Online Appendix
to
"The Influence of Start-up Motivation on Entrepreneurial Performance"
by

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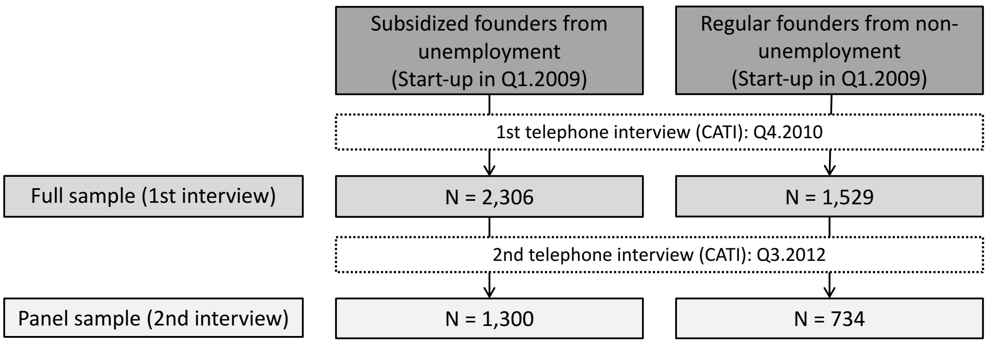
A Supplementary Figures and Tables

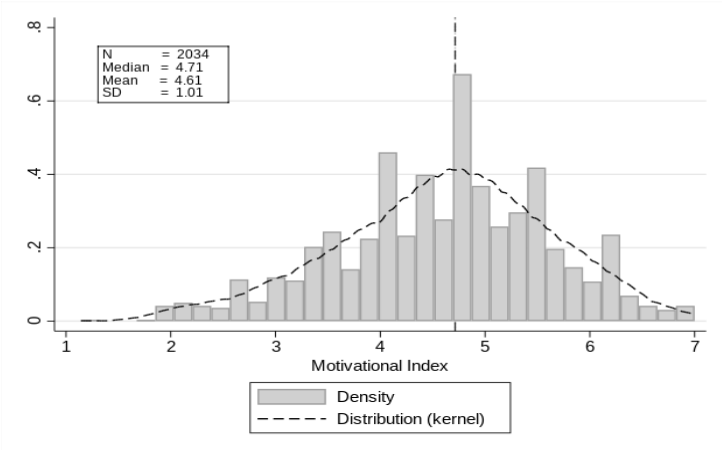
Figure A.1: Data Creation and Estimation Sample



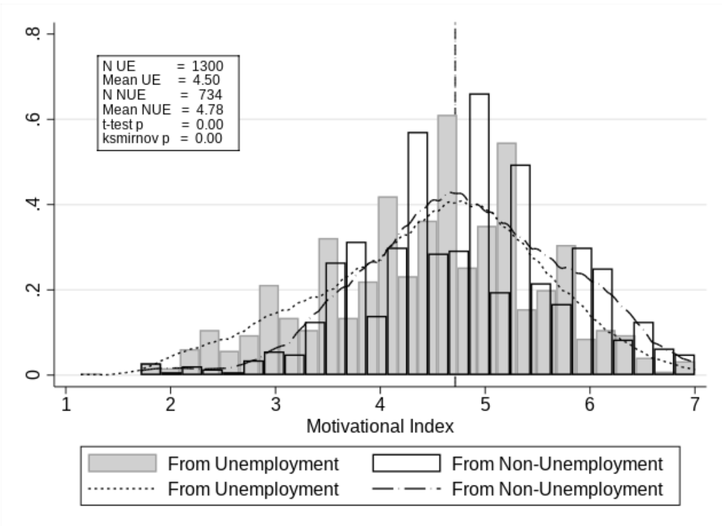
Note: For details on the construction of the data set, see Section 3.1 in the text and Caliendo *et al.* (2015, Section 4).

Figure A.2: Density Distribution of Motivational Index

(a) Whole Sample



(b) Differentiated by Previous Employment Status



Note: The dashed vertical line represents the cutoff between entrepreneurs who score high (above median, to the right) and low (to the left) on the motivational index. Kernel distributions use an Epanechnikov function with a bandwidth of 0.2. Figure A.2b also reports p-values for t-test and *ksmirnov*-test of equal means and equal distributions between start-ups from unemployment (UE) and non-unemployment (NUE), respectively.

Table A.1: Outcome Variables in t_{40} and Intermediate Plans in t_{19}

	All	Motivational Index		Mean diff.
		Low	High	Low v. High p-value
	(1)	(2)	(3)	4
Outcomes in t_{40}				
Self-employed with same business (firm survival)	0.71	0.66	0.75	0.00
Net income from self-employment (Euros/month)	2422.26	2240.37	2580.08	0.00
At least one employee	0.47	0.42	0.52	0.00
Expansion to new fields of business	0.26	0.20	0.30	0.00
Expansion to new regions	0.10	0.05	0.13	0.00
Applied for patent or trademark protection	0.12	0.06	0.16	0.00
Intermediate plans in t_{19}				
Plan Expansion to new fields of business	0.50	0.44	0.55	0.00
Plan Expansion to new regions	0.20	0.14	0.26	0.00
Plan to apply for patent or TM	0.09	0.05	0.12	0.00
Unique Idea[a]	0.64	0.52	0.75	0.00
Observations	2,034	993	1,041	

Note: All reported numbers are shares (unless stated otherwise) for the entire sample (column 1) and differentiated by scoring high (above median) and low in the motivational index. We also report p-values for t-tests of equal means between both groups.
[a]Based on a scale from '0' (not unique) to '10' (very unique), this variable takes the value 1 when the answer is 5 or above in the mentioned scale.

Table A.2: Descriptive Statistics for All Covariates

	All	Motivational Index Low	Motivational Index High	Mean diff. Low v. High p-value
	(1)	(2)	(3)	(4)
A. *Personal characteristics*				
Age (in years)				
<25	0.03	0.03	0.04	0.24
25−<35	0.21	0.16	0.27	0.00
35−<45	0.31	0.29	0.34	0.01
45−<56	0.29	0.33	0.25	0.00
≥56	0.15	0.20	0.11	0.00
Female	0.37	0.39	0.36	0.74
Children in household				
No children	0.64	0.67	0.61	0.00
Children under six years	0.18	0.16	0.21	0.01
Children between six and 14 years	0.25	0.24	0.27	0.05
Married	0.60	0.61	0.58	0.28
Not German	0.05	0.05	0.05	0.51
Living in East Germany	0.17	0.17	0.17	0.98
B. *Human capital*				
School achievement				
None or lower secondary school	0.20	0.20	0.19	0.95
Middle secondary school	0.34	0.33	0.35	0.76
Upper secondary school	0.47	0.47	0.46	0.74
Professional education				
Unskilled workers/others	0.45	0.44	0.47	0.17
Skilled workers (apprenticeship)	0.17	0.18	0.16	0.21
Technical college education	0.30	0.30	0.29	0.51
University education	0.08	0.08	0.08	0.70
C. *Intergenerational transmission*				
Parents born abroad	0.18	0.17	0.19	0.29
Parents are/were self-employed	0.37	0.35	0.40	0.03
Business takeover from parents	0.07	0.08	0.07	0.21
School achievement of father				
None or lower secondary school	0.56	0.59	0.54	0.10
Middle secondary school	0.18	0.18	0.18	0.86
Upper secondary school	0.24	0.22	0.26	0.14
Father unknown	0.01	0.01	0.02	0.24
Father of respondent employed at age 15	0.89	0.90	0.88	0.17
D. *Labor market history*				
Duration of dependent employment right before start-up				
<1 year	0.05	0.05	0.05	0.55
5 or more years	0.48	0.52	0.45	0.00
Monthly net income from last dep. employment right before start-up				
Non-employed	0.23	0.22	0.25	0.01
€0−€1,000	0.05	0.04	0.05	0.96
>€1,000−€1,500	0.14	0.14	0.14	0.94
>€1,500−€2,500	0.21	0.20	0.21	0.55
>€2,500	0.24	0.25	0.23	0.48

(Table A.2 continued on next page)

(Table A.2 continued)

	All	Motivational Index Low	High	Mean diff. Low v. High *p*-value
	(1)	(2)	(3)	(4)
Dependently employed and income not specified	0.14	0.15	0.13	0.12
Unemployment experience before start-up[a]				
Not specified	0.02	0.02	0.02	0.31
0	0.23	0.20	0.26	0.00
>0−≤2	0.27	0.25	0.28	0.25
>2−≤5	0.25	0.26	0.25	0.32
>5−≤15	0.19	0.21	0.17	0.00
>15	0.05	0.07	0.03	0.00
Employment experience before start-up[a]				
Not specified	0.01	0.01	0.01	0.57
≤50	0.21	0.20	0.21	0.22
>50−≤70	0.20	0.21	0.19	0.35
>70−≤90	0.33	0.33	0.34	0.48
>90−≤99	0.12	0.13	0.11	0.09
>99	0.13	0.13	0.14	0.64
E. *Local macroeconomic conditions*				
Vacancies related to stock of unemployed	15.30	15.12	15.46	0.40
Unemployment rate	8.13	8.18	8.08	0.43
Real GDP per capita in 2008 (in €1,000)	34.48	34.84	34.15	0.19
F. *Business-related characteristics*				
Sectoral distribution of businesses				
Agriculture, forestry, fishing	0.01	0.01	0.01	0.55
Manufacturing, crafts	0.16	0.16	0.16	0.41
Construction	0.08	0.08	0.07	0.47
Retail	0.15	0.15	0.15	0.71
Transport, logistics	0.03	0.04	0.03	0.04
Financial service, insurance industry	0.04	0.05	0.04	0.93
IT	0.05	0.04	0.05	0.23
Other services	0.28	0.27	0.29	0.49
Other sectors	0.20	0.20	0.20	0.66
Industry-specific experience before start-up				
Due to dependent employment	0.65	0.66	0.64	0.47
Due to former self-employment	0.19	0.18	0.20	0.41
Due to secondary employment	0.21	0.19	0.23	0.09
Due to hobby	0.27	0.24	0.31	0.00
Due to honorary office	0.07	0.07	0.08	0.34
None	0.13	0.14	0.12	0.20
Capital invested at start-up				
Not specified	0.02	0.03	0.02	0.76
None	0.22	0.26	0.18	0.00
<€1,000	0.08	0.09	0.07	0.09
€1,000−<€5,000	0.18	0.19	0.17	0.50
€5,000−<€10,000	0.12	0.11	0.13	0.47
€10,000−<€50,000	0.28	0.24	0.31	0.01
≥€50,000	0.09	0.07	0.11	0.00
Capital at start consisted entirely of own equity	0.46	0.41	0.50	0.00
Observations	2,034	933	1,041	

Note: The table presents variable means for the entire sample in column (1) and differentiated by scoring high (above median) in the motivational index in column (2) and low in column (3). We also report *p*-values for *t*-tests of equal means between both groups in column (4).
[a]Reported as the share of working time, standardized by age 15.

Table A.3: Regression Results for Employees with all Covariates

	At least one employee (1)
Self-Determination Index	0.030**
	(0.012)
A. *Personal characteristics*	
Age (in years)	
<25	(reference category)
25−<35	-0.023
	(0.093)
35−<45	-0.018
	(0.094)
45−<56	-0.057
	(0.095)
≥56	-0.169*
	(0.099)
Female	-0.050*
	(0.028)
Children in household	
No children	-0.074
	(0.060)
Children under six years	0.004
	(0.047)
Children between six and 14 years	-0.106**
	(0.053)
Married	-0.007
	(0.029)
Not German	0.085
	(0.060)
Living in East Germany	-0.070
	(0.051)
B. *Human capital*	
School achievement	
None or lower secondary school	(reference category)
Middle secondary school	0.076**
	(0.037)
Upper secondary school	0.085*
	(0.044)
Professional education	
Unskilled workers/others	(reference category)
Skilled workers (apprenticeship)	0.064
	(0.054)
Technical college education	0.115*
	(0.059)
University education	0.063
	(0.056)
C. *Intergenerational transmission*	
Parents born abroad	-0.007
	(0.037)
Parents are/were self-employed	-0.022
	(0.025)
Business takeover from parents	0.204***
	(0.054)

(Table A.3 continued on next page)

(Table A.3 continued)

	At least one employee (1)
School achievement of father	
Father unknown	(reference category)
None or lower secondary school	0.165
	(0.210)
Middle secondary school	0.145
	(0.211)
Upper secondary school	0.228
	(0.211)
Father of respondent employed at age 15	0.014
	(0.043)
D. *Labor market history*	
Duration of dependent employment right before start-up	
<1 year	-0.056
	(0.062)
5 or more years	-0.033
	(0.034)
Monthly net income from last dep. employment right before start-up	
Non-employed	(reference category)
€0−€1,000	0.078*
	(0.048)
>€1,000−€1,500	0.090**
	(0.045)
>€1,500−€2,500	0.031
	(0.043)
>€2,500	0.003
	(0.051)
Dependently employed and income not specified	0.087
	(0.080)
Unemployment experience before start-up[a]	
Not specified	0.189
	(0.133)
0	0.267***
	(0.087)
$>0-\leq 2$	0.224***
	(0.086)
$>2-\leq 5$	0.147*
	(0.087)
$>5-\leq 15$	0.125
	(0.089)
>15	(reference category)
Employment experience before start-up[a]	
Not specified	0.003
	(0.199)
≤ 50	-0.116**
	(0.049)
$>50-\leq 70$	-0.082*
	(0.046)
$>70-\leq 90$	-0.040
	(0.040)
$>90-\leq 99$	-0.037
	(0.047)
>99	(reference category)

(Table A.3 continued on next page)

(Table A.3 continued)

	At least one employee
	(1)
E. ***Local macroeconomic conditions***	
Vacancies related to	
stock of unemployed	0.000
	(0.002)
Unemployment rate	0.005
	(0.006)
Real GDP per capita in 2008	
(in €1,000)	-0.001*
	(0.001)
F. ***Business-related characteristics***	
Sectoral distribution of businesses	
Agriculture, forestry, fishing	-0.306*
	(0.159)
Manufacturing, crafts	0.084**
	(0.040)
Construction	0.089*
	(0.047)
Retail	0.088**
	(0.043)
Transport, logistics	0.150*
	(0.085)
Financial service, insurance industry	0.130**
	(0.064)
IT	-0.062
	(0.061)
Other services	0.033
	(0.034)
Other sectors	(reference category)
Industry-specific experience	
before start-up	
Due to dependent employment	0.025
	(0.033)
Due to former self-employment	0.080***
	(0.031)
Due to secondary employment	-0.024
	(0.032)
Due to hobby	-0.137***
	(0.028)
Due to honorary office	-0.010
	(0.048)
None	0.003
	(0.051)
Capital invested at start-up	
Not specified	(reference category)
None	-0.051
	(0.079)
<€1,000	0.002
	(0.093)
€1,000−<€5,000	-0.038
	(0.084)
€5,000−<€10,000	0.079
	(0.083)
€10,000−<€50,000	0.191**
	(0.079)
≥€50,000	0.402***
	(0.085)
Capital at start consisted	
entirely of own equity	-0.086***
	(0.028)
Pseudo R^2	0.239
Observations	1480

Note: Standard errors in parentheses. ***/**/* indicates statistical significance at the 1/5/10% level.
[a] Reported as the share of working time, standardized by age 15.

Table A.4: Robustness 1 – Non-Linearities

	Survival		Income		Employees		Field Expansion		Reg. Expansion		Patents or TM	
	Raw	Controlled	Raw	Controlled	Raw	Controlled	Raw	Controlled	Raw	Controlled	Raw	Controlled
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A. *Motivational Index (above median)*												
Above median	0.089***	0.054**	339.711***	269.543***	0.107***	0.056**	0.102***	0.079***	0.083***	0.058***	0.102***	0.068***
	(0.023)	(0.021)	(114.416)	(101.377)	(0.027)	(0.024)	(0.024)	(0.023)	(0.019)	(0.017)	(0.028)	(0.025)
R^2			0.007	0.322								
Pseudo R^2	0.008	0.154			0.008	0.238	0.012	0.103	0.028	0.148	0.032	0.221
Panel B. *Motivational Index (Tertile 2, Tertile 3)*												
Tertile 2	0.066**	0.030	311.792**	134.770	0.125***	0.041	0.004	-0.006	0.049**	0.025	0.039	-0.018
	(0.028)	(0.025)	(134.329)	(119.235)	(0.033)	(0.029)	(0.031)	(0.030)	(0.024)	(0.022)	(0.038)	(0.031)
Tertile 3	0.115***	0.068***	466.129***	338.975***	0.138***	0.074**	0.132***	0.111***	0.098***	0.071***	0.141***	0.108***
	(0.027)	(0.026)	(141.729)	(124.355)	(0.032)	(0.029)	(0.027)	(0.028)	(0.022)	(0.020)	(0.032)	(0.028)
R^2			0.009	0.300								
Pseudo R^2	0.009	0.154			0.011	0.237	0.019	0.108	0.028	0.146	0.054	0.241
Panel C. *Motivational Categories (above median)*												
Opportunity (above median)	0.011	0.015	-300.174**	-142.450	-0.038	0.017	0.123***	0.102***	0.042**	0.040**	0.101***	0.077***
	(0.024)	(0.022)	(117.357)	(106.116)	(0.028)	(0.025)	(0.024)	(0.024)	(0.018)	(0.016)	(0.027)	(0.026)
Career ambition (above median)	0.051**	0.054**	371.910***	393.699***	0.082***	0.039*	0.057**	0.041*	0.058***	0.045***	0.017	0.024
	(0.024)	(0.022)	(115.136)	(103.782)	(0.027)	(0.024)	(0.025)	(0.023)	(0.018)	(0.016)	(0.025)	(0.026)
Necessity (above median)	-0.118***	-0.042**	-519.701***	-205.519**	-0.156***	-0.066***	0.040*	0.037	-0.004	0.006	-0.069***	-0.040
	(0.023)	(0.021)	(113.717)	(98.687)	(0.026)	(0.024)	(0.024)	(0.024)	(0.017)	(0.017)	(0.026)	(0.025)
R^2			0.029	0.329								
Pseudo R^2	0.018	0.156			0.026	0.242	0.027	0.114	0.027	0.152	0.049	0.231
Controls:												
A. Personal characteristics		×		×		×		×		×		×
B. Human Capital		×		×		×		×		×		×
C. Intergenerational transmission		×		×		×		×		×		×
D. Labor market history		×		×		×		×		×		×
E. Local macroeconomic conditions		×		×		×		×		×		×
F. Business-related characteristics		×		×		×		×		×		×

Note: Reported are regression coefficients from OLS regressions for net income from self-employment and the marginal effects from logit regressions for all other outcomes. All outcomes except self-employed with same business (N=2,034) are conditional on business survival and reported for those who are still in business only (n=1,492). Income (n=1,321), measures on employment and expansions (n=1,477) are based on slightly lower numbers of observations due to item non-responses. Information on patent applications and application for trademark protection(n=757) was collected for a 50% sub-sample only.
Standard deviations are denoted in parentheses. *** p<0.01/ ** p<0.05/ * p<0.10. Covariates include all variables listed in Table A.2. Detailed results are available upon request.

Table A.5: Robustness 2 – Other

	Survival		Income		Employees		Field Expansion		Reg. Expansion		Patents or TM	
	Raw	Controlled	Raw	Controlled	Raw	Controlled	Raw	Controlled	Raw	Controlled	Raw	Controlled
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A. *Without Attrition Weights*												
Motivational Index	0.051***	0.036***	203.658***	155.239***	0.058***	0.030**	0.036***	0.029**	0.034***	0.025***	0.063***	0.059***
	(0.009)	(0.009)	(57.900)	(49.506)	(0.013)	(0.012)	(0.012)	(0.013)	(0.009)	(0.010)	(0.014)	(0.015)
R^2			0.008	0.325								
Pseudo R^2	0.012	0.144			0.010	0.239	0.006	0.094	0.020	0.124	0.051	0.223
Panel B. *Index based on Factor Analysis*												
Factor Index	0.059***	0.040***	158.664***	127.290**	0.056***	0.030**	0.055***	0.044***	0.042***	0.033***	0.067***	0.064***
	(0.011)	(0.010)	(56.080)	(49.645)	(0.014)	(0.012)	(0.013)	(0.013)	(0.009)	(0.009)	(0.015)	(0.015)
R^2			0.005	0.321								
Pseudo R^2	0.014	0.157			0.009	0.239	0.013	0.104	0.029	0.150	0.056	0.250
Observations	2,034		1,321		1,480		1,480		1,480		757	
Panel C. *From Unemployment*												
Motivational Index	0.053***	0.027**	220.308***	183.907***	0.060***	0.036**	0.035**	0.023	0.046***	0.035***	0.044**	0.055**
	(0.014)	(0.013)	(61.639)	(54.135)	(0.017)	(0.016)	(0.016)	(0.016)	(0.012)	(0.013)	(0.018)	(0.023)
R^2			0.011	0.336								
Pseudo R^2	0.011	0.155			0.011	0.218	0.004	0.092	0.028	0.207	0.030	0.308
Observations	1,300		850		935		935		935		446	
Panel D. *From Non-Unemployment*												
Motivational Index	0.054***	0.036**	155.541	155.420	0.035	0.017	0.081***	0.043*	0.040***	0.039**	0.081***	0.066***
	(0.020)	(0.015)	(108.164)	(98.499)	(0.024)	(0.020)	(0.023)	(0.023)	(0.016)	(0.019)	(0.022)	(0.023)
R^2			0.004	0.425								
Pseudo R^2	0.011	0.266			0.003	0.349	0.036	0.225	0.036	0.223	0.065	0.510
Observations	734		471		543		544		544		311	
Controls:												
A. Personal characteristics		×		×		×		×		×		×
B. Human Capital		×		×		×		×		×		×
C. Intergenerational transmission		×		×		×		×		×		×
D. Labor market history		×		×		×		×		×		×
E. Local macroeconomic conditions		×		×		×		×		×		×
F. Business-related characteristics		×		×		×		×		×		×

Note: Reported are regression coefficients from OLS regressions for net income from self-employment and the marginal effects from logit regressions for all other outcomes. All outcomes except self-employed with same business (N=2,034) are conditional on business survival and reported for those who are still in business only (n=1,492). Income (n=1,321), measures on employment and expansions (n=1,477) are based on slightly lower numbers of observations due to item non-responses. Information on patent applications and application for trademark protection(n=757) was collected for a 50% sub-sample only.
Standard deviations are denoted in parentheses. *** p<0.01/ ** p<0.05/ * p<0.10. Covariates include all variables listed in Table A.2. Detailed results are available upon request.

Table A.6: Estimation Results - Fresh Sample t_{19}

	Survival		Income		Employees		Field Expansion		Reg. Expansion		Patents & TM	
	Raw	Controlled	Raw	Controlled	Raw	Controlled	Raw	Controlled	Raw	Controlled	Raw	Controlled
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Self-Determination Index	0.043***	0.035***	115.715**	122.796***	0.046***	0.022*	-0.002	-0.005	0.024**	0.021**	0.019	0.020
	(0.011)	(0.011)	(48.889)	(42.014)	(0.014)	(0.013)	(0.015)	(0.015)	(0.009)	(0.010)	(0.013)	(0.015)
R^2			0.004	0.377								
Pseudo R^2	0.010	0.113			0.008	0.200	0.000	0.059	0.008	0.120	0.005	0.206
Observations	1,583		1,094		1,225		1,225		1,225		679	
Controls:												
A. Personal characteristics		×		×		×		×		×		×
B. Human Capital		×		×		×		×		×		×
C. Intergenerational transmission		×		×		×		×		×		×
D. Labor market history		×		×		×		×		×		×
E. Local macroeconomic conditions		×		×		×		×		×		×
F. Business-related characteristics		×		×		×		×		×		×

Note: Reported are regression coefficients from OLS regressions for net income from self-employment and the marginal effects from logit regressions for all other outcomes. All outcomes except self-employed with same business (N=1,583) are conditional on business survival and reported for those who are still in business only (n=1,227). Income (n=1,093) is based on slightly lower numbers of observations due to item non-responses. Information on patent applications, application for trademark protection (n=679) was collected for a 50% sub-sample only.
Standard deviations are denoted in parentheses. *** p<0.01/ ** p<0.05/ * p<0.10. Covariates include all variables listed in Table A.2. Detailed results are available upon request.

Table A.7: Potential Mechanisms - Intermediate Plans in t_{19}

	Plan Field Expansion		Plan Reg. Expansion		Plan Patent or TM	
	Raw	Controlled	Raw	Controlled	Raw	Controlled
	(1)	(2)	(3)	(4)	(5)	(6)
Motivational Index	0.058***	0.046***	0.069***	0.061***	0.061***	0.046***
	(0.017)	(0.017)	(0.015)	(0.015)	(0.011)	(0.011)
Pseudo R^2	0.010	0.134	0.031	0.168	0.064	0.218
Observations	932		933		944	
Controls:						
A. Personal characteristics		×		×		×
B. Human Capital		×		×		×
C. Intergenerational transmission		×		×		×
D. Labor market history		×		×		×
E. Local macroeconomic conditions		×		×		×
F. Business-related characteristics		×		×		×

Note: Reported are marginal effects of Logit regressions. All outcomes were collected for a random 50% sub-sample only, number of observations differ because of item non-response.
Standard deviations are denoted in parentheses. *** p<0.01/ ** p<0.05/ * p<0.10. Covariates include all variables listed in Table A.2. Detailed results are available upon request.

Table A.8: Potential Mechanisms II - Intermediate Plans in t_{19}, Outcomes in t_{40}

	Field Expansion			Reg. Expansion			Patents or TM		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Motivational Index	0.048***		0.027*	0.030**		0.013	0.019		0.012
	(0.018)		(0.017)	(0.015)		(0.014)	(0.012)		(0.012)
Plan Field Expansion		0.271***	0.263***						
		(0.029)	(0.030)						
Plan Regional Expansion					0.131***	0.124***			
					(0.021)	(0.022)			
Plan Patent or TM								0.118***	0.116***
								(0.025)	(0.025)
Pseudo R^2	0.143	0.218	0.221	0.241	0.290	0.292	0.376	0.524	0.531
Observations	750	750	750	739	739	739	596	596	596
Controls:									
A. Personal characteristics	×	×	×	×	×	×	×	×	×
B. Human Capital	×	×	×	×	×	×	×	×	×
C. Intergenerational transmission	×	×	×	×	×	×	×	×	×
D. Labor market history	×	×	×	×	×	×	×	×	×
E. Local macroeconomic conditions	×	×	×	×	×	×	×	×	×
F. Business-related characteristics	×	×	×	×	×	×	×	×	×

Note: Reported are regression coefficients from OLS regressions for net income from self-employment and the marginal effects from logit regressions for all other outcomes.
Standard deviations are denoted in parentheses. *** p<0.01/ ** p<0.05/ * p<0.10. Covariates include all variables listed in Table A.2. Detailed results are available upon request.