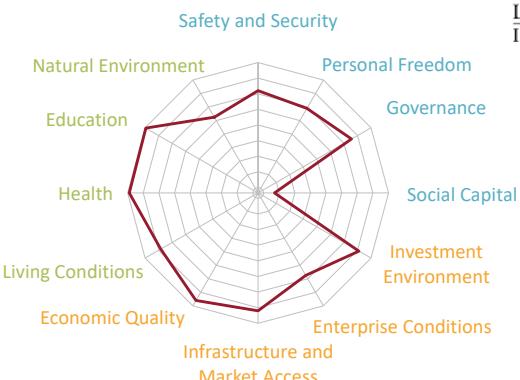
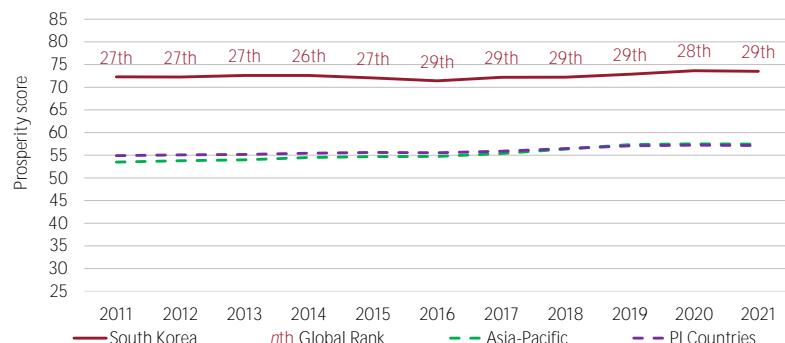


South Korea: Prosperity score 73.5 (29th)

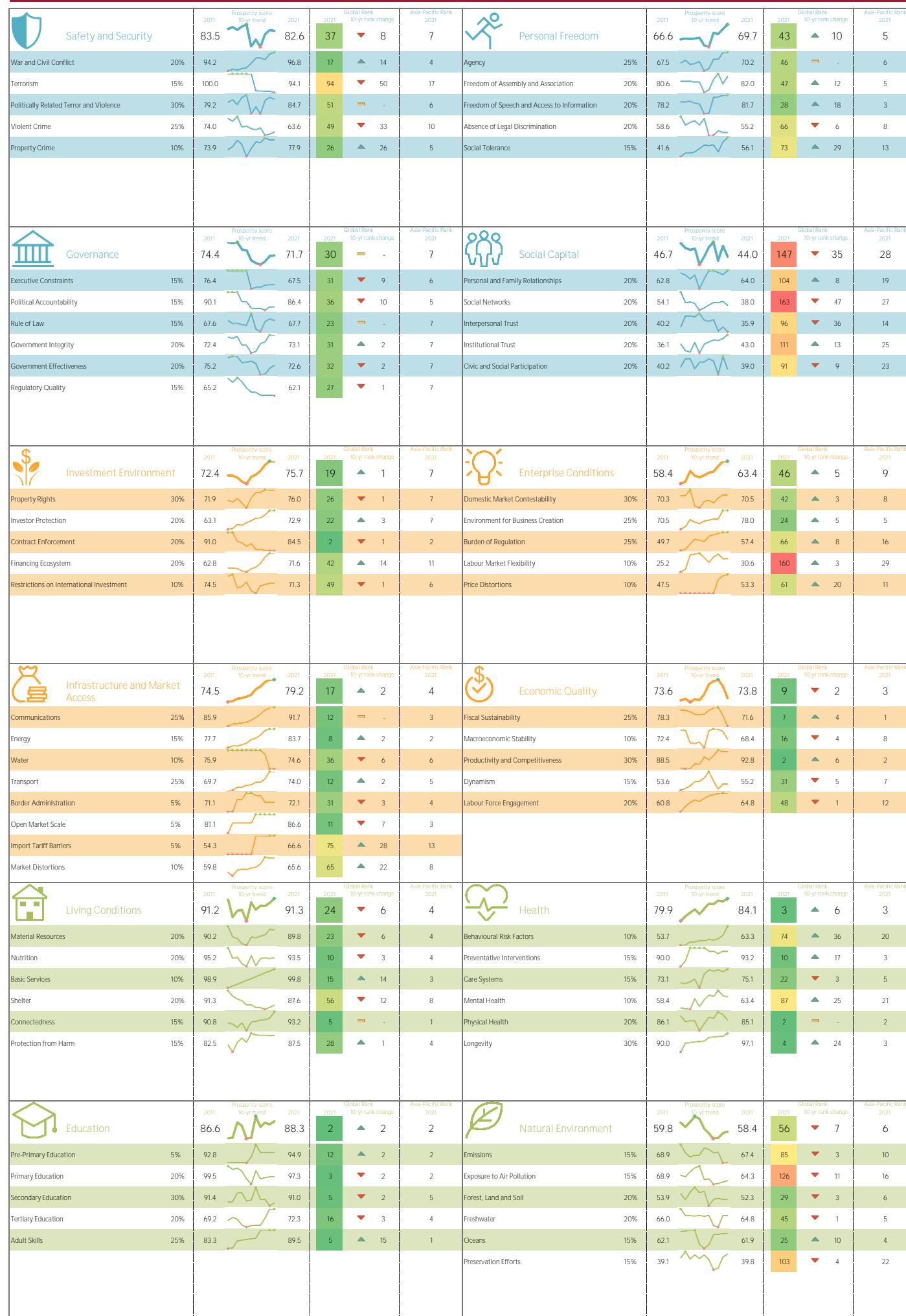
Prosperity over time



Breakdown of performance

	Score 10-year trend	2021	Rank - Global (1 to 167) 2021	10-year rank change	Rank - Asia-Pacific (1 to 29) 2021
Prosperity score	72.3	73.5	29	▼ 2	7
Inclusive Societies	67.8	67.0	38	▼ 3	7
🛡 Safety and Security	83.5	82.6	37	▼ 8	7
⾛ Personal Freedom	66.6	69.7	43	▲ 10	5
🏛 Governance	74.4	71.7	30	-	7
👫 Social Capital	46.7	44.0	147	▼ 35	28
Open Economies	69.7	73.0	21	▲ 2	6
🌻 Investment Environment	72.4	75.7	19	▲ 1	7
💡 Enterprise Conditions	58.4	63.4	46	▲ 5	9
📦 Infrastructure and Market Access	74.5	79.2	17	▲ 2	4
⌚ Economic Quality	73.6	73.8	9	▼ 2	3
Empowered People	79.4	80.5	21	▼ 2	5
🏡 Living Conditions	91.2	91.3	24	▼ 6	4
⚡ Health	79.9	84.1	3	▲ 6	3
🎓 Education	86.6	88.3	2	▲ 2	2
🌿 Natural Environment	59.8	58.4	56	▼ 7	6

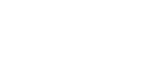
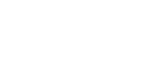
South Korea (29th): Pillar and element scores



South Korea: Safety and Security (37th): Element and indicator scores

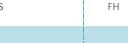
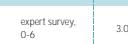
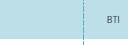
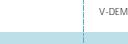
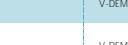
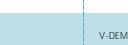
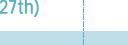
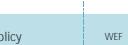
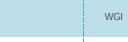


Italics: Indicator contains imputed values

Human Rights Indicators: Freedom of Assembly and Association												
Indicator	Source	Unit	Weight	2011			Value 10-yr trend			2021		
				Global Rank 2011	Global Rank 2021	2011	10-yr trend	2021	Global Rank 2011	Global Rank 2021	2011	2021
Agency (46th)			25%	67.5	46		70.2	46	59	47	82.0	59
Personal autonomy and individual rights	FH	coding, 0-16	1.0	12.0	45		13.0	36	39	30	11.0	39
Due process and rights	WJP	expert survey, 0-1	1.0	0.784	18		0.780	19	55	52	0.70	55
Freedom of movement	CIRIGHTS	coding, 0-4	1.0	3.0	85		3.0	83	63	Autonomy from the state	0.780	84.8
Women's agency	WomStat	coding, 0-16	1.0	6.0	56		6.0	56				
Freedom from arbitrary interference with privacy	WJP	expert survey, 0-1	1.0	0.66	39		0.83	16				
Freedom from forced labour	V-DEM	index, 0-1	1.0	0.855	48		0.869	28				
Government response to slavery	GSI	index, -10-100	1.0	39.1	79		27.6	131				
Satisfaction with freedom	Gallup	percentage	1.0	61.5	116		69.5	130				
Freedom of Speech and Access to Information (28th)												
Press freedom from government censorship	FH	index, 0-100	1.0	32.0	49		34.0	46	60	66	55.2	60
Press freedom from physical repression	RSF	index, 0-100	1.0	24.5	48		23.4	40	29	23	0.682	47
Freedom of opinion and expression	WJP	expert survey, 0-1	1.0	0.765	30		0.658	48	66	Freedom from hiring and workplace discrimination	0.723	60.2
Government media censorship	V-DEM	coding, 0-4	0.5	2.93	67		3.78	15	42	LGBT rights	1.0	1.0
Alternative sources of information	V-DEM	coding, 0-4	1.0	0.815	77		0.963	2	84	Protection of women's workplace, education and family rights	7.0	7.0
Political diversity of media perspectives	V-DEM	coding, 0-3	0.5	2.69	62		2.92	8	59	Freedom of belief and religion	0.694	0.712
Social Tolerance (73rd)												
Perceived tolerance of ethnic minorities	Gallup	percentage	1.0	41.6	102		56.1	73	118	122	0.42	118
Perceived tolerance of LGBT individuals	Gallup	percentage	1.0	58.1	93		65.7	120				
Perceived tolerance of immigrants	Gallup	percentage	1.0	15.1	95		37.2	68				
				54.4	102		64.0	86				



Italics: Indicator contains imputed values.

Non-Indicator Context																	
Indicator	Source	Unit	Weight	Value			Global Rank 2011	Global Rank 2021	Source	Unit	Weight	Value			Global Rank 2011	Global Rank 2021	
				2011	10-yr trend	2021						2011	10-yr trend	2021			
Executive Constraints (31st)			15%	76.4		67.5	22	31	Political Accountability (36th)			15%	90.1		86.4	26	36
Executive powers are effectively limited by the judiciary and legislature	WJP	expert survey, 0-3	2.0	2.48		1.89	12	46	Consensus on democracy and a market economy as a goal	BTI	expert survey, 1-10	1.0	10.0		10.0	1	1
Government powers are subject to independent and non-governmental checks	WJP	expert survey, 0-3	1.0	2.25		2.34	17	20	Political participation and rights	FH	coding, 1-7	0.5	1.0		2.0	1	38
Transition of power is subject to the law	WJP	expert survey, 0-1	1.0	0.847		0.853	28	26	Democracy level	CSP	expert survey, -10-10	1.0	8.0		8.0	55	55
Military involvement in rule of law and politics	FI	index, 0-10	0.5	6.67		6.70	72	67	Complaint mechanisms	WJP	expert survey, 0-1	1.0	0.754		0.709	21	34
Government officials are sanctioned for misconduct	WJP	expert survey, 0-1	1.0	0.736		0.680	25	26									
Rule of Law (23rd)			15%	67.6		67.7	23	23	Government Integrity (31st)			20%	72.4		73.1	33	31
Judicial independence	WEF	expert survey, 1-7	1.0	3.99		3.93	60	68	Use of public office for private gain	WJP	expert survey, 0-4	1.0	2.47		2.12	18	31
Civil justice	WJP	expert survey, 0-6	3.0	4.53		4.48	12	16	Diversion of public funds	WEF	expert survey, 1-7	1.0	3.68		3.75	56	56
Integrity of the legal system	FI	index, 0-10	2.0	7.85		7.78	22	19	Anti-corruption policy	BTI	expert survey, 1-10	1.0	8.0		7.0	28	35
Efficiency of dispute settlement	WEF	expert survey, 1-7	0.5	3.5		4.2	82	46	Clientelism	V-DEM	index, 0-1	1.0	0.241		0.098	42	22
									Legislative corruption	V-DEM	coding, 0-4	0.5	2.42		2.42	51	56
									Judicial corruption	V-DEM	coding, 0-4	0.5	3.06		3.27	40	28
									Executive corruption	V-DEM	index, 0-1	0.5	0.207		0.064	40	25
									Public sector corruption	V-DEM	index, 0-1	0.5	0.087		0.054	25	21
Government Effectiveness (32nd)			20%	75.2		72.6	30	32	Regulatory Quality (27th)			15%	65.2		62.1	26	27
Government quality and credibility	WGI	index, -2.5-+2.5	2.0	1.09		1.38	29	22	Right to information	WJP	expert survey, 0-1	0.5	0.75		0.76	8	6
Prioritisation	BTI	expert survey, 1-10	1.0	9.0		8.0	28	30	Publicised laws and government data	WJP	expert survey, 0-1	1.0	0.71		0.69	9	29
Efficiency of government spending	WEF	expert survey, 1-7	0.5	3.23		3.48	76	54	Transparency of government policy	WEF	expert survey, 1-7	0.5	3.75		3.63	116	104
Efficient use of assets	BTI	expert survey, 1-10	1.0	8.0		8.0	27	31	Budget transparency	IBP	index, 0-100	0.5	71.0		62.0	20	46
Implementation	BTI	expert survey, 1-10	1.0	8.0		7.0	29	38	Regulatory quality	WGI	index, -2.5-+2.5	1.0	0.84		1.07	39	30
Policy learning	BTI	expert survey, 1-10	1.0	7.0		7.0	38	35	Enforcement of regulations	WJP	expert survey, 0-1	1.0	0.616		0.571	38	50
Policy coordination	BTI	expert survey, 1-10	1.0	9.0		8.0	26	29	Efficiency of legal framework in challenging regulations	WEF	expert survey, 1-7	1.0	3.23		3.44	90	70
									Delay in administrative proceedings	WJP	expert survey, 0-1	1.0	0.952		0.785	1	11



Italics: Indicator contains imputed values





South Korea: Investment Environment (19th): Element and indicator scores



Italics: Indicator contains imputed values

South Korea: Infrastructure and Market Access (17th): Element and indicator scores



Italics: Indicator contains imputed values

Communications (12th)												Energy (8th)											
	Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021		Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021		
International internet bandwidth	ITU	kilobits per second per capita	1.0	51.5	58.2	52	45				Installed electric capacity	UNESD	kilowatts per capita	1.5	1,614	2,462	30	30	19				
2G, 3G and 4G network coverage	GSMA	index 0-100	2.0	99.6	99.6	6	15				Ease of establishing an electricity connection	WB-DB	index 0-100	1.0	99.9	99.9	1	1	2				
Fixed broadband subscriptions	ITU	number /100 population	1.0	33,130	42,764	6	6				Reliability of electricity supply	WB-DB	index 0-7	1.0	7.0	7.0	1	1	1				
Internet usage	ITU	percentage	1.0	81.6	96.2	9	9																
Water (36th)												Transport (12th)											
	Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021		Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021		
Gross fixed water assets	IBNET	USD per population served	1.0	263.1	263.1	37	37				Logistics performance	WB-LPI	index 1-5	1.5	3.71	3.66	21	21	25				
Water production	IBNET	litres per capita per day	0.5	338.0	338.0	49	49				Airport connectivity	WEF	index 0-100	2.0	233,332.9	500,950.5	14	14	16				
Reliability of water supply	WEF	expert survey 1-7	1.0	6.38	6.18	23	28				Efficiency of seaport services	WEF	expert survey 1-7	2.0	5.13	5.46	22	22	10				
											Liner shipping connectivity	UNCTAD	index rebased to 100 in 2004	0.5	75.2	105.1	11	11	3				
											Quality of roads	WEF	expert survey 1-7	1.0	5.8	5.9	14	14	9				
											Road density	FAO	km per 100 sq km of land area	0.5	105.5	105.9	33	33	33				
											Rail density	UIC	km per sq km of land area	0.5	0.0348	0.0422	51	51	45				
Border Administration (31st)												Open Market Scale (11th)											
	Source	Unit	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021		Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021	
Efficiency of customs clearance process	WB-LPI	survey 1-5	1.5	3.33	3.40	26	25				Domestic and international market access for goods	WTO	percentage of global GDP	1.5	58.34	86.57	1	1	1				
Time to comply with border regulations and procedures	WB-DB	hours	1.0	5.4	5.4	30	30				Domestic and international market access for services	WTO	percentage of global GDP	2.0	46.7	76.0	5	5	1				
Cost to comply with border regulations and procedures	WB-DB	USD (current)	0.5	134.3	134.3	42	46				Trade-weighted average tariff faced in destination markets	WEF	percentage	0.5	3.9	3.4	80	80	48				
											Margin of preference in destination markets	WEF	index 1-100	0.5	7.0	13.0	155	155	149				
Import Tariff Barriers (75th)												Market Distortions (65th)											
	Source	Unit	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021		Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021	
Share of imports free from tariff duties	WEF	percentage	1.5	44.67	66.66	101	71				Extent of liberalisation of foreign trade	BTI	expert survey 1-10	1.0	9.0	9.0	48	48	48				
Average applied tariff rate	WEF	percentage	2.0	8.50	7.08	95	90				Prevalence of non-tariff barriers	WEF	expert survey 1-7	1.0	3.99	4.38	125	125	80				
Complexity of tariffs	WEF	index 1-7	0.3	5.011	5.024	115	111				Non-tariff measures	UNCTAD	number	0.3	1,388.0	1,388.0	155	155	155				

South Korea: Economic Quality (9th): Element and indicator scores

Italics: Indicator contains imputed values

South Korea: Living Conditions (24th): Element and indicator scores

South Korea: Health (3rd): Element and indicator scores



Italics: Indicator contains imputed values

Behavioural Risk Factors (74th)										Preventative Interventions (10th)										
	Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021	Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021
Obesity	WHO-GDO	percentage	1.0	3.8	4.7	↓↑	14	8	Diphtheria immunisation	WHO	percentage	1.0	94.0	98.0	↑↑	75	19			
Smoking	WHO	percentage	1.0	29.1	22.0	↓↑	113	98	Measles immunisation	WHO	percentage	1.0	93.0	98.0	↑↑	74	22			
Substance use disorders	GBD	number /100,000 population	1.0	3,769.8	3,066.0	↓↑	153	133	Hepatitis immunisation	WHO	percentage	1.0	94.0	98.0	↑↑	63	16			
									Contraceptive prevalence	UNICEF	percentage	1.0	66.4	66.4	↔	33	36			
									Antenatal care coverage	UNICEF	percentage	1.0	98.0	98.0	↔	39	45			
									Existence of national screening programs	WHO	index, 0-1	0.5	1.0	1.0	↔	1	1			
Care Systems (22nd)										Mental Health (87th)										
Healthcare coverage	ILO	percentage	0.5	0.0	0.0	↔	1	1	Emotional wellbeing	Gallup	index, 0-1	0.5	0.77	0.68	↓↑	60	75			
Health facilities	WHO	index, 0-0.6	1.0	0.543	0.555	↑↑	5	2	Depressive disorders	GBD	years /100,000 population	1.0	350.6	357.6	↑↑	5	6			
Health practitioners and staff	WHO	index, 0-1	1.0	0.286	0.378	↑↑	62	55	Suicide	WHO	deaths /100,000 population	1.0	28.8	21.2	↓↑	157	158			
Births attended by skilled health staff	UNICEF	percentage	1.0	99.9	100.0	↔	10	1												
Tuberculosis treatment coverage	WHO	percentage	0.5	94.0	94.0	↔	5	7												
Antiretroviral HIV therapy	UNAIDS	percentage	1.0	55.6	55.6	↔	37	98												
Satisfaction with healthcare	Gallup	percentage	1.0	71.0	71.4	↑↑	39	46												
Physical Health (2nd)										Longevity (4th)										
Physical pain	Gallup	percentage	0.5	17.0	27.2	↑↑	16	50	Maternal mortality	WB-DI	deaths /100,000 live births	1.0	15.0	11.0	↓↑	48	44			
Health problems	Gallup	percentage	0.5	20.1	22.6	↑↑	41	85	Under 5 mortality	WB-DI	number /1,000 under 5 population	1.0	4.3	3.2	↓↑	17	15			
Communicable diseases	GBD	years /100,000 population	2.0	261.2	252.0	↓↑	27	27	5-14 mortality	UN IGME	number /1,000 5-14 year-old population	0.5	1.3	0.8	↓↑	28	17			
Non-communicable diseases	GBD	years /100,000 population	0.5	6,287.6	6,223.3	↓↑	48	38	15-60 mortality	WB-DI	number /1,000 population	2.0	76.1	54.9	↓↑	26	13			
Raised blood pressure	WHO	percentage	0.5	14.6	11.0	↓↑	2	1	Life expectancy at 60	WHO	years	1.0	20.7	25.8	↑↑	45	2			

South Korea: Education (2nd): Element and indicator scores

Trac3: Indicator Compendium - Impacted values												
Indicator Group	Indicator Name	Source	Unit	Weight	Value			Global Rank 2011	Global Rank 2021	Trac3 Score	Trac3 Weight	
					2011	10-yr trend	2021					
Pre-Primary Education (12th)				5%	92.8		94.9	14	12	Primary Education (3rd)	20%	
Pre-primary enrolment (net)	UNESCO	percentage	1.0	92.8		94.9	14	12	Primary enrolment	UNESCO	percentage	
										Primary completion	UNESCO	percentage
										Primary education quality	Ang&AI	score, 0-625
Secondary Education (5th)				30%	91.4		91.0	3	5	Tertiary Education (16th)	20%	
Secondary school enrolment	UNESCO	percentage	1.0	94.6		98.0	13	8	Tertiary enrolment	UNESCO	percentage	
Lower-secondary completion	UNESCO	percentage	1.0	98.9		103.1	38	1	Tertiary completion	UNESCO	percentage	
Access to quality education	V-DEM	index, 0-4	1.0	3.81		3.36	8	33	Average quality of higher education institutions	QS, TES	index, 0-1	
Secondary education quality	Ang&AI	score, 0-625	2.0	552.5		559.6	4	2	Skillset of university graduates	WEF	expert survey, 1-7	
										Quality of vocational training	WEF	expert survey, 1-7
Adult Skills (5th)				25%	83.3		89.5	20	5			
Adult literacy	UNESCO	percentage	1.0	97.97		97.97	55	59				
Education level of adult population	BL	index, 0-1	1.0	0.71		0.88	9	2				
Women's average years in school	IHME	years	1.0	13.5		14.6	20	18				
Education inequality	Cas&Dom	index, 0-1	0.5	0.144		0.129	33	29				
Digital skills among population	WEF	expert survey, 1-7	0.5	5.04		4.99	26	25				



Exposure to Air Pollution (126th)												Freshwater (45th)				Preservation Efforts (103rd)							
				Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021	Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021
Emissions (85th)			15%			68.9				82	85					15%	68.9			64.3	115	126	
CO2 emissions	CDIAC	Index, 0-1	2.0			0.568				0.534	135	138	Exposure to fine particulate matter	EPI	percentage	2.0	43.347			51.803	159	156	
SO2 emissions	EDGAR	index, 0-1	1.0			0.729				0.747	93	100	Health impact of air pollution	IHME	DALYs /100,000 population	2.0	666.7			598.7	52	45	
NOx emissions	EDGAR	index, 0-1	1.0			0.60				0.57	99	116	Satisfaction with air quality	Gallup	percentage	0.5	72.0			59.9	109	147	
Black carbon emissions	EDGAR	index, 0-1	1.0			0.780				0.766	32	43											
Methane emissions	EDGAR	index, 0-1	1.0			0.892				0.893	7	7											
Forest, Land and Soil (29th)				Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021	Source	Unit	Weight	2011	Value	10-yr trend	2021	Global Rank	2011	2021
Forest area	FAO	percentage	1.0			65.90				64.52	13	13	Renewable water resources	FAO	m³ per person	1.0	1,421.0			1,367.0	137	131	
Flood occurrence	WRI	index, 0-5	1.0			3.5				3.5	130	130	Wastewater treatment	EPI	percentage	1.0	83.7			83.7	28	28	
Sustainable nitrogen management	Zhang&Davidson	Index, 0-sqrt(2)	1.0			0.62				0.66	34	46	Freshwater withdrawal	FAO	percentage	1.0	45.02			45.02	136	137	
Oceans (25th)													Satisfaction with water quality	Gallup	percentage	1.0	81.6			78.1	48	47	
Overexploitation of fish stocks	EPI	percentage	1.0			9.0				6.1	27	12	Terrestrial protected areas	WDPA	percentage	1.0	11.230			11.671	105	105	
Stability of marine biodiversity	EPI	index, 0-100	1.0			41.9				41.9	74	74	Marine protected areas	WDPA	percentage	1.0	1,630.5			1,633.6	58	64	
Clean ocean water	OHI	index, 0-100	1.0			62.9				60.0	33	44	Long term management of forest areas	FAO	percentage	1.0	50.10			39.34	61	87	
													Protection for biodiverse areas	UN-WCMC	index, 0-1	1.0	34.404			37.693	101	103	
													Pesticide regulation	EPI	index, 0-25	1.0	23.0			23.0	17	18	
													Satisfaction with preservation efforts	Gallup	percentage	1.0	36.4			46.3	127	102	

Italics: Indicator contains imputed values

Glossary



Source Code	Source Name
AD	Aswath Damodaran
Ang&al	Angrist et al. (2021)
BL	Barro and Lee dataset
BTI	Bertelsmann Stiftung Transformation Index
CDIAC	Carbon Dioxide Information Analysis Center
CIRIGHTS	CIRIGHTS Dataset
CSP	Center for Systemic Peace
Cas&Dom	Castello-Climent and Domenech (2012)
Chinn-Ito	Chinn-Ito Index
ECI	Economic Complexity Index
EDGAR	Emissions Database for Global Atmospheric Research
EPI	Yale and Columbia Universities (Environmental Performance Index)
FAO	Food and Agriculture Organization of the UN - AQUASTAT
FH	Freedom House
FI	Fraser Institute
GBD	Global Burden of Disease study
GDL	Global Data Lab
GSI	Global Slavery Index
GSMA	Groupe Spéciale Mobile Association
GTD	Global Terrorism Database
GVS	World Values Survey, European Values Survey, Global Barometer Surveys, Arab Barometer, Latinobarometro
Gallup	Gallup Dailies
IBNET	International Benchmarking Network for Water and Sanitation Utilities
IBP	International Budget Partnership
IDEA	International Institute for Democracy and Electoral Assistance
IDMC	Internal Displacement Monitoring Center
IHME	Institute for Health Metrics and Evaluation
ILGA	International Lesbian, Gay, Bisexual, Trans and Intersex Association
ILO	International Labour Organization
IMF	International Monetary Fund
IMF-FAS	International Monetary Fund Financial Access Survey
IMF-WEO	International Monetary Fund World Economic Outlook
ITU	International Telecommunications Union
JMP	WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation
OHI	Ocean Health Index
OPHI	Oxford Poverty and Human Development Initiative
PTS	Amnesty International & US State Department Political Terror Scale
Pew	Pew Research Center
QS, TES	QS World University Rankings and TES University Rankings
RAI	Rural Access Index
RsF	Reporters Without Borders
TE	Trading Economics
UCDP	Uppsala Conflict Data Program
UIC	International Union of Railways
UN IGME	United Nations Inter-agency Group for Child Mortality Estimation
UN-Corm	United Nations Comtrade Database
UN-WCMC	UN Environment World Conservation Monitoring Centre
UNAIDS	Joint United Nations Programme on HIV and AIDS
UNCTAD	United Nations Trade Data
UNESCO	UNESCO Institute for Statistics
UNESD	United Nations Energy Statistics Database
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations International Children's Emergency Fund
UNODC	United Nations Office on Drugs and Crime
V-DEM	Varieties of Democracy
WB-DB	World Bank Doing Business Index
WB-DI	World Bank World Development Indicators
WB-ES	World Bank Enterprise Surveys
WB-GFI	World Bank Global Financial Inclusion
WB-LPI	World Bank Logistics Performance Index
WDPA	World Database on Protected Areas
WEF	World Economic Forum Global Competitiveness Index
WGI	Worldwide Governance Indicators
WHO	World Health Organisation
WHO-GDO	World Health Organisation (Global Dementia Observatory)
WIPO	World Intellectual Property Organisation
WJP	World Justice Project (Rule of Law Index)
WRI	World Resources Institute
WTO	World Trade Organisation
WomStat	The WomanStats Project
Zhang&Davidson	Xin Zhang and Eric Davidson (2016)

Following the data irregularities identified in the Doing Business '18 and '20 reports, the World Bank Group released revised data in time for inclusion in the 2021 Prosperity Index. The World Bank Group subsequently took the decision to discontinue the Doing Business report. Therefore, for the 2022 Prosperity Index, we will be reviewing all data sources to ensure that the Index utilises the most relevant and accurate sources.