

ONLINE SUPPLEMENTARY APPENDIX

Table I. Variables

Variable	Measure	Source of data
Yearly AI innovation	Annual number of AI patents for the focal country	U.S. Patent and Trademark Office (USPTO) and Artificial Intelligence Patent Dataset (AIPD)
GDPR announcement	Dummy variable taking value of 1 from 2011 and onwards (GDPR announcement year)	European Data Protection Supervisor (EDPS)*
GDPR-affected countries	Dummy variable taking a value of 1 if the focal country is part of EU member states (excluding its ex-member UK)	European Data Protection Supervisor (EDPS)*
Individualism	On a scale of 0 to 100, and defined as a “preference for a loosely-knit social framework” (Hofstede, 1980, 1984, 2001)	Hofstede model of national culture**
Masculinity	On a scale of 0 to 100 and characterized by “rewards and recognition for performance, celebrates success, ambition, and wealth” (Hofstede, 1980, 1984, 2001)	Hofstede model of national culture**
Uncertainty avoidance	On a scale of 0 to 100, referring to “rejection of ambiguity or uncertainty to avoid anxiety” (Hofstede, 1980, 1984, 2001)	Hofstede model of national culture**
Power distance	On a scale of 0 to 100 and is “the extent to which the less powerful members of institutions and organizations accept that power is distributed unequally” (Hofstede & Bond, 1984)	Hofstede model of national culture**
Long term orientation	On a scale of 0 to 100 and it associates the connection of the past with the current and future actions/challenges (Hofstede, 2001).	Hofstede model of national culture**
Indulgence	On a scale of 0 to 100 referring to the degree of freedom that societal norms give to citizens in fulfilling their human desires (Hofstede, 2001).	Hofstede model of national culture**
Cumulative AI innovation	Cumulative number of AI patents (since 1976) of the focal country (logged and one year lagged)	U.S. Patent and Trademark Office (USPTO) and Artificial Intelligence Patent Dataset (AIPD)
GDP growth	Annual GDP growth rate of the focal country (one year lagged)	World Bank Open Data platform
Economic freedom	Annual economic freedom index is calculated based on ten components and scored on a scale of 0 to 100 (logged and one year lagged)	Fraser Institute’s Economic Freedom of the World index
R&D expenditure	Annual gross domestic expenditures on research and development (R&D), expressed as a percent of GDP of the focal country (one year lagged)	World Bank Open Data platform
Researchers in R&D	Annual number of researchers (per million people) involved in R&D of the focal country (logged and one year lagged)	World Bank Open Data platform
Education expenditure	Annual gross domestic expenditures on education, expressed as a percent of GDP of the focal country (one year lagged)	World Bank Open Data platform
Political rights	Annual political rights index is calculated based on questions reflecting the country’s free and fair elections, the political competition, and the autonomy of all citizens. The political rights index takes values from 1 to 7, with 1 denoting the lowest level of political rights and 7 the highest level of political rights (one year lagged)	Freedom House
Population size	Annual count of all residents of the focal country regardless of legal status or citizenship (logged and one year lagged)	World Bank Open Data platform
Developed country	It is a binary variable that takes 1 if the focal country is one of the highest development countries and 0 otherwise (one year lagged)	World Bank’s classification***
MHT value added	It’s expressed as the proportion of medium-high and high-tech (MHT) industry value added in total value added to the manufacturing of the focal in a given year (one year lagged).	World Bank Open Data platform
Tax rate	It’s expressed as the yearly corporate tax rate applied at the focal country (one year lagged)	Tax foundation

* Source: https://edps.europa.eu/data-protection/data-protection/legislation/history-general-data-protection-regulation_en

** Source: <https://geerthofstede.com/research-and-vsm/dimension-data-matrix/>

*** Source: <https://link.springer.com/article/10.1057/s41267-020-00386-y/tables/2>

Table II. Country/territory-level AI patent count of control vs treatment groups

GDPR-unaffected countries/territories	Number of AI patents	GDPR-affected countries/territories	Number of AI patents
U.S.	381,724	Germany	22,300
Canada	19,176	U.K.	16,661
India	15,481	France	10,521
China	13,462	Sweden	4,362
Taiwan	6,917	Netherlands	3,545
Australia	4,762	Finland	3,409
Russian Federation	2,033	Italy	2,893
Singapore	1,498	Ireland	2,498
Brazil	761	Belgium	1,581
Hong Kong	598	Spain	1,547
Mexico	295	Denmark	1,261
Malaysia	277	Austria	1,091
Türkiye	261	Norway	958
Serbia	120	Czech Republic	837
Thailand	118	Poland	581
Philippines	118	Romania	506
Vietnam	67	Hungary	390
Chile	62	Bulgaria	307
Pakistan	58	Greece	247
Iran	45	Estonia	186
Colombia	38	Portugal	138
Venezuela	37	Luxembourg	109
Indonesia	26	Slovenia	40
		Croatia	36
		Lithuania	24
Total	483,934	Total	76,028

Table III. Predicting AI innovation with fixed-effects Poisson model

Yearly AI innovation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	0.346 (0.000)	1.071 (0.000)	0.351 (0.000)	0.373 (0.000)	0.049 (0.225)	0.415 (0.000)	1.526 (0.000)
GDPR announcement x GDPR-affected countries (β_{12})	-0.080 (0.000)	-0.600 (0.000)	-0.259 (0.000)	0.094 (0.028)	0.526 (0.000)	0.534 (0.000)	-0.941 (0.000)
Cumulative AI innovation ^{a,b}	0.526 (0.000)	0.451 (0.000)	0.527 (0.000)	0.533 (0.000)	0.423 (0.000)	0.456 (0.000)	0.409 (0.000)
GDP growth ^b	-0.002 (0.270)	0.005 (0.002)	-0.003 (0.101)	-0.002 (0.141)	0.006 (0.000)	0.007 (0.000)	0.007 (0.000)
Economic freedom ^b	-0.173 (0.000)	-0.123 (0.000)	-0.178 (0.000)	-0.170 (0.000)	-0.171 (0.000)	-0.107 (0.000)	-0.148 (0.000)
R&D expenditure ^b	0.013 (0.525)	-0.016 (0.408)	0.003 (0.872)	0.011 (0.590)	-0.020 (0.323)	0.042 (0.043)	-0.012 (0.530)
Researchers in R&D ^{a,b}	-0.144 (0.000)	-0.161 (0.000)	-0.134 (0.000)	-0.145 (0.000)	-0.088 (0.000)	-0.197 (0.000)	-0.100 (0.000)
Education expenditure ^b	0.049 (0.000)	0.047 (0.000)	0.045 (0.000)	0.041 (0.000)	0.040 (0.000)	0.051 (0.000)	0.038 (0.000)
Political rights ^b	0.039 (0.000)	0.058 (0.000)	0.041 (0.000)	0.040 (0.000)	0.038 (0.000)	0.058 (0.000)	0.038 (0.000)
Population size ^{a,b}	1.642 (0.000)	1.682 (0.000)	1.708 (0.000)	1.446 (0.000)	1.573 (0.000)	1.540 (0.000)	1.688 (0.000)
MHT value added ^b	0.004 (0.009)	-0.000 (0.972)	0.004 (0.003)	0.004 (0.007)	-0.001 (0.475)	0.004 (0.015)	-0.001 (0.507)
Tax rate ^b	0.002 (0.012)	0.004 (0.000)	0.002 (0.003)	0.003 (0.000)	0.003 (0.000)	0.004 (0.000)	0.004 (0.000)
GDPR announcement x Individualism		-0.006 (0.000)					
GDPR-affected countries x Individualism		0.106 (1.000)					
GDPR announcement x GDPR-affected countries x Individualism (δ_{112})		0.007 (0.000)					
GDPR announcement x Masculinity			-0.000 (0.731)				
GDPR-affected countries x Masculinity			-0.098 (1.000)				
GDPR announcement x GDPR-affected countries x Masculinity (δ_{212})			0.003 (0.003)				
GDPR announcement x Uncertainty avoidance				-0.000 (0.627)			
GDPR-affected countries x Uncertainty avoidance				0.029 (1.000)			
GDPR announcement x GDPR-affected countries x Uncertainty avoidance (δ_{312})				-0.003 (0.000)			
GDPR announcement x Power distance					0.013 (0.000)		
GDPR-affected countries x Power distance					-0.037 (1.000)		
GDPR announcement x GDPR-affected countries x Power distance (δ_{412})					-0.013 (0.000)		
GDPR announcement x Long term orientation						0.006 (0.000)	
GDPR-affected countries x Long term orientation						-0.011 (1.000)	
GDPR announcement x GDPR-affected countries x Long term orientation (δ_{512})						-0.013 (0.000)	
GDPR announcement x Indulgence							-0.013 (0.000)
GDPR-affected countries x Indulgence							-0.211 (1.000)
GDPR announcement x GDPR-affected countries x Indulgence (δ_{612})							0.014 (0.000)
Year fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	960	960	960	960	960	960	960
No. of countries	48	48	48	48	48	48	48
Log-likelihood	-4452.5	-4215.7	-4434.3	-4429.6	-4073.0	-4180.5	-4139.7
Chi2 overall model fit	50835.5 (0.000)	49354.7 (0.000)	50254.9 (0.000)	50342.1 (0.000)	49682.2 (0.000)	50983.7 (0.000)	49245.5 (0.000)

We considered whether the assumptions behind the specific estimation model drive our results. We used the fixed-effects Poisson model to control for unobserved heterogeneity across countries. The results show consistency with our main results.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed. GDPR-affected countries, Hofstede variables main effects, Developed country, and Region are dropped from the model because they are constant within the group.

Table IV. Predicting AI innovation with random-effects Poisson model using alternative moderating variables (Hofstede dummy variables)

Yearly AI innovation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	0.466 (0.000)	0.806 (0.000)	0.641 (0.000)	0.459 (0.000)	0.673 (0.000)	0.734 (0.000)	1.291 (0.000)
GDPR-affected countries (β_2)	-0.119 (0.845)	-0.151 (0.860)	0.118 (0.880)	-0.254 (0.845)	0.474 (0.653)	0.442 (0.675)	0.312 (0.586)
GDPR announcement x GDPR-affected countries (β_{12})	-0.108 (0.000)	-0.049 (0.530)	-0.384 (0.000)	-0.112 (0.000)	-0.000 (0.999)	0.095 (0.000)	-0.618 (0.000)
Individualism dummy	-1.056 (0.056)	-2.311 (0.102)	-1.787 (0.029)	-1.729 (0.019)	-0.776 (0.138)	-1.253 (0.046)	-0.397 (0.405)
Masculinity dummy	0.300 (0.293)	0.474 (0.270)	1.152 (0.038)	0.409 (0.328)	0.192 (0.509)	0.364 (0.249)	0.352 (0.207)
Uncertainty avoidance dummy	-0.744 (0.019)	-1.247 (0.009)	-0.742 (0.154)	-1.263 (0.130)	-0.594 (0.083)	-0.857 (0.018)	-1.034 (0.004)
Power distance dummy	-0.152 (0.705)	-0.426 (0.560)	-0.566 (0.332)	-0.354 (0.534)	-0.114 (0.857)	-0.241 (0.589)	0.145 (0.685)
Long term orientation dummy	0.612 (0.052)	1.220 (0.037)	0.838 (0.082)	0.840 (0.047)	0.695 (0.019)	0.831 (0.164)	0.686 (0.017)
Indulgence dummy	0.817 (0.009)	1.374 (0.006)	1.212 (0.007)	1.094 (0.017)	0.851 (0.005)	1.025 (0.003)	2.138 (0.001)
Cumulative AI innovation ^{a,b}	0.531 (0.000)	0.498 (0.000)	0.532 (0.000)	0.525 (0.000)	0.428 (0.000)	0.424 (0.000)	0.419 (0.000)
GDP growth ^b	-0.002 (0.141)	0.004 (0.034)	-0.002 (0.199)	0.000 (0.966)	0.004 (0.022)	0.006 (0.000)	0.006 (0.001)
Economic freedom ^b	-0.177 (0.000)	-0.169 (0.000)	-0.157 (0.000)	-0.150 (0.000)	-0.208 (0.000)	-0.117 (0.000)	-0.201 (0.000)
R&D expenditure ^b	-0.031 (0.097)	-0.071 (0.001)	-0.043 (0.036)	-0.018 (0.376)	-0.048 (0.012)	-0.036 (0.062)	-0.033 (0.086)
Researchers in R&D ^{a,b}	-0.137 (0.000)	-0.134 (0.000)	-0.157 (0.000)	-0.175 (0.000)	-0.037 (0.035)	-0.153 (0.000)	-0.046 (0.012)
Education expenditure ^b	0.050 (0.000)	0.053 (0.000)	0.047 (0.000)	0.057 (0.000)	0.029 (0.000)	0.054 (0.000)	0.037 (0.000)
Political rights ^b	0.037 (0.000)	0.061 (0.000)	0.048 (0.000)	0.045 (0.000)	0.021 (0.029)	0.054 (0.000)	0.030 (0.002)
Population size ^{a,b}	0.828 (0.000)	1.325 (0.000)	1.173 (0.000)	1.085 (0.000)	0.741 (0.000)	0.957 (0.000)	0.690 (0.000)
Developed country	1.891 (0.000)	2.687 (0.000)	2.536 (0.000)	2.359 (0.000)	1.718 (0.000)	1.987 (0.000)	1.687 (0.000)
MHT value added ^b	0.003 (0.036)	0.002 (0.284)	0.002 (0.175)	0.001 (0.385)	-0.001 (0.591)	-0.001 (0.453)	-0.001 (0.443)
Tax rate ^b	0.002 (0.051)	0.002 (0.004)	0.003 (0.001)	0.001 (0.081)	0.002 (0.002)	0.004 (0.000)	0.004 (0.000)
GDPR announcement x Individualism dummy		-0.327 (0.000)					
GDPR-affected countries x Individualism dummy		0.557 (0.761)					
GDPR announcement x GDPR-affected countries x Individualism dummy (δ_{112})		-0.001 (0.987)					
GDPR announcement x Masculinity dummy			-0.220 (0.000)				
GDPR-affected countries x Masculinity dummy			-1.241 (0.120)				
GDPR announcement x GDPR-affected countries x Masculinity dummy (δ_{212})			0.345 (0.000)				
GDPR announcement x Uncertainty avoidance dummy				0.215 (0.000)			
GDPR-affected countries x Uncertainty avoidance dummy				0.248 (0.817)			
GDPR announcement x GDPR-affected countries x Uncertainty avoidance dummy (δ_{312})				-0.137 (0.000)			
GDPR announcement x Power distance dummy					0.548 (0.000)		
GDPR-affected countries x Power distance dummy					-0.201 (0.819)		
GDPR announcement x GDPR-affected countries x Power distance dummy (δ_{412})					-0.601 (0.000)		
GDPR announcement x Long term orientation dummy						0.455 (0.000)	
GDPR-affected countries x Long term orientation dummy						-0.192 (0.801)	
GDPR announcement x GDPR-affected countries x Long term orientation dummy (δ_{512})						-0.589 (0.000)	
GDPR announcement x Indulgence dummy							
GDPR-affected countries x Indulgence dummy							-0.570 (0.000)
GDPR announcement x GDPR-affected countries x Indulgence dummy (δ_{612})							-1.784 (0.021)
Constant							0.620 (0.000)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	960	960	960	960	960	960	960
No. of countries	48	48	48	48	48	48	48
Log-likelihood	-4829.3	-4671.0	-4770.8	-4785.0	-4459.0	-4488.5	-4454.4
Chi2 overall model fit	147135.6 (0.000)	146863.5 (0.000)	146961.2 (0.000)	147003.8 (0.000)	146661.6 (0.000)	146711.4 (0.000)	146659.5 (0.000)

We used alternative ways to calculate the key moderating variables. Following Damaraju et al. (2021), we calculated all the moderating variables by coding countries based on above-average cultural dimension values during our sample period, using dummy variables (e.g., "individualist" = 1, "collectivist" = 0). This approach provides conclusions similar to those of the main analyses, except for individualism, where its moderating effect is not statistically significant.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed.

Table V. Predicting AI innovation with random-effects Poisson model using alternative moderating variables (GLOBE cultural practices)

Yearly AI innovation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	0.318 (0.000)	-0.667 (0.000)	2.835 (0.000)	1.083 (0.000)	-6.016 (0.000)	2.984 (0.000)	1.285 (0.000)
GDPR-affected countries (β_2)	-1.996 (0.021)	-3.213 (0.556)	-5.887 (0.166)	-1.116 (0.496)	10.939 (0.212)	-13.451 (0.019)	-5.010 (0.001)
GDPR announcement $\times$ GDPR-affected countries (β_{12})	-0.096 (0.000)	0.318 (0.006)	-2.710 (0.000)	0.918 (0.000)	6.988 (0.000)	2.149 (0.000)	-1.898 (0.000)
In-group collectivism	0.511 (0.217)	-0.042 (0.964)	0.320 (0.263)	0.007 (0.984)	1.343 (0.030)	3.016 (0.006)	0.178 (0.426)
Gender egalitarianism	0.730 (0.212)	0.291 (0.526)	-0.460 (0.604)	-0.048 (0.909)	1.596 (0.030)	4.711 (0.000)	0.205 (0.515)
Uncertainty avoidance	-0.660 (0.202)	-0.270 (0.498)	0.134 (0.671)	0.274 (0.511)	-0.772 (0.231)	-3.428 (0.008)	-0.036 (0.884)
Power distance	1.108 (0.070)	1.134 (0.023)	1.015 (0.014)	0.836 (0.023)	3.407 (0.029)	3.443 (0.026)	0.932 (0.005)
Future orientation	2.459 (0.002)	2.020 (0.000)	1.600 (0.000)	1.433 (0.002)	3.527 (0.000)	6.333 (0.000)	1.242 (0.001)
Human orientation	1.590 (0.000)	1.370 (0.000)	1.063 (0.000)	1.023 (0.000)	2.193 (0.000)	3.734 (0.000)	0.212 (0.562)
Cumulative AI innovation ^{a,b}	0.548 (0.000)	0.417 (0.000)	0.501 (0.000)	0.551 (0.000)	0.491 (0.000)	0.511 (0.000)	0.561 (0.000)
GDP growth ^b	-0.001 (0.627)	0.009 (0.000)	0.002 (0.347)	0.003 (0.085)	0.003 (0.052)	0.006 (0.001)	0.000 (0.896)
Economic freedom ^b	-0.233 (0.000)	-0.179 (0.000)	-0.116 (0.000)	-0.185 (0.000)	-0.219 (0.000)	-0.210 (0.000)	-0.209 (0.000)
R&D expenditure ^b	0.017 (0.449)	0.001 (0.974)	-0.087 (0.000)	0.103 (0.000)	0.070 (0.002)	0.002 (0.920)	0.013 (0.510)
Researchers in R&D ^{a,b}	-0.121 (0.000)	-0.116 (0.000)	-0.197 (0.000)	-0.205 (0.000)	-0.111 (0.000)	-0.129 (0.000)	-0.165 (0.000)
Education expenditure ^b	0.057 (0.000)	0.066 (0.000)	0.068 (0.000)	0.070 (0.000)	0.045 (0.000)	0.057 (0.000)	0.066 (0.000)
Political rights ^b	0.053 (0.000)	0.057 (0.000)	0.057 (0.000)	0.036 (0.000)	0.025 (0.011)	0.046 (0.000)	0.063 (0.000)
Population size ^{a,b}	1.289 (0.000)	1.185 (0.000)	0.889 (0.000)	0.860 (0.000)	1.747 (0.000)	2.794 (0.000)	0.834 (0.000)
Developed country	5.708 (0.000)	5.430 (0.000)	4.462 (0.000)	4.016 (0.000)	8.298 (0.000)	11.766 (0.000)	3.388 (0.000)
MHT value added ^b	0.001 (0.576)	-0.003 (0.031)	-0.002 (0.297)	0.000 (0.942)	-0.005 (0.002)	0.002 (0.322)	0.002 (0.322)
Tax rate ^b	0.002 (0.018)	0.002 (0.005)	0.002 (0.008)	0.002 (0.030)	0.003 (0.000)	0.002 (0.029)	0.002 (0.006)
GDPR announcement $\times$ In-group collectivism		0.318 (0.000)					
GDPR-affected countries $\times$ In-group collectivism		0.113 (0.909)					
GDPR announcement $\times$ GDPR-affected countries $\times$ In-group collectivism (δ_{112})		-0.085 (0.001)					
GDPR announcement $\times$ Gender egalitarianism			-0.670 (0.000)				
GDPR-affected countries $\times$ Gender egalitarianism			0.734 (0.474)				
GDPR announcement $\times$ GDPR-affected countries $\times$ Gender egalitarianism (δ_{212})			0.775 (0.000)				
GDPR announcement $\times$ Uncertainty avoidance				-0.158 (0.000)			
GDPR-affected countries $\times$ Uncertainty avoidance				-0.420 (0.365)			
GDPR announcement $\times$ GDPR-affected countries $\times$ Uncertainty avoidance (δ_{312})				-0.194 (0.000)			
GDPR announcement $\times$ Power distance					1.297 (0.000)		
GDPR-affected countries $\times$ Power distance					-2.366 (0.143)		
GDPR announcement $\times$ GDPR-affected countries $\times$ Power distance (δ_{412})					-1.414 (0.000)		
GDPR announcement $\times$ Future orientation						-0.673 (0.000)	
GDPR-affected countries $\times$ Future orientation						4.069 (0.017)	
GDPR announcement $\times$ GDPR-affected countries $\times$ Future orientation (δ_{512})						-0.519 (0.000)	
GDPR announcement $\times$ Human orientation							-0.213 (0.000)
GDPR-affected countries $\times$ Human orientation							0.929 (0.026)
GDPR announcement $\times$ GDPR-affected countries $\times$ Human orientation (δ_{612})							0.453 (0.000)
Constant	-47.567 (0.000)	-40.536 (0.000)	-31.892 (0.000)	-29.983 (0.000)	-81.418 (0.000)	-127.012 (0.000)	-25.367 (0.000)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	680	680	680	680	680	680	680
No. of countries	34	34	34	34	34	34	34
Log-likelihood	-3894.0	-3484.4	-3655.2	-3731.7	-3580.6	-3614.7	-3826.1
Chi2 overall model fit	145019.8 (0.000)	144910.9 (0.000)	145021.3 (0.000)	145644.2 (0.000)	144472.9 (0.000)	144745.2 (0.000)	145842.1 (0.000)

We used GLOBE measures of cultural practices. The values of GLOBE's cultural dimensions range from 0 to 10, with higher values indicating countries exhibiting higher levels of in-group collectivism (opposite of individualism), gender egalitarianism (opposite of masculinity), uncertainty avoidance, power distance, future orientation (long-term orientation), and human orientation (indulgence). The final sample includes 34 countries, consisting of 19 GDPR-unaffected countries and 15 GDPR-affected countries, all with available GLOBE measure data. As shown in Online Appendix Table V, the findings are consistent with our main results using the Hofstede measure except for gender egalitarianism. The results based on GLOBE largely support our hypotheses, except for the positive moderating effect of gender egalitarianism on the GDPR-AI innovation relationship, which differs from our finding on the positive moderating role of masculinity. This discrepancy likely arises because the two constructs are not fully aligned. For example, Hofstede's concept of masculinity represents values of competition and achievement linked to traditional gender roles (Van den Bos et al., 2010), which is especially relevant in the competitive environment of AI innovation. In contrast,

GLOBE's gender egalitarianism emphasizes equal treatment and opportunities for men and women in society (Lyness & Judiesch, 2014). This distinction is illustrated in countries like the United States, United Kingdom, Australia, Switzerland, and the Netherlands, where high masculinity often coexists with strong gender egalitarianism. In these societies, ambition and assertiveness are valued, while equal access to opportunities and leadership roles across genders is actively promoted. Furthermore, despite the negative correlation between Hofstede's uncertainty avoidance and GLOBE's uncertainty avoidance practice score, our findings remain consistent. This suggests that while related, these measures capture distinct aspects of uncertainty avoidance rather than opposing constructs. Their divergence may reflect differences in theory, measurement, or context, underscoring the complexity of cross-cultural comparisons.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed.

Table VI. Predicting AI innovation with random-effects Poisson model using alternative control variables

Yearly AI innovation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	0.528 (0.000)	1.193 (0.000)	0.550 (0.000)	0.720 (0.000)	0.271 (0.000)	0.593 (0.000)	1.661 (0.000)
GDPR-affected countries (β_2)	0.445 (0.604)	1.024 (0.459)	-0.474 (0.733)	-2.812 (0.136)	-4.800 (0.036)	1.932 (0.027)	0.927 (0.292)
GDPR announcement $\times$ GDPR-affected countries (β_{12})	-0.086 (0.000)	-0.608 (0.000)	-0.231 (0.001)	-0.064 (0.147)	0.479 (0.000)	0.515 (0.000)	-0.955 (0.000)
Individualism	-0.044 (0.013)	-0.031 (0.347)	-0.051 (0.008)	-0.020 (0.110)	-0.015 (0.223)	-0.003 (0.786)	-0.027 (0.053)
Masculinity	0.003 (0.783)	0.002 (0.849)	-0.017 (0.465)	-0.002 (0.823)	0.003 (0.671)	-0.001 (0.938)	0.002 (0.841)
Uncertainty avoidance	-0.037 (0.000)	-0.036 (0.000)	-0.043 (0.000)	-0.037 (0.001)	-0.041 (0.000)	-0.022 (0.002)	-0.032 (0.000)
Power distance	-0.032 (0.038)	-0.027 (0.044)	-0.032 (0.054)	-0.030 (0.019)	-0.063 (0.001)	-0.008 (0.342)	-0.019 (0.115)
Long term orientation	0.032 (0.001)	0.033 (0.000)	0.034 (0.002)	0.023 (0.000)	0.025 (0.000)	0.040 (0.000)	0.032 (0.000)
Indulgence	0.020 (0.066)	0.023 (0.034)	0.022 (0.053)	0.021 (0.012)	0.029 (0.002)	0.014 (0.055)	0.027 (0.054)
Cumulative AI innovation ^{a,b}	0.522 (0.000)	0.456 (0.000)	0.521 (0.000)	0.522 (0.000)	0.420 (0.000)	0.462 (0.000)	0.412 (0.000)
GNI growth ^b	0.003 (0.011)	0.004 (0.000)	0.002 (0.019)	0.002 (0.067)	0.003 (0.003)	0.004 (0.000)	0.003 (0.009)
Economic freedom ^b	-0.014 (0.000)	-0.011 (0.000)	-0.013 (0.000)	-0.012 (0.000)	-0.011 (0.000)	-0.008 (0.000)	-0.010 (0.000)
R&D expenditure ^b	0.039 (0.051)	-0.027 (0.165)	0.039 (0.062)	0.028 (0.129)	-0.040 (0.033)	0.014 (0.474)	-0.030 (0.115)
Researchers in R&D ^{a,b}	-0.214 (0.000)	-0.189 (0.000)	-0.213 (0.000)	-0.216 (0.000)	-0.156 (0.000)	-0.233 (0.000)	-0.160 (0.000)
Education expenditure ^b	0.055 (0.000)	0.051 (0.000)	0.053 (0.000)	0.047 (0.000)	0.045 (0.000)	0.053 (0.000)	0.041 (0.000)
Political rights ^b	-0.011 (0.207)	0.019 (0.038)	-0.010 (0.272)	-0.012 (0.163)	-0.006 (0.539)	0.022 (0.018)	-0.002 (0.783)
Population size ^{a,b}	1.156 (0.000)	1.066 (0.000)	1.243 (0.000)	0.803 (0.000)	0.808 (0.000)	0.668 (0.000)	0.912 (0.000)
Developed country ^b	0.324 (0.000)	0.204 (0.000)	0.321 (0.000)	0.380 (0.000)	0.037 (0.361)	0.141 (0.001)	0.104 (0.010)
MHT value added ^b	0.001 (0.713)	-0.003 (0.073)	0.001 (0.560)	0.001 (0.679)	-0.003 (0.017)	0.002 (0.286)	-0.003 (0.024)
Tax rate ^b	0.001 (0.105)	0.002 (0.002)	0.002 (0.038)	0.002 (0.003)	0.002 (0.018)	0.003 (0.000)	0.003 (0.000)
GDPR announcement $\times$ Individualism		-0.006 (0.000)					
GDPR-affected countries $\times$ Individualism		-0.007 (0.846)					
GDPR announcement $\times$ GDPR-affected countries $\times$ Individualism (δ_{112})		0.007 (0.000)					
GDPR announcement $\times$ Masculinity			-0.001 (0.612)				
GDPR-affected countries $\times$ Masculinity			0.024 (0.362)				
GDPR announcement $\times$ GDPR-affected countries $\times$ Masculinity (δ_{212})			0.003 (0.024)				
GDPR announcement $\times$ Uncertainty avoidance				-0.003 (0.000)			
GDPR-affected countries $\times$ Uncertainty avoidance				0.030 (0.093)			
GDPR announcement $\times$ GDPR-affected countries $\times$ Uncertainty avoidance (δ_{312})				0.000 (0.824)			
GDPR announcement $\times$ Power distance					0.013 (0.000)		
GDPR-affected countries $\times$ Power distance					0.068 (0.010)		
GDPR announcement $\times$ GDPR-affected countries $\times$ Power distance (δ_{412})					-0.012 (0.000)		
GDPR announcement $\times$ Long term orientation						0.006 (0.000)	
GDPR-affected countries $\times$ Long term orientation						-0.027 (0.028)	
GDPR announcement $\times$ GDPR-affected countries $\times$ Long term orientation (δ_{512})						-0.013 (0.000)	
GDPR announcement $\times$ Indulgence							-0.013 (0.000)
GDPR-affected countries $\times$ Indulgence							-0.001 (0.978)
GDPR announcement $\times$ GDPR-affected countries $\times$ Indulgence (δ_{612})							0.015 (0.000)
Constant	-11.075 (0.000)	-10.866 (0.002)	-10.616 (0.000)	-7.108 (0.000)	-6.477 (0.001)	-7.614 (0.000)	-9.249 (0.000)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	960	960	960	960	960	960	960
No. of countries	48	48	48	48	48	48	48
Log-likelihood	-4806.3	-4574.2	-4796.3	-4778.9	-4459.1	-4551.1	-4435.2
Chi2 overall model fit	146765.7 (0.000)	146579.0 (0.000)	146752.5 (0.000)	146905.0 (0.000)	146455.3 (0.000)	146997.3 (0.000)	146340.0 (0.000)

We employed alternate control variables, such as the economic freedom index provided by the Heritage Foundation instead of the Fraser Institute, replaced GDP growth with GNI growth, and the focal country' HDI (Human Development Index) to operationalize the dummy variable "Developed country" (if the index falls between 0.800 and 1.000 at the focal year the dummy variable takes 1, and 0 otherwise). The results remain consistent with the main results, except for uncertainty avoidance, where its moderating effect is not statistically significant.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed.

Table VII. Predicting AI innovation with random-effects Poisson model using GDP per capita as an additional control variable without the economic freedom index and the number of researchers in R&D

Yearly AI innovation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	0.515 (0.000)	1.210 (0.000)	0.176 (0.014)	0.768 (0.000)	0.214 (0.000)	0.537 (0.000)	1.759 (0.000)
GDPR-affected countries (β_2)	-0.156 (0.829)	1.470 (0.173)	-1.793 (0.109)	-0.313 (0.843)	-4.159 (0.032)	-1.305 (0.335)	1.019 (0.199)
GDPR announcement x GDPR-affected countries (β_{12})	-0.146 (0.000)	-0.780 (0.000)	0.012 (0.857)	-0.120 (0.004)	0.524 (0.000)	0.464 (0.000)	-1.133 (0.000)
Individualism	-0.032 (0.021)	0.001 (0.948)	-0.032 (0.019)	-0.013 (0.175)	-0.016 (0.191)	-0.031 (0.055)	-0.018 (0.130)
Masculinity	-0.010 (0.256)	-0.007 (0.385)	-0.045 (0.021)	-0.006 (0.328)	-0.005 (0.508)	-0.009 (0.297)	-0.010 (0.244)
Uncertainty avoidance	-0.017 (0.026)	-0.020 (0.006)	-0.023 (0.009)	-0.011 (0.223)	-0.029 (0.001)	-0.019 (0.018)	-0.020 (0.005)
Power distance	-0.019 (0.085)	-0.020 (0.052)	-0.010 (0.420)	-0.011 (0.245)	-0.048 (0.001)	-0.018 (0.096)	-0.015 (0.103)
Long term orientation	0.011 (0.135)	0.018 (0.018)	0.013 (0.097)	0.011 (0.039)	0.013 (0.051)	0.002 (0.863)	0.013 (0.062)
Indulgence	0.016 (0.068)	0.023 (0.013)	0.018 (0.039)	0.013 (0.063)	0.023 (0.009)	0.017 (0.053)	0.036 (0.005)
Cumulative AI innovation ^{a,b}	0.538 (0.000)	0.464 (0.000)	0.546 (0.000)	0.544 (0.000)	0.420 (0.000)	0.473 (0.000)	0.414 (0.000)
GDP growth ^b	-0.005 (0.005)	0.002 (0.304)	-0.006 (0.000)	-0.005 (0.006)	0.005 (0.006)	0.003 (0.047)	0.005 (0.001)
R&D expenditure ^b	-0.078 (0.000)	-0.122 (0.000)	-0.101 (0.000)	-0.078 (0.000)	-0.092 (0.000)	-0.066 (0.000)	-0.087 (0.000)
Education expenditure ^b	0.045 (0.000)	0.039 (0.000)	0.044 (0.000)	0.040 (0.000)	0.036 (0.000)	0.045 (0.000)	0.033 (0.000)
Political rights ^b	0.058 (0.000)	0.075 (0.000)	0.054 (0.000)	0.064 (0.000)	0.046 (0.000)	0.080 (0.000)	0.050 (0.000)
Population size ^{a,b}	1.052 (0.000)	0.990 (0.000)	1.071 (0.000)	0.697 (0.000)	1.010 (0.000)	1.003 (0.000)	0.964 (0.000)
Developed country	1.916 (0.000)	1.919 (0.000)	1.988 (0.000)	1.411 (0.000)	1.811 (0.000)	1.924 (0.000)	1.904 (0.000)
MHT value added ^b	0.001 (0.695)	-0.002 (0.105)	0.002 (0.170)	0.001 (0.392)	-0.004 (0.006)	0.002 (0.237)	-0.004 (0.013)
Tax rate ^b	0.001 (0.146)	0.003 (0.000)	0.001 (0.170)	0.003 (0.000)	0.002 (0.001)	0.004 (0.000)	0.004 (0.000)
GDP per capita ^{a,b}	-0.229 (0.000)	-0.196 (0.000)	-0.226 (0.000)	-0.230 (0.000)	-0.182 (0.000)	-0.214 (0.000)	-0.178 (0.000)
GDPR announcement x Individualism		-0.006 (0.000)					
GDPR-affected countries x Individualism		-0.043 (0.124)					
GDPR announcement x GDPR-affected countries x Individualism (δ_{112})		0.008 (0.000)					
GDPR announcement x Masculinity			0.005 (0.000)				
GDPR-affected countries x Masculinity			0.040 (0.064)				
GDPR announcement x GDPR-affected countries x Masculinity (δ_{212})			0.002 (0.027)				
GDPR announcement x Uncertainty avoidance				-0.004 (0.000)			
GDPR-affected countries x Uncertainty avoidance				0.001 (0.925)			
GDPR announcement x GDPR-affected countries x Uncertainty avoidance (δ_{312})				0.000 (0.579)			
GDPR announcement x Power distance					0.014 (0.000)		
GDPR-affected countries x Power distance					0.054 (0.017)		
GDPR announcement x GDPR-affected countries x Power distance (δ_{412})					-0.014 (0.000)		
GDPR announcement x Long term orientation						0.006 (0.000)	
GDPR-affected countries x Long term orientation						0.022 (0.267)	
GDPR announcement x GDPR-affected countries x Long term orientation (δ_{512})						-0.012 (0.000)	
GDPR announcement x Indulgence							-0.014 (0.000)
GDPR-affected countries x Indulgence							-0.032 (0.133)
GDPR announcement x GDPR-affected countries x Indulgence (δ_{612})							0.017 (0.000)
Constant	-12.281 (0.000)	-14.744 (0.000)	-10.913 (0.000)	-8.183 (0.000)	-11.675 (0.000)	-11.423 (0.000)	-13.231 (0.000)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	960	960	960	960	960	960	960
No. of countries	48	48	48	48	48	48	48
Log-likelihood	-5086.5	-4851.5	-5054.0	-5020.2	-4651.3	-4838.2	-4606.6
Chi2 overall model fit	147596.6 (0.000)	147456.5 (0.000)	147637.7 (0.000)	147761.4 (0.000)	147148.1 (0.000)	147655.1 (0.000)	147064.5 (0.000)

Controlling for GDP per capita is crucial, as it creates a conducive environment for innovation by providing the necessary financial resources (Yoon et al., 2024). However, including GDP per capita as an additional control posed a multicollinearity issue due to its high correlation with Economic Freedom and the number of Researchers in R&D variables (correlation coefficients above 0.9 and VIF scores above 10). Therefore, we opted to exclude the Economic Freedom and the number of Researchers in R&D variables from the models while retaining GDP per capita to assess the sensitivity of our findings. The results align with the main findings, except for uncertainty avoidance, where its moderating effect is not statistically significant.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed.

Table VIII. Predicting the number of AI companies with random-effects linear model

Yearly number of AI companies	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	63.639 (0.090)	90.763 (0.023)	-99.755 (0.036)	133.682 (0.001)	21.527 (0.620)	-0.964 (0.980)	107.698 (0.007)
GDPR-affected countries (β_2)	48.467 (0.052)	45.613 (0.218)	22.284 (0.504)	83.050 (0.279)	72.822 (0.382)	45.281 (0.321)	66.560 (0.030)
GDPR announcement $\times$ GDPR-affected countries (β_{12})	-15.322 (0.075)	-52.768 (0.019)	-130.920 (0.000)	71.113 (0.007)	33.641 (0.269)	66.206 (0.003)	-59.328 (0.004)
Individualism	-0.702 (0.054)	-0.882 (0.170)	-0.658 (0.041)	-0.756 (0.061)	-0.765 (0.048)	-0.533 (0.232)	-0.686 (0.065)
Masculinity	0.349 (0.178)	0.300 (0.257)	-0.030 (0.960)	0.433 (0.125)	0.311 (0.254)	0.369 (0.160)	0.357 (0.180)
Uncertainty avoidance	-0.662 (0.016)	-0.621 (0.028)	-0.472 (0.073)	-0.010 (0.982)	-0.577 (0.082)	-0.623 (0.032)	-0.662 (0.020)
Power distance	0.422 (0.192)	0.517 (0.134)	0.233 (0.439)	0.483 (0.267)	0.473 (0.499)	0.438 (0.184)	0.443 (0.207)
Long term orientation	0.147 (0.554)	0.059 (0.826)	0.208 (0.346)	0.265 (0.302)	0.158 (0.533)	-0.291 (0.514)	0.191 (0.473)
Indulgence	-0.332 (0.301)	-0.412 (0.228)	-0.288 (0.308)	-0.319 (0.328)	-0.388 (0.250)	-0.268 (0.413)	0.063 (0.901)
Cumulative AI innovation ^{a,b}	6.424 (0.052)	7.765 (0.021)	4.957 (0.114)	4.443 (0.185)	6.783 (0.048)	5.088 (0.125)	5.480 (0.103)
GDP growth ^b	-0.873 (0.346)	-0.960 (0.305)	-0.980 (0.283)	-1.313 (0.156)	-0.869 (0.352)	-0.447 (0.623)	-0.754 (0.417)
Economic freedom ^b	-3.845 (0.499)	-4.895 (0.399)	-4.888 (0.374)	0.283 (0.961)	-5.514 (0.345)	-4.519 (0.435)	-2.287 (0.695)
R&D expenditure ^b	24.158 (0.006)	24.213 (0.006)	18.960 (0.026)	25.883 (0.003)	23.165 (0.009)	22.847 (0.009)	25.626 (0.004)
Researchers in R&D ^{a,b}	-8.028 (0.127)	-8.709 (0.100)	-2.724 (0.593)	-10.709 (0.045)	-7.255 (0.173)	-10.038 (0.063)	-9.923 (0.063)
Education expenditure ^b	-0.357 (0.906)	-0.563 (0.853)	-0.221 (0.938)	1.429 (0.639)	-0.389 (0.898)	0.679 (0.821)	-0.345 (0.910)
Political rights ^b	5.332 (0.087)	5.577 (0.075)	6.128 (0.033)	7.406 (0.019)	4.960 (0.114)	6.851 (0.028)	6.153 (0.056)
Population size ^{a,b}	5.721 (0.190)	4.376 (0.325)	7.220 (0.064)	7.451 (0.094)	5.591 (0.204)	5.620 (0.233)	6.259 (0.177)
Developed country	3.031 (0.839)	1.745 (0.908)	9.431 (0.484)	5.300 (0.746)	5.137 (0.737)	3.591 (0.828)	4.342 (0.784)
MHT value added ^b	-0.863 (0.023)	-0.867 (0.023)	-0.793 (0.026)	-0.993 (0.009)	-0.831 (0.031)	-0.902 (0.018)	-0.907 (0.019)
Tax rate ^b	0.768 (0.130)	0.670 (0.191)	0.930 (0.051)	1.411 (0.007)	0.660 (0.198)	0.987 (0.051)	0.889 (0.083)
GDPR announcement $\times$ Individualism		-0.602 (0.023)					
GDPR-affected countries $\times$ Individualism		0.277 (0.729)					
GDPR announcement $\times$ GDPR-affected countries $\times$ Individualism (δ_{112})		0.872 (0.034)					
GDPR announcement $\times$ Masculinity			2.913 (0.000)				
GDPR-affected countries $\times$ Masculinity			0.198 (0.773)				
GDPR announcement $\times$ GDPR-affected countries $\times$ Masculinity (δ_{212})			2.881 (0.000)				
GDPR announcement $\times$ Uncertainty avoidance				-1.361 (0.000)			
GDPR-affected countries $\times$ Uncertainty avoidance				-0.591 (0.432)			
GDPR announcement $\times$ GDPR-affected countries $\times$ Uncertainty avoidance (δ_{312})				-1.076 (0.005)			
GDPR announcement $\times$ Power distance					0.689 (0.061)		
GDPR-affected countries $\times$ Power distance					-0.232 (0.808)		
GDPR announcement $\times$ GDPR-affected countries $\times$ Power distance (δ_{412})					-0.717 (0.129)		
GDPR announcement $\times$ Long term orientation						1.853 (0.000)	
GDPR-affected countries $\times$ Long term orientation						0.273 (0.648)	
GDPR announcement $\times$ GDPR-affected countries $\times$ Long term orientation (δ_{512})						-1.728 (0.000)	
GDPR announcement $\times$ Indulgence							-0.844 (0.001)
GDPR-affected countries $\times$ Indulgence							-0.388 (0.575)
GDPR announcement $\times$ GDPR-affected countries $\times$ Indulgence (δ_{612})							0.982 (0.020)
Constant	-46.770 (0.602)	13.947 (0.898)	-85.037 (0.345)	-133.167 (0.174)	-28.777 (0.755)	-36.587 (0.685)	-79.654 (0.433)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	920	920	920	920	920	920	920
No. of countries	46	46	46	46	46	46	46
Overall R ²	0.174	0.179	0.211	0.197	0.177	0.218	0.184
Chi2 overall model fit	102.7 (0.000)	108.8 (0.000)	149.1 (0.000)	130.3 (0.000)	106.0 (0.000)	151.8 (0.000)	113.0 (0.000)

We utilized the ORBIS database to identify companies engaged in AI by country and year. Iran and Venezuela did not have any AI companies; therefore, these two countries were excluded from our analysis. As a result, this additional analysis includes 46 countries and 920 observations.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed.

Table IX: Predicting the number of AI publications with random-effects linear model

Yearly number of AI publications	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	4045.734 (0.000)	2883.475 (0.000)	444.608 (0.651)	6331.757 (0.000)	4795.488 (0.000)	3283.195 (0.000)	5365.096 (0.000)
GDPR-affected countries (β_2)	1576.831 (0.081)	1987.776 (0.139)	1275.184 (0.250)	536.387 (0.848)	1378.465 (0.638)	1232.461 (0.433)	2141.743 (0.043)
GDPR announcement $\times$ GDPR-affected countries (β_{12})	-839.490 (0.000)	-675.824 (0.133)	-1804.031 (0.003)	2535.944 (0.000)	-1657.711 (0.006)	46.734 (0.916)	-1844.205 (0.000)
Individualism	-22.059 (0.105)	-23.225 (0.337)	-20.486 (0.086)	-17.110 (0.240)	-22.014 (0.116)	-22.016 (0.153)	-20.768 (0.131)
Masculinity	9.447 (0.303)	10.953 (0.252)	6.701 (0.738)	10.259 (0.304)	9.879 (0.315)	9.300 (0.298)	9.740 (0.298)
Uncertainty avoidance	-24.004 (0.014)	-24.483 (0.016)	-19.863 (0.032)	-16.341 (0.319)	-24.932 (0.042)	-24.830 (0.012)	-24.240 (0.016)
Power distance	12.417 (0.289)	10.028 (0.416)	8.316 (0.437)	6.229 (0.698)	13.205 (0.596)	11.672 (0.307)	12.734 (0.320)
Long term orientation	-0.533 (0.953)	1.667 (0.864)	0.848 (0.915)	2.869 (0.758)	-0.350 (0.970)	-10.398 (0.477)	0.004 (1.000)
Indulgence	-20.004 (0.086)	-19.009 (0.121)	-19.069 (0.064)	-16.361 (0.177)	-19.045 (0.136)	-16.378 (0.151)	-9.512 (0.594)
Cumulative AI innovation ^{a,b}	426.317 (0.000)	413.695 (0.000)	390.087 (0.000)	350.323 (0.000)	431.066 (0.000)	395.699 (0.000)	396.269 (0.000)
GDP growth ^b	13.644 (0.445)	6.332 (0.723)	8.882 (0.616)	1.889 (0.915)	12.447 (0.490)	16.160 (0.360)	16.512 (0.355)
Economic freedom ^b	-326.571 (0.004)	-294.039 (0.009)	-242.777 (0.029)	-263.080 (0.019)	-301.160 (0.009)	-405.942 (0.000)	-366.694 (0.002)
R&D expenditure ^b	658.827 (0.001)	645.876 (0.001)	584.051 (0.003)	679.815 (0.001)	658.929 (0.001)	544.891 (0.007)	699.970 (0.001)
Researchers in R&D ^{a,b}	-395.889 (0.001)	-361.125 (0.002)	-344.460 (0.003)	-453.538 (0.000)	-407.884 (0.001)	-346.915 (0.003)	-398.192 (0.001)
Education expenditure ^b	52.159 (0.442)	42.598 (0.528)	54.540 (0.410)	109.007 (0.106)	49.400 (0.469)	60.162 (0.370)	56.111 (0.413)
Political rights ^b	11.547 (0.886)	-4.934 (0.951)	5.850 (0.940)	102.561 (0.210)	20.015 (0.807)	63.102 (0.432)	62.559 (0.445)
Population size ^{a,b}	329.830 (0.026)	340.517 (0.024)	363.614 (0.005)	360.592 (0.017)	325.891 (0.031)	387.641 (0.014)	355.893 (0.027)
Developed country	384.070 (0.490)	344.240 (0.548)	449.086 (0.366)	348.141 (0.576)	341.061 (0.556)	648.652 (0.292)	538.833 (0.355)
MHT value added ^b	-20.687 (0.040)	-19.125 (0.058)	-21.221 (0.028)	-27.319 (0.007)	-20.728 (0.043)	-22.770 (0.023)	-22.557 (0.026)
Tax rate ^b	15.130 (0.214)	23.047 (0.059)	15.727 (0.183)	36.579 (0.003)	17.492 (0.157)	17.502 (0.145)	19.535 (0.109)
GDPR announcement $\times$ Individualism		24.341 (0.000)					
GDPR-affected countries $\times$ Individualism		-10.853 (0.713)					
GDPR announcement $\times$ GDPR-affected countries $\times$ Individualism (δ_{112})		-12.822 (0.119)					
GDPR announcement $\times$ Masculinity			57.274 (0.000)				
GDPR-affected countries $\times$ Masculinity			-4.666 (0.837)				
GDPR announcement $\times$ GDPR-affected countries $\times$ Masculinity (δ_{212})			50.260 (0.000)				
GDPR announcement $\times$ Uncertainty avoidance				-36.788 (0.000)			
GDPR-affected countries $\times$ Uncertainty avoidance				4.819 (0.862)			
GDPR announcement $\times$ GDPR-affected countries $\times$ Uncertainty avoidance (δ_{312})				-31.648 (0.000)			
GDPR announcement $\times$ Power distance					-12.354 (0.090)		
GDPR-affected countries $\times$ Power distance					1.835 (0.957)		
GDPR announcement $\times$ GDPR-affected countries $\times$ Power distance (δ_{412})					11.605 (0.220)		
GDPR announcement $\times$ Long term orientation						27.065 (0.000)	
GDPR-affected countries $\times$ Long term orientation						9.375 (0.634)	
GDPR announcement $\times$ GDPR-affected countries $\times$ Long term orientation (δ_{512})						-20.037 (0.013)	
GDPR announcement $\times$ Indulgence							-19.147 (0.000)
GDPR-affected countries $\times$ Indulgence							-11.525 (0.636)
GDPR announcement $\times$ GDPR-affected countries $\times$ Indulgence (δ_{612})							21.095 (0.011)
Constant	-2580.741 (0.382)	-3568.463 (0.327)	-3610.718 (0.223)	-4430.318 (0.170)	-2817.333 (0.363)	-3361.079 (0.246)	-3883.375 (0.253)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	960	960	960	960	960	960	960
No. of countries	48	48	48	48	48	48	48
Overall R ²	0.49	0.50	0.51	0.52	0.49	0.51	0.50
Chi2 overall model fit	391.5 (0.000)	422.3 (0.000)	460.0 (0.000)	453.8 (0.000)	391.5 (0.000)	430.8 (0.000)	409.9 (0.000)

To collect information on AI publications, we used the SCIMAGO database, which provides the number of publications in the field of Artificial Intelligence by country.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed.

Table X. Predicting the number of AI patents with random-effects Poisson model without China in the sample

Yearly AI innovation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	0.641 (0.000)	1.272 (0.000)	1.129 (0.000)	0.390 (0.000)	0.275 (0.000)	0.648 (0.000)	1.774 (0.000)
GDPR-affected countries (β_2)	0.004 (0.996)	1.786 (0.143)	0.629 (0.641)	0.143 (0.962)	-1.768 (0.474)	0.807 (0.507)	0.821 (0.356)
GDPR announcement x GDPR-affected countries (β_{12})	-0.049 (0.000)	-0.395 (0.000)	-0.676 (0.000)	0.264 (0.000)	0.535 (0.000)	0.470 (0.000)	-0.891 (0.000)
Individualism	-0.038 (0.007)	0.000 (0.990)	-0.048 (0.004)	-0.052 (0.004)	-0.029 (0.028)	-0.023 (0.112)	-0.037 (0.011)
Masculinity	-0.004 (0.630)	0.000 (0.988)	0.006 (0.802)	-0.003 (0.784)	-0.003 (0.747)	-0.004 (0.617)	-0.003 (0.722)
Uncertainty avoidance	-0.029 (0.000)	-0.035 (0.000)	-0.032 (0.002)	-0.034 (0.042)	-0.033 (0.001)	-0.025 (0.001)	-0.033 (0.000)
Power distance	-0.014 (0.242)	-0.018 (0.158)	-0.020 (0.168)	-0.019 (0.367)	-0.031 (0.134)	-0.009 (0.412)	-0.014 (0.265)
Long term orientation	0.030 (0.001)	0.036 (0.000)	0.035 (0.001)	0.036 (0.001)	0.029 (0.000)	0.035 (0.005)	0.032 (0.001)
Indulgence	0.023 (0.017)	0.033 (0.002)	0.027 (0.016)	0.027 (0.023)	0.026 (0.011)	0.020 (0.027)	0.040 (0.009)
Cumulative AI innovation ^{a,b}	0.428 (0.000)	0.374 (0.000)	0.411 (0.000)	0.433 (0.000)	0.353 (0.000)	0.395 (0.000)	0.337 (0.000)
GDP growth ^b	0.003 (0.084)	0.008 (0.000)	0.004 (0.025)	0.004 (0.037)	0.009 (0.000)	0.009 (0.000)	0.009 (0.000)
Economic freedom ^b	-0.197 (0.000)	-0.134 (0.000)	-0.192 (0.000)	-0.190 (0.000)	-0.170 (0.000)	-0.116 (0.000)	-0.150 (0.000)
R&D expenditure ^b	-0.233 (0.000)	-0.202 (0.000)	-0.221 (0.000)	-0.223 (0.000)	-0.184 (0.000)	-0.138 (0.000)	-0.171 (0.000)
Researchers in R&D ^{a,b}	-0.007 (0.700)	-0.063 (0.001)	-0.005 (0.807)	-0.016 (0.383)	-0.008 (0.669)	-0.110 (0.000)	-0.020 (0.290)
Education expenditure ^b	0.036 (0.000)	0.041 (0.000)	0.031 (0.000)	0.028 (0.000)	0.032 (0.000)	0.044 (0.000)	0.034 (0.000)
Political rights ^b	0.060 (0.000)	0.079 (0.000)	0.069 (0.000)	0.058 (0.000)	0.058 (0.000)	0.076 (0.000)	0.060 (0.000)
Population size ^{a,b}	1.174 (0.000)	1.302 (0.000)	1.387 (0.000)	1.418 (0.000)	1.121 (0.000)	1.015 (0.000)	1.265 (0.000)
Developed country	1.698 (0.000)	2.109 (0.000)	1.899 (0.000)	1.958 (0.001)	1.600 (0.000)	1.347 (0.003)	1.817 (0.000)
MHT value added ^b	0.012 (0.000)	0.007 (0.000)	0.011 (0.000)	0.012 (0.000)	0.005 (0.000)	0.010 (0.000)	0.005 (0.000)
Tax rate ^b	-0.000 (0.605)	0.001 (0.473)	0.001 (0.404)	0.000 (0.793)	0.001 (0.380)	0.002 (0.023)	0.002 (0.047)
GDPR announcement x Individualism		-0.006 (0.000)					
GDPR-affected countries x Individualism		-0.059 (0.086)					
GDPR announcement x GDPR-affected countries x Individualism (δ_{112})		0.004 (0.000)					
GDPR announcement x Masculinity			-0.008 (0.000)				
GDPR-affected countries x Masculinity			-0.013 (0.635)				
GDPR announcement x GDPR-affected countries x Masculinity (δ_{212})			0.011 (0.000)				
GDPR announcement x Uncertainty avoidance				0.004 (0.000)			
GDPR-affected countries x Uncertainty avoidance				-0.000 (0.994)			
GDPR announcement x GDPR-affected countries x Uncertainty avoidance (δ_{312})				-0.006 (0.000)			
GDPR announcement x Power distance					0.013 (0.000)		
GDPR-affected countries x Power distance					0.027 (0.366)		
GDPR announcement x GDPR-affected countries x Power distance (δ_{412})					-0.013 (0.000)		
GDPR announcement x Long term orientation						0.006 (0.000)	
GDPR-affected countries x Long term orientation						-0.012 (0.490)	
GDPR announcement x GDPR-affected countries x Long term orientation (δ_{512})						-0.011 (0.000)	
GDPR announcement x Indulgence							-0.014 (0.000)
GDPR-affected countries x Indulgence							-0.018 (0.440)
GDPR announcement x GDPR-affected countries x Indulgence (δ_{612})							0.014 (0.000)
Constant	-14.547 (0.000)	-20.935 (0.000)	-17.981 (0.000)	-17.716 (0.000)	-13.422 (0.000)	-13.015 (0.000)	-17.020 (0.000)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	940	940	940	940	940	940	940
No. of countries	47	47	47	47	47	47	47
Log-likelihood	-4284.5	-4122.7	-4236.0	-4256.9	-3984.4	-4123.8	-3965.9
Chi2 overall model fit	138531.1 (0.000)	138402.9 (0.000)	138468.6 (0.000)	138444.0 (0.000)	138228.6 (0.000)	138612.7 (0.000)	138097.3 (0.000)

To address concerns that the results might be influenced by the large population sizes of certain countries in the control group, we conducted additional analyses excluding China from the sample.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed.

Table XI. Predicting the number of AI patents with random-effects Poisson model without India in the sample

Yearly AI innovation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	0.708 (0.000)	1.353 (0.000)	0.749 (0.000)	0.701 (0.000)	0.308 (0.000)	0.811 (0.000)	1.705 (0.000)
GDPR-affected countries (β_2)	-0.110 (0.830)	1.984 (0.022)	-0.281 (0.732)	0.403 (0.804)	-3.687 (0.051)	1.589 (0.060)	0.765 (0.254)
GDPR announcement x GDPR-affected countries (β_{12})	-0.060 (0.000)	-0.641 (0.000)	-0.219 (0.001)	0.152 (0.000)	0.482 (0.000)	0.683 (0.000)	-0.988 (0.000)
Individualism	-0.003 (0.705)	0.038 (0.036)	-0.005 (0.582)	-0.002 (0.823)	-0.003 (0.738)	0.017 (0.077)	-0.006 (0.547)
Masculinity	0.003 (0.639)	0.005 (0.394)	-0.004 (0.816)	0.004 (0.517)	0.004 (0.507)	0.005 (0.347)	0.001 (0.858)
Uncertainty avoidance	-0.020 (0.000)	-0.024 (0.000)	-0.021 (0.000)	-0.015 (0.079)	-0.029 (0.000)	-0.013 (0.023)	-0.022 (0.000)
Power distance	0.004 (0.638)	-0.000 (0.980)	0.004 (0.612)	0.007 (0.487)	-0.033 (0.040)	0.006 (0.409)	0.001 (0.914)
Long term orientation	0.018 (0.001)	0.024 (0.000)	0.018 (0.001)	0.018 (0.001)	0.021 (0.000)	0.036 (0.000)	0.021 (0.001)
Indulgence	0.013 (0.063)	0.022 (0.003)	0.014 (0.051)	0.012 (0.113)	0.024 (0.005)	0.011 (0.106)	0.029 (0.008)
Cumulative AI innovation ^{a,b}	0.435 (0.000)	0.376 (0.000)	0.436 (0.000)	0.443 (0.000)	0.372 (0.000)	0.359 (0.000)	0.370 (0.000)
GDP growth ^b	-0.005 (0.006)	0.002 (0.380)	-0.006 (0.002)	-0.006 (0.002)	0.002 (0.191)	0.005 (0.006)	0.003 (0.119)
Economic freedom ^b	-0.110 (0.000)	-0.064 (0.000)	-0.113 (0.000)	-0.104 (0.000)	-0.136 (0.000)	-0.028 (0.128)	-0.113 (0.000)
R&D expenditure ^b	0.088 (0.000)	0.055 (0.005)	0.082 (0.000)	0.095 (0.000)	0.020 (0.317)	0.154 (0.000)	0.021 (0.301)
Researchers in R&D ^{a,b}	-0.166 (0.000)	-0.182 (0.000)	-0.160 (0.000)	-0.170 (0.000)	-0.099 (0.000)	-0.236 (0.000)	-0.115 (0.000)
Education expenditure ^b	0.042 (0.000)	0.037 (0.000)	0.040 (0.000)	0.032 (0.000)	0.035 (0.000)	0.042 (0.000)	0.031 (0.000)
Political rights ^b	0.015 (0.139)	0.036 (0.000)	0.016 (0.097)	0.015 (0.122)	0.026 (0.010)	0.030 (0.002)	0.028 (0.005)
Population size ^{a,b}	0.532 (0.000)	0.585 (0.000)	0.554 (0.000)	0.469 (0.000)	0.630 (0.000)	0.379 (0.000)	0.646 (0.000)
Developed country	1.055 (0.000)	1.331 (0.000)	1.067 (0.000)	1.053 (0.002)	1.093 (0.001)	0.498 (0.120)	1.251 (0.000)
MHT value added ^b	-0.003 (0.031)	-0.006 (0.000)	-0.003 (0.054)	-0.003 (0.063)	-0.006 (0.000)	-0.002 (0.168)	-0.005 (0.002)
Tax rate ^b	0.002 (0.012)	0.003 (0.000)	0.002 (0.003)	0.004 (0.000)	0.002 (0.006)	0.005 (0.000)	0.004 (0.000)
GDPR announcement x Individualism		-0.006 (0.000)					
GDPR-affected countries x Individualism		-0.059 (0.009)					
GDPR announcement x GDPR-affected countries x Individualism (δ_{112})		0.008 (0.000)					
GDPR announcement x Masculinity			-0.001 (0.446)				
GDPR-affected countries x Masculinity			0.006 (0.733)				
GDPR announcement x GDPR-affected countries x Masculinity (δ_{212})			0.003 (0.011)				
GDPR announcement x Uncertainty avoidance				-0.000 (0.882)			
GDPR-affected countries x Uncertainty avoidance				-0.005 (0.773)			
GDPR announcement x GDPR-affected countries x Uncertainty avoidance (δ_{312})				-0.003 (0.000)			
GDPR announcement x Power distance					0.013 (0.000)		
GDPR-affected countries x Power distance					0.048 (0.028)		
GDPR announcement x GDPR-affected countries x Power distance (δ_{412})					-0.012 (0.000)		
GDPR announcement x Long term orientation						0.006 (0.000)	
GDPR-affected countries x Long term orientation						-0.026 (0.020)	
GDPR announcement x GDPR-affected countries x Long term orientation (δ_{512})						-0.015 (0.000)	
GDPR announcement x Indulgence							-0.013 (0.000)
GDPR-affected countries x Indulgence							-0.017 (0.359)
GDPR announcement x GDPR-affected countries x Indulgence (δ_{612})							0.015 (0.000)
Constant	-6.403 (0.000)	-11.703 (0.000)	-6.284 (0.001)	-5.848 (0.000)	-6.888 (0.000)	-5.865 (0.000)	-9.021 (0.000)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	940	940	940	940	940	940	940
No. of countries	47	47	47	47	47	47	47
Log-likelihood	-4474.3	-4263.7	-4465.0	-4444.9	-4200.3	-4155.8	-4187.3
Chi2 overall model fit	137163.8 (0.000)	137024.6 (0.000)	137178.0 (0.000)	137143.6 (0.000)	136984.5 (0.000)	137208.7 (0.000)	136883.8 (0.000)

To address concerns that the results might be influenced by the large population sizes of certain countries in the control group, we conducted additional analyses excluding India from the sample.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed.

Table XII. Predicting the number of AI patents with random-effects Poisson model without the U.S. in the sample

Yearly AI innovation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	0.528 (0.000)	1.200 (0.000)	0.172 (0.100)	0.605 (0.000)	-0.126 (0.122)	0.168 (0.052)	1.666 (0.000)
GDPR-affected countries (β_2)	0.114 (0.833)	2.483 (0.055)	-0.296 (0.738)	0.947 (0.562)	-2.357 (0.292)	-0.784 (0.605)	1.243 (0.150)
GDPR announcement $\times$ GDPR-affected countries (β_{12})	-0.153 (0.000)	-0.757 (0.000)	0.060 (0.473)	0.060 (0.234)	0.739 (0.000)	0.756 (0.000)	-1.058 (0.000)
Individualism	-0.013 (0.168)	0.016 (0.558)	-0.013 (0.179)	-0.010 (0.270)	-0.022 (0.088)	-0.033 (0.090)	-0.030 (0.040)
Masculinity	-0.001 (0.878)	0.000 (0.964)	-0.012 (0.480)	0.000 (0.946)	-0.001 (0.855)	-0.004 (0.660)	-0.003 (0.717)
Uncertainty avoidance	-0.020 (0.001)	-0.032 (0.001)	-0.020 (0.001)	-0.012 (0.185)	-0.030 (0.001)	-0.025 (0.005)	-0.030 (0.000)
Power distance	-0.000 (0.964)	-0.015 (0.251)	-0.000 (0.993)	0.005 (0.642)	-0.031 (0.106)	-0.009 (0.481)	-0.010 (0.410)
Long term orientation	0.015 (0.010)	0.030 (0.006)	0.016 (0.006)	0.016 (0.004)	0.020 (0.007)	0.013 (0.361)	0.022 (0.013)
Indulgence	0.012 (0.099)	0.031 (0.006)	0.013 (0.079)	0.010 (0.184)	0.022 (0.022)	0.019 (0.068)	0.043 (0.003)
Cumulative AI innovation ^{a,b}	0.556 (0.000)	0.533 (0.000)	0.542 (0.000)	0.553 (0.000)	0.483 (0.000)	0.523 (0.000)	0.449 (0.000)
GDP growth ^b	-0.002 (0.345)	0.003 (0.079)	-0.002 (0.176)	-0.003 (0.080)	0.005 (0.007)	0.005 (0.008)	0.005 (0.003)
Economic freedom ^b	-0.224 (0.000)	-0.169 (0.000)	-0.228 (0.000)	-0.207 (0.000)	-0.242 (0.000)	-0.150 (0.000)	-0.197 (0.000)
R&D expenditure ^b	-0.018 (0.380)	-0.131 (0.000)	-0.050 (0.016)	-0.016 (0.408)	-0.081 (0.000)	-0.049 (0.034)	-0.056 (0.008)
Researchers in R&D ^{a,b}	-0.122 (0.000)	-0.161 (0.000)	-0.091 (0.000)	-0.117 (0.000)	-0.055 (0.003)	-0.192 (0.000)	-0.075 (0.000)
Education expenditure ^b	0.050 (0.000)	0.055 (0.000)	0.042 (0.000)	0.027 (0.001)	0.038 (0.000)	0.061 (0.000)	0.026 (0.002)
Political rights ^b	0.078 (0.000)	0.164 (0.000)	0.077 (0.000)	0.099 (0.000)	0.086 (0.000)	0.136 (0.000)	0.110 (0.000)
Population size ^{a,b}	0.669 (0.000)	1.246 (0.000)	0.665 (0.000)	0.588 (0.000)	0.938 (0.000)	1.068 (0.000)	1.134 (0.000)
Developed country	1.320 (0.000)	2.361 (0.000)	1.288 (0.000)	1.339 (0.000)	1.572 (0.000)	1.839 (0.001)	1.975 (0.000)
MHT value added ^b	0.001 (0.397)	0.001 (0.352)	0.002 (0.167)	0.001 (0.366)	-0.002 (0.287)	0.004 (0.004)	-0.002 (0.168)
Tax rate ^b	-0.000 (0.887)	-0.002 (0.391)	0.001 (0.373)	0.007 (0.000)	-0.001 (0.405)	0.004 (0.012)	0.005 (0.003)
GDPR announcement $\times$ Individualism		-0.010 (0.000)					
GDPR-affected countries $\times$ Individualism		-0.079 (0.032)					
GDPR announcement $\times$ GDPR-affected countries $\times$ Individualism (δ_{112})		0.011 (0.000)					
GDPR announcement $\times$ Masculinity			0.007 (0.000)				
GDPR-affected countries $\times$ Masculinity			0.010 (0.597)				
GDPR announcement $\times$ GDPR-affected countries $\times$ Masculinity (δ_{212})			-0.004 (0.111)				
GDPR announcement $\times$ Uncertainty avoidance				-0.002 (0.007)			
GDPR-affected countries $\times$ Uncertainty avoidance				-0.008 (0.616)			
GDPR announcement $\times$ GDPR-affected countries $\times$ Uncertainty avoidance (δ_{312})				-0.003 (0.000)			
GDPR announcement $\times$ Power distance					0.016 (0.000)		
GDPR-affected countries $\times$ Power distance					0.035 (0.193)		
GDPR announcement $\times$ GDPR-affected countries $\times$ Power distance (δ_{412})					-0.015 (0.000)		
GDPR announcement $\times$ Long term orientation						0.009 (0.000)	
GDPR-affected countries $\times$ Long term orientation						0.014 (0.513)	
GDPR announcement $\times$ GDPR-affected countries $\times$ Long term orientation (δ_{512})						-0.016 (0.000)	
GDPR announcement $\times$ Indulgence							-0.015 (0.000)
GDPR-affected countries $\times$ Indulgence							-0.034 (0.132)
GDPR announcement $\times$ GDPR-affected countries $\times$ Indulgence (δ_{612})							0.018 (0.000)
Constant	-7.795 (0.000)	-21.459 (0.000)	-7.261 (0.000)	-7.482 (0.000)	-10.543 (0.000)	-12.878 (0.000)	-15.882 (0.000)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	940	940	940	940	940	940	940
No. of countries	47	47	47	47	47	47	47
Log-likelihood	-4593.9	-4269.7	-4569.5	-4550.1	-4210.0	-4303.5	-4196.1
Chi2 overall model fit	54869.6 (0.000)	54416.8 (0.000)	54861.1 (0.000)	54823.4 (0.000)	54244.8 (0.000)	54577.3 (0.000)	54030.7 (0.000)

To address concerns that the results might be influenced by countries with a large volume of AI patents, we conducted additional analyses excluding the U.S. from the sample.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed.

Table XIII. Predicting AI innovation with random-effects Poisson model (Pre-treatment period 2006–2010)

Yearly AI innovation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GDPR announcement (β_1)	-0.236 (0.000)	-0.315 (0.000)	-0.504 (0.000)	-0.314 (0.000)	-0.307 (0.000)	-0.188 (0.000)	-0.099 (0.133)
GDPR-affected countries (β_2)	0.055 (0.861)	1.340 (0.001)	-0.299 (0.525)	0.271 (0.769)	-1.264 (0.252)	0.834 (0.059)	0.458 (0.201)
GDPR announcement $\times$ GDPR-affected countries (β_{12})	-0.072 (0.000)	-0.710 (0.000)	0.121 (0.156)	0.196 (0.000)	0.127 (0.004)	0.273 (0.000)	-0.559 (0.000)
Individualism	-0.002 (0.759)	0.016 (0.044)	-0.002 (0.672)	-0.002 (0.757)	-0.001 (0.863)	0.008 (0.077)	0.001 (0.900)
Masculinity	0.000 (0.980)	0.002 (0.560)	-0.008 (0.333)	0.000 (0.886)	0.001 (0.771)	0.001 (0.744)	0.001 (0.867)
Uncertainty avoidance	-0.008 (0.017)	-0.008 (0.010)	-0.008 (0.022)	-0.006 (0.254)	-0.012 (0.007)	-0.004 (0.200)	-0.007 (0.033)
Power distance	0.002 (0.611)	0.001 (0.850)	0.002 (0.601)	0.004 (0.450)	-0.010 (0.321)	0.003 (0.296)	0.003 (0.515)
Long term orientation	0.004 (0.190)	0.005 (0.095)	0.004 (0.165)	0.003 (0.261)	0.006 (0.100)	0.013 (0.002)	0.004 (0.201)
Indulgence	0.002 (0.705)	0.002 (0.616)	0.002 (0.619)	-0.000 (0.971)	0.005 (0.296)	-0.003 (0.442)	0.002 (0.737)
Cumulative AI innovation ^{a,b}	0.807 (0.000)	0.843 (0.000)	0.806 (0.000)	0.828 (0.000)	0.771 (0.000)	0.804 (0.000)	0.803 (0.000)
GDP growth ^b	-0.001 (0.636)	-0.000 (0.956)	-0.001 (0.415)	-0.001 (0.514)	0.000 (0.915)	0.001 (0.645)	0.002 (0.368)
Economic freedom ^b	-0.178 (0.000)	-0.164 (0.000)	-0.169 (0.000)	-0.192 (0.000)	-0.202 (0.000)	-0.126 (0.000)	-0.165 (0.000)
R&D expenditure ^b	0.005 (0.821)	0.026 (0.261)	-0.025 (0.310)	0.025 (0.278)	-0.000 (0.987)	0.082 (0.001)	0.042 (0.071)
Researchers in R&D ^{a,b}	-0.003 (0.920)	-0.011 (0.659)	0.037 (0.183)	-0.011 (0.682)	-0.008 (0.742)	-0.016 (0.541)	-0.024 (0.338)
Education expenditure ^b	-0.016 (0.017)	-0.025 (0.000)	-0.014 (0.036)	-0.025 (0.000)	-0.018 (0.009)	-0.014 (0.034)	-0.023 (0.001)
Political rights ^b	0.045 (0.000)	0.048 (0.000)	0.047 (0.000)	0.047 (0.000)	0.042 (0.000)	0.039 (0.000)	0.046 (0.000)
Population size ^{a,b}	0.251 (0.000)	0.172 (0.000)	0.263 (0.000)	0.215 (0.000)	0.286 (0.000)	0.140 (0.003)	0.208 (0.000)
Developed country	0.571 (0.003)	0.509 (0.003)	0.529 (0.006)	0.571 (0.005)	0.616 (0.003)	0.163 (0.348)	0.505 (0.008)
MHT value added ^b	-0.001 (0.463)	-0.002 (0.178)	-0.000 (0.831)	-0.001 (0.658)	-0.002 (0.351)	0.001 (0.463)	-0.001 (0.379)
Tax rate ^b	-0.002 (0.002)	-0.001 (0.304)	-0.003 (0.001)	-0.001 (0.127)	-0.002 (0.040)	-0.002 (0.011)	-0.001 (0.479)
GDPR announcement $\times$ Individualism		0.000 (0.421)					
GDPR-affected countries $\times$ Individualism		-0.030 (0.002)					
GDPR announcement $\times$ GDPR-affected countries $\times$ Individualism (δ_{112})		0.009 (0.000)					
GDPR announcement $\times$ Masculinity			0.004 (0.001)				
GDPR-affected countries $\times$ Masculinity			0.008 (0.388)				
GDPR announcement $\times$ GDPR-affected countries $\times$ Masculinity (δ_{212})			0.003 (0.029)				
GDPR announcement $\times$ Uncertainty avoidance				0.001 (0.302)			
GDPR-affected countries $\times$ Uncertainty avoidance				-0.001 (0.946)			
GDPR announcement $\times$ GDPR-affected countries $\times$ Uncertainty avoidance (δ_{312})				-0.005 (0.000)			
GDPR announcement $\times$ Power distance					0.003 (0.000)		
GDPR-affected countries $\times$ Power distance					0.018 (0.171)		
GDPR announcement $\times$ GDPR-affected countries $\times$ Power distance (δ_{412})					-0.004 (0.000)		
GDPR announcement $\times$ Long-term orientation						-0.001 (0.046)	
GDPR-affected countries $\times$ Long-term orientation						-0.012 (0.029)	
GDPR announcement $\times$ GDPR-affected countries $\times$ Long term orientation (δ_{512})						-0.005 (0.000)	
GDPR announcement $\times$ Indulgence							-0.002 (0.003)
GDPR-affected countries $\times$ Indulgence							-0.007 (0.428)
GDPR announcement $\times$ GDPR-affected countries $\times$ Indulgence (δ_{612})							0.009 (0.000)
Constant	-3.166 (0.004)	-3.683 (0.001)	-3.152 (0.007)	-2.597 (0.021)	-3.027 (0.010)	-2.499 (0.004)	-2.663 (0.023)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	672	672	672	672	672	672	672
No. of countries	48	48	48	48	48	48	48
Log-likelihood	-2854.7	-2806.3	-2846.5	-2829.6	-2839.5	-2804.6	-2803.7
Chi2 overall model fit	66294.5 (0.000)	66859.7 (0.000)	66348.7 (0.000)	66430.0 (0.000)	65946.6 (0.000)	67336.2 (0.000)	66239.5 (0.000)

Given that Figure 1 demonstrates significant differences in AI innovation between GDPR-affected and unaffected countries in prior years (e.g., 2000, 2001, 2003), the lengthy pre-treatment period (2000–2010) may induce bias. To net out this potential bias, we considered a shorter pre-treatment period (2006–2010) to see whether the results and moderating effects remain true. The results using the shorter pre-treatment period are consistent.

^a Logarithm transformed; ^b one year lagged; p values in parentheses; significance tests are two-tailed.

Figure I. Conceptual model

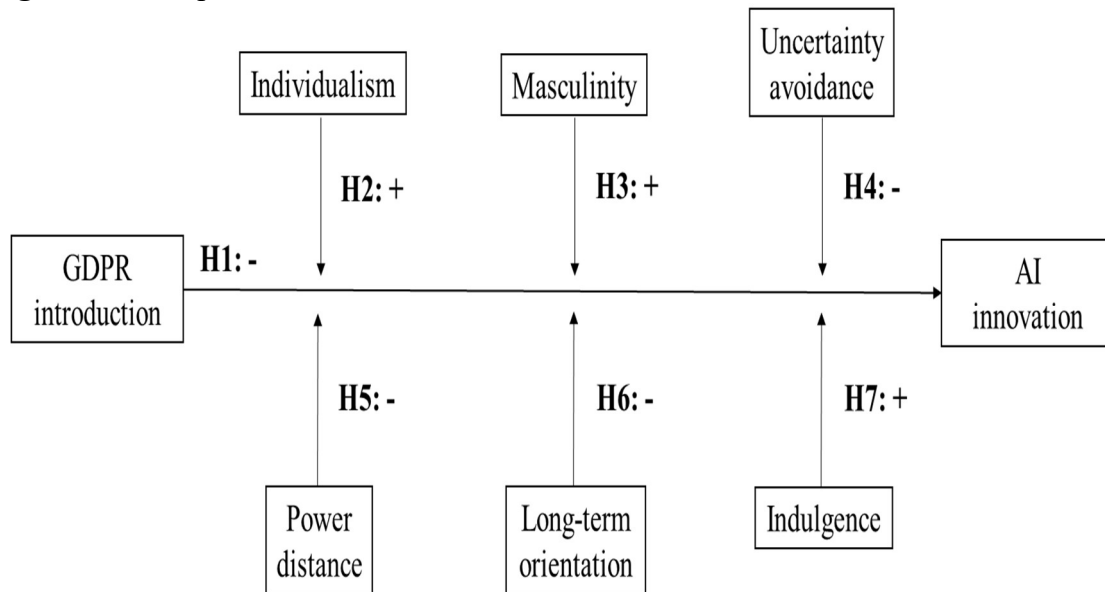
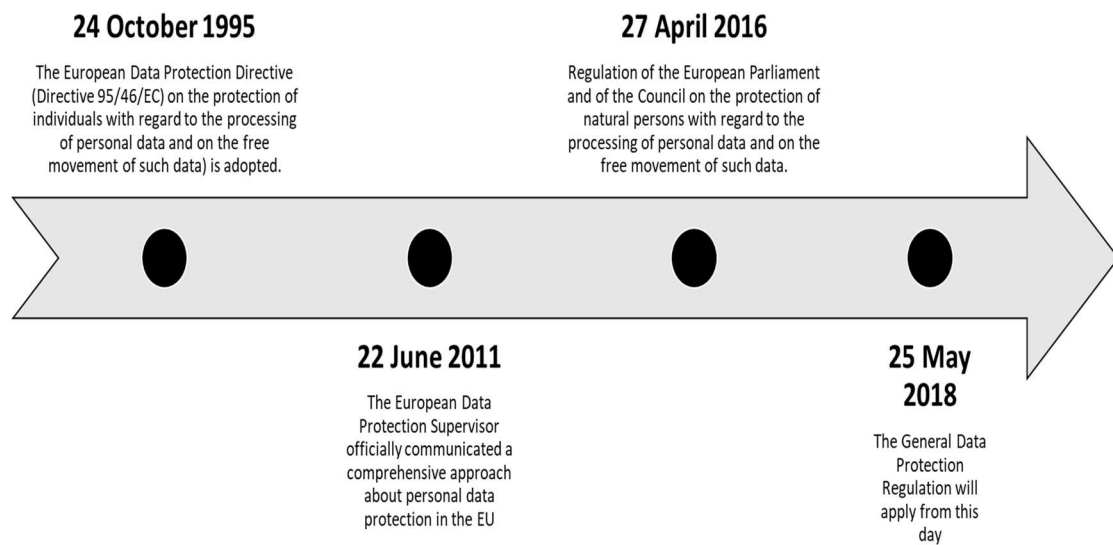


Figure II. The History of the GDPR



Source: https://www.edps.europa.eu/data-protection/data-protection/legislation/history-general-data-protection-regulation_en

Figure III. AI patenting evolution of the top ten most productive GDPR-unaffected countries

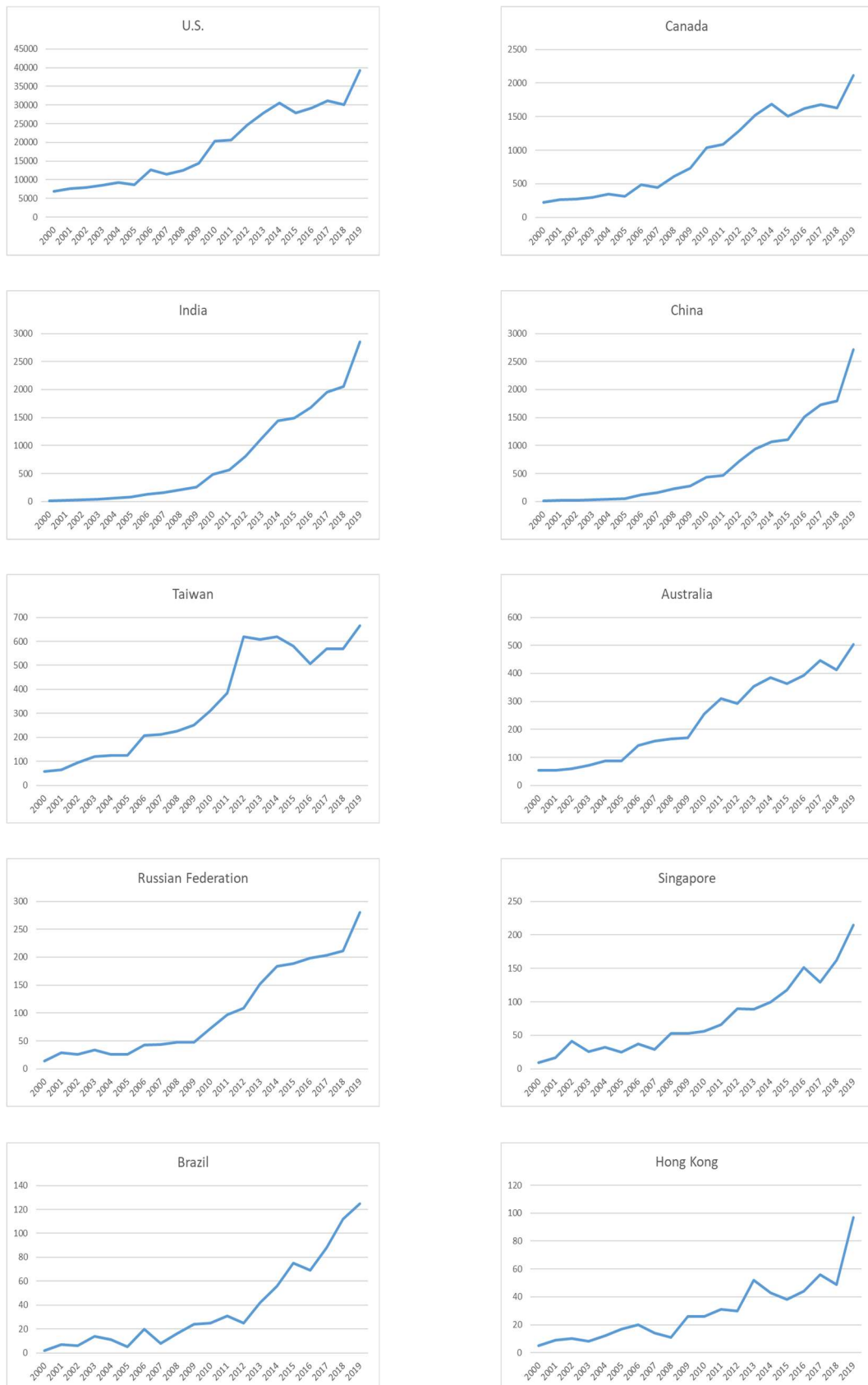


Figure IV. AI patenting evolution of the top ten most productive GDPR-affected countries

