

# Supplementary Material

Is there a rise in the importance of socioemotional skills in the labor market? Evidence from a trend study among college graduates

Jim Allen, Barbara Belfi and Lex Borghans

**Frontiers in Psychology – Personality and Social Psychology**

doi: 10.3389/fpsyg.2020.01710

## Appendix A

Table A1 Analysis of required skills, full models (part 1)

	working independ- ently		working to plan		alertness		explaining		collaboration		information gathering	
	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>
Linear trend	0.001 (0.004)		0.013 (0.002)	**	0.005 (0.005)		0.002 (0.004)		0.008 (0.002)	**	0.005 (0.002)	*
Economic cycle	-0.049 (0.297)		-0.376 (0.201)		0.111 (0.372)		0.257 (0.301)		-0.255 (0.102)	*	0.199 (0.207)	
Gender (female)	0.254 (0.007)	**	0.061 (0.011)	**	0.092 (0.013)	**	0.119 (0.014)	**	0.212 (0.012)	**	0.075 (0.013)	**
Age	-0.006 (0.002)	**	-0.007 (0.003)	*	-0.020 (0.003)	**	-0.018 (0.003)	**	-0.022 (0.003)	**	-0.006 (0.004)	
Broad field of study (ref: economics)												
<i>agriculture and food</i>	0.022 (0.047)		0.168 (0.022)	**	-0.300 (0.044)	**	-0.201 (0.053)	**	-0.207 (0.031)	**	-0.072 (0.033)	*
<i>teaching and</i>	-0.091 (0.03)	**	-0.268 (0.024)	**	-0.125 (0.027)	**	-0.021 (0.034)		-0.007 (0.032)		-0.324 (0.022)	**
<i>technical</i>	-0.156 (0.029)	**	0.115 (0.017)	**	-0.467 (0.036)	**	-0.358 (0.047)	**	-0.204 (0.032)	**	-0.110 (0.023)	**
<i>health studies</i>	-0.104 (0.031)	**	0.180 (0.019)	**	-0.370 (0.04)	**	-0.260 (0.044)	**	-0.216 (0.03)	**	-0.017 (0.019)	
<i>social studies</i>	0.029 (0.029)		0.027 (0.028)		-0.390 (0.034)	**	-0.144 (0.03)	**	-0.039 (0.033)		-0.139 (0.026)	**
Region (ref: west)												
<i>north</i>	0.027 (0.022)		0.024 (0.019)		-0.012 (0.02)		0.012 (0.013)		-0.003 (0.019)		0.014 (0.016)	
<i>east</i>	0.000 (0.016)		0.002 (0.012)		-0.018 (0.015)		-0.010 (0.012)		-0.035 (0.014)	*	-0.016 (0.014)	
<i>south</i>	0.001 (0.014)		0.029 (0.01)	**	-0.010 (0.01)		-0.007 (0.012)		0.023 (0.01)	*	-0.002 (0.01)	
Migration background (ref: native Dutch)												
<i>western (excl. native</i>	0.007 (0.029)		0.043 (0.018)	*	0.057 (0.026)	*	0.086 (0.03)	**	0.097 (0.029)	**	0.064 (0.021)	**
<i>non-western</i>	-0.019 (0.021)		0.037 (0.017)	*	0.029 (0.021)		0.042 (0.018)	*	0.095 (0.022)	**	0.041 (0.025)	
Constant	1.694 (0.032)	**	0.690 (0.016)	**	1.336 (0.035)	**	1.504 (0.029)	**	1.269 (0.011)	**	1.145 (0.015)	**
cut 1	-1.362 (0.046)	**	-1.161 (0.017)	**	-1.317 (0.029)	**	-1.444 (0.032)	**	-1.284 (0.026)	**	-1.407 (0.018)	**
cut 3 = - cut 2	-0.564 (0.03)	**	-0.413 (0.017)	**	-0.520 (0.034)	**	-0.599 (0.026)	**	-0.510 (0.013)	**	-0.557 (0.017)	**
cut 4	1.972 (0.039)	**	1.499 (0.017)	**	1.861 (0.039)	**	1.963 (0.037)	**	1.880 (0.016)	**	1.995 (0.023)	**
Pseudo R <sup>2</sup>	0.010		0.009		0.011		0.011		0.012		0.005	

Table A1 Analysis of required skills, full models (part 2)

	creativity		learning ability		logical reasoning		occupation-specific knowledge		interdisciplinary knowledge		digital literacy	
	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>
Linear trend	0.006 (0.003)		0.002 (0.003)		0.021 (0.002)	**	0.013 (0.003)	**	0.008 (0.005)		0.014 (0.003)	**
Economic cycle	0.179 (0.214)		-0.030 (0.21)		-0.743 (0.289)	**	-0.320 (0.251)		-0.435 (0.319)		-0.159 (0.227)	
Gender (female)	0.174 (0.012)	**	0.147 (0.012)	**	0.080 (0.013)	**	0.063 (0.012)	**	0.006 (0.012)		0.013 (0.014)	
Age	-0.014 (0.003)	**	-0.023 (0.003)	**	-0.019 (0.004)	**	-0.024 (0.003)	**	0.003 (0.003)		-0.010 (0.004)	**
Broad field of study (ref: <i>agriculture and food</i> )	-0.031 (0.047)		0.030 (0.043)		0.054 (0.026)	*	0.034 (0.051)		-0.091 (0.038)	*	0.208 (0.036)	**
<i>teaching and education</i>	0.128 (0.035)	**	0.061 (0.028)	*	-0.277 (0.027)	**	0.202 (0.016)	**	0.012 (0.016)		-0.051 (0.033)	
<i>technical</i>	-0.005 (0.033)		0.005 (0.02)		0.044 (0.025)		-0.175 (0.032)	**	-0.151 (0.018)	**	0.266 (0.025)	**
<i>health studies</i>	-0.114 (0.041)	**	-0.063 (0.017)	**	-0.021 (0.027)		-0.188 (0.025)	**	-0.054 (0.018)	**	0.312 (0.029)	**
<i>social studies</i>	-0.144 (0.031)	**	0.085 (0.028)	**	0.112 (0.028)	**	0.203 (0.027)	**	-0.116 (0.033)	**	0.056 (0.029)	
Region (ref: west)												
<i>north</i>	0.018 (0.025)		-0.003 (0.019)		-0.030 (0.018)		0.030 (0.02)		0.059 (0.016)	**	-0.008 (0.018)	
<i>east</i>	0.008 (0.012)		-0.032 (0.011)	**	-0.050 (0.018)	**	0.010 (0.015)		0.003 (0.009)		-0.022 (0.01)	*
<i>south</i>	0.005 (0.012)		-0.022 (0.011)	*	-0.037 (0.011)	**	0.030 (0.01)	**	-0.013 (0.011)		0.010 (0.013)	
Migration background (ref: <i>western (excl. native)</i> )	0.055 (0.018)	**	0.057 (0.026)	*	0.065 (0.021)	**	0.023 (0.03)		0.048 (0.027)		0.118 (0.02)	**
<i>non-western</i>	-0.007 (0.016)		0.106 (0.024)	**	0.038 (0.022)		-0.017 (0.022)		0.086 (0.011)	**	0.107 (0.027)	**
Constant	1.033 (0.023)	**	1.161 (0.024)	**	1.360 (0.022)	**	1.088 (0.023)	**	0.383 (0.038)	**	0.796 (0.021)	**
cut 1	-1.284 (0.023)	**	-1.288 (0.021)	**	-1.399 (0.054)	**	-1.310 (0.022)	**	-1.642 (0.044)	**	-1.384 (0.015)	**
cut 3 = - cut 2	-0.491 (0.023)	**	-0.508 (0.024)	**	-0.594 (0.027)	**	-0.528 (0.022)	**	-0.623 (0.041)	**	-0.517 (0.021)	**
cut 4	1.785 (0.027)	**	1.815 (0.026)	**	2.135 (0.023)	**	2.141 (0.023)	**	2.160 (0.033)	**	1.810 (0.029)	**
Pseudo R <sup>2</sup>	0.006		0.005		0.010		0.014		0.002		0.009	

\*  $p < 0.05$ , \*\*  $p < 0.01$ .

Table A2 Analysis of effects on wages, full models (part 1)

	working independently		working to plan		alertness		explaining		collaboration		information gathering	
	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>
Required skill	0.006 (0.001)	**	0.003 (0.002)		0.015 (0.003)	**	0.017 (0.002)	**	0.002 (0.002)		0.006 (0.001)	**
Linear trend	0.000 (0)		0.000 (0)		0.000 (0)		0.000 (0)		0.000 (0)		0.001 (0)	*
Economic cycle	0.033 (0.018)		0.000 (0.03)		-0.023 (0.035)		-0.048 (0.021)	*	-0.034 (0.021)		0.067 (0.023)	*
Survey year												
2005	-0.007 (0.001)	**	-0.006 (0.001)	**	-0.006 (0.001)	**	-0.006 (0.001)	**	-0.007 (0.001)	**	-0.007 (0.001)	**
2006	0.006 (0.006)		0.016 (0.008)		0.023 (0.011)		0.031 (0.007)	**	0.024 (0.007)	**	-0.005 (0.007)	
2007	0.029 (0.008)	**	0.042 (0.009)	**	0.051 (0.015)	**	0.062 (0.01)	**	0.052 (0.01)	**	0.013 (0.008)	
2008	0.036 (0.008)	**	0.050 (0.011)	**	0.062 (0.017)	**	0.073 (0.011)	**	0.060 (0.011)	**	0.019 (0.01)	
2009	0.039 (0.006)	**	0.049 (0.008)	**	0.059 (0.013)	**	0.067 (0.009)	**	0.054 (0.009)	**	0.024 (0.007)	**
2010	0.019 (0.005)	**	0.023 (0.005)	**	0.030 (0.011)	*	0.035 (0.007)	**	0.023 (0.008)	*	0.006 (0.006)	
2011	0.004 (0.006)		0.007 (0.006)		0.016 (0.012)		0.020 (0.008)	*	0.006 (0.009)		-0.009 (0.007)	
2012	-0.020 (0.006)	**	-0.018 (0.006)	*	-0.009 (0.013)		-0.005 (0.009)		-0.021 (0.009)	*	-0.035 (0.007)	**
2013	-0.050 (0.007)	**	-0.054 (0.008)	**	-0.048 (0.012)	**	-0.048 (0.008)	**	-0.063 (0.009)	**	-0.061 (0.008)	**
2015	-0.059 (0.008)	**	-0.061 (0.008)	**	-0.053 (0.014)	**	-0.050 (0.009)	**	-0.068 (0.01)	**	-0.075 (0.009)	**
2015	-0.066 (0.009)	**	-0.066 (0.009)	**	-0.055 (0.016)	**	-0.050 (0.011)	**	-0.071 (0.012)	**	-0.084 (0.01)	**
2016	-0.043 (0.01)	**	-0.038 (0.01)	**	-0.022 (0.02)		-0.015 (0.014)		-0.040 (0.015)	*	-0.067 (0.012)	**
2017	-0.031 (0.012)	*	-0.021 (0.013)		0.000 (0.025)		0.012 (0.017)		-0.017 (0.018)		-0.062 (0.014)	**

Table A2 Analysis of effects on wages, full models (part 2)

	working independently		working to plan		alertness		explaining		collaboration		information gathering	
	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>
Gender (female)	-0.052 (0.003)	**	-0.051 (0.003)	**	-0.052 (0.003)	**	-0.052 (0.003)	**	-0.051 (0.003)	**	-0.052 (0.003)	**
Age	0.016 (0.001)	**	0.016 (0.001)	**	0.016 (0.001)	**	0.016 (0.001)	**	0.016 (0.001)	**	0.016 (0.001)	**
Broad field of study (ref: economics)												
<i>agriculture and food</i>	-0.068 (0.007)	**	-0.068 (0.007)	**	-0.065 (0.007)	**	-0.065 (0.007)	**	-0.067 (0.007)	**	-0.067 (0.008)	**
<i>teaching and education</i>	-0.079 (0.011)	**	-0.079 (0.011)	**	-0.079 (0.011)	**	-0.080 (0.011)	**	-0.080 (0.011)	**	-0.077 (0.011)	**
<i>technical</i>	-0.057 (0.005)	**	-0.058 (0.005)	**	-0.053 (0.005)	**	-0.054 (0.005)	**	-0.057 (0.005)	**	-0.057 (0.005)	**
<i>health studies</i>	-0.065 (0.005)	**	-0.065 (0.005)	**	-0.062 (0.005)	**	-0.063 (0.005)	**	-0.065 (0.005)	**	-0.065 (0.005)	**
<i>social studies</i>	0.036 (0.005)	**	0.036 (0.005)	**	0.039 (0.005)	**	0.037 (0.005)	**	0.036 (0.005)	**	0.037 (0.004)	**
Region (ref: west)												
<i>north</i>	-0.027 (0.006)	**	-0.027 (0.006)	**	-0.027 (0.006)	**	-0.028 (0.006)	**	-0.028 (0.006)	**	-0.027 (0.006)	**
<i>east</i>	-0.005 (0.003)		-0.005 (0.003)		-0.005 (0.003)		-0.005 (0.003)		-0.005 (0.003)		-0.005 (0.003)	
<i>south</i>	0.022 (0.002)	**	0.022 (0.002)	**	0.023 (0.002)	**	0.022 (0.002)	**	0.022 (0.002)	**	0.022 (0.002)	**
Migration background												
<i>western (excl. native)</i>	-0.001 (0.004)		-0.002 (0.005)		-0.002 (0.005)		-0.002 (0.005)		-0.001 (0.005)		-0.002 (0.005)	
<i>non-western</i>	0.014 (0.003)	**	0.014 (0.003)	**	0.013 (0.003)	**	0.013 (0.003)	**	0.014 (0.003)	**	0.014 (0.003)	**
Constant	2.637 (0.006)	**	2.654 (0.007)	**	2.603 (0.015)	**	2.594 (0.009)	**	2.657 (0.011)	**	2.641 (0.006)	**
R <sup>2</sup>	0.106		0.105		0.108		0.108		0.105		0.186	

Table A2 Analysis of effects on wages, full models (part 3)

	creativity		learning ability		logical reasoning		occupation-specific knowledge		interdisciplinary knowledge		digital literacy	
	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>
Required skill	0.004 (0.002)	*	0.004 (0.001)	**	0.007 (0.002)	**	0.014 (0.001)	**	0.006 (0.002)	**	0.002 (0.001)	
Linear trend	0.000 (0)		0.001 (0)	**	0.001 (0)	**	0.000 (0)		0.000 (0)		0.001 (0)	*
Economic cycle	-0.015 (0.029)		0.008 (0.015)		0.019 (0.029)		-0.026 (0.018)		0.002 (0.023)		0.046 (0.034)	
Survey year												
2005	-0.007 (0.001)	**	-0.009 (0.001)	**	-0.008 (0.001)	**	-0.005 (0.001)	**	-0.003 (0.001)	**	-0.006 (0.001)	**
2006	0.018 (0.008)	*	0.009 (0.004)	*	0.006 (0.008)		0.022 (0.004)	**	0.019 (0.005)	**	0.002 (0.008)	
2007	0.044 (0.01)	**	0.033 (0.005)	**	0.028 (0.01)	*	0.050 (0.005)	**	0.046 (0.006)	**	0.024 (0.01)	*
2008	0.053 (0.011)	**	0.039 (0.005)	**	0.034 (0.011)	**	0.059 (0.006)	**	0.057 (0.006)	**	0.031 (0.01)	**
2009	0.049 (0.008)	**	0.037 (0.003)	**	0.033 (0.008)	**	0.053 (0.004)	**	0.056 (0.004)	**	0.033 (0.006)	**
2010	0.020 (0.006)	**	0.010 (0.002)	**	0.008 (0.006)		0.023 (0.002)	**	0.032 (0.003)	**	0.012 (0.004)	**
2011	0.003 (0.006)		-0.008 (0.002)	**	-0.010 (0.006)		0.006 (0.003)	*	0.018 (0.004)	**	-0.004 (0.005)	
2012	-0.023 (0.006)	**	-0.034 (0.002)	**	-0.037 (0.007)	**	-0.020 (0.004)	**	-0.007 (0.005)		-0.029 (0.006)	**
2013	-0.061 (0.007)	**	-0.071 (0.005)	**	-0.074 (0.01)	**	-0.060 (0.006)	**	-0.040 (0.007)	**	-0.058 (0.01)	**
2015	-0.068 (0.008)	**	-0.080 (0.004)	**	-0.084 (0.01)	**	-0.066 (0.006)	**	-0.046 (0.007)	**	-0.069 (0.009)	**
2015	-0.073 (0.008)	**	-0.088 (0.004)	**	-0.092 (0.01)	**	-0.069 (0.006)	**	-0.049 (0.007)	**	-0.077 (0.009)	**
2016	-0.044 (0.01)	**	-0.064 (0.003)	**	-0.070 (0.012)	**	-0.038 (0.005)	**	-0.020 (0.006)	**	-0.056 (0.008)	**
2017	-0.025 (0.013)		-0.049 (0.004)	**	-0.057 (0.014)	**	-0.017 (0.006)	**	-0.003 (0.007)		-0.048 (0.01)	**

Table A2 Analysis of effects on wages, full models (part 4)

	creativity		learning ability		logical reasoning		occupation-specific knowledge		interdisciplinary knowledge		digital literacy	
	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>	<i>b</i> ( <i>SE</i> )	<i>p</i>
Gender (female)	-0.051 (0.003)	**	-0.052 (0.003)	**	-0.051 (0.003)	**	-0.051 (0.003)	**	-0.051 (0.003)	**	-0.051 (0.003)	**
Age	0.016 (0.001)	**	0.016 (0.001)	**	0.016 (0.001)	**	0.016 (0.001)	**	0.016 (0.001)	**	0.016 (0.001)	**
Broad field of study (ref: economics)												
<i>agriculture and food</i>	-0.067 (0.007)	**	-0.068 (0.007)	**	-0.068 (0.007)	**	-0.068 (0.007)	**	-0.068 (0.007)	**	-0.069 (0.007)	**
<i>teaching and education</i>	-0.080 (0.011)	**	-0.080 (0.011)	**	-0.078 (0.011)	**	-0.082 (0.011)	**	-0.080 (0.011)	**	-0.081 (0.011)	**
<i>technical</i>	-0.058 (0.005)	**	-0.058 (0.005)	**	-0.058 (0.005)	**	-0.056 (0.005)	**	-0.057 (0.005)	**	-0.059 (0.005)	**
<i>health studies</i>	-0.065 (0.005)	**	-0.065 (0.005)	**	-0.065 (0.005)	**	-0.063 (0.005)	**	-0.065 (0.005)	**	-0.067 (0.005)	**
<i>social studies</i>	0.036 (0.005)	**	0.035 (0.005)	**	0.035 (0.005)	**	0.034 (0.004)	**	0.036 (0.004)	**	0.035 (0.005)	**
Region (ref: west)												
<i>north</i>	-0.028 (0.006)	**	-0.028 (0.006)	**	-0.027 (0.006)	**	-0.027 (0.006)	**	-0.027 (0.006)	**	-0.027 (0.006)	**
<i>east</i>	-0.005 (0.003)		-0.005 (0.003)		-0.005 (0.003)		-0.005 (0.003)		-0.004 (0.003)		-0.005 (0.003)	
<i>south</i>	0.022 (0.002)	**	0.022 (0.002)	**	0.023 (0.002)	**	0.022 (0.002)	**	0.023 (0.002)	**	0.022 (0.002)	**
Migration background (ref: native Dutch)												
<i>western (excl. native)</i>	-0.002 (0.005)		-0.002 (0.005)		-0.001 (0.005)		-0.001 (0.005)		-0.001 (0.005)		-0.002 (0.005)	
<i>non-western</i>	0.014 (0.003)	**	0.013 (0.003)	**	0.014 (0.003)	**	0.014 (0.003)	**	0.014 (0.003)	**	0.013 (0.003)	**
Constant	2.650 (0.007)	**	2.652 (0.004)	**	2.638 (0.007)	**	2.610 (0.005)	**	2.641 (0.005)	**	2.659 (0.006)	**
R <sup>2</sup>	0.105		0.107		0.010		0.108		0.106		0.106	

\* p < 0.05, \*\* p < 0.01.