	1,898	(19.02%)	Not true	5,101	(51.2%)
True	8,083	(80.98%)	True	4,860	(48.8%)
Participates in tutorial lectures.			Outdoor activity with my father at least once in a week.		
Not true	6,022	(60.15%)	Not true	4,960	(50.75%)
True	3,990	(39.85%)	True	4,813	(49.25%)
Have gone to museum in the past year with a family member.			Eat a meal with both parents each day.		
Not true	5,807	(58.11%)	Not true	5,911	(59.33%)
True	4,186	(41.89%)	True	4,052	(40.67%)
Continued on next page					

Table G.9 – continued from previous page

Home Cognitive Scale Question	Freq.	Percent	Home Emotional Scale Question	Freq.	Percent
Have been to a concert or theatre in the past year with a family member.			The parent would not hit the child is he/she were cursing.		
Not true	5,939	(59.47%)	Not true	357	(3.59%)
True	4,048	(40.53%)	True	9,587	(96.41%)
There are discussions in the family about what was seen on TV.			The parent had to hit the child at most once in the past week.		
Not true	2,868	(29.71%)	Not true	28	(0.29%)
True	6,784	(70.28%)	True	9,777	(99.71%)
The flat is not dark or dreary.			The mother encouraged the child to participate in the conversation.		
Not true	1,593	(16.04%)	Not true	2,912	(29.59%)
True	8,340	(83.96%)	True	6,930	(70.41%)
The rooms are mostly clean.			The mother answered the child's questions.		
Not true	958	(9.65%)	Not true	4,528	(46.1%)
True	8,969	(90.35%)	True	5,295	(53.9%)
The rooms are mostly tidy.			The mother talked to the child.		
Not true	1,052	(10.59%)	Not true	3,849	(39.14%)
True	8,878	(89.41%)	True	5,985	(60.86%)
The building is safe.			The mother introduced the child to the interrogator.		
Not true	538	(5.45%)	Not true	5,876	(59.61%)
True	9,342	(94.55%)	True	3,981	(40.39%)
			The mother spoke in a positive voice about the child.		

Table G.9 – continued from previous page

Home Cognitive Scale Question	Freq.	Percent	Home Emotional Scale Question	Freq.	Percent
			Not true	936	(9.52%)
			True	8,898	(90.48%)

Appendix H. Factors associated to the level and change of LoC

Figure H.1: The distribution (in year 2006 and 2009) and change of LoC (standardized values)
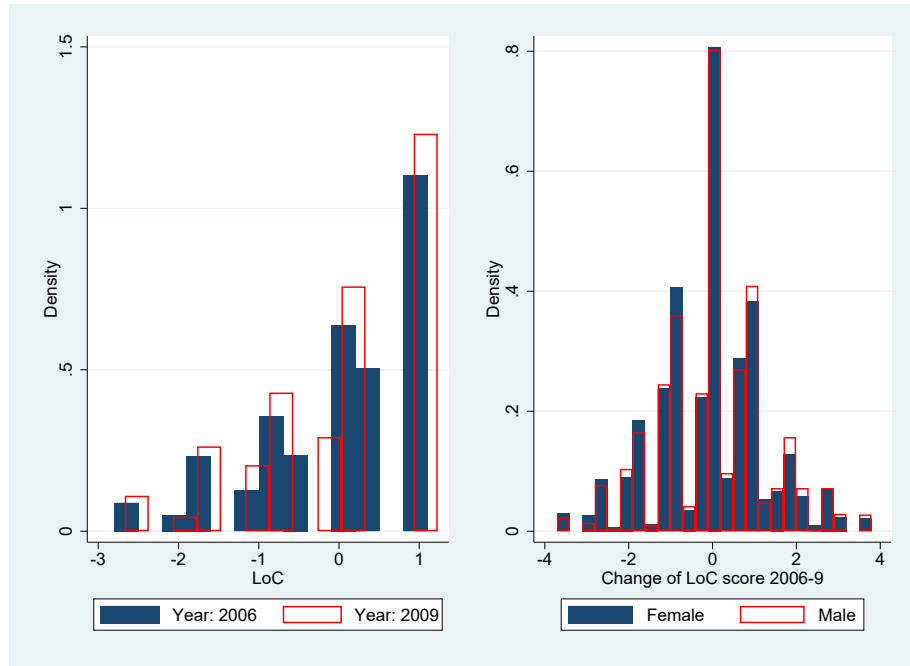
	VARIABLES	(1) LoC score (2009)	(2) LoC score (2009)	(3) Change of LoC (2006-2009)	(4) Change of LoC (2006-2009)
Basis LoC	LoC score in 2006			-0.849***	-0.902***
				[0.024]	[0.025]
	HOME cognitive scale	0.002**		0.002	
		[0.001]		[0.001]	
Home environment	Minimum wanted education for child: college (2006)	0.109**		0.084	
		[0.052]		[0.052]	
	How often did the parents read tales from a book?	0.004	0.004*	0.004	0.004
		[0.003]	[0.003]	[0.003]	[0.003]
	How many people sleep in the same room? (2006)	-0.017			
		[0.028]			
	Mother's mother: high school	0.058		0.063	
		[0.051]		[0.049]	
	Mother's father: less than 8	-0.055			
Parental education		[0.080]			
	Mother's father: high school	0.056	0.077*	0.056	0.083*
		[0.048]	[0.044]	[0.046]	[0.045]
	Father's father: less than 8	-0.132	-0.162**	-0.146*	-0.144*
		[0.084]	[0.075]	[0.084]	[0.079]
	Mother works (2009) = 1	0.084		0.065	
		[0.054]		[0.053]	
Household's financial position	Father works (2008) = 1	0.075		0.083*	0.073
		[0.046]		[0.046]	[0.045]
	Household income (2007, imp)	0.074		0.076	0.089
		[0.059]		[0.058]	[0.055]
	Financial distress (2006)	-0.060		-0.064	
		[0.052]		[0.052]	
Special characteristic	Special education needs	-0.199**		-0.165*	
		[0.086]		[0.086]	
	Mental, physical or sexual abuse before age 14	-0.046***	-0.025***	-0.042***	-0.025***
		[0.009]	[0.009]	[0.009]	[0.009]
Family- or health-related shocks	Accident (2009, imp)	-0.371**	-0.389**	-0.426**	-0.402**
		[0.188]	[0.166]	[0.187]	[0.168]
	Death (2009)	-0.184*		-0.182*	-0.179*
		[0.111]		[0.110]	[0.103]
	Death (2009, imp)			0.957***	
				[0.240]	
	Region (=1 if Southern Transdanubia)			-0.063	
Regional dummies				[0.077]	
	Region (=1 if Northern Great Plain)	0.130**	0.142**	0.150**	0.165***
		[0.065]	[0.060]	[0.067]	[0.063]
	Do you look good? (2008)		0.072**		0.076**
			[0.032]		[0.033]
	Sociability (2006)		0.035**		0.027*
			[0.015]		[0.015]
Psychological factors / traits	Self esteem (2006)		0.034**		0.030**
			[0.013]		[0.014]
	Self esteem (2006, imp)				-0.475
					[0.295]
	Emotional stability (2006)		0.023		0.007
			[0.020]		[0.021]
	Health: cannot sleep (2008)		-0.046*		-0.042
			[0.025]		[0.026]
	How healthy do you feel? (2006)		0.073*		0.061
			[0.037]		[0.038]
Health	How healthy do you feel? (2008)		0.020		0.017
			[0.034]		[0.034]
	Objective health (2006)		0.012		0.010
			[0.010]		[0.010]
	Health: bad mood (2008)				-0.019
					[0.025]
	School environment 2008		0.017**		0.017**
			[0.006]		[0.007]
Other environmental issues	How many friends smoke/drink/take drugs? (2008)		-0.013		-0.013
			[0.009]		[0.009]
	How many friends smoke/drink/take drugs? (2008, imp)		-0.117		-0.261*
			[0.109]		[0.143]
	Works (2007, imp)				-0.396***
					[0.135]
	Positive expectations (school, work)- 2008		0.078***		0.070***
Channels of LoC			[0.017]		[0.017]
	Diligence grade (2008)		0.028		0.026
			[0.028]		[0.028]
	Constant	2.665***	1.077***	2.219***	1.449***
		[0.121]	[0.280]	[0.120]	[0.318]
	Observations	2,940	3,038	2,920	2,951
	R-squared	0.052	0.093	0.411	0.437

Appendix I. Factor loadings
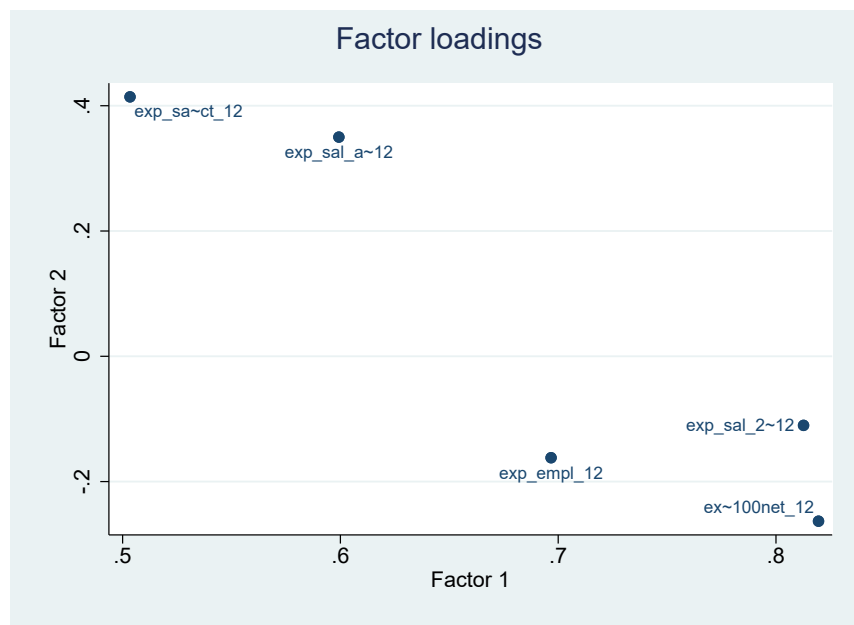
Figure I.2: Factor loadings of expectations (2012)

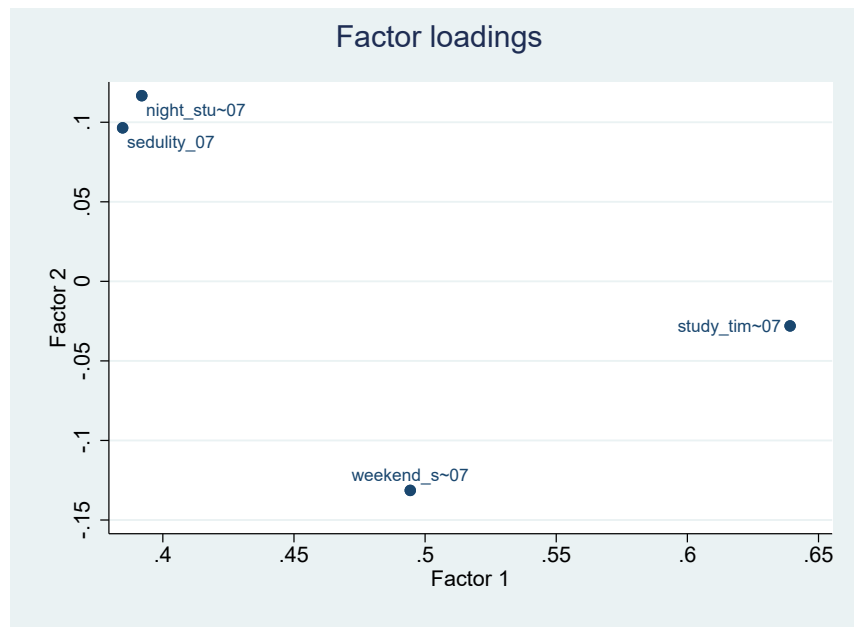Figure I.3: Factor loadings of effort (2007)

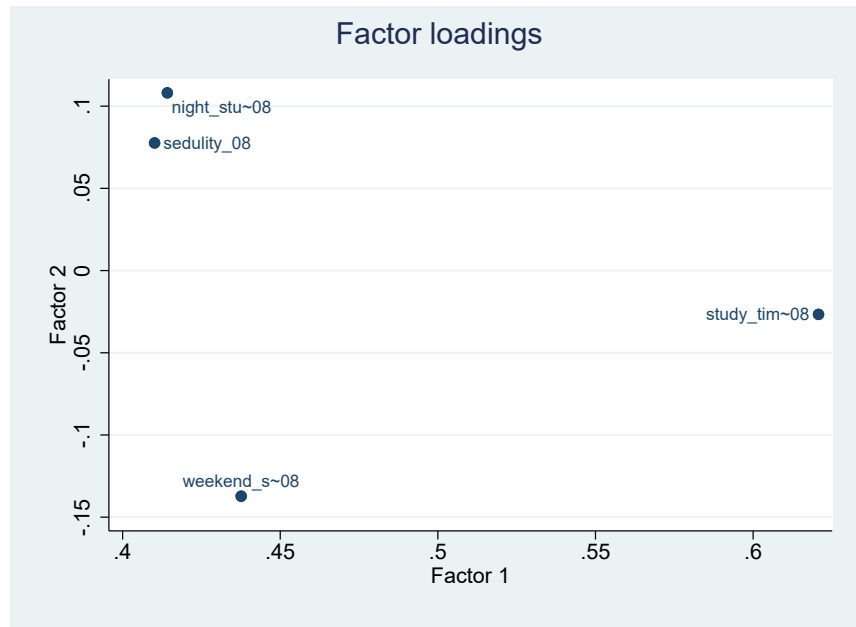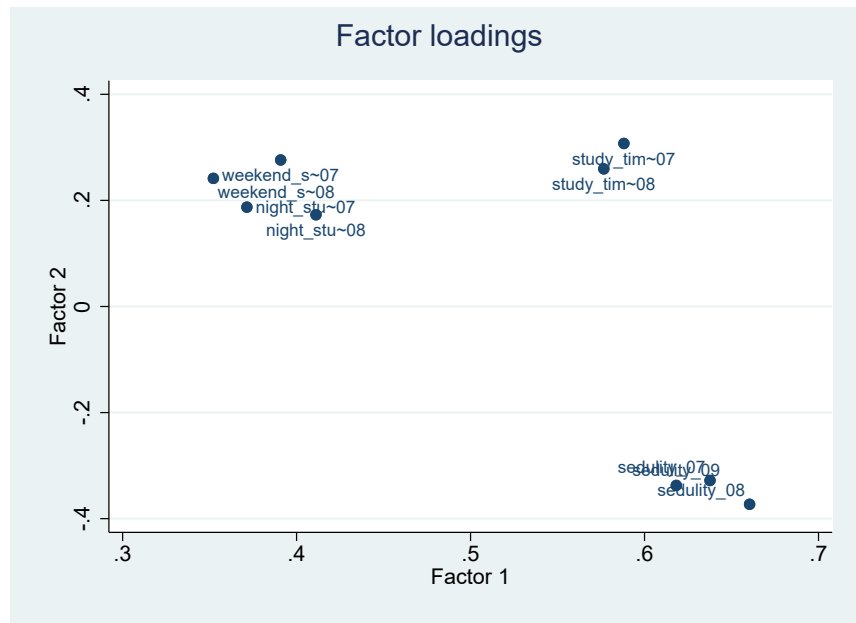Figure I.4: Factor loadings of effort (2008)

Figure I.5: Factor loadings of effort (2007-2009)

Appendix J. Complete regressions

Appendix J.1. School-leaving age

Table J.11: Complete regressions - school-leaving age

	Basic controls		Cognitive ability, Expectations and Effort			
	None	Pre-determined controls	Pre + Cognitive ability	Pre + Cogn + Expecta-tions	Pre + Cogn + Effort	Pre + Cogn + Exp + Effort
	(1)	(2)	(3)	(4)	(5)	(6)
LoC score in 2009	0.134***	0.046**	0.045**	0.027	0.024	0.024
	[0.025]	[0.022]	[0.022]	[0.021]	[0.017]	[0.017]
Mother's education: less than high school		-0.043	-0.001	0.029	-0.115***	-0.110***
		[0.053]	[0.052]	[0.053]	[0.039]	[0.039]
Mother's education: high school		0.140***	0.157***	0.159***		
		[0.037]	[0.037]	[0.039]		
Father's education: less than high school		0.011				
		[0.036]				
HOME cognitive scale		0.006***	0.006***	0.005***	0.003***	0.003***
		[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Social disadvantage (2006)		0.049	0.055	0.037	0.065**	0.062*
		[0.035]	[0.034]	[0.035]	[0.033]	[0.033]
Father works (2006) = 1, Yes		0.153***	0.143***	0.115***	0.085**	0.080**
		[0.049]	[0.045]	[0.044]	[0.037]	[0.037]
Financial distress (2009)		-0.177***	-0.174***	-0.157***	-0.082**	-0.079*
		[0.050]	[0.049]	[0.047]	[0.041]	[0.040]
Mental, physical or sexual abuse before age 14		-0.005	-0.005	-0.005	-0.011	-0.011
		[0.009]	[0.009]	[0.009]	[0.008]	[0.008]
Father's mother: high school		0.103***	0.105***	0.098***	0.083***	0.084***
		[0.034]	[0.033]	[0.035]	[0.031]	[0.032]
Highest wanted education for child: college (2006)		0.350***	0.249***	0.238***	0.168**	0.174**
		[0.079]	[0.078]	[0.076]	[0.069]	[0.069]

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Table J.11 – continued from previous page

	Basic controls		Cognitive ability, Expectations and Effort			
	None	Pre-determined controls	Pre + Cognitive ability	Pre + Cogn + Expecta-tions	Pre + Cogn + Effort	Pre + Cogn + Exp + Effort
	(1)	(2)	(3)	(4)	(5)	(6)
How long can you pay for child's education: college (2006)		0.207** [0.091]	0.201** [0.088]	0.192** [0.085]	0.153** [0.074]	0.154** [0.075]
Mother works (2009) = 1, Yes		0.240*** [0.052]	0.243*** [0.051]	0.206*** [0.049]	0.108*** [0.041]	0.108*** [0.041]
Reading score			0.134*** [0.031]	0.127*** [0.031]	0.060** [0.025]	0.060** [0.025]
Mathematics score			0.070*** [0.027]	0.056** [0.027]	0.069*** [0.023]	0.069*** [0.023]
Exp: earn more than avg (2008)				-0.276*** [0.100]		-0.195** [0.084]
Exp: permanent employment (2008)				0.889*** [0.126]		0.152* [0.091]
Exp: earn more than net HUF100.000 (2008)				0.280*** [0.101]		0.031 [0.096]
Exp: earn more than net HUF200.000 (2008)				-0.012 [0.087]		0.080 [0.082]
How many hours a week do you spend with studying? (2008)					0.017*** [0.005]	0.017*** [0.005]
Effort grade (2008)					0.042* [0.024]	0.041* [0.024]
Study after 8pm on weekday (2008)					0.060 [0.037]	0.061* [0.037]
Night study 2008 imp					-1.492*** [0.295]	-1.460*** [0.289]
Weekend study 2008 imp					-1.507*** [0.280]	-1.450*** [0.273]

Table J.11 – continued from previous page

	Basic controls		Cognitive ability, Expectations and Effort			
	None	Pre-determined controls	Pre + Cognitive ability	Pre + Cogn + Expecta-tions	Pre + Cogn + Effort	Pre + Cogn + Exp + Effort
	(1)	(2)	(3)	(4)	(5)	(6)
Number of students in the class		0.013*** [0.004]				
How often did the parents read tales from a book		0.006** [0.003]				
Minimum wanted education for child: college (2006)		0.047 [0.034]				
Effort grade (2007)					0.031 [0.024]	0.030 [0.024]
Effort 20008 imp					-0.287*** [0.106]	-0.283*** [0.105]
Weekend study 2007 imp					-0.391*** [0.108]	-0.390*** [0.108]
Constant	21.411*** [0.025]	19.818*** [0.191]	20.338*** [0.140]	19.847*** [0.169]	20.605*** [0.128]	20.572*** [0.135]
Observations	3,038	2,844	2,844	2,844	2,844	2,844
Clusters	1264	1219	1219	1219	1219	1219
Selected controls	0	15	13	17	20	24
Dictionary size	0	119	121	131	137	147
R-squared (in-sample)	0.0130	0.258	0.268	0.316	0.431	0.441
R-squared (out-sample)	0.0124	0.249	0.258	0.319	0.469	0.479

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Appendix J.2. Graduating from high school

Table J.12: Complete regressions - graduating from high school

| | Basic controls | | Cognitive ability, Expectations and Effort | | | |
| | None | Pre-determined controls | Pre + Cognitive ability | Pre + Cogn + Expecta-tions | Pre + Cogn + Effort | Pre + Cogn + Exp + Effort |
	(1)	(2)	(3)	(4)	(5)	(6)
LoC score in 2009	0.054***	0.012*	0.010	0.009	0.006	0.006
	[0.009]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]
Mother's education: less than high school		-0.059***	-0.041**	-0.038**	-0.034*	-0.035*
		[0.019]	[0.019]	[0.019]	[0.018]	[0.018]
Father's education less than high school		-0.060***	0.001	0.003	0.001	0.003
		[0.016]	[0.017]	[0.018]	[0.018]	[0.018]
Father' education: high school			0.069***	0.068***	0.067***	0.067***
			[0.017]	[0.017]	[0.018]	[0.018]
HOME cognitive scale		0.002***	0.001***	0.001***	0.001***	0.001***
		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Social disadvantage (2006)		0.035**	0.032**	0.030**	0.034**	0.036**
		[0.015]	[0.014]	[0.014]	[0.014]	[0.014]
Mental, physical or sexual abuse before age 14		0.003	0.002	0.002	0.003	0.003
		[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
Highest wanted education for child: college (2006)		0.321***	0.275***	0.275***	0.235***	0.236***
		[0.031]	[0.031]	[0.030]	[0.030]	[0.029]
How long can you pay for child's education: college (2006)		0.062*	0.059*	0.057*	0.062**	0.063**
		[0.032]	[0.030]	[0.030]	[0.029]	[0.029]
Mother works (2009) = 1, Yes		0.069***	0.051**	0.050**	0.034*	0.049***
		[0.019]	[0.021]	[0.021]	[0.020]	[0.017]
Reading score			0.087***	0.087***	0.063***	0.063***
			[0.011]	[0.011]	[0.011]	[0.011]
Mathematics score			0.024**	0.024**	0.028***	0.029***
			[0.010]	[0.010]	[0.010]	[0.010]

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	Basic controls		Cognitive ability, Expectations and Effort			
	None	Pre-determined controls	Pre + Cognitive ability	Pre Cogn + Expecta-tions	Pre Cogn + Effort	Pre Cogn + Exp + Effort
	(1)	(2)	(3)	(4)	(5)	(6)
Exp: earn more than avg (2008)				-0.060* [0.036]		-0.053 [0.034]
Exp: earn more than net HUF100.000 (2008)				0.049 [0.035]		-0.001 [0.036]
Exp: earn more than net HUF200.000 (2008)				0.036 [0.036]		0.046 [0.035]
How many hours a week do you spend with studying? (2007)					0.008*** [0.002]	0.008*** [0.002]
How many hours a week do you spend with studying? (2008)					0.007*** [0.002]	0.007*** [0.002]
Effort grade (2008)					0.011 [0.011]	0.010 [0.011]
Study after 8pm on weekday (2008)					0.092*** [0.017]	0.092*** [0.017]
Night study 2008 imp					-0.042 [0.049]	-0.041 [0.050]
Weekend study 2008 imp					-0.140*** [0.043]	-0.139*** [0.043]
Number of students in the class		0.003** [0.001]				
Minimum wanted education for child: college (2006)		0.037*** [0.014]				
Effort grade (2007)					0.028** [0.011]	0.027** [0.011]

	Basic controls		Cognitive ability, Expectations and Effort			
	None	Pre-determined controls	Pre + Cognitive ability	Pre + Cogn + Expecta-tions	Pre + Cogn + Effort	Pre + Cogn + Exp + Effort
	(1)	(2)	(3)	(4)	(5)	(6)
Female		0.055***				
		[0.014]				
Special education needs		-0.133***	-0.160***	-0.159***	-0.156***	-0.157***
		[0.036]	[0.029]	[0.029]	[0.028]	[0.028]
SEN students in the class		-0.006				
		[0.004]				
Roma		-0.151***	-0.118***	-0.116***	-0.113***	-0.114***
		[0.042]	[0.040]	[0.040]	[0.037]	[0.038]
Mother works (2007) = 1, Yes			0.030	0.029	0.029	
			[0.020]	[0.020]	[0.020]	
Constant	0.711***	0.207***	0.331***	0.325***	0.133**	0.154**
	[0.010]	[0.052]	[0.041]	[0.044]	[0.060]	[0.062]
Observations	3,038	2,844	2,844	2,844	2,844	2,844
Clusters	1264	1219	1219	1219	1219	1219
Selected controls	0	14	14	17	21	23
Dictionary size	0	119	121	131	137	147
R-squared (in-sample)	0.0135	0.430	0.458	0.460	0.484	0.485
R-squared (out-sample)	0.0187	0.451	0.482	0.483	0.504	0.503

Appendix J.3. College aspirations

Table J.13: Complete regressions - has college aspirations

| | Basic controls | | Cognitive ability, Expectations and Effort | | | |
| | None | Pre-determined controls | Pre + Cognitive ability | Pre + Cogn + Expecta-tions | Pre + Cogn + Effort | Pre + Cogn + Exp + Effort |
	(1)	(2)	(3)	(4)	(5)	(6)
LoC score in 2009	0.063***	0.023***	0.021***	0.021***	0.016**	0.016**
	[0.010]	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]
Mother's education: less than high school		-0.085***	-0.067***	-0.066***	-0.058***	-0.056**
		[0.024]	[0.023]	[0.024]	[0.023]	[0.023]
Father's education: less than high school		-0.090***	-0.073***	-0.071***	-0.070***	-0.067***
		[0.025]	[0.025]	[0.025]	[0.024]	[0.024]
Mother's education: college		0.069**	0.068***	0.069***	0.067***	0.066***
		[0.027]	[0.026]	[0.026]	[0.025]	[0.025]
Father's education: college		0.049	0.041	0.047	0.037	0.038
		[0.032]	[0.031]	[0.031]	[0.029]	[0.029]
Mother's father: college		0.049*				
		[0.027]				
HOME cognitive scale		0.001***	0.001*	0.001*	0.001	0.000
		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Mental, physical or sexual abuse before age 14		0.002	0.002	0.002	0.004	0.004
		[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
Highest wanted education for child: college (2006)		0.297***	0.227***	0.230***	0.184***	0.186***
		[0.031]	[0.030]	[0.030]	[0.028]	[0.028]
How long can you pay for child's education: college (2006)		0.036	0.033	0.032	0.047**	0.044**
		[0.026]	[0.024]	[0.024]	[0.022]	[0.022]
Reading score			0.084***	0.086***	0.052***	0.051***
			[0.012]	[0.012]	[0.012]	[0.011]
Mathematics score			0.061***	0.063***	0.063***	0.063***
			[0.012]	[0.012]	[0.012]	[0.012]

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	Basic controls		Cognitive ability, Expectations and Effort			
	None	Pre-determined controls	Pre + Cognitive ability	Pre + Cogn + Expecta-tions	Pre + Cogn + Effort	Pre + Cogn + Exp + Effort
	(1)	(2)	(3)	(4)	(5)	(6)
Exp: earn more than avg (2008)				-0.068* [0.037]		-0.065* [0.034]
Exp: earn more than net HUF100.000 (2008)				0.005 [0.040]		-0.002 [0.039]
Exp: earn more than net HUF200.000 (2008)				0.105** [0.046]		0.093** [0.043]
How many hours a week do you spend with studying? (2008)					0.017*** [0.003]	0.017*** [0.003]
Effort grade (2008)					0.059*** [0.011]	0.058*** [0.011]
Number of students in the class		0.007*** [0.002]	0.004*** [0.002]		0.004*** [0.001]	0.004*** [0.001]
How often did the parents read tales from a book		0.003** [0.001]				
Minimum wanted education for child: college (2006)		0.165*** [0.024]	0.119*** [0.024]	0.117*** [0.024]	0.087*** [0.023]	0.085*** [0.023]
Effort grade (2007)					0.056*** [0.012]	0.056*** [0.012]
SEN students in the class		-0.006** [0.003]			-0.009*** [0.003]	-0.009*** [0.003]
Constant	0.438*** [0.012]	-0.060 [0.057]	0.139** [0.055]	0.234*** [0.047]	-0.330*** [0.071]	-0.317*** [0.071]
Observations	3,038	2,844	2,844	2,844	2,844	2,844
Clusters	1264	1219	1219	1219	1219	1219
Selected controls	0	13	12	14	16	19
Dictionary size	0	119	121	131	137	147
R-squared (in-sample)	0.0153	0.411	0.449	0.450	0.491	0.493
R-squared (out-sample)	0.0175	0.400	0.444	0.445	0.478	0.479

Appendix J.4. Attending college

Table J.14: Complete regressions - Attends college

	Basic controls		Cognitive ability, Expectations and Effort			
	None	Pre-determined controls	Pre + Cognitive ability	Pre + Cogn + Expecta-tions	Pre + Cogn + Effort	Pre + Cogn + Exp + Effort
	(1)	(2)	(3)	(4)	(5)	(6)
LoC score in 2009	0.056***	0.024***	0.019**	0.017**	0.015*	0.013
	[0.010]	[0.009]	[0.009]	[0.009]	[0.008]	[0.008]
Mother's education: less than high school		-0.099***	-0.065***	-0.062***	-0.059***	-0.056***
		[0.023]	[0.022]	[0.022]	[0.020]	[0.021]
Father's education: less than high school		-0.054**	-0.033	-0.031	-0.029	-0.028
		[0.027]	[0.026]	[0.026]	[0.025]	[0.025]
Mother's education: college		0.063**	0.046	0.046	0.043	0.043
		[0.032]	[0.030]	[0.030]	[0.029]	[0.029]
Father's education: college		0.132***	0.108***	0.108***	0.103***	0.103***
		[0.038]	[0.036]	[0.036]	[0.035]	[0.035]
HOME cognitive scale		0.002***	0.001*	0.001*	0.001	0.000
		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Mental, physical or sexual abuse before age 14		-0.001	-0.002	-0.002	0.001	0.001
		[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
Highest wanted education for child: college (2006)		0.247***	0.153***	0.150***	0.124***	0.120***
		[0.022]	[0.022]	[0.022]	[0.021]	[0.021]
Reading score			0.083***	0.083***	0.054***	0.054***
			[0.013]	[0.013]	[0.013]	[0.013]
Mathematics score			0.090***	0.089***	0.090***	0.089***
			[0.013]	[0.013]	[0.012]	[0.012]
Exp: earn more than avg (2008)				0.033		0.039
				[0.038]		[0.038]
Exp: earn more than net HUF100.000 (2008)				-0.008		-0.008
				[0.040]		[0.038]
Exp: earn more than						

Continued on next page

| | Basic controls | | Cognitive ability, Expectations and Effort | | | |
	None	Pre-determined controls	Pre + Cognitive ability	Pre + Cogn + Expecta-tions	Pre + Cogn + Effort	Pre + Cogn + Exp + Effort
	(1)	(2)	(3)	(4)	(5)	(6)
net HUF200.000 (2008)				0.055 [0.046]		0.042 [0.044]
How many hours a week do you spend with studying? (2007)					0.006* [0.003]	0.006* [0.003]
How many hours a week do you spend with studying? (2008)					0.011*** [0.003]	0.011*** [0.003]
Effort grade (2008)					0.051*** [0.011]	0.050*** [0.011]
Minimum wanted education for child: college (2006)		0.168*** [0.027]	0.109*** [0.026]	0.108*** [0.026]	0.078*** [0.025]	0.077*** [0.025]
Effort grade (2007)					0.062*** [0.011]	0.062*** [0.011]
Special education needs		-0.068*** [0.018]	-0.048*** [0.017]	-0.044** [0.017]	-0.073*** [0.018]	-0.070*** [0.018]
Constant	0.347*** [0.011]	0.045 [0.047]	0.193*** [0.047]	0.169*** [0.050]	-0.282*** [0.060]	-0.302*** [0.063]
Observations	3,038	2,844	2,844	2,844	2,844	2,844
Clusters	1264	1219	1219	1219	1219	1219
Selected controls	0	9	11	14	15	18
Dictionary size	0	119	121	131	137	147
R-squared (in-sample)	0.0131	0.337	0.409	0.411	0.452	0.453
R-squared (out-sample)	0.0158	0.361	0.426	0.428	0.460	0.462

Appendix K. Nested regressions

Table K.15: Nested regression results

	Basic controls		Cognitive ability, Expectations and Effort			
	None	Pre-determined controls	Pre + Cognitive ability	Pre + Cogn + Expecta-tions	Pre + Cogn + Effort	Pre + Cogn + Exp + Effort
	(1)	(2)	(3)	(4)	(5)	(6)
A. School-leaving age						
LoC score in 2009	0.134***	0.052**	0.044**	0.026	0.032*	0.027
Observations	3,038	2,994	2,992	2,989	2,992	2,989
R-squared (in sample)	0.013	0.260	0.279	0.326	0.438	0.455
B. Graduates from high school						
LoC score in 2009	0.054***	0.014**	0.010	0.010	0.007	0.007
Observations	3,038	3,006	3,004	3,001	3,004	3,001
R-squared (in sample)	0.014	0.425	0.460	0.461	0.485	0.486
C. College aspiration						
LoC score in 2009	0.063***	0.023***	0.019**	0.018**	0.015*	0.014*
Observations	3,038	3,006	3,004	3,001	3,004	3,001
R-squared (in sample)	0.015	0.406	0.448	0.452	0.490	0.493
D. Attends college						
LoC score in 2009	0.056***	0.021**	0.015*	0.013	0.011	0.009
Observations	3,038	3,006	3,004	3,001	3,004	3,001
R-squared (in sample)	0.013	0.334	0.406	0.407	0.449	0.450

We take specification 6 for each outcome, reported in Table 4 and then we remove variables in a way so that we obtain the previous specification.

Appendix L. Complete channel regressions

Appendix L.1. Expectations (2008)

Table L.16: Complete regressions - Expectations (2008)

	None	+Pre-determined	+Cognitive	+Effort
	(1)	(2)	(3)	(4)
		Expectations (2008)		
LoC score in 2006	0.149***	0.098***	0.096***	0.096***
	[0.018]	[0.017]	[0.017]	[0.017]
Mother less than high school		-0.143***	-0.135***	-0.135***
		[0.045]	[0.045]	[0.045]
Mother's father educ		0.009	0.007	0.007
		[0.008]	[0.008]	[0.008]
HOME cognitive scale		0.006***	0.005***	0.005***
		[0.001]	[0.001]	[0.001]
Special education needs		-0.130	-0.131	-0.131
		[0.080]	[0.081]	[0.081]
of students in the class		0.009***	0.008**	0.008**
		[0.003]	[0.003]	[0.003]
Ideal education for child: university (2006)		0.146**	0.114*	0.114*
		[0.059]	[0.062]	[0.062]
Minimum wanted education for child: university (2006)		0.133***	0.112***	0.112***
		[0.040]	[0.041]	[0.041]
How long can you pay for child's education: university (2006)		0.078	0.077	0.077
		[0.058]	[0.058]	[0.058]
Reading score			0.032	0.032
			[0.026]	[0.026]
Mathematics score			0.031	0.031
			[0.026]	[0.026]
Female		-0.181***	-0.180***	-0.180***
		[0.034]	[0.036]	[0.036]
SEN students in the class		-0.006	-0.006	-0.006
		[0.008]	[0.008]	[0.008]
Mother's mother: high school		0.088**	0.085**	0.085**
		[0.035]	[0.035]	[0.035]
Constant	-0.009	-0.775***	-0.679***	-0.679***
	[0.019]	[0.105]	[0.114]	[0.114]
Observations	3,352	3,232	3,232	3,232
Clusters	1328	1299	1299	1299
Selected controls	0	11	13	13
Dictionary size	0	77	79	80
R-squared (in-sample)	0.0259	0.180	0.183	0.183
R-squared (out-of-sample)	0.0144	0.151	0.163	0.163

Appendix L.2. Effort (2008)

Table L.17: Complete regressions - Effort (2008)

	None	+Pre-determined	+Cognitive	+Effort
	(1)	(2)	(3)	(4)
	Expectations (2008)			
LoC score in 2006	0.069***	0.037***	0.033**	0.031**
	[0.014]	[0.013]	[0.013]	[0.013]
Expectations (2008)			0.019	
			[0.015]	
Mother less than high school		-0.113***	-0.091***	-0.088***
		[0.034]	[0.034]	[0.034]
HOME cognitive scale		0.003***	0.002***	0.002***
		[0.001]	[0.001]	[0.001]
Special education needs		0.017	0.052	
		[0.042]	[0.043]	
Ideal education for child: university (2006)		0.269***	0.217***	0.210***
		[0.034]	[0.035]	[0.035]
Minimum wanted education for child: university (2006)		0.149***	0.113***	0.111***
		[0.037]	[0.037]	[0.037]
Reading score			0.093***	0.090***
			[0.016]	[0.016]
Female		0.390***	0.369***	0.372***
		[0.028]	[0.027]	[0.028]
Constant	-0.007	-0.571***	-0.459***	-0.442***
	[0.016]	[0.060]	[0.064]	[0.064]
Observations	3,352	3,232	3,232	3,232
Clusters	1328	1299	1299	1299
Selected controls	0	6	7	7
Dictionary size	0	77	79	80
R-squared (in-sample)	0.00857	0.210	0.221	0.221
R-squared (out-of-sample)	0.0140	0.230	0.239	0.244

Appendix L.3. Effort (2007-8-9)

Table L.18: Complete regressions - Effort (2007-8-9)

	None	+Pre-determined	+Cognitive	+Effort
	(1)	(2)	(3)	(4)
	Expectations (2008)			
LoC score in 2006	0.099***	0.055***	0.047***	0.041***
	[0.018]	[0.015]	[0.015]	[0.015]
Expectations (2008)				0.046**
				[0.018]
Mother less than high school		-0.104**	-0.073	-0.066
		[0.045]	[0.044]	[0.044]
Mother's father education		0.028***	0.018**	0.018**
		[0.008]	[0.008]	[0.008]
HOME cognitive scale		0.004***	0.002***	0.002**
		[0.001]	[0.001]	[0.001]
Special education needs		0.117**	0.159***	
		[0.050]	[0.052]	
Ideal education for child: university (2006)		0.311***	0.193***	0.172***
		[0.041]	[0.043]	[0.042]
Minimum wanted education for child: university (2006)		0.275***	0.198***	0.191***
		[0.043]	[0.043]	[0.043]
Reading score			0.135***	0.123***
			[0.022]	[0.022]
Mathematics score			0.083***	0.088***
			[0.023]	[0.022]
Female		0.553***	0.542***	0.551***
		[0.033]	[0.034]	[0.034]
Region: Northern Great Plain		0.238***	0.263***	0.257***
		[0.043]	[0.042]	[0.042]
Financial distress (2009)		-0.103***	-0.094***	-0.089**
		[0.035]	[0.035]	[0.035]
Constant	-0.010	-0.901***	-0.666***	-0.624***
	[0.019]	[0.080]	[0.083]	[0.083]
Observations	3,352	3,232	3,232	3,232
Clusters	1328	1299	1299	1299
Selected controls	0	9	11	11
Dictionary size	0	77	79	80
R-squared (in-sample)	0.0117	0.310	0.342	0.342
R-squared (out-of-sample)	0.0187	0.327	0.353	0.353