

Appendix to the paper

“Which Agglomeration Externalities Matter Most And Why?”

by Henri L.F. de Groot, Jacques Poot and Martijn Smit

Journal of Economic Surveys, forthcoming

This document contains the following information:

- Table A1: an ordered probit analysis of the more heterogeneous full dataset, which can be directly compared with the previous results obtained with the smaller dataset that was used in De Groot et al. (2009);
- Tables A2–A4: marginal effects for the three estimated equations reported in Table 2;
- Tables A5–A8: Fixed Effect and Random Effect average weighted effect sizes of Fisher z-statistics, the corresponding 95 percent confidence intervals, and their regressions matching Table 3;
- Figures A1–A3: funnel plots based on the Fisher statistics.

Table A1: Ordered probit results including sector-specific estimates

Dependent: categorical	Specialization	Competition	Diversity
Characteristics of dependent variable			
Data measure patents or innovations	0.541 (0.332)	-1.025* (0.591)	0.454 (0.383)
Data measure productivity	0.179 (0.430)	-0.278 (0.473)	-0.310 (0.333)
Data measure output	-0.190 (0.655)	-1.098* (0.577)	-0.456 (0.401)
Data include the service sector	0.0889 (0.262)	0.172 (0.393)	0.359 (0.313)
Specification of key variables			
Specialization included		-0.738* (0.405)	-0.788*** (0.299)
Specialization as a location quotient	0.0906 (0.216)		
More specialization variables included	-0.0845 (0.368)		
Competition included	-0.241 (0.263)		0.0770 (0.276)
Competition is measured in est. per employee		1.152*** (0.437)	
Competition is measured in establishments		1.018 (0.876)	
More competition variables included		0.139 (0.409)	
Diversity included	0.546* (0.323)	1.023*** (0.361)	
Diversity estimated using largest five			1.226** (0.577)
More diversity variables included			0.701 (0.468)
Other data characteristics			
Population density (log)	-0.0744 (0.119)	0.0827 (0.138)	-0.162 (0.120)
GDP per capita (log)	-0.0259 (0.173)	-0.314 (0.283)	-0.0860 (0.186)

<i>Table A1 – continued</i>	Specialization	Competition	Diversity
Standardised mean year to which the data pertains	-0.103 (0.0908)	-0.230 (0.354)	0.451*** (0.136)
Length of period covered by the data (in years)	-0.140 (0.230)	0.757** (0.317)	-0.318 (0.261)
Data are from Asia	-0.00722 (0.406)	1.089 (0.740)	1.171** (0.468)
Data are from the USA	0.509 (0.392)	0.928** (0.449)	-0.191 (0.413)
Presence of additional control variables			
Urbanization included	-0.496 (0.304)	1.623*** (0.523)	0.650** (0.310)
Educational variables included	-1.127*** (0.344)	-0.0230 (0.484)	0.532* (0.298)
Wages or GDP also included	-0.582** (0.277)	-0.0839 (0.437)	0.562** (0.270)
Geographical variables also included	0.198 (0.280)	-0.513* (0.303)	-0.371 (0.303)
Other study characteristics			
Estimated using panel data or similar	0.518 (0.401)	-0.306 (0.526)	0.604* (0.356)
Static estimation	-0.0233 (0.614)	1.080 (0.771)	-0.735 (0.667)
Estimated using microdata	-0.592* (0.327)	0.620 (0.446)	0.563 (0.372)
Working paper	0.0153 (0.347)	1.090* (0.622)	0.203 (0.400)
Standardised year of publication	0.622*** (0.162)	-0.241 (0.317)	-0.527** (0.256)
Limit point 1	-0.536	1.560	-1.528
Limit point 2	0.324	2.533**	0.158
Number of observations	324	177	305
Pseudo-R ²	0.134	0.200	0.209

Note: Standard errors in parentheses. This table matches Table 14.4 of De Groot et al. (2009). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A2: Marginal effects for Specialization

	Outcome --	Outcome +-	Outcome ++
Characteristics of dependent variable			
Data measure patents or innovations	-1.000*** (0.187)	0.305** (0.134)	0.695*** (0.110)
Data measure productivity	-0.296* (0.167)	0.0902 (0.0580)	0.206* (0.119)
Data measure output	-0.741*** (0.259)	0.226** (0.105)	0.515*** (0.193)
Data include the service sector	-0.0251 (0.0315)	0.00764 (0.0103)	0.0174 (0.0217)
Specification of key variables			
Specialization as a location quotient	0.347*** (0.0834)	-0.106** (0.0412)	-0.241*** (0.0666)
More specialization variables included	0.0442 (0.113)	-0.0135 (0.0357)	-0.0307 (0.0771)
Competition included	0.00288 (0.103)	-0.000878 (0.0316)	-0.00200 (0.0718)
Diversity included	-0.0569 (0.0808)	0.0174 (0.0256)	0.0396 (0.0560)
Other data characteristics			
Population density (log)	0.177*** (0.0395)	-0.0540** (0.0242)	-0.123*** (0.0257)
GDP per capita (log)	-0.0394 (0.0735)	0.0120 (0.0219)	0.0274 (0.0520)
Standardised mean year to which the data pertains	-0.0402 (0.0376)	0.0123 (0.0130)	0.0280 (0.0254)
Length of period covered by the data (in years)	0.0101 (0.0758)	-0.00308 (0.0228)	-0.00704 (0.0530)
Data are from Asia	0.117 (0.177)	-0.0356 (0.0565)	-0.0812 (0.122)
Data are from the USA	-0.177 (0.225)	0.0540 (0.0756)	0.123 (0.151)
Presence of additional control variables			
Urbanization included	0.141 (0.113)	-0.0429 (0.0306)	-0.0978 (0.0851)
Educational variables included	0.629*** (0.181)	-0.192** (0.0977)	-0.438*** (0.111)
Wages or GDP also included	-0.450*** (0.164)	0.137** (0.0697)	0.313*** (0.116)
Geographical variables also included	-0.511*** (0.121)	0.156** (0.0704)	0.355*** (0.0799)

<i>Table A2 – continued</i>	Outcome --	Outcome +-	Outcome ++
Other study characteristics			
Estimated using panel data or similar	-0.247** (0.111)	0.0752** (0.0333)	0.172* (0.0884)
Static estimation	0.311 (0.199)	-0.0947 (0.0657)	-0.216 (0.143)
Estimated using microdata	0.603*** (0.159)	-0.184** (0.0865)	-0.419*** (0.105)
Working paper	-0.272* (0.161)	0.0829 (0.0619)	0.189* (0.107)
Standardised year of publication	-0.385*** (0.0517)	0.117*** (0.0447)	0.268*** (0.0399)
Number of observations	144	144	144
Pseudo-R ²	0.417	0.417	0.417

Note: Standard errors in parentheses. This table accompanies Table 2, second column in the paper. Marginal effects calculated as average for all covariates (Stata: mfx, dydx(*)). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A3: Marginal effects for Competition

	Outcome --	Outcome +-	Outcome ++
Characteristics of dependent variable			
Data measure patents or innovations	0.262** (0.128)	0.0770 (0.0558)	-0.339** (0.168)
Data measure productivity	-0.0254 (0.0788)	-0.00746 (0.0209)	0.0328 (0.0995)
Data measure output	0.103 (0.153)	0.0303 (0.0470)	-0.133 (0.197)
Data include the service sector	0.0683** (0.0338)	0.0201 (0.0129)	-0.0884** (0.0418)
Specification of key variables			
Specialization included	0.149*** (0.0561)	0.0440** (0.0200)	-0.193*** (0.0602)
Competition is measured in est. per employee	-0.435*** (0.155)	-0.128* (0.0736)	0.563*** (0.191)
Competition is measured in establishments	-0.0798 (0.172)	-0.0235 (0.0528)	0.103 (0.224)
More competition variables included	-0.216* (0.122)	-0.0635 (0.0424)	0.279* (0.151)
Diversity included	-0.133** (0.0613)	-0.0393 (0.0255)	0.173** (0.0772)
Other data characteristics			
Population density (log)	-0.00938 (0.0303)	-0.00276 (0.00923)	0.0121 (0.0394)
GDP per capita (log)	0.0528 (0.0651)	0.0155 (0.0235)	-0.0683 (0.0874)
Standardised mean year to which the data pertains	0.274** (0.131)	0.0806 (0.0688)	-0.354* (0.189)
Length of period covered by the data (in years)	-0.0201 (0.0655)	-0.00592 (0.0199)	0.0261 (0.0851)
Data are from Asia	-0.423* (0.243)	-0.124* (0.0645)	0.547** (0.278)
Data are from the USA	0.250** (0.106)	0.0736 (0.0488)	-0.324** (0.137)
Presence of additional control variables			
Urbanization included	-0.466*** (0.129)	-0.137* (0.0746)	0.604*** (0.157)
Educational variables included	-0.279* (0.167)	-0.0822 (0.0627)	0.361* (0.214)
Wages or GDP also included	-0.0483 (0.129)	-0.0142 (0.0402)	0.0625 (0.168)

<i>Table A3 – continued</i>	Outcome --	Outcome +-	Outcome ++
Geographical variables also included	0.0666 (0.0912)	0.0196 (0.0275)	-0.0862 (0.117)
Other study characteristics			
Estimated using panel data or similar	0.117 (0.171)	0.0345 (0.0573)	-0.152 (0.226)
Static estimation	-0.304* (0.184)	-0.0896 (0.0722)	0.394* (0.240)
Estimated using microdata	-0.0768 (0.0822)	-0.0226 (0.0295)	0.0995 (0.109)
Working paper	-0.375* (0.196)	-0.110 (0.0687)	0.485** (0.238)
Standardised year of publication	-0.0747 (0.124)	-0.0220 (0.0435)	0.0966 (0.167)
Number of observations	96	96	96
Pseudo-R ²	0.323	0.323	0.323

Note: Standard errors in parentheses. This table accompanies Table 2, second column in the paper. Marginal effects calculated as average for all covariates (Stata: mfx, dydx(*)). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A4: Marginal effects for Diversity

	Outcome --	Outcome +-	Outcome ++
Characteristics of dependent variable			
Data measure patents or innovations	-0.140** (0.0594)	-0.110** (0.0495)	0.251*** (0.0929)
Data measure productivity	0.000308 (0.0788)	0.000242 (0.0621)	-0.000550 (0.141)
Data measure output	0.0623 (0.0721)	0.0491 (0.0552)	-0.111 (0.125)
Data include the service sector	0.00614 -0.140**	0.00483 -0.110**	-0.0110 0.251***
Specification of key variables			
Specialization included	0.0364 (0.0434)	0.0286 (0.0364)	-0.0650 (0.0784)
Competition included	-0.0196 (0.0376)	-0.0154 (0.0321)	0.0350 (0.0693)
Diversity estimated using largest five	-0.160*** (0.0595)	-0.126*** (0.0457)	0.286*** (0.0826)
More diversity variables included	-0.113 (0.0789)	-0.0888* (0.0500)	0.202* (0.121)
Other data characteristics			
Population density (log)	0.0333 (0.0252)	0.0262 (0.0184)	-0.0596 (0.0415)
GDP per capita (log)	-0.0296 (0.0335)	-0.0233 (0.0235)	0.0529 (0.0557)
Standardised mean year to which the data pertains	-0.113** (0.0561)	-0.0887** (0.0383)	0.201** (0.0829)
Length of period covered by the data (in years)	-0.0419 (0.0352)	-0.0330 (0.0302)	0.0748 (0.0632)
Data are from Asia	-0.259* (0.134)	-0.204** (0.0946)	0.463** (0.203)
Data are from the USA	0.0466 (0.0990)	0.0367 (0.0814)	-0.0833 (0.179)
Presence of additional control variables			
Urbanization included	-0.0657 (0.0656)	-0.0517 (0.0517)	0.117 (0.114)
Educational variables included	-0.0765 (0.0708)	-0.0602 (0.0555)	0.137 (0.122)
Wages or GDP also included	-0.116** (0.0581)	-0.0916* (0.0475)	0.208** (0.0944)
Geographical variables also included	0.0450 (0.0431)	0.0354 (0.0327)	-0.0804 (0.0736)

<i>Table A4 – continued</i>	Outcome --	Outcome +-	Outcome ++
Other study characteristics			
Estimated using panel data or similar	-0.0286 (0.0561)	-0.0225 (0.0456)	0.0511 (0.101)
Static estimation	0.0240 (0.0857)	0.0189 (0.0663)	-0.0429 (0.152)
Estimated using microdata	-0.0874 (0.0614)	-0.0688 (0.0474)	0.156 (0.103)
Working paper	-0.0146 (0.0767)	-0.0115 (0.0611)	0.0262 (0.138)
Standardised year of publication	0.0967** (0.0404)	0.0761** (0.0341)	-0.173*** (0.0634)
Number of observations	144	144	144
Pseudo-R ²	0.465	0.465	0.465

Note: Standard errors in parentheses. This table accompanies Table 2, second column in the paper. Marginal effects calculated as average for all covariates (Stata: mfx, dydx(*)). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A5: FE estimates

Tables A5 to A8 and Figures A1 to A3 report the results of our meta-analysis in which the t -values of the regression coefficients of indicators of specialization, competition and diversity in the primary studies have been replaced by Fisher's z -values, using the formulae in Poot (2014, p. 245, Meta-analysis of previous empirical research findings. In: R.J. Stimson (ed.), *Handbook of Research Methods and Applications in Spatially Integrated Social Science*. Cheltenham: Edward Elgar). Each of these Fisher z -values acts as an effect size, with the standard error approximated by the reciprocal of the square root of the primary study's number of observations minus three. The effect sizes and their standard errors were used to calculate inverse variance weighted fixed effect (FE) and random effects (RE) averages using the software provided by Stata (see Sterne, J.A.C. (2009). *Meta-Analysis in Stata: An Updated Collection from the Stata Journal*, Stata Press). Meta-regression models, that correspond with the WLS regressions in Table 3 of the paper, were also estimated with the software (FE and RE in Tables A6 and A8 respectively). Finally, Figures A1 to A3 report the corresponding funnel plots. In all tables below, the indented ID's in first column refer to the following study IDs:

34	Lee et al. (2005)	987	Martin et al. (2008)
63	Greunz (2004)	1002	Andersson et al. (2005)
64	van der Panne (2004)	1012	Almeida (2005)
65	Acs and Armington (2004)	1013	Beaudry and Breschi (2003)
74	Combes et al. (2004)	1019	van Soest et al. (2002)
84	Serrano and Cabrer (2004)	1030	Condliffe et al. (2008)
131	Chen (2002)	1033	Glaeser and Kerr (2008)
209	Combes (2000)	1034	Lu et al. (2009)
237	Sjöholm (1999)	1036	Baltzopoulos (2009)
248	Feldman and Audretsch (1999)	1040	Neffke (2009)
251	Baptista and Swann (1998)	1046	Cingano and Schivardi (2004)
252	Baten et al. (2005)	1047	Deidda et al. (2006)
355	Glaeser et al. (1992)	1051	Gao (2004)
357	Paci and Usai (1999)	1052	Hanson (1998)
360	Cainelli and Leoncini (1999)	1054	Venderson et al. (2001)
698	de Vor and de Groot (2008)	1059	Paci and Usai (2000)
822	Carlino and Hunt (2007)	1060	Paci and Usai (2006)
824	Fritsch and Slavtchev (2007)	1061	Suedekum and Blien (2005)
826	Gustavsson (2003)	1063	Usai and Paci (2001)
836	Fu and Hong (2008)	1064	van Oort (2002)
850	Brühlhart and Mathys (2008)		

Specialization

Study	ES	[95% Conf. Interval]		% weight

34				
2	-0.030	-0.084	0.025	0.06
4	-0.025	-0.080	0.030	0.06
5	-0.136	-0.191	-0.081	0.06
Sub-total				
I-V pooled ES	-0.064	-0.095	-0.032	0.19

63				
6	0.261	0.221	0.300	0.12
7	0.267	0.227	0.306	0.12
8	0.267	0.227	0.306	0.12
9	0.261	0.221	0.301	0.12
Sub-total				
I-V pooled ES	0.264	0.244	0.284	0.49

64				
10	0.022	-0.004	0.048	0.28
11	0.022	-0.004	0.048	0.28
12	0.022	-0.004	0.048	0.28
Sub-total				
I-V pooled ES	0.022	0.007	0.037	0.85

65				
13	-0.152	-0.251	-0.053	0.02
14	-0.309	-0.408	-0.210	0.02
15	-0.307	-0.406	-0.208	0.02
Sub-total				
I-V pooled ES	-0.256	-0.313	-0.199	0.06

74				
16	0.087	0.068	0.105	0.57
17	0.097	0.085	0.108	1.39
18	0.067	0.047	0.087	0.48
19	0.081	0.071	0.091	2.00
20	-0.007	-0.016	0.001	2.74
21	0.070	0.061	0.078	2.74
Sub-total				
I-V pooled ES	0.055	0.051	0.060	9.92

84				
26	-0.030	-0.067	0.006	0.15
27	-0.024	-0.060	0.013	0.15
28	-0.046	-0.101	0.009	0.06
29	-0.030	-0.067	0.006	0.15
30	-0.046	-0.101	0.009	0.06
31	-0.046	-0.101	0.009	0.06
32	-0.026	-0.058	0.005	0.19
33	-0.055	-0.120	0.010	0.04
34	-0.026	-0.058	0.005	0.19
35	-0.026	-0.058	0.005	0.19
36	-0.046	-0.101	0.009	0.06
37	-0.026	-0.058	0.005	0.19
38	-0.026	-0.058	0.005	0.19
39	-0.026	-0.058	0.005	0.19
40	-0.026	-0.058	0.005	0.19
41	-0.030	-0.067	0.006	0.15
Sub-total				
I-V pooled ES	-0.030	-0.039	-0.021	2.22

131				
42	-0.017	-0.094	0.059	0.03
44	-0.000	-0.081	0.080	0.03
45	-0.017	-0.093	0.060	0.03
49	0.008	-0.072	0.088	0.03
Sub-total				
I-V pooled ES	-0.007	-0.046	0.032	0.13

209				
52	-0.077	-0.093	-0.060	0.72
53	-0.030	-0.045	-0.015	0.89
54	-0.017	-0.024	-0.010	4.10
55	-0.009	-0.016	-0.003	4.62
Sub-total				

I-V pooled ES	-0.019	-0.023	-0.014	10.33

237				
56	-0.028	-0.064	0.009	0.14
57	-0.026	-0.063	0.010	0.14
58	-0.044	-0.080	-0.007	0.14
59	0.105	0.089	0.121	0.76
60	-0.047	-0.083	-0.010	0.14
61	0.135	0.122	0.148	1.16
Sub-total				
I-V pooled ES	0.086	0.078	0.095	2.51

248				
62	-0.108	-0.134	-0.083	0.30
63	-0.074	-0.099	-0.048	0.30
64	-0.228	-0.253	-0.202	0.30
65	-0.187	-0.212	-0.162	0.30
Sub-total				
I-V pooled ES	-0.149	-0.162	-0.136	1.19

251				
66	-0.022	-0.066	0.022	0.10
67	-0.026	-0.070	0.018	0.10
68	-0.018	-0.062	0.026	0.10
69	-0.010	-0.054	0.034	0.10
70	-0.043	-0.087	0.001	0.10
71	-0.041	-0.085	0.003	0.10
72	-0.027	-0.071	0.017	0.10
73	-0.042	-0.086	0.002	0.10
74	-0.011	-0.055	0.033	0.10
Sub-total				
I-V pooled ES	-0.026	-0.041	-0.012	0.89

252				
75	0.001	-0.039	0.041	0.12
Sub-total				
I-V pooled ES	0.001	-0.039	0.041	0.12

355				
78	-0.019	-0.081	0.042	0.05
79	-0.031	-0.093	0.031	0.05
Sub-total				
I-V pooled ES	-0.025	-0.069	0.018	0.10

357				
80	0.011	-0.001	0.024	1.24
81	0.012	-0.001	0.024	1.24
82	0.014	0.002	0.027	1.24
83	0.011	-0.001	0.024	1.24
84	0.012	-0.001	0.024	1.24
85	0.011	-0.001	0.024	1.24
Sub-total				
I-V pooled ES	0.012	0.007	0.017	7.46

360				
86	0.088	0.035	0.141	0.07
88	0.088	0.035	0.141	0.07
Sub-total				
I-V pooled ES	0.088	0.050	0.125	0.14

698				
90	-0.096	-0.192	-0.000	0.02
92	-0.096	-0.192	-0.000	0.02
Sub-total				
I-V pooled ES	-0.096	-0.164	-0.028	0.04

826				
96	0.009	-0.143	0.162	0.01
99	0.088	-0.065	0.240	0.01
100	0.065	-0.100	0.231	0.01
102	0.116	-0.050	0.281	0.01
Sub-total				
I-V pooled ES	0.068	-0.011	0.147	0.03

836				
104	-0.017	-0.027	-0.007	1.79
105	0.005	0.003	0.008	27.33

Sub-total					
I-V pooled ES	0.004	0.001	0.007		29.13

850					
106	0.171	0.034	0.307		0.01
107	0.103	-0.037	0.244		0.01
108	0.128	-0.012	0.268		0.01
109	0.151	0.015	0.287		0.01
Sub-total					
I-V pooled ES	0.139	0.070	0.208		0.04

987					
110	0.001	-0.005	0.008		4.74
111	0.001	-0.005	0.008		4.74
Sub-total					
I-V pooled ES	0.001	-0.003	0.006		9.47

1012					
123	0.040	0.000	0.081		0.12
126	-0.191	-0.231	-0.152		0.12
127	-0.186	-0.226	-0.147		0.12
129	0.047	0.007	0.087		0.12
Sub-total					
I-V pooled ES	-0.074	-0.094	-0.054		0.49

1013					
131	-0.011	-0.023	0.001		1.30
132	-0.014	-0.024	-0.004		1.89
Sub-total					
I-V pooled ES	-0.013	-0.020	-0.005		3.19

1019					
133	-0.027	-0.074	0.019		0.09
134	-0.028	-0.074	0.019		0.09
135	-0.084	-0.190	0.023		0.02
136	-0.126	-0.233	-0.020		0.02
Sub-total					
I-V pooled ES	-0.040	-0.070	-0.010		0.21

1030					
137	0.056	0.021	0.092		0.15
138	0.116	-0.170	0.402		0.00
139	0.056	0.020	0.091		0.16
Sub-total					
I-V pooled ES	0.056	0.031	0.081		0.31

1033					
140	0.114	0.104	0.125		1.68
141	0.123	0.112	0.134		1.68
Sub-total					
I-V pooled ES	0.119	0.111	0.126		3.36

1034					
142	-0.044	-0.070	-0.017		0.27
144	0.065	0.038	0.091		0.27
145	-0.009	-0.019	0.002		1.76
146	0.081	0.054	0.108		0.27
147	-0.046	-0.072	-0.019		0.27
148	0.069	0.043	0.096		0.27
Sub-total					
I-V pooled ES	0.006	-0.002	0.014		3.10

1036					
149	0.112	0.103	0.122		2.02
150	0.465	0.422	0.507		0.11
Sub-total					
I-V pooled ES	0.130	0.120	0.139		2.13

1040					
151	-0.002	-0.020	0.016		0.58
152	0.010	-0.005	0.025		0.87
153	0.010	-0.005	0.025		0.87
154	-0.004	-0.022	0.014		0.58
Sub-total					
I-V pooled ES	0.005	-0.003	0.013		2.90

1046					

155		0.049	-0.000	0.098	0.08
156		-0.085	-0.134	-0.036	0.08
157		0.048	-0.001	0.097	0.08
Sub-total					
I-V pooled ES		0.004	-0.025	0.032	0.24

1047					
158		-0.021	-0.040	-0.003	0.58
159		-0.024	-0.044	-0.003	0.47
Sub-total					
I-V pooled ES		-0.022	-0.036	-0.009	1.04

1051					
161		-0.059	-0.131	0.013	0.04
163		-0.104	-0.176	-0.032	0.04
164		0.180	0.109	0.252	0.04
Sub-total					
I-V pooled ES		0.006	-0.036	0.047	0.11

1052					
165		-0.035	-0.094	0.024	0.06
168		-0.075	-0.133	-0.018	0.06
169		0.021	-0.037	0.080	0.06
170		-0.025	-0.083	0.033	0.06
Sub-total					
I-V pooled ES		-0.029	-0.058	0.000	0.23

1054					
171		0.066	0.031	0.101	0.15
Sub-total					
I-V pooled ES		0.066	0.031	0.101	0.15

1059					
172		0.052	0.032	0.072	0.46
Sub-total					
I-V pooled ES		0.052	0.032	0.072	0.46

1060					
173		-0.024	-0.044	-0.003	0.47
174		-0.021	-0.039	-0.003	0.60
Sub-total					
I-V pooled ES		-0.022	-0.036	-0.009	1.07

1061					
175		-0.047	-0.076	-0.017	0.22
176		-0.031	-0.056	-0.007	0.32
Sub-total					
I-V pooled ES		-0.038	-0.057	-0.019	0.54

1063					
177		-0.015	-0.027	-0.002	1.22
178		-0.008	-0.015	-0.001	3.81
Sub-total					
I-V pooled ES		-0.010	-0.016	-0.004	5.03

1064					
179		-0.067	-0.148	0.015	0.03
180		0.103	0.021	0.185	0.03
181		0.050	-0.031	0.132	0.03
182		-0.112	-0.194	-0.031	0.03
Sub-total					
I-V pooled ES		-0.006	-0.047	0.034	0.12

Overall					
I-V pooled ES		0.012	0.011	0.013	100.00

Test(s) of heterogeneity:

	Heterogeneity statistic	degrees of freedom	P	I-squared**
34	10.15	2	0.006	80.3%
63	0.08	3	0.994	0.0%
64	0.00	2	1.000	0.0%
65	6.35	2	0.042	68.5%
74	311.52	5	0.000	98.4%
84	2.32	15	1.000	0.0%
131	0.29	3	0.961	0.0%

209	59.22	3	0.000	94.9%
237	235.10	5	0.000	97.9%
248	89.02	3	0.000	96.6%
251	2.66	8	0.954	0.0%
252	0.00	0	.	0.0%
355	0.07	1	0.794	0.0%
357	0.16	5	0.999	0.0%
360	0.00	1	0.991	0.0%
698	0.00	1	0.997	0.0%
826	0.95	3	0.813	0.0%
836	16.92	1	0.000	94.1%
850	0.51	3	0.918	0.0%
987	0.00	1	0.979	0.0%
1012	131.24	3	0.000	97.7%
1013	0.12	1	0.729	0.0%
1019	3.73	3	0.292	19.7%
1030	0.17	2	0.919	0.0%
1033	1.31	1	0.253	23.5%
1034	105.73	5	0.000	95.3%
1036	249.62	1	0.000	99.6%
1040	2.47	3	0.481	0.0%
1046	18.99	2	0.000	89.5%
1047	0.03	1	0.862	0.0%
1051	34.97	2	0.000	94.3%
1052	5.35	3	0.148	43.9%
1054	0.00	0	.	0.0%
1059	0.00	0	.	0.0%
1060	0.04	1	0.834	0.0%
1061	0.61	1	0.435	0.0%
1063	0.75	1	0.388	0.0%
1064	17.31	3	0.001	82.7%
Overall	5352.16	137	0.000	97.4%
Overall Test for heterogeneity between sub-groups:	4044.41	37	0.000	

** I-squared: the variation in ES attributable to heterogeneity

Considerable heterogeneity observed (up to 99.6%) in one or more sub-groups,
Test for heterogeneity between sub-groups likely to be invalid

Significance test(s) of ES=0

34	z= 3.94	p = 0.000
63	z= 26.08	p = 0.000
64	z= 2.83	p = 0.005
65	z= 8.77	p = 0.000
74	z= 24.64	p = 0.000
84	z= 6.30	p = 0.000
131	z= 0.35	p = 0.724
209	z= 8.43	p = 0.000
237	z= 19.35	p = 0.000
248	z= 23.00	p = 0.000
251	z= 3.53	p = 0.000
252	z= 0.06	p = 0.956
355	z= 1.13	p = 0.258
357	z= 4.59	p = 0.000
360	z= 4.59	p = 0.000
698	z= 2.78	p = 0.005
826	z= 1.68	p = 0.093
836	z= 3.00	p = 0.003
850	z= 3.94	p = 0.000
987	z= 0.62	p = 0.538
1012	z= 7.32	p = 0.000
1013	z= 3.16	p = 0.002
1019	z= 2.60	p = 0.009
1030	z= 4.42	p = 0.000
1033	z= 30.73	p = 0.000
1034	z= 1.44	p = 0.151
1036	z= 26.77	p = 0.000
1040	z= 1.20	p = 0.229
1046	z= 0.26	p = 0.794
1047	z= 3.24	p = 0.001
1051	z= 0.27	p = 0.784
1052	z= 1.95	p = 0.052
1054	z= 3.64	p = 0.000
1059	z= 5.00	p = 0.000
1060	z= 3.23	p = 0.001

1061	z= 3.91	p = 0.000
1063	z= 3.12	p = 0.002
1064	z= 0.31	p = 0.760
Overall	z= 17.07	p = 0.000

Competition

Study	ES	[95% Conf. Interval]		% Weight

34				
2	0.098	0.044	0.153	0.13
3	0.257	0.203	0.312	0.13
4	0.248	0.193	0.303	0.13
Sub-total				
I-V pooled ES	0.201	0.170	0.233	0.40

64				
10	-0.022	-0.048	0.004	0.59
11	-0.022	-0.048	0.004	0.59
12	-0.022	-0.048	0.004	0.59
Sub-total				
I-V pooled ES	-0.022	-0.037	-0.007	1.77

65				
13	-0.191	-0.291	-0.092	0.04
14	-0.337	-0.436	-0.238	0.04
15	0.076	-0.023	0.175	0.04
Sub-total				
I-V pooled ES	-0.151	-0.208	-0.094	0.12

74				
16	-0.121	-0.139	-0.103	1.19
17	0.035	0.023	0.047	2.88
18	0.019	-0.001	0.039	1.00
19	-0.105	-0.115	-0.096	4.14
20	0.137	0.128	0.145	5.67
21	0.070	0.061	0.078	5.67
Sub-total				
I-V pooled ES	0.035	0.030	0.039	20.56

131				
43	0.068	-0.008	0.144	0.07
45	0.101	0.024	0.177	0.07
47	0.052	-0.029	0.132	0.06
49	0.041	-0.039	0.121	0.06
Sub-total				
I-V pooled ES	0.066	0.027	0.105	0.26

209				
52	-0.005	-0.021	0.012	1.49
53	-0.011	-0.025	0.004	1.84
54	0.005	-0.002	0.012	8.50
55	-0.009	-0.015	-0.002	9.58
Sub-total				
I-V pooled ES	-0.003	-0.007	0.001	21.41

237				
56	-0.010	-0.046	0.027	0.30
57	-0.009	-0.045	0.028	0.30
58	0.023	-0.014	0.059	0.30
59	-0.062	-0.078	-0.046	1.58
60	0.023	-0.014	0.059	0.30
61	-0.055	-0.068	-0.042	2.41
Sub-total				
I-V pooled ES	-0.043	-0.052	-0.034	5.19

248				
62	-0.044	-0.069	-0.018	0.62
63	0.026	0.000	0.051	0.62
64	0.003	-0.022	0.029	0.62
65	0.097	0.071	0.122	0.62
Sub-total				
I-V pooled ES	0.021	0.008	0.033	2.47

355				
76	0.272	0.211	0.334	0.11
78	0.261	0.199	0.322	0.11
Sub-total				
I-V pooled ES	0.266	0.223	0.310	0.21

360				

87		-0.083	-0.136	-0.030	0.14
88		-0.084	-0.137	-0.030	0.14
	Sub-total				
	I-V pooled ES	-0.083	-0.121	-0.046	0.28

	698				
90		0.045	-0.051	0.140	0.04
91		0.051	-0.045	0.147	0.04
	Sub-total				
	I-V pooled ES	0.048	-0.020	0.115	0.09

	822				
93		0.403	0.285	0.521	0.03
	Sub-total				
	I-V pooled ES	0.403	0.285	0.521	0.03

	824				
94		-0.296	-0.503	-0.089	0.01
95		-0.313	-0.519	-0.106	0.01
	Sub-total				
	I-V pooled ES	-0.304	-0.450	-0.158	0.02

	826				
97		-0.099	-0.264	0.066	0.01
99		0.134	-0.019	0.287	0.02
100		-0.091	-0.256	0.074	0.01
101		0.125	-0.028	0.277	0.02
	Sub-total				
	I-V pooled ES	0.026	-0.053	0.105	0.06

	987				
110		-0.000	-0.007	0.006	9.82
	Sub-total				
	I-V pooled ES	-0.000	-0.007	0.006	9.82

	1002				
116		0.031	0.016	0.047	1.71
119		0.015	0.000	0.031	1.71
120		0.020	0.005	0.035	1.71
122		0.054	0.038	0.069	1.71
	Sub-total				
	I-V pooled ES	0.030	0.022	0.038	6.85

	1012				
123		0.016	-0.024	0.056	0.25
124		0.029	-0.011	0.069	0.25
125		0.008	-0.031	0.048	0.26
126		0.061	0.022	0.101	0.26
	Sub-total				
	I-V pooled ES	0.029	0.009	0.049	1.00

	1019				
133		0.116	0.070	0.163	0.19
134		0.111	0.065	0.157	0.19
135		0.135	0.029	0.242	0.04
136		0.098	-0.009	0.204	0.04
	Sub-total				
	I-V pooled ES	0.114	0.084	0.144	0.44

	1034				
142		0.100	0.073	0.127	0.56
143		0.098	0.072	0.125	0.56
144		0.047	0.020	0.073	0.56
145		0.004	-0.006	0.015	3.64
146		0.073	0.046	0.100	0.55
147		0.099	0.072	0.126	0.56
148		0.082	0.055	0.109	0.55
	Sub-total				
	I-V pooled ES	0.042	0.035	0.050	7.00

	1036				
149		-0.283	-0.292	-0.273	4.20
150		-0.455	-0.498	-0.413	0.22
	Sub-total				
	I-V pooled ES	-0.291	-0.301	-0.282	4.42

	1046				

155		-0.017	-0.066	0.032	0.17
156		0.127	0.078	0.176	0.17
157		-0.019	-0.068	0.030	0.17
Sub-total					
I-V pooled ES		0.030	0.002	0.058	0.50

1047					
158		0.021	0.003	0.040	1.20
159		0.024	0.003	0.044	0.97
Sub-total					
I-V pooled ES		0.022	0.009	0.036	2.17

1051					
160		0.245	0.174	0.317	0.08
161		0.229	0.158	0.301	0.08
164		0.109	0.037	0.181	0.08
Sub-total					
I-V pooled ES		0.195	0.153	0.236	0.23

1052					
165		0.074	0.016	0.133	0.12
166		0.102	0.043	0.161	0.12
167		0.082	0.024	0.140	0.12
168		0.022	-0.036	0.080	0.12
169		0.084	0.025	0.143	0.12
170		0.015	-0.042	0.073	0.12
Sub-total					
I-V pooled ES		0.063	0.039	0.087	0.70

1060					
173		-0.017	-0.037	0.003	0.96
174		-0.021	-0.039	-0.003	1.25
Sub-total					
I-V pooled ES		-0.019	-0.033	-0.006	2.21

1061					
175		-0.042	-0.071	-0.012	0.45
176		-0.039	-0.063	-0.014	0.66
Sub-total					
I-V pooled ES		-0.040	-0.059	-0.021	1.12

1063					
177		0.010	-0.002	0.023	2.54
178		0.000	-0.007	0.007	7.89
Sub-total					
I-V pooled ES		0.003	-0.004	0.009	10.43

1064					
179		-0.263	-0.344	-0.181	0.06
180		-0.182	-0.264	-0.101	0.06
181		-0.215	-0.297	-0.134	0.06
182		-0.231	-0.313	-0.150	0.06
Sub-total					
I-V pooled ES		-0.223	-0.264	-0.182	0.24

Overall					
I-V pooled ES		-0.001	-0.003	0.001	100.00

Test(s) of heterogeneity:

	Heterogeneity statistic	degrees of freedom	P	I-squared**
34	20.39	2	0.000	90.2%
64	0.00	2	1.000	0.0%
65	34.38	2	0.000	94.2%
74	1702.11	5	0.000	99.7%
131	1.29	3	0.732	0.0%
209	9.47	3	0.024	68.3%
237	40.65	5	0.000	87.7%
248	61.07	3	0.000	95.1%
355	0.07	1	0.795	0.0%
360	0.00	1	0.982	0.0%
698	0.01	1	0.928	0.0%
822	0.00	0	.	.%
824	0.01	1	0.912	0.0%
826	7.65	3	0.054	60.8%
987	0.00	0	.	.%

1002	14.40	3	0.002	79.2%
1012	4.08	3	0.253	26.5%
1019	0.27	3	0.966	0.0%
1034	116.26	6	0.000	94.8%
1036	60.04	1	0.000	98.3%
1046	22.44	2	0.000	91.1%
1047	0.03	1	0.862	0.0%
1051	8.33	2	0.016	76.0%
1052	7.22	5	0.205	30.7%
1060	0.08	1	0.778	0.0%
1061	0.02	1	0.883	0.0%
1063	2.02	1	0.155	50.6%
1064	1.93	3	0.586	0.0%
Overall	6999.07	91	0.000	98.7%
Overall Test for heterogeneity between sub-groups:	4884.86	27	0.000	

** I-squared: the variation in ES attributable to heterogeneity)

Considerable heterogeneity observed (up to 99.7%) in one or more sub-groups,
Test for heterogeneity between sub-groups likely to be invalid

Significance test(s) of ES=0

34	z= 12.48	p = 0.000
64	z= 2.83	p = 0.005
65	z= 5.17	p = 0.000
74	z= 15.38	p = 0.000
131	z= 3.32	p = 0.001
209	z= 1.35	p = 0.176
237	z= 9.62	p = 0.000
248	z= 3.17	p = 0.002
355	z= 11.99	p = 0.000
360	z= 4.34	p = 0.000
698	z= 1.38	p = 0.168
822	z= 6.71	p = 0.000
824	z= 4.08	p = 0.000
826	z= 0.64	p = 0.520
987	z= 0.07	p = 0.943
1002	z= 7.74	p = 0.000
1012	z= 2.82	p = 0.005
1019	z= 7.45	p = 0.000
1034	z= 10.96	p = 0.000
1036	z= 60.05	p = 0.000
1046	z= 2.09	p = 0.037
1047	z= 3.24	p = 0.001
1051	z= 9.22	p = 0.000
1052	z= 5.18	p = 0.000
1060	z= 2.80	p = 0.005
1061	z= 4.13	p = 0.000
1063	z= 0.81	p = 0.420
1064	z= 10.71	p = 0.000
Overall	z= 1.06	p = 0.287

Diversity

Study	ES	[95% Conf. Interval]		% weight

34				
1	0.173	0.118	0.228	0.06
2	0.111	0.057	0.166	0.06
4	0.100	0.045	0.155	0.06
Sub-total				
I-V pooled ES	0.128	0.096	0.160	0.19

63				
6	0.098	0.058	0.138	0.12
7	0.087	0.047	0.127	0.12
8	0.101	0.061	0.140	0.12
9	0.084	0.044	0.124	0.12
Sub-total				
I-V pooled ES	0.092	0.073	0.112	0.47

64				
10	0.041	0.015	0.067	0.28
11	-0.041	-0.067	-0.015	0.28
12	0.041	0.015	0.067	0.28
Sub-total				
I-V pooled ES	0.014	-0.001	0.029	0.83

74				
16	0.030	0.012	0.048	0.56
17	0.017	0.005	0.029	1.34
18	0.032	0.012	0.052	0.47
19	0.040	0.030	0.049	1.93
20	0.006	-0.002	0.015	2.65
21	-0.019	-0.027	-0.010	2.65
Sub-total				
I-V pooled ES	0.010	0.006	0.015	9.60

81				
22	-0.003	-0.120	0.114	0.01
23	-0.003	-0.120	0.115	0.01
24	-0.005	-0.122	0.113	0.01
25	-0.002	-0.119	0.115	0.01
Sub-total				
I-V pooled ES	-0.003	-0.062	0.056	0.05

84				
26	0.057	0.021	0.094	0.14
27	-0.024	-0.060	0.013	0.14
28	0.087	0.032	0.142	0.06
29	0.057	0.021	0.094	0.14
30	-0.029	-0.084	0.026	0.06
31	0.087	0.032	0.142	0.06
32	0.050	0.018	0.082	0.19
33	-0.104	-0.169	-0.038	0.04
34	0.050	0.018	0.082	0.19
35	0.050	0.018	0.082	0.19
36	-0.036	-0.091	0.019	0.06
37	-0.050	-0.082	-0.018	0.19
38	0.050	0.018	0.082	0.19
39	0.050	0.018	0.082	0.19
40	0.050	0.018	0.082	0.19
41	0.057	0.021	0.094	0.14
Sub-total				
I-V pooled ES	0.032	0.023	0.042	2.15

131				
45	0.070	-0.006	0.146	0.03
46	0.192	0.112	0.273	0.03
48	0.079	-0.383	0.541	0.00
49	0.179	0.099	0.259	0.03
50	0.077	0.000	0.153	0.03
51	-0.394	-0.856	0.068	0.00
Sub-total				
I-V pooled ES	0.123	0.084	0.162	0.12

209				
52	0.018	0.002	0.034	0.69

53		-0.015	-0.030	-0.001	0.86
54		-0.001	-0.007	0.006	3.97
55		-0.008	-0.014	-0.001	4.47
Sub-total					
I-V pooled ES		-0.004	-0.008	0.001	9.99

237					
56		0.017	-0.020	0.053	0.14
57		-0.016	-0.053	0.020	0.14
58		0.099	0.062	0.135	0.14
59		0.043	0.027	0.059	0.74
60		0.098	0.061	0.134	0.14
61		0.100	0.087	0.113	1.13
Sub-total					
I-V pooled ES		0.071	0.062	0.080	2.42

248					
62		-0.049	-0.075	-0.024	0.29
63		-0.027	-0.053	-0.002	0.29
64		-0.031	-0.057	-0.006	0.29
65		-0.028	-0.053	-0.002	0.29
Sub-total					
I-V pooled ES		-0.034	-0.047	-0.021	1.15

251					
67		0.024	-0.020	0.068	0.10
71		-0.010	-0.054	0.035	0.10
74		0.006	-0.038	0.050	0.10
Sub-total					
I-V pooled ES		0.007	-0.019	0.032	0.29

252					
75		-0.052	-0.092	-0.012	0.12
Sub-total					
I-V pooled ES		-0.052	-0.092	-0.012	0.12

355					
77		0.104	0.043	0.166	0.05
78		0.112	0.051	0.174	0.05
Sub-total					
I-V pooled ES		0.108	0.065	0.152	0.10

357					
80		0.035	0.023	0.047	1.20
81		0.033	0.021	0.046	1.20
82		0.047	0.035	0.060	1.20
83		0.035	0.023	0.047	1.20
84		0.036	0.023	0.048	1.20
85		0.036	0.024	0.048	1.20
Sub-total					
I-V pooled ES		0.037	0.032	0.042	7.21

360					
88		-0.071	-0.124	-0.018	0.07
89		-0.062	-0.115	-0.008	0.07
Sub-total					
I-V pooled ES		-0.066	-0.104	-0.029	0.13

822					
93		-0.119	-0.237	-0.001	0.01
Sub-total					
I-V pooled ES		-0.119	-0.237	-0.001	0.01

824					
94		0.229	0.022	0.435	0.00
Sub-total					
I-V pooled ES		0.229	0.022	0.435	0.00

826					
98		0.008	-0.157	0.173	0.01
99		-0.026	-0.179	0.127	0.01
100		0.039	-0.126	0.204	0.01
103		-0.003	-0.156	0.149	0.01
Sub-total					
I-V pooled ES		0.003	-0.076	0.082	0.03

836					

104	-0.002	-0.012	0.009	1.74
105	0.013	0.010	0.015	26.44
Sub-total I-V pooled ES	0.012	0.009	0.014	28.18

987				
110	-0.004	-0.010	0.002	4.58
Sub-total I-V pooled ES	-0.004	-0.010	0.002	4.58

1002				
112	0.070	0.054	0.085	0.80
113	0.072	0.057	0.087	0.80
114	0.066	0.050	0.081	0.80
115	0.073	0.058	0.088	0.80
116	0.072	0.057	0.087	0.80
117	0.059	0.044	0.074	0.80
118	0.076	0.061	0.091	0.80
119	0.063	0.048	0.079	0.80
120	0.058	0.043	0.073	0.80
121	0.064	0.048	0.079	0.80
122	0.065	0.050	0.080	0.80
Sub-total I-V pooled ES	0.067	0.062	0.072	8.79

1012				
123	0.003	-0.037	0.043	0.12
126	-0.007	-0.046	0.033	0.12
128	0.032	-0.008	0.072	0.12
130	-0.047	-0.087	-0.008	0.12
Sub-total I-V pooled ES	-0.005	-0.025	0.015	0.47

1013				
131	0.003	-0.010	0.015	1.26
132	-0.008	-0.018	0.002	1.83
Sub-total I-V pooled ES	-0.004	-0.011	0.004	3.09

1019				
133	0.090	0.043	0.136	0.09
134	0.092	0.046	0.138	0.09
135	0.109	0.003	0.216	0.02
136	0.109	0.003	0.216	0.02
Sub-total I-V pooled ES	0.094	0.064	0.124	0.21

1033				
140	-0.011	-0.021	0.000	1.62
141	-0.007	-0.018	0.004	1.62
Sub-total I-V pooled ES	-0.009	-0.016	-0.001	3.25

1034				
143	0.056	0.029	0.082	0.26
144	-0.010	-0.036	0.017	0.26
145	0.009	-0.001	0.020	1.70
146	0.021	-0.005	0.048	0.26
147	0.057	0.030	0.084	0.26
148	0.017	-0.010	0.044	0.26
Sub-total I-V pooled ES	0.018	0.010	0.025	3.00

1036				
149	0.043	0.033	0.053	1.96
150	-0.061	-0.104	-0.018	0.10
Sub-total I-V pooled ES	0.038	0.028	0.047	2.06

1040				
151	-0.034	-0.052	-0.016	0.56
152	0.005	-0.010	0.020	0.84
153	0.005	-0.010	0.020	0.84
154	-0.040	-0.059	-0.022	0.56
Sub-total I-V pooled ES	-0.012	-0.020	-0.004	2.80

1046					
155		-0.001	-0.050	0.048	0.08
156		0.119	0.070	0.168	0.08
157		-0.002	-0.051	0.047	0.08
Sub-total					
I-V pooled ES		0.039	0.010	0.067	0.23

1047					
158		0.021	0.003	0.040	0.56
159		-0.032	-0.052	-0.012	0.45
Sub-total					
I-V pooled ES		-0.003	-0.016	0.011	1.01

1051					
161		0.014	-0.057	0.086	0.04
162		0.001	-0.071	0.072	0.04
164		0.069	-0.003	0.141	0.04
Sub-total					
I-V pooled ES		0.028	-0.013	0.069	0.11

1052					
166		-0.008	-0.066	0.051	0.05
167		0.001	-0.057	0.059	0.06
169		-0.017	-0.075	0.042	0.05
170		-0.010	-0.068	0.048	0.06
Sub-total					
I-V pooled ES		-0.008	-0.037	0.021	0.22

1054					
171		-0.004	-0.039	0.032	0.15
Sub-total					
I-V pooled ES		-0.004	-0.039	0.032	0.15

1059					
172		0.039	0.019	0.060	0.45
Sub-total					
I-V pooled ES		0.039	0.019	0.060	0.45

1060					
173		0.024	0.003	0.044	0.45
174		0.021	0.003	0.039	0.58
Sub-total					
I-V pooled ES		0.022	0.009	0.036	1.03

1061					
175		-0.035	-0.064	-0.005	0.21
176		0.011	-0.014	0.035	0.31
Sub-total					
I-V pooled ES		-0.008	-0.027	0.011	0.52

1063					
177		0.015	0.002	0.027	1.18
178		0.008	0.001	0.015	3.68
Sub-total					
I-V pooled ES		0.010	0.004	0.016	4.87

1064					
179		0.142	0.060	0.223	0.03
180		0.073	-0.009	0.155	0.03
181		0.095	0.013	0.176	0.03
182		0.109	0.028	0.191	0.03
Sub-total					
I-V pooled ES		0.105	0.064	0.145	0.11

Overall					
I-V pooled ES		0.017	0.016	0.018	100.00

Test(s) of heterogeneity:

	Heterogeneity statistic	degrees of freedom	P	I-squared**
34	3.95	2	0.139	49.3%
63	0.48	3	0.924	0.0%
64	25.49	2	0.000	92.2%
74	91.23	5	0.000	94.5%
81	0.00	3	1.000	0.0%
84	82.75	15	0.000	81.9%

131	12.82	5	0.025	61.0%
209	11.41	3	0.010	73.7%
237	66.75	5	0.000	92.5%
248	1.99	3	0.574	0.0%
251	1.12	2	0.572	0.0%
252	0.00	0	.	.%
355	0.03	1	0.855	0.0%
357	3.35	5	0.647	0.0%
360	0.06	1	0.809	0.0%
822	0.00	0	.	.%
824	0.00	0	.	.%
826	0.33	3	0.954	0.0%
836	6.91	1	0.009	85.5%
987	0.00	0	.	.%
1002	5.80	10	0.832	0.0%
1012	7.84	3	0.050	61.7%
1013	1.65	1	0.199	39.3%
1019	0.20	3	0.978	0.0%
1033	0.20	1	0.654	0.0%
1034	22.78	5	0.000	78.1%
1036	21.68	1	0.000	95.4%
1040	24.95	3	0.000	88.0%
1046	15.44	2	0.000	87.0%
1047	14.67	1	0.000	93.2%
1051	1.96	2	0.375	0.0%
1052	0.18	3	0.981	0.0%
1054	0.00	0	.	.%
1059	0.00	0	.	.%
1060	0.04	1	0.834	0.0%
1061	5.33	1	0.021	81.2%
1063	0.75	1	0.388	0.0%
1064	1.44	3	0.695	0.0%
Overall	1725.34	137	0.000	92.1%
Overall Test for heterogeneity between sub-groups:	1291.74	37	0.000	

** I-squared: the variation in ES attributable to heterogeneity)

Considerable heterogeneity observed (up to 95.4%) in one or more sub-groups,
Test for heterogeneity between sub-groups likely to be invalid

Significance test(s) of ES=0

34	z= 7.95	p = 0.000
63	z= 9.14	p = 0.000
64	z= 1.79	p = 0.074
74	z= 4.52	p = 0.000
81	z= 0.10	p = 0.920
84	z= 6.81	p = 0.000
131	z= 6.19	p = 0.000
209	z= 1.73	p = 0.084
237	z= 15.86	p = 0.000
248	z= 5.21	p = 0.000
251	z= 0.52	p = 0.606
252	z= 2.53	p = 0.011
355	z= 4.88	p = 0.000
357	z= 14.30	p = 0.000
360	z= 3.46	p = 0.001
822	z= 1.98	p = 0.048
824	z= 2.17	p = 0.030
826	z= 0.07	p = 0.942
836	z= 9.09	p = 0.000
987	z= 1.20	p = 0.230
1002	z= 28.53	p = 0.000
1012	z= 0.51	p = 0.608
1013	z= 0.91	p = 0.363
1019	z= 6.12	p = 0.000
1033	z= 2.31	p = 0.021
1034	z= 4.37	p = 0.000
1036	z= 7.76	p = 0.000
1040	z= 2.83	p = 0.005
1046	z= 2.67	p = 0.008
1047	z= 0.36	p = 0.718
1051	z= 1.33	p = 0.184
1052	z= 0.56	p = 0.578
1054	z= 0.21	p = 0.835
1059	z= 3.78	p = 0.000

1060	z= 3.23	p = 0.001
1061	z= 0.80	p = 0.422
1063	z= 3.12	p = 0.002
1064	z= 5.03	p = 0.000
Overall	z= 24.49	p = 0.000

Table A6: FE regression

Dependent: categorical	Specialization	Competition	Diversity
Characteristics of dependent variable			
Data measure patents or innovations	0.0347 (0.0454)	-0.0227 (0.0314)	0.0288*** (0.0105)
Data measure productivity	-0.0872** (0.0379)	-0.0501 (0.0535)	0.0205 (0.0123)
Data measure output	-0.0762* (0.0423)	0.0510*** (0.0152)	-0.000365 (0.00718)
Data include the service sector	0.00161 (0.00711)	0.0174 (0.0168)	-0.00325 (0.00262)
Specification of key variables			
Specialization included		-0.101** (0.0365)	-0.0164 (0.0137)
Specialization as a location quotient	0.0200 (0.0255)		
More specialization variables included	-0.0121 (0.0279)		
Competition included	-0.0603* (0.0343)		0.00300 (0.00739)
Competition is measured in est. per employee		-0.0484 (0.0395)	
Competition is measured in establishments		0.0415* (0.0207)	
More competition variables included		0.0182 (0.0464)	
Diversity included	0.0817** (0.0307)	-0.000809 (0.0506)	
Diversity estimated using largest five			0.0838*** (0.0171)
More diversity variables included			0.00171 (0.00762)
Other data characteristics			
Population density (log)	-0.0297*** (0.0106)	0.0436*** (0.0116)	-0.00221 (0.00544)
GDP per capita (log)	-0.0568 (0.0348)	-0.0492 (0.0328)	0.0180 (0.0162)

<i>Table A6 – continued</i>	Specialization	Competition	Diversity
Standardised mean year to which the data pertains	0.0270* (0.0136)	-0.143** (0.0587)	0.00979* (0.00556)
Length of period covered by the data (in years)	-0.00504 (0.0165)	-0.0153 (0.0190)	0.00322 (0.0101)
Data are from Asia	-0.104 (0.102)	-0.0570 (0.120)	0.0209 (0.0446)
Data are from the USA	0.0584 (0.0446)	-0.0456 (0.0900)	-0.0345 (0.0209)
Presence of additional control variables			
Urbanization included	0.00917 (0.0151)	0.117** (0.0472)	-0.0112 (0.00726)
Educational variables included	-0.0104 (0.0338)	0.0757*** (0.0253)	0.00245 (0.00848)
Wages or GDP also included	0.0196 (0.0222)	0.0810 (0.0572)	0.0183* (0.00952)
Geographical variables also included	0.0427 (0.0404)	0.0101 (0.0351)	0.000627 (0.0111)
Other study characteristics			
Estimated using panel data or similar	0.0474 (0.0289)	-0.0296 (0.0361)	-0.00287 (0.0112)
Static estimation	-0.0255 (0.0542)	-0.0156 (0.0451)	-0.00572 (0.0236)
Estimated using microdata	-0.0771** (0.0300)	0.0463 (0.0601)	-0.0348*** (0.0124)
Working paper	0.0532 (0.0341)	-0.0209 (0.0692)	0.00534 (0.0145)
Standardised year of publication	0.0254 (0.0199)	0.0636 (0.0489)	0.00558 (0.00734)
Number of observations	138	92	138
Adjusted R ²	0.394	0.535	0.554

Note: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A7: RE estimations

Specialization

Study	ES	[95% Conf. Interval]		% weight

34				
2	-0.030	-0.084	0.025	0.69
4	-0.025	-0.080	0.030	0.69
5	-0.136	-0.191	-0.081	0.69
Sub-total				
D+L pooled ES	-0.064	-0.135	0.008	2.07

63				
6	0.261	0.221	0.300	0.77
7	0.267	0.227	0.306	0.77
8	0.267	0.227	0.306	0.77
9	0.261	0.221	0.301	0.77
Sub-total				
D+L pooled ES	0.264	0.244	0.284	3.06

64				
10	0.022	-0.004	0.048	0.82
11	0.022	-0.004	0.048	0.82
12	0.022	-0.004	0.048	0.82
Sub-total				
D+L pooled ES	0.022	0.007	0.037	2.47

65				
13	-0.152	-0.251	-0.053	0.46
14	-0.309	-0.408	-0.210	0.46
15	-0.307	-0.406	-0.208	0.46
Sub-total				
D+L pooled ES	-0.256	-0.358	-0.154	1.39

74				
16	0.087	0.068	0.105	0.85
17	0.097	0.085	0.108	0.86
18	0.067	0.047	0.087	0.84
19	0.081	0.071	0.091	0.87
20	-0.007	-0.016	0.001	0.87
21	0.070	0.061	0.078	0.87
Sub-total				
D+L pooled ES	0.065	0.029	0.101	5.17

84				
26	-0.030	-0.067	0.006	0.78
27	-0.024	-0.060	0.013	0.78
28	-0.046	-0.101	0.009	0.69
29	-0.030	-0.067	0.006	0.78
30	-0.046	-0.101	0.009	0.69
31	-0.046	-0.101	0.009	0.69
32	-0.026	-0.058	0.005	0.80
33	-0.055	-0.120	0.010	0.63
34	-0.026	-0.058	0.005	0.80
35	-0.026	-0.058	0.005	0.80
36	-0.046	-0.101	0.009	0.69
37	-0.026	-0.058	0.005	0.80
38	-0.026	-0.058	0.005	0.80
39	-0.026	-0.058	0.005	0.80
40	-0.026	-0.058	0.005	0.80
41	-0.030	-0.067	0.006	0.78
Sub-total				
D+L pooled ES	-0.030	-0.039	-0.021	12.12

131				
42	-0.017	-0.094	0.059	0.57
44	-0.000	-0.081	0.080	0.55
45	-0.017	-0.093	0.060	0.57
49	0.008	-0.072	0.088	0.55
Sub-total				
D+L pooled ES	-0.007	-0.046	0.032	2.25

209				
52	-0.077	-0.093	-0.060	0.85
53	-0.030	-0.045	-0.015	0.86

54		-0.017	-0.024	-0.010	0.87
55		-0.009	-0.016	-0.003	0.87
	Sub-total				
	D+L pooled ES	-0.032	-0.053	-0.011	3.46

237					
56		-0.028	-0.064	0.009	0.78
57		-0.026	-0.063	0.010	0.78
58		-0.044	-0.080	-0.007	0.78
59		0.105	0.089	0.121	0.86
60		-0.047	-0.083	-0.010	0.78
61		0.135	0.122	0.148	0.86
	Sub-total				
	D+L pooled ES	0.017	-0.050	0.085	4.84

248					
62		-0.108	-0.134	-0.083	0.83
63		-0.074	-0.099	-0.048	0.83
64		-0.228	-0.253	-0.202	0.83
65		-0.187	-0.212	-0.162	0.83
	Sub-total				
	D+L pooled ES	-0.149	-0.218	-0.080	3.31

251					
66		-0.022	-0.066	0.022	0.74
67		-0.026	-0.070	0.018	0.74
68		-0.018	-0.062	0.026	0.74
69		-0.010	-0.054	0.034	0.74
70		-0.043	-0.087	0.001	0.74
71		-0.041	-0.085	0.003	0.74
72		-0.027	-0.071	0.017	0.74
73		-0.042	-0.086	0.002	0.74
74		-0.011	-0.055	0.033	0.74
	Sub-total				
	D+L pooled ES	-0.026	-0.041	-0.012	6.70

252					
75		0.001	-0.039	0.041	0.76
	Sub-total				
	D+L pooled ES	0.001	-0.039	0.041	0.76

355					
78		-0.019	-0.081	0.042	0.65
79		-0.031	-0.093	0.031	0.65
	Sub-total				
	D+L pooled ES	-0.025	-0.069	0.018	1.30

357					
80		0.011	-0.001	0.024	0.86
81		0.012	-0.001	0.024	0.86
82		0.014	0.002	0.027	0.86
83		0.011	-0.001	0.024	0.86
84		0.012	-0.001	0.024	0.86
85		0.011	-0.001	0.024	0.86
	Sub-total				
	D+L pooled ES	0.012	0.007	0.017	5.18

360					
86		0.088	0.035	0.141	0.70
88		0.088	0.035	0.141	0.70
	Sub-total				
	D+L pooled ES	0.088	0.050	0.125	1.39

698					
90		-0.096	-0.192	-0.000	0.48
92		-0.096	-0.192	-0.000	0.48
	Sub-total				
	D+L pooled ES	-0.096	-0.164	-0.028	0.96

826					
96		0.009	-0.143	0.162	0.28
99		0.088	-0.065	0.240	0.28
100		0.065	-0.100	0.231	0.25
102		0.116	-0.050	0.281	0.25
	Sub-total				
	D+L pooled ES	0.068	-0.011	0.147	1.07

836					
104		-0.017	-0.027	-0.007	0.87
105		0.005	0.003	0.008	0.87
Sub-total					
D+L pooled ES					1.74

850					
106		0.171	0.034	0.307	0.33
107		0.103	-0.037	0.244	0.31
108		0.128	-0.012	0.268	0.32
109		0.151	0.015	0.287	0.33
Sub-total					
D+L pooled ES					1.28

987					
110		0.001	-0.005	0.008	0.87
111		0.001	-0.005	0.008	0.87
Sub-total					
D+L pooled ES					1.74

1012					
123		0.040	0.000	0.081	0.76
126		-0.191	-0.231	-0.152	0.77
127		-0.186	-0.226	-0.147	0.77
129		0.047	0.007	0.087	0.76
Sub-total					
D+L pooled ES					3.06

1013					
131		-0.011	-0.023	0.001	0.86
132		-0.014	-0.024	-0.004	0.87
Sub-total					
D+L pooled ES					1.73

1019					
133		-0.027	-0.074	0.019	0.73
134		-0.028	-0.074	0.019	0.73
135		-0.084	-0.190	0.023	0.43
136		-0.126	-0.233	-0.020	0.43
Sub-total					
D+L pooled ES					2.33

1030					
137		0.056	0.021	0.092	0.78
138		0.116	-0.170	0.402	0.10
139		0.056	0.020	0.091	0.79
Sub-total					
D+L pooled ES					1.68

1033					
140		0.114	0.104	0.125	0.87
141		0.123	0.112	0.134	0.87
Sub-total					
D+L pooled ES					1.73

1034					
142		-0.044	-0.070	-0.017	0.82
144		0.065	0.038	0.091	0.82
145		-0.009	-0.019	0.002	0.87
146		0.081	0.054	0.108	0.82
147		-0.046	-0.072	-0.019	0.82
148		0.069	0.043	0.096	0.82
Sub-total					
D+L pooled ES					4.98

1036					
149		0.112	0.103	0.122	0.87
150		0.465	0.422	0.507	0.75
Sub-total					
D+L pooled ES					1.62

1040					
151		-0.002	-0.020	0.016	0.85
152		0.010	-0.005	0.025	0.86
153		0.010	-0.005	0.025	0.86
154		-0.004	-0.022	0.014	0.85
Sub-total					

D+L pooled ES	0.005	-0.003	0.013	3.41

1046				
155	0.049	-0.000	0.098	0.72
156	-0.085	-0.134	-0.036	0.72
157	0.048	-0.001	0.097	0.72
Sub-total				
D+L pooled ES	0.004	-0.083	0.091	2.16

1047				
158	-0.021	-0.040	-0.003	0.85
159	-0.024	-0.044	-0.003	0.84
Sub-total				
D+L pooled ES	-0.022	-0.036	-0.009	1.69

1051				
161	-0.059	-0.131	0.013	0.60
163	-0.104	-0.176	-0.032	0.60
164	0.180	0.109	0.252	0.60
Sub-total				
D+L pooled ES	0.006	-0.167	0.179	1.79

1052				
165	-0.035	-0.094	0.024	0.67
168	-0.075	-0.133	-0.018	0.67
169	0.021	-0.037	0.080	0.67
170	-0.025	-0.083	0.033	0.67
Sub-total				
D+L pooled ES	-0.029	-0.068	0.010	2.68

1054				
171	0.066	0.031	0.101	0.79
Sub-total				
D+L pooled ES	0.066	0.031	0.101	0.79

1059				
172	0.052	0.032	0.072	0.84
Sub-total				
D+L pooled ES	0.052	0.032	0.072	0.84

1060				
173	-0.024	-0.044	-0.003	0.84
174	-0.021	-0.039	-0.003	0.85
Sub-total				
D+L pooled ES	-0.022	-0.036	-0.009	1.69

1061				
175	-0.047	-0.076	-0.017	0.81
176	-0.031	-0.056	-0.007	0.83
Sub-total				
D+L pooled ES	-0.038	-0.057	-0.019	1.64

1063				
177	-0.015	-0.027	-0.002	0.86
178	-0.008	-0.015	-0.001	0.87
Sub-total				
D+L pooled ES	-0.010	-0.016	-0.004	1.73

1064				
179	-0.067	-0.148	0.015	0.55
180	0.103	0.021	0.185	0.55
181	0.050	-0.031	0.132	0.55
182	-0.112	-0.194	-0.031	0.55
Sub-total				
D+L pooled ES	-0.006	-0.104	0.092	2.18

Overall				
D+L pooled ES	0.003	-0.007	0.012	100.00

Test(s) of heterogeneity:

	Heterogeneity statistic	degrees of freedom	P	I-squared**	Tau-squared
34	10.15	2	0.006	80.3%	0.0032
63	0.08	3	0.994	0.0%	0.0000
64	0.00	2	1.000	0.0%	0.0000

65	6.35	2	0.042	68.5%	0.0056
74	311.52	5	0.000	98.4%	0.0020
84	2.32	15	1.000	0.0%	0.0000
131	0.29	3	0.961	0.0%	0.0000
209	59.22	3	0.000	94.9%	0.0004
237	235.10	5	0.000	97.9%	0.0068
248	89.02	3	0.000	96.6%	0.0048
251	2.66	8	0.954	0.0%	0.0000
252	0.00	0	.	0.0%	0.0000
355	0.07	1	0.794	0.0%	0.0000
357	0.16	5	0.999	0.0%	0.0000
360	0.00	1	0.991	0.0%	0.0000
698	0.00	1	0.997	0.0%	0.0000
826	0.95	3	0.813	0.0%	0.0000
836	16.92	1	0.000	94.1%	0.0002
850	0.51	3	0.918	0.0%	0.0000
987	0.00	1	0.979	0.0%	0.0000
1012	131.24	3	0.000	97.7%	0.0176
1013	0.12	1	0.729	0.0%	0.0000
1019	3.73	3	0.292	19.7%	0.0003
1030	0.17	2	0.919	0.0%	0.0000
1033	1.31	1	0.253	23.5%	0.0000
1034	105.73	5	0.000	95.3%	0.0025
1036	249.62	1	0.000	99.6%	0.0619
1040	2.47	3	0.481	0.0%	0.0000
1046	18.99	2	0.000	89.5%	0.0053
1047	0.03	1	0.862	0.0%	0.0000
1051	34.97	2	0.000	94.3%	0.0220
1052	5.35	3	0.148	43.9%	0.0007
1054	0.00	0	.	0.0%	0.0000
1059	0.00	0	.	0.0%	0.0000
1060	0.04	1	0.834	0.0%	0.0000
1061	0.61	1	0.435	0.0%	0.0000
1063	0.75	1	0.388	0.0%	0.0000
1064	17.31	3	0.001	82.7%	0.0083
Overall	5352.16	137	0.000	97.4%	0.0029

** I-squared: the variation in ES attributable to heterogeneity)

Note: between group heterogeneity not calculated;
only valid with inverse variance method

Significance test(s) of ES=0

34	z= 1.75	p = 0.080
63	z= 26.08	p = 0.000
64	z= 2.83	p = 0.005
65	z= 4.92	p = 0.000
74	z= 3.56	p = 0.000
84	z= 6.30	p = 0.000
131	z= 0.35	p = 0.724
209	z= 2.94	p = 0.003
237	z= 0.51	p = 0.610
248	z= 4.22	p = 0.000
251	z= 3.53	p = 0.000
252	z= 0.06	p = 0.956
355	z= 1.13	p = 0.258
357	z= 4.59	p = 0.000
360	z= 4.59	p = 0.000
698	z= 2.78	p = 0.005
826	z= 1.68	p = 0.093
836	z= 0.47	p = 0.635
850	z= 3.94	p = 0.000
987	z= 0.62	p = 0.538
1012	z= 1.08	p = 0.280
1013	z= 3.16	p = 0.002
1019	z= 2.39	p = 0.017
1030	z= 4.42	p = 0.000
1033	z= 26.87	p = 0.000
1034	z= 0.91	p = 0.365
1036	z= 1.63	p = 0.102
1040	z= 1.20	p = 0.229
1046	z= 0.08	p = 0.933
1047	z= 3.24	p = 0.001
1051	z= 0.07	p = 0.948
1052	z= 1.45	p = 0.147
1054	z= 3.64	p = 0.000
1059	z= 5.00	p = 0.000

1060	z= 3.23	p = 0.001
1061	z= 3.91	p = 0.000
1063	z= 3.12	p = 0.002
1064	z= 0.13	p = 0.899
Overall	z= 0.52	p = 0.602

Competition

Study	ES	[95% Conf. Interval]		% Weight

34				
2	0.098	0.044	0.153	1.10
3	0.257	0.203	0.312	1.10
4	0.248	0.193	0.303	1.10
Sub-total				
D+L pooled ES	0.201	0.100	0.302	3.30

64				
10	-0.022	-0.048	0.004	1.19
11	-0.022	-0.048	0.004	1.19
12	-0.022	-0.048	0.004	1.19
Sub-total				
D+L pooled ES	-0.022	-0.037	-0.007	3.56

65				
13	-0.191	-0.291	-0.092	0.91
14	-0.337	-0.436	-0.238	0.91
15	0.076	-0.023	0.175	0.91
Sub-total				
D+L pooled ES	-0.151	-0.388	0.086	2.72

74				
16	-0.121	-0.139	-0.103	1.20
17	0.035	0.023	0.047	1.21
18	0.019	-0.001	0.039	1.20
19	-0.105	-0.115	-0.096	1.21
20	0.137	0.128	0.145	1.21
21	0.070	0.061	0.078	1.21
Sub-total				
D+L pooled ES	0.006	-0.078	0.090	7.25

131				
43	0.068	-0.008	0.144	1.01
45	0.101	0.024	0.177	1.01
47	0.052	-0.029	0.132	0.99
49	0.041	-0.039	0.121	0.99
Sub-total				
D+L pooled ES	0.066	0.027	0.105	4.01

209				
52	-0.005	-0.021	0.012	1.20
53	-0.011	-0.025	0.004	1.21
54	0.005	-0.002	0.012	1.21
55	-0.009	-0.015	-0.002	1.21
Sub-total				
D+L pooled ES	-0.004	-0.013	0.005	4.84

237				
56	-0.010	-0.046	0.027	1.16
57	-0.009	-0.045	0.028	1.16
58	0.023	-0.014	0.059	1.16
59	-0.062	-0.078	-0.046	1.20
60	0.023	-0.014	0.059	1.16
61	-0.055	-0.068	-0.042	1.21
Sub-total				
D+L pooled ES	-0.019	-0.047	0.010	7.06

248				
62	-0.044	-0.069	-0.018	1.19
63	0.026	0.000	0.051	1.19
64	0.003	-0.022	0.029	1.19
65	0.097	0.071	0.122	1.19
Sub-total				
D+L pooled ES	0.021	-0.037	0.078	4.76

355				
76	0.272	0.211	0.334	1.07
78	0.261	0.199	0.322	1.07
Sub-total				
D+L pooled ES	0.266	0.223	0.310	2.15

360				

87		-0.083	-0.136	-0.030	1.11
88		-0.084	-0.137	-0.030	1.11
	Sub-total				
	D+L pooled ES	-0.083	-0.121	-0.046	2.22

	698				
90		0.045	-0.051	0.140	0.92
91		0.051	-0.045	0.147	0.92
	Sub-total				
	D+L pooled ES	0.048	-0.020	0.115	1.85

	822				
93		0.403	0.285	0.521	0.82
	Sub-total				
	D+L pooled ES	0.403	0.285	0.521	0.82

	824				
94		-0.296	-0.503	-0.089	0.49
95		-0.313	-0.519	-0.106	0.49
	Sub-total				
	D+L pooled ES	-0.304	-0.450	-0.158	0.98

	826				
97		-0.099	-0.264	0.066	0.63
99		0.134	-0.019	0.287	0.67
100		-0.091	-0.256	0.074	0.63
101		0.125	-0.028	0.277	0.67
	Sub-total				
	D+L pooled ES	0.021	-0.106	0.147	2.60

	987				
110		-0.000	-0.007	0.006	1.21
	Sub-total				
	D+L pooled ES	-0.000	-0.007	0.006	1.21

	1002				
116		0.031	0.016	0.047	1.21
119		0.015	0.000	0.031	1.21
120		0.020	0.005	0.035	1.21
122		0.054	0.038	0.069	1.21
	Sub-total				
	D+L pooled ES	0.030	0.013	0.047	4.82

	1012				
123		0.016	-0.024	0.056	1.15
124		0.029	-0.011	0.069	1.15
125		0.008	-0.031	0.048	1.15
126		0.061	0.022	0.101	1.15
	Sub-total				
	D+L pooled ES	0.029	0.005	0.052	4.61

	1019				
133		0.116	0.070	0.163	1.13
134		0.111	0.065	0.157	1.13
135		0.135	0.029	0.242	0.87
136		0.098	-0.009	0.204	0.87
	Sub-total				
	D+L pooled ES	0.114	0.084	0.144	4.01

	1034				
142		0.100	0.073	0.127	1.19
143		0.098	0.072	0.125	1.19
144		0.047	0.020	0.073	1.19
145		0.004	-0.006	0.015	1.21
146		0.073	0.046	0.100	1.19
147		0.099	0.072	0.126	1.19
148		0.082	0.055	0.109	1.19
	Sub-total				
	D+L pooled ES	0.071	0.034	0.109	8.33

	1036				
149		-0.283	-0.292	-0.273	1.21
150		-0.455	-0.498	-0.413	1.14
	Sub-total				
	D+L pooled ES	-0.368	-0.537	-0.198	2.36

	1046				

155		-0.017	-0.066	0.032	1.12
156		0.127	0.078	0.176	1.12
157		-0.019	-0.068	0.030	1.12
Sub-total					
D+L pooled ES		0.030	-0.065	0.125	3.37

1047					
158		0.021	0.003	0.040	1.20
159		0.024	0.003	0.044	1.20
Sub-total					
D+L pooled ES		0.022	0.009	0.036	2.40

1051					
160		0.245	0.174	0.317	1.03
161		0.229	0.158	0.301	1.03
164		0.109	0.037	0.181	1.03
Sub-total					
D+L pooled ES		0.195	0.110	0.279	3.10

1052					
165		0.074	0.016	0.133	1.09
166		0.102	0.043	0.161	1.09
167		0.082	0.024	0.140	1.09
168		0.022	-0.036	0.080	1.09
169		0.084	0.025	0.143	1.09
170		0.015	-0.042	0.073	1.09
Sub-total					
D+L pooled ES		0.063	0.034	0.092	6.53

1060					
173		-0.017	-0.037	0.003	1.20
174		-0.021	-0.039	-0.003	1.20
Sub-total					
D+L pooled ES		-0.019	-0.033	-0.006	2.40

1061					
175		-0.042	-0.071	-0.012	1.18
176		-0.039	-0.063	-0.014	1.19
Sub-total					
D+L pooled ES		-0.040	-0.059	-0.021	2.37

1063					
177		0.010	-0.002	0.023	1.21
178		0.000	-0.007	0.007	1.21
Sub-total					
D+L pooled ES		0.004	-0.006	0.014	2.42

1064					
179		-0.263	-0.344	-0.181	0.99
180		-0.182	-0.264	-0.101	0.99
181		-0.215	-0.297	-0.134	0.99
182		-0.231	-0.313	-0.150	0.99
Sub-total					
D+L pooled ES		-0.223	-0.264	-0.182	3.95

Overall					
D+L pooled ES		0.016	-0.002	0.035	100.00

Test(s) of heterogeneity:

	Heterogeneity statistic	degrees of freedom	P	I-squared**	Tau-squared
34	20.39	2	0.000	90.2%	0.0072
64	0.00	2	1.000	0.0%	0.0000
65	34.38	2	0.000	94.2%	0.0414
74	1702.11	5	0.000	99.7%	0.0110
131	1.29	3	0.732	0.0%	0.0000
209	9.47	3	0.024	68.3%	0.0000
237	40.65	5	0.000	87.7%	0.0011
248	61.07	3	0.000	95.1%	0.0033
355	0.07	1	0.795	0.0%	0.0000
360	0.00	1	0.982	0.0%	0.0000
698	0.01	1	0.928	0.0%	0.0000
822	0.00	0	.	.%	0.0000
824	0.01	1	0.912	0.0%	0.0000
826	7.65	3	0.054	60.8%	0.0102

987	0.00	0	.	0.000	0.000
1002	14.40	3	0.002	79.2%	0.0002
1012	4.08	3	0.253	26.5%	0.0001
1019	0.27	3	0.966	0.0%	0.0000
1034	116.26	6	0.000	94.8%	0.0024
1036	60.04	1	0.000	98.3%	0.0147
1046	22.44	2	0.000	91.1%	0.0064
1047	0.03	1	0.862	0.0%	0.0000
1051	8.33	2	0.016	76.0%	0.0042
1052	7.22	5	0.205	30.7%	0.0004
1060	0.08	1	0.778	0.0%	0.0000
1061	0.02	1	0.883	0.0%	0.0000
1063	2.02	1	0.155	50.6%	0.0000
1064	1.93	3	0.586	0.0%	0.0000
Overall	6999.07	91	0.000	98.7%	0.0075

** I-squared: the variation in ES attributable to heterogeneity)

Note: between group heterogeneity not calculated;
only valid with inverse variance method

Significance test(s) of ES=0

34	z= 3.91	p = 0.000
64	z= 2.83	p = 0.005
65	z= 1.25	p = 0.213
74	z= 0.14	p = 0.892
131	z= 3.32	p = 0.001
209	z= 0.88	p = 0.380
237	z= 1.27	p = 0.205
248	z= 0.70	p = 0.482
355	z= 11.99	p = 0.000
360	z= 4.34	p = 0.000
698	z= 1.38	p = 0.168
822	z= 6.71	p = 0.000
824	z= 4.08	p = 0.000
826	z= 0.32	p = 0.749
987	z= 0.07	p = 0.943
1002	z= 3.53	p = 0.000
1012	z= 2.42	p = 0.016
1019	z= 7.45	p = 0.000
1034	z= 3.75	p = 0.000
1036	z= 4.25	p = 0.000
1046	z= 0.62	p = 0.533
1047	z= 3.24	p = 0.001
1051	z= 4.52	p = 0.000
1052	z= 4.32	p = 0.000
1060	z= 2.80	p = 0.005
1061	z= 4.13	p = 0.000
1063	z= 0.77	p = 0.440
1064	z= 10.71	p = 0.000
Overall	z= 1.72	p = 0.086

Diversity

Study	ES	[95% Conf. Interval]		% weight

34				
1	0.173	0.118	0.228	0.55
2	0.111	0.057	0.166	0.55
4	0.100	0.045	0.155	0.55
Sub-total				
D+L pooled ES	0.128	0.084	0.172	1.64

63				
6	0.098	0.058	0.138	0.71
7	0.087	0.047	0.127	0.71
8	0.101	0.061	0.140	0.71
9	0.084	0.044	0.124	0.71
Sub-total				
D+L pooled ES	0.092	0.073	0.112	2.84

64				
10	0.041	0.015	0.067	0.87
11	-0.041	-0.067	-0.015	0.87
12	0.041	0.015	0.067	0.87
Sub-total				
D+L pooled ES	0.014	-0.040	0.067	2.62

74				
16	0.030	0.012	0.048	0.96
17	0.017	0.005	0.029	1.01
18	0.032	0.012	0.052	0.94
19	0.040	0.030	0.049	1.02
20	0.006	-0.002	0.015	1.03
21	-0.019	-0.027	-0.010	1.03
Sub-total				
D+L pooled ES	0.017	-0.003	0.037	6.00

81				
22	-0.003	-0.120	0.114	0.20
23	-0.003	-0.120	0.115	0.20
24	-0.005	-0.122	0.113	0.20
25	-0.002	-0.119	0.115	0.20
Sub-total				
D+L pooled ES	-0.003	-0.062	0.056	0.80

84				
26	0.057	0.021	0.094	0.75
27	-0.024	-0.060	0.013	0.75
28	0.087	0.032	0.142	0.55
29	0.057	0.021	0.094	0.75
30	-0.029	-0.084	0.026	0.55
31	0.087	0.032	0.142	0.55
32	0.050	0.018	0.082	0.80
33	-0.104	-0.169	-0.038	0.45
34	0.050	0.018	0.082	0.80
35	0.050	0.018	0.082	0.80
36	-0.036	-0.091	0.019	0.55
37	-0.050	-0.082	-0.018	0.80
38	0.050	0.018	0.082	0.80
39	0.050	0.018	0.082	0.80
40	0.050	0.018	0.082	0.80
41	0.057	0.021	0.094	0.75
Sub-total				
D+L pooled ES	0.028	0.005	0.050	11.27

131				
45	0.070	-0.006	0.146	0.38
46	0.192	0.112	0.273	0.35
48	0.079	-0.383	0.541	0.02
49	0.179	0.099	0.259	0.35
50	0.077	0.000	0.153	0.38
51	-0.394	-0.856	0.068	0.02
Sub-total				
D+L pooled ES	0.116	0.044	0.188	1.49

209				
52	0.018	0.002	0.034	0.97

53		-0.015	-0.030	-0.001	0.99
54		-0.001	-0.007	0.006	1.04
55		-0.008	-0.014	-0.001	1.04
Sub-total					
D+L pooled ES		-0.002	-0.012	0.007	4.05

237					
56		0.017	-0.020	0.053	0.75
57		-0.016	-0.053	0.020	0.75
58		0.099	0.062	0.135	0.75
59		0.043	0.027	0.059	0.98
60		0.098	0.061	0.134	0.75
61		0.100	0.087	0.113	1.00
Sub-total					
D+L pooled ES		0.057	0.021	0.094	4.97

248					
62		-0.049	-0.075	-0.024	0.88
63		-0.027	-0.053	-0.002	0.88
64		-0.031	-0.057	-0.006	0.88
65		-0.028	-0.053	-0.002	0.88
Sub-total					
D+L pooled ES		-0.034	-0.047	-0.021	3.52

251					
67		0.024	-0.020	0.068	0.66
71		-0.010	-0.054	0.035	0.66
74		0.006	-0.038	0.050	0.66
Sub-total					
D+L pooled ES		0.007	-0.019	0.032	1.98

252					
75		-0.052	-0.092	-0.012	0.71
Sub-total					
D+L pooled ES		-0.052	-0.092	-0.012	0.71

355					
77		0.104	0.043	0.166	0.49
78		0.112	0.051	0.174	0.49
Sub-total					
D+L pooled ES		0.108	0.065	0.152	0.97

357					
80		0.035	0.023	0.047	1.01
81		0.033	0.021	0.046	1.01
82		0.047	0.035	0.060	1.01
83		0.035	0.023	0.047	1.01
84		0.036	0.023	0.048	1.01
85		0.036	0.024	0.048	1.01
Sub-total					
D+L pooled ES		0.037	0.032	0.042	6.04

360					
88		-0.071	-0.124	-0.018	0.56
89		-0.062	-0.115	-0.008	0.56
Sub-total					
D+L pooled ES		-0.066	-0.104	-0.029	1.13

822					
93		-0.119	-0.237	-0.001	0.20
Sub-total					
D+L pooled ES		-0.119	-0.237	-0.001	0.20

824					
94		0.229	0.022	0.435	0.07
Sub-total					
D+L pooled ES		0.229	0.022	0.435	0.07

826					
98		0.008	-0.157	0.173	0.11
99		-0.026	-0.179	0.127	0.13
100		0.039	-0.126	0.204	0.11
103		-0.003	-0.156	0.149	0.13
Sub-total					
D+L pooled ES		0.003	-0.076	0.082	0.48

836					

104	-0.002	-0.012	0.009	1.02
105	0.013	0.010	0.015	1.05
Sub-total D+L pooled ES	0.007	-0.007	0.020	2.07

987				
110	-0.004	-0.010	0.002	1.04
Sub-total D+L pooled ES	-0.004	-0.010	0.002	1.04

1002				
112	0.070	0.054	0.085	0.98
113	0.072	0.057	0.087	0.98
114	0.066	0.050	0.081	0.98
115	0.073	0.058	0.088	0.98
116	0.072	0.057	0.087	0.98
117	0.059	0.044	0.074	0.98
118	0.076	0.061	0.091	0.98
119	0.063	0.048	0.079	0.98
120	0.058	0.043	0.073	0.98
121	0.064	0.048	0.079	0.98
122	0.065	0.050	0.080	0.98
Sub-total D+L pooled ES	0.067	0.062	0.072	10.83

1012				
123	0.003	-0.037	0.043	0.70
126	-0.007	-0.046	0.033	0.71
128	0.032	-0.008	0.072	0.70
130	-0.047	-0.087	-0.008	0.71
Sub-total D+L pooled ES	-0.005	-0.037	0.027	2.83

1013				
131	0.003	-0.010	0.015	1.01
132	-0.008	-0.018	0.002	1.02
Sub-total D+L pooled ES	-0.003	-0.013	0.007	2.03

1019				
133	0.090	0.043	0.136	0.63
134	0.092	0.046	0.138	0.63
135	0.109	0.003	0.216	0.23
136	0.109	0.003	0.216	0.23
Sub-total D+L pooled ES	0.094	0.064	0.124	1.74

1033				
140	-0.011	-0.021	0.000	1.02
141	-0.007	-0.018	0.004	1.02
Sub-total D+L pooled ES	-0.009	-0.016	-0.001	2.04

1034				
143	0.056	0.029	0.082	0.86
144	-0.010	-0.036	0.017	0.86
145	0.009	-0.001	0.020	1.02
146	0.021	-0.005	0.048	0.86
147	0.057	0.030	0.084	0.86
148	0.017	-0.010	0.044	0.86
Sub-total D+L pooled ES	0.024	0.005	0.044	5.34

1036				
149	0.043	0.033	0.053	1.03
150	-0.061	-0.104	-0.018	0.68
Sub-total D+L pooled ES	-0.007	-0.109	0.095	1.70

1040				
151	-0.034	-0.052	-0.016	0.96
152	0.005	-0.010	0.020	0.99
153	0.005	-0.010	0.020	0.99
154	-0.040	-0.059	-0.022	0.96
Sub-total D+L pooled ES	-0.016	-0.039	0.008	3.89

1046					
155		-0.001	-0.050	0.048	0.60
156		0.119	0.070	0.168	0.60
157		-0.002	-0.051	0.047	0.60
Sub-total					
D+L pooled ES		0.039	-0.040	0.117	1.81

1047					
158		0.021	0.003	0.040	0.96
159		-0.032	-0.052	-0.012	0.94
Sub-total					
D+L pooled ES		-0.005	-0.057	0.047	1.89

1051					
161		0.014	-0.057	0.086	0.41
162		0.001	-0.071	0.072	0.41
164		0.069	-0.003	0.141	0.41
Sub-total					
D+L pooled ES		0.028	-0.013	0.069	1.22

1052					
166		-0.008	-0.066	0.051	0.51
167		0.001	-0.057	0.059	0.52
169		-0.017	-0.075	0.042	0.51
170		-0.010	-0.068	0.048	0.52
Sub-total					
D+L pooled ES		-0.008	-0.037	0.021	2.06

1054					
171		-0.004	-0.039	0.032	0.76
Sub-total					
D+L pooled ES		-0.004	-0.039	0.032	0.76

1059					
172		0.039	0.019	0.060	0.94
Sub-total					
D+L pooled ES		0.039	0.019	0.060	0.94

1060					
173		0.024	0.003	0.044	0.94
174		0.021	0.003	0.039	0.96
Sub-total					
D+L pooled ES		0.022	0.009	0.036	1.90

1061					
175		-0.035	-0.064	-0.005	0.83
176		0.011	-0.014	0.035	0.89
Sub-total					
D+L pooled ES		-0.011	-0.056	0.033	1.72

1063					
177		0.015	0.002	0.027	1.01
178		0.008	0.001	0.015	1.04
Sub-total					
D+L pooled ES		0.010	0.004	0.016	2.05

1064					
179		0.142	0.060	0.223	0.34
180		0.073	-0.009	0.155	0.34
181		0.095	0.013	0.176	0.34
182		0.109	0.028	0.191	0.34
Sub-total					
D+L pooled ES		0.105	0.064	0.145	1.38

Overall					
D+L pooled ES		0.027	0.022	0.033	100.00

Test(s) of heterogeneity:

	Heterogeneity statistic	degrees of freedom	P	I-squared**	Tau-squared
34	3.95	2	0.139	49.3%	0.0008
63	0.48	3	0.924	0.0%	0.0000
64	25.49	2	0.000	92.2%	0.0021
74	91.23	5	0.000	94.5%	0.0006
81	0.00	3	1.000	0.0%	0.0000

84	82.75	15	0.000	81.9%	0.0016
131	12.82	5	0.025	61.0%	0.0041
209	11.41	3	0.010	73.7%	0.0001
237	66.75	5	0.000	92.5%	0.0018
248	1.99	3	0.574	0.0%	0.0000
251	1.12	2	0.572	0.0%	0.0000
252	0.00	0	.	.%	0.0000
355	0.03	1	0.855	0.0%	0.0000
357	3.35	5	0.647	0.0%	0.0000
360	0.06	1	0.809	0.0%	0.0000
822	0.00	0	.	.%	0.0000
824	0.00	0	.	.%	0.0000
826	0.33	3	0.954	0.0%	0.0000
836	6.91	1	0.009	85.5%	0.0001
987	0.00	0	.	.%	0.0000
1002	5.80	10	0.832	0.0%	0.0000
1012	7.84	3	0.050	61.7%	0.0007
1013	1.65	1	0.199	39.3%	0.0000
1019	0.20	3	0.978	0.0%	0.0000
1033	0.20	1	0.654	0.0%	0.0000
1034	22.78	5	0.000	78.1%	0.0004
1036	21.68	1	0.000	95.4%	0.0051
1040	24.95	3	0.000	88.0%	0.0005
1046	15.44	2	0.000	87.0%	0.0042
1047	14.67	1	0.000	93.2%	0.0013
1051	1.96	2	0.375	0.0%	0.0000
1052	0.18	3	0.981	0.0%	0.0000
1054	0.00	0	.	.%	0.0000
1059	0.00	0	.	.%	0.0000
1060	0.04	1	0.834	0.0%	0.0000
1061	5.33	1	0.021	81.2%	0.0008
1063	0.75	1	0.388	0.0%	0.0000
1064	1.44	3	0.695	0.0%	0.0000
Overall	1725.34	137	0.000	92.1%	0.0008

** I-squared: the variation in ES attributable to heterogeneity)

Note: between group heterogeneity not calculated;
only valid with inverse variance method

Significance test(s) of ES=0

34	z= 5.66	p = 0.000
63	z= 9.14	p = 0.000
64	z= 0.50	p = 0.617
74	z= 1.69	p = 0.090
81	z= 0.10	p = 0.920
84	z= 2.43	p = 0.015
131	z= 3.15	p = 0.002
209	z= 0.51	p = 0.611
237	z= 3.10	p = 0.002
248	z= 5.21	p = 0.000
251	z= 0.52	p = 0.606
252	z= 2.53	p = 0.011
355	z= 4.88	p = 0.000
357	z= 14.30	p = 0.000
360	z= 3.46	p = 0.001
822	z= 1.98	p = 0.048
824	z= 2.17	p = 0.030
826	z= 0.07	p = 0.942
836	z= 0.92	p = 0.357
987	z= 1.20	p = 0.230
1002	z= 28.53	p = 0.000
1012	z= 0.30	p = 0.762
1013	z= 0.63	p = 0.529
1019	z= 6.12	p = 0.000
1033	z= 2.31	p = 0.021
1034	z= 2.43	p = 0.015
1036	z= 0.13	p = 0.893
1040	z= 1.29	p = 0.199
1046	z= 0.96	p = 0.336
1047	z= 0.19	p = 0.847
1051	z= 1.33	p = 0.184
1052	z= 0.56	p = 0.578
1054	z= 0.21	p = 0.835
1059	z= 3.78	p = 0.000
1060	z= 3.23	p = 0.001
1061	z= 0.49	p = 0.621

1063	z= 3.12	p = 0.002
1064	z= 5.03	p = 0.000
Overall	z= 9.21	p = 0.000

Table A8: RE regression

Dependent: categorical	Specialization	Competition	Diversity
Characteristics of dependent variable			
Data measure patents or innovations	0.0790** (0.0318)	-0.0674 (0.0534)	0.0251* (0.0141)
Data measure productivity	0.00902 (0.0294)	-0.0262 (0.0566)	0.00953 (0.0161)
Data measure output	-0.0309 (0.0335)	-0.0420 (0.0555)	-0.0102 (0.0155)
Data include the service sector	-0.00702 (0.00670)	-0.00254 (0.0102)	-0.00297 (0.00340)
Specification of key variables			
Specialization included		-0.0535 (0.0403)	-0.0114 (0.0129)
Specialization as a location quotient	0.00897 (0.0234)		
More specialization variables included	-0.0620** (0.0252)		
Competition included	-0.0485** (0.0235)		-0.00334 (0.0106)
Competition is measured in est. per employee		0.0238 (0.0397)	
Competition is measured in establishments		0.0104 (0.0648)	
More competition variables included		0.0116 (0.0476)	
Diversity included	0.103*** (0.0249)	0.0196 (0.0416)	
Diversity estimated using largest five			0.0818*** (0.0197)
More diversity variables included			0.0144 (0.0120)
Other data characteristics			
Population density (log)	-0.0273*** (0.00894)	0.0513*** (0.0136)	0.00418 (0.00628)
GDP per capita (log)	-0.0151 (0.0185)	-0.0659** (0.0298)	0.0143 (0.0106)

<i>Table A8 – continued</i>	Specialization	Competition	Diversity
Standardised mean year to which the data pertains	0.0118 (0.00992)	-0.0197 (0.0433)	0.0108** (0.00511)
Length of period covered by the data (in years)	0.00171 (0.0162)	0.0632** (0.0268)	-0.000880 (0.00797)
Data are from Asia	-0.0363 (0.0499)	-0.0527 (0.0845)	0.0387 (0.0290)
Data are from the USA	-0.00708 (0.0331)	0.00442 (0.0593)	-0.0451* (0.0250)
Presence of additional control variables			
Urbanization included	0.0100 (0.0239)	0.0301 (0.0485)	-0.00462 (0.0124)
Educational variables included	-0.109*** (0.0253)	0.0996** (0.0389)	0.0210* (0.0120)
Wages or GDP also included	0.0394 (0.0298)	-0.0197 (0.0469)	0.0278** (0.0132)
Geographical variables also included	0.0478* (0.0253)	0.0170 (0.0353)	-0.00198 (0.0128)
Other study characteristics			
Estimated using panel data or similar	0.0372 (0.0251)	0.0363 (0.0600)	0.00318 (0.0131)
Static estimation	-0.000299 (0.0429)	0.111 (0.0755)	-0.00729 (0.0207)
Estimated using microdata	-0.117*** (0.0262)	-0.0286 (0.0514)	-0.0113 (0.0151)
Working paper	0.0921*** (0.0308)	0.0261 (0.0637)	-0.0285* (0.0167)
Standardised year of publication	0.0315** (0.0127)	-0.00151 (0.0353)	0.00467 (0.00827)
Number of observations	138	92	138
I ² (% residual variation due to heterogeneity)	0.958	0.972	0.822

Note: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figures A1-A3: Funnel plots Specialization, Competition and Diversity



