Agricultura y género
Estadísticas internacionales

Lunes 16 de octubre 2023
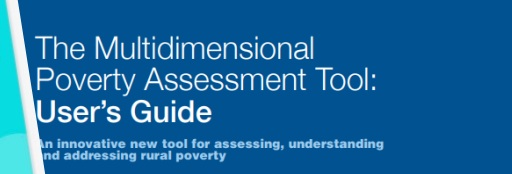
Daniela Benavente, Consultora

Mi experiencia con índices

Recursos en línea

- OCDE/EU Manual para la construcción de indicadores compuestos (2008)

- Competence Centre on Composite Indicators and Scoreboards del Joint Research Centre de la Unión Europea: https://knowledge4policy.ec.europa.eu/composite-indicators_en

- 111 índices incluyen a Chile, ordenados por agenda EU y ODS, con foco en Chile: https://composite-indicators.jrc.ec.europa.eu/explorer/explorer/countries-and-territories/cl/chile

- Auditorías estadísticas: https://knowledge4policy.ec.europa.eu/composite-indicators/statistical-audits_en

- Coint Tool en Excel in COINr package: https://knowledge4policy.ec.europa.eu/composite-indicators/toolkit_en

Handbook on Constructing Composite Indicators

METHODOLOGY AND USER GUIDE

OECD   JRC EUROPEAN COMMISSION
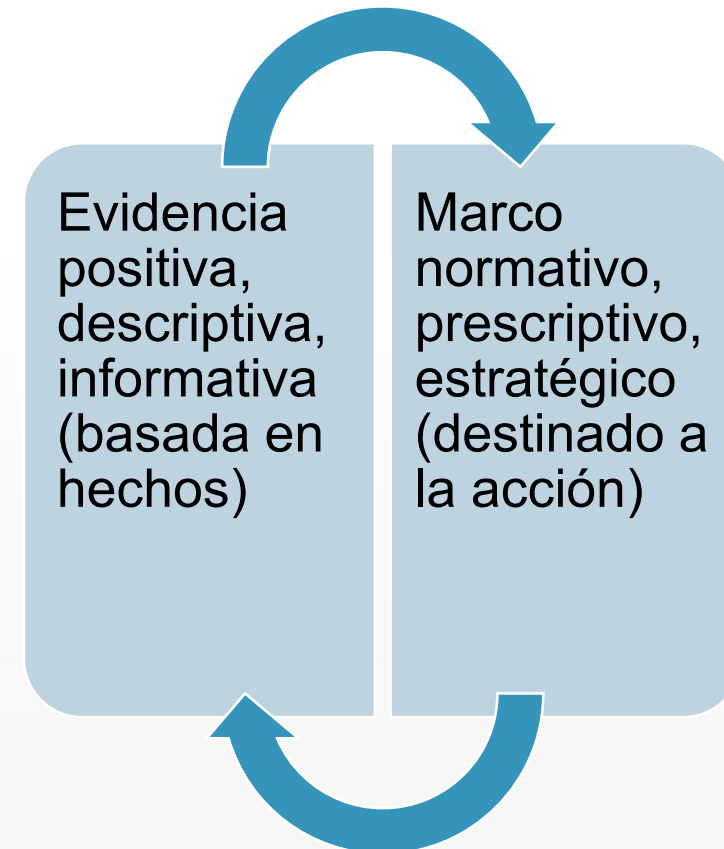
Qué es un índice?
Retroalimentación con políticas públicas

Definición

- Un índice, ó indicador compuesto, es una **estadística única** que mide un **concepto multidimensional**

- Resulta de la **agregación ponderada** de indicadores diversos sobre la base de un **marco conceptual** y un **modelo estadístico.**

Uso en políticas públicas

Evidencia positiva, descriptiva, informativa (basada en hechos)

Marco normativo, prescriptivo, estratégico (destinado a la acción)
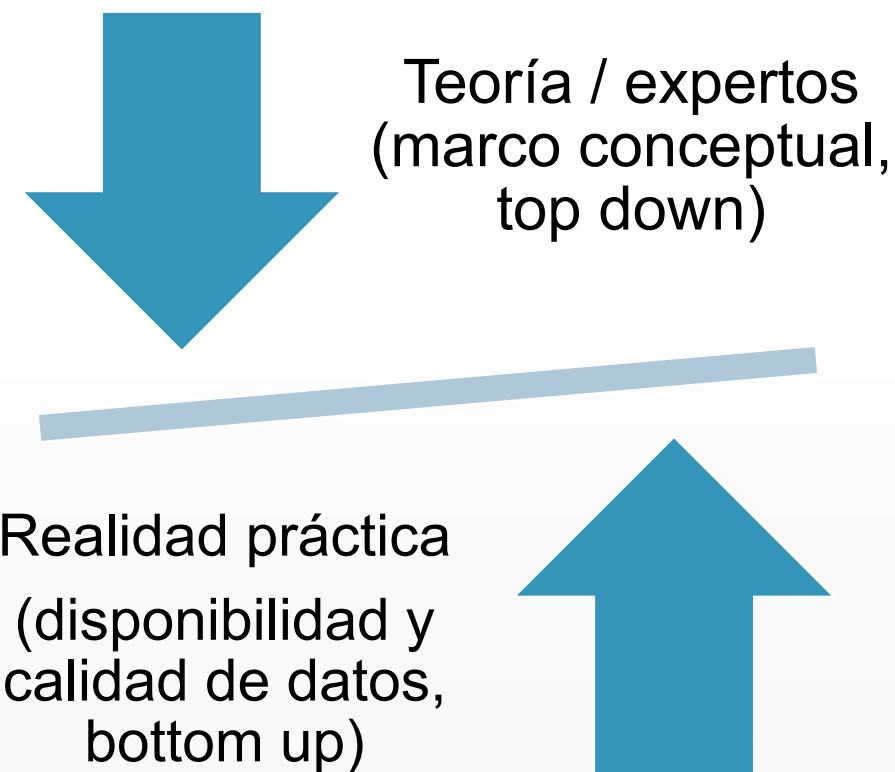
Etapa 1: Marco conceptual
Debe ser coherente con el conocimiento experto

- Criticables y criticados

- Fenómenos multi-disciplinarios

  - No hay "1" modelo: existen por ejemplo **23 rankings de universidades** (Wikipedia)

  - Mejores practicas, progresión, simetrías.

¿O TE MOLESTA LA CRÍTICA CONSTRUCTIVA?

Global Innovation Index (average)

Innovation Efficiency Ratio (ratio)

Innovation Input Sub-Index

Innovation Output Sub-Index

Institutions	Human capital & Research	Infrastructure	Market Sophistication	Business Sophistication	Knowledge & Technology Outputs	Creative Outputs
Political environment	Education	ICT	Credit	Knowledge workers	Knowledge creation	Intangible assets
Regulatory environment	Tertiary education	General infrastructure	Investment	Innovation linkages	Knowledge impact	Creative goods & services
Business environment	Research & development	Ecological sustainability	Trade & competition	Knowledge absorption	Knowledge diffusion	Online creativity

	5.3 Absorción de conocimiento	6.3 Difusión de conocimiento
Efecto espejo		
Royalties y licencias	Pagos	Recetas
Inversión extranjera directa	Entradas netas	Salidas netas
Servicios de computación y Comunicaciones	Importaciones	Exportaciones
High-tech	Importaciones	Exportaciones

- Gender Gap Report del WEF(brecha de género)
  - Brechas más que niveles: matrícula secundaria mujeres versus hombres, más que calidad de la educación
  - Resultados más que insumos o políticas: mujeres jefes de estado más que duración de duración del postnatal
  - Igualdad de género más que empoderamiento de mujeres: cap de puntaje en 1 cuando hay paridad
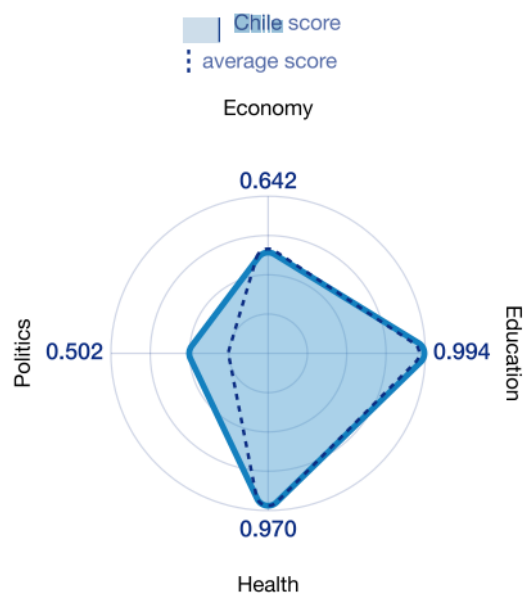

Economy Profile
Chile

Score (imparity = 0, parity = 1): **0.777**
Rank (out of 146 countries): **27th**
Index Edition: **2023**

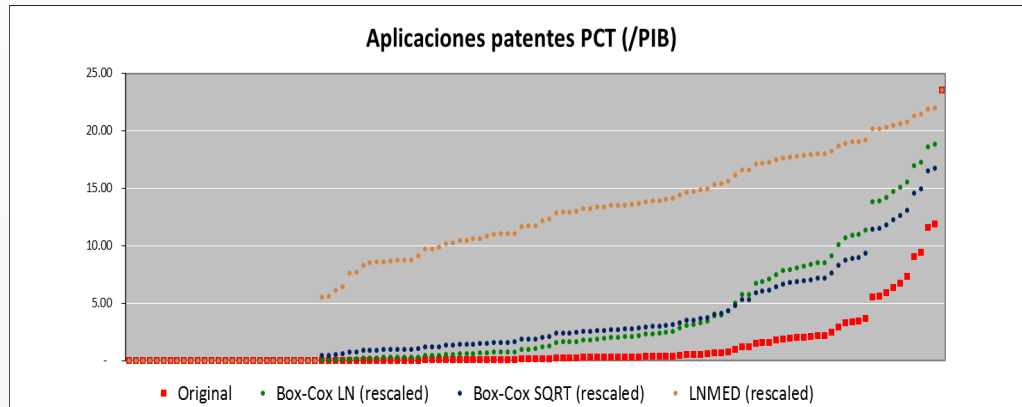Global Gender Gap Index 2023 Edition

Chile score
average score

Economy 0.642
Education 0.994
Politics 0.502
Health 0.970

Overview

Index and Subindex	2023 Score	2023 Rank	2022 Score	2022 Rank
Global Gender Gap Index	0.777	27th	0.736	47th
Economic Participation and Opportunity	0.642	96th	0.616	105th
Educational Attainment	0.994	64th	0.994	62nd
Health and Survival	0.970	69th	0.970	76th
Political Empowerment	0.502	12th	0.363	34th

Etapa 2: Selección y tratamiento de datos

- Crítica: "Representación simplista que agrega peras con manzanas."

- Comparabilidad (sesgo?): Ej. Patentes en GII

  - per cápita? USA > CHL > CHN

  - por PIB? CHN > USA > CHL

  - por gasto en I&D? CHL > CHN > USA

$$Penalty = MAX\left(0, MIN\left(1, \frac{decline}{-25} * \frac{share}{20}\right)\right)$$

Penalty for a decline in cereal output per capita 1980-2015

Aplicaciones patentes PCT (/PIB)
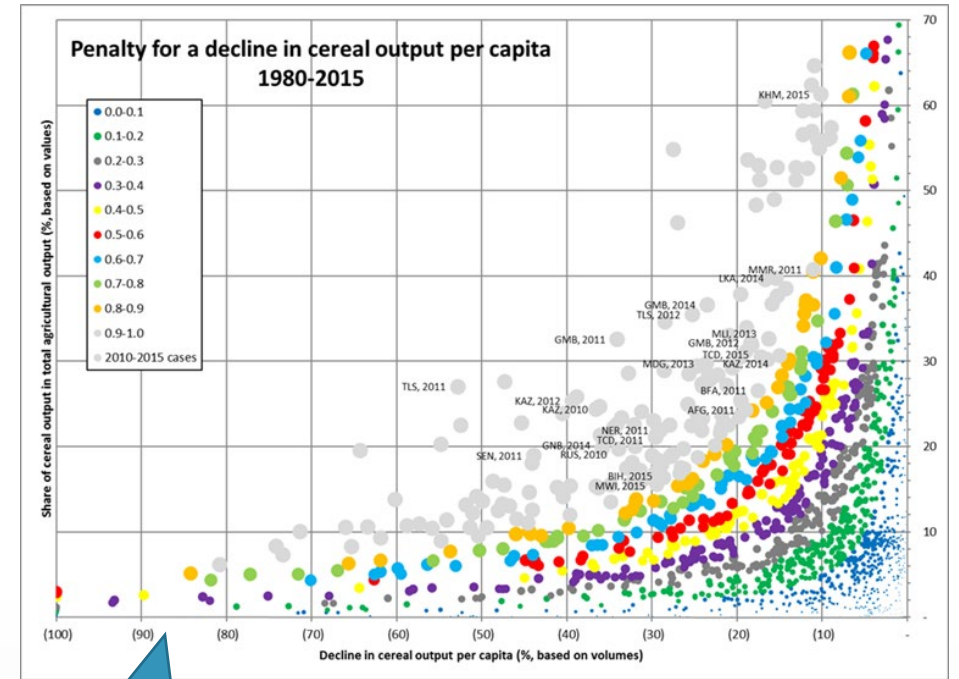
A veces hay que inventar el dato clave FAVIEW de FAO (detalle más adelante)
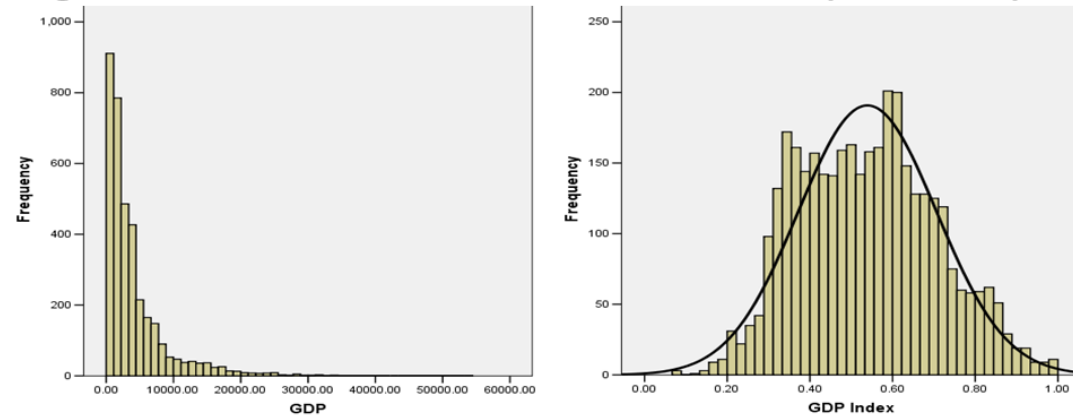
Etapa 3: Análisis multivariante
Etapa técnica

- Problemas frecuentes:
  - Valores extremos (*outliers*)
  - Compensaciones no deseadas
  - Distribuciones no-normales
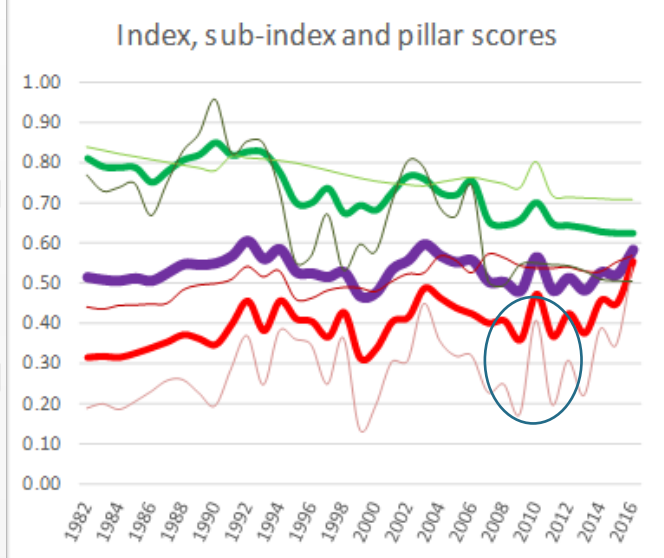 - Correlaciones negativas
  - … etc.

Log-transformation and normalization of GDP (FAO, 2011)

Variance-stabilizing transformations

Relationship of σ^2 to $E(y)$	Transformation
$\sigma^2 \propto$ constant	$y' = y$ (no transformation)
$\sigma^2 \propto E(y)$	$y' = \sqrt{y}$ (square root: Poisson data)
$\sigma^2 \propto E(y)(1 - E(y))$	$y' = \sin^{-1}(\sqrt{y})$ (arcsin)
$\sigma^2 \propto (E(y))^2$	$y' = \log y$
$\sigma^2 \propto (E(y))^3$	$y' = y^{-1/2}$ (reciprocal square root)
$\sigma^2 \propto (E(y))^4$	$y' = y^{-1}$ (reciprocal)

Source: Chen (no date)

Haití
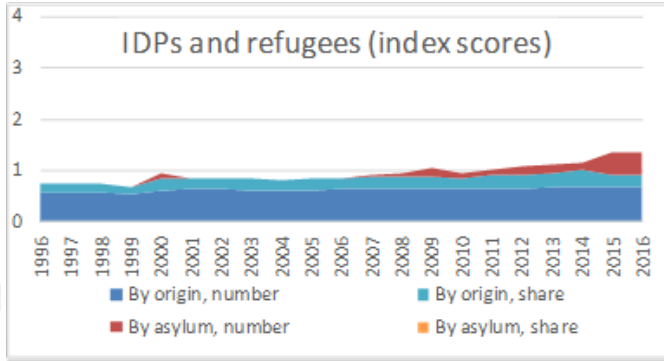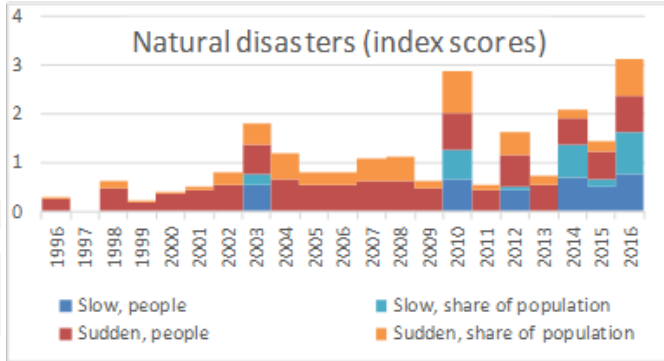
Siria
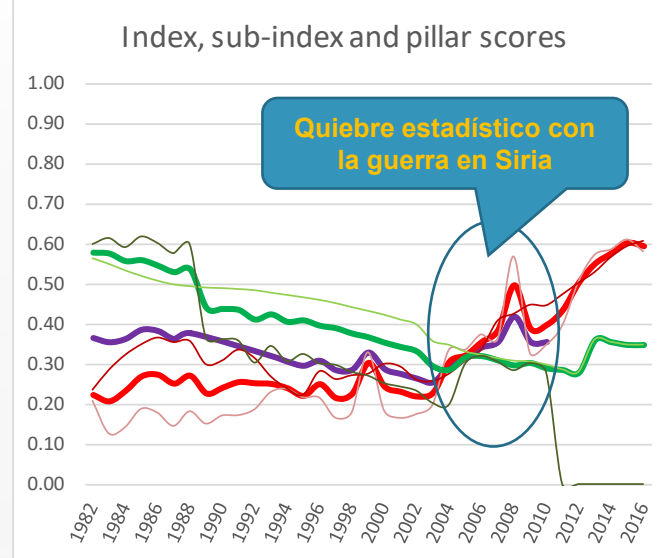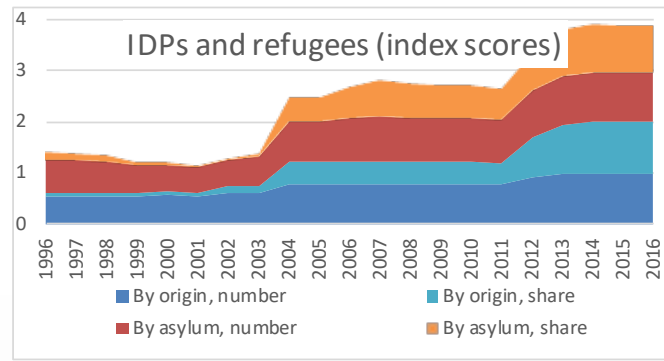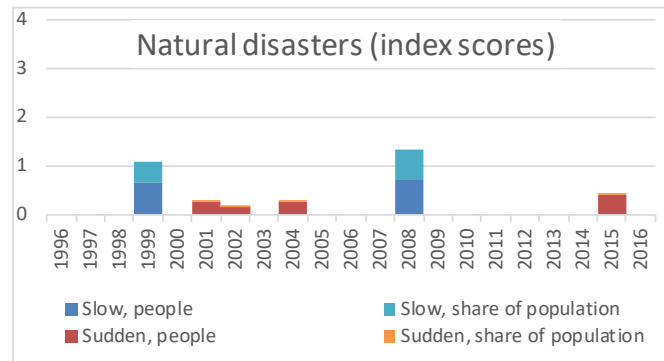
Etapa 4: Imputación datos faltantes, backcasting

Vulnerabilidad agrícola (FAO)

Uso interno para evaluación de 30 años de ayuda alimentaria

Exposición al riesgo (elementos coyunturales)

Resiliencia (factores estructurales)

Severidad de choques

Factores agravantes

Social

Económica

Desastres naturales

Personas desplazadas internamente / refugiados

Quiebre estadístico con la guerra en Siria

Etapa 5: Normalización y scoring (escala común)

- Métodos más comunes:
  - *z-scores* (promedio 0, varianza 1)
  - ratios (Cf. mujer/hombre, output/input)
  - min-max en rango ([0, 1], [0, 100], etc.)
- Para ponderar y agregar (*index scoring*)
- Permite también detectar **fortalezas** y **debilidades**

Chile

SME Competitiveness Grid

FIRM CAPABILITIES (Normalized scores)

Compete	Small	Medium	Large	All
International quality certificate	6.8	44.6	76.1	50.4
Bank account	50.0	91.3	62.8	63.6
Capacity utilization	37.8	42.1	53.6	43.2
Managerial experience	81.2	82.2	53.8	74.5
Connect				
E-mail	62.9	82.3	97.1	77.3
Firm website	63.4	77.1	84.4	74.8
Change				
Audited financial statement	22.1	48.8	79.7	48.7
Investment financed by banks	87.3	75.8	76.5	79.0
Formal training programme	34.1	66.5	95.2	66.5
Foreign technology licences	17.3	39.2	73.1	45.5

■ Compete ■ Connect ■ Change

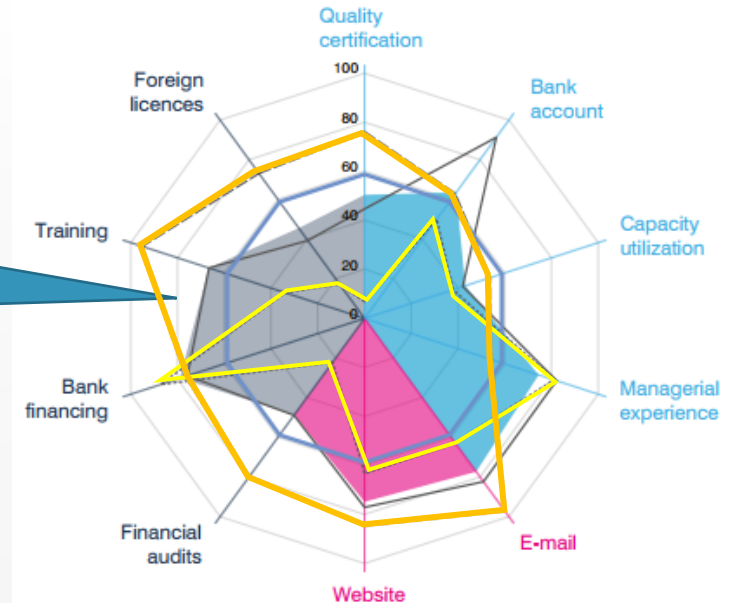— Reference level ⋯ Small — Medium — Large

Competitividad PYMEs (ITC)
Normalización ad-hoc para efecto visual:
mediana obtiene puntaje 50
Objetivo: visualización de brecha
(**pequeñas**, medianas y **grandes** empresas)

Etapa 6: Ponderación
Contribuciones de indicadores

- Coeficientes: importancia (expertos, encuestas), o definidos con métodos estadísticos

- GII 2013: Análisis envolvente de datos: para detectar estrategias "implícitas" y ventajas comparativas. Cuál es mi mejor ranking si cambio los ponderadores?

> GII 2013: Con mis reglas gano yo

	Institutions	Human capital and research	Infrastructure	Market sophistication	Business sophistication	Knowledge and technology outputs	Creative outputs	Efficient frontier rank	GII rank	Diff.
GII weights	0.10	0.10	0.10	0.10	0.10	0.25	0.25			
	Country-specific weights and efficient frontier (min 0.05 and max 0.20)									
Switzerland	0.06	0.18	0.11	0.08	0.19	0.19	0.19	1	1	-
Hong Kong (China)	0.20	0.05	0.20	0.20	0.19	0.05	0.12	1	7	6
Singapore	0.12	0.19	0.19	0.10	0.20	0.14	0.05	1	8	7
Sweden	0.20	0.20	0.20	0.17	0.05	0.13	0.05	2	2	-
United States of America	0.12	0.20	0.05	0.20	0.18	0.20	0.05	2	5	3
United Kingdom	0.20	0.20	0.20	0.20	0.05	0.06	0.09	3	3	-
Finland	0.20	0.20	0.20	0.05	0.11	0.19	0.05	4	6	2
Netherlands	0.20	0.12	0.20	0.05	0.20	0.05	0.18	7	4	(3)
Ireland	0.20	0.20	0.05	0.20	0.12	0.18	0.05	7	10	3
Denmark	0.20	0.20	0.20	0.20	0.05	0.06	0.09	8	9	1
Canada	0.20	0.20	0.19	0.20	0.05	0.05	0.10	9	11	2
Norway	0.20	0.20	0.20	0.05	0.10	0.05	0.20	9	16	7
Luxembourg	0.20	0.20	0.11	0.05	0.19	0.05	0.20	10	12	2
Israel	0.05	0.20	0.08	0.20	0.20	0.20	0.07	10	14	4

SÓLO QUE SERÍA LINDO LEVANTARSE UN DÍA Y ENCONTRARSE CON QUE POR FIN LA VIDA DE UNO DEPENDE DE UNO

Etapa 7: Agregación
Índice v. tablero de bordo (*scoreboard*)

- Promedios geométricos son menos "compensatorios" que los aritméticos: 2 y 8 promedian 4, no 5.

- Son preferibles los perfiles "equilibrados"

Índice de Desarrollo Humano (promedio **geométrico**)		
Vida larga y saludable	Conocimiento (promedio **aritmético**)	Estándar de vida decente
Esperanza de vida [20, 85 años]	Años de escolarización – esperados [0, 18 años] / Años de escolarización – promedio [0, 15 años]	LN PNB per capita (PPP$) [100, 75'000]

El problema con la agregación de promedios
Índice de desarrollo humano ajustado por inequidad (2015)

2021	Valor	Valor	Ranking	Caída en valor	Caída en ranking
Very high human development					
Panama	0,805	0,640	61	20,5	-19
Costa Rica	0,809	0,664	58	17,9	-17
Mauritius	0,802	0,666	63	17,0	-11
Chile	**0,855**	**0,722**	**42**	**15,6**	**-8**
Argentina	0,842	0,720	47	14,5	-6
Türkiye	0,838	0,717	48	14,4	-7
Thailand	0,800	0,686	66	14,3	-2
Oman	0,816	0,708	54	13,2	-7
Hong Kong, China (SAR)	0,952	0,828	4	13,0	-19
Singapore	0,939	0,817	12	13,0	-15
Spain	0,905	0,788	27	12,9	-12
Uruguay	0,809	0,710	58	12,2	-3
World	0,732	0,590		19,4	—
OECD	0,899	0,800		11,0	—
Developing countries	0,685	0,538		21,5	—
Latin America and the Caribbean	0,754	0,601		20,3	—
Very high human development	0,896	0,805		10,2	—
High human development	0,754	0,627		16,8	—
Medium human development	0,636	0,481		24,4	—
Low human development	0,518	0,359		30,7	—

Caída de Chile (entre países de "muy alto" desarrollo humano)

A MI LO QUE MÀS ME PREOCUPA ES CÓMO BAJAR EL ÍNDICE DE EGOÍSMO...

Etapa 8: Análisis de sensibilidad
Auditoria estadística

- Objetivo: evaluar qué tan robusto es el índice obtenido, matizar resultados

- La auditoría es a menudo externa e independiente

- O no se hace… o no se publica…

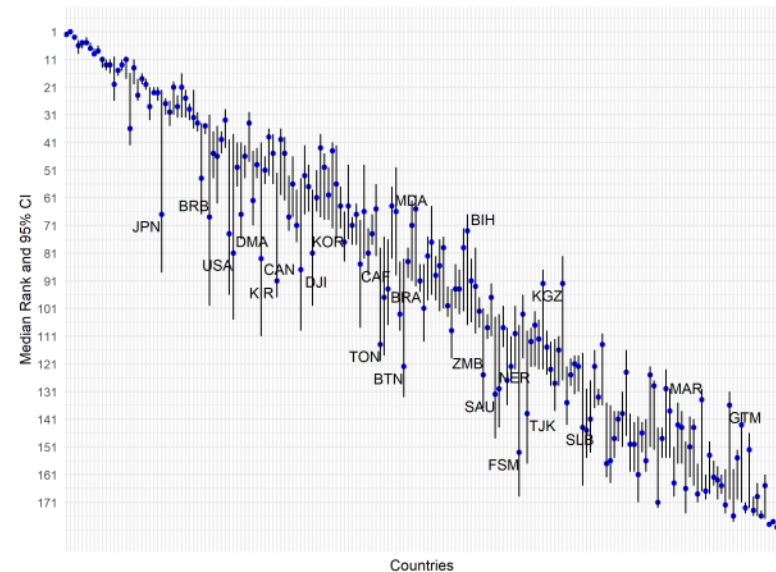**Figure 1.** Median ranking of countries and 95% CI across simulations of alternative EPI methodologies.

Source: European Commission's Joint Research Centre, 2022.
Notes: Countries with a Q95-Q5 confidence interval of greater than 36 positions are labelled on the plot.

Auditoría del JRC, **Indice de protección ambiental 2022** (universidades de Yale y Columbia)

Índice Mundial de Innovación	
Rankings publicados	Auditoría
Datos faltantes	Datos imputados
Promedios aritméticos	Promedios geométricos
Ponderadores fijos	Ponderadores aleatorios
Un cómputo	4,000 simulaciones Monte Carlo
Un ranking	Intervalos de confianza de 90% para rankings

Herramienta Excel y R "Hágalo Ud. Mismo"

- Se puede **auditar** un índice "a ciegas"?
- Ejemplo: Índice de competitividad de Turquía
  - Marco conceptual: OCDE
  - Datos: Turquía
  - Modelización: analista (yo)
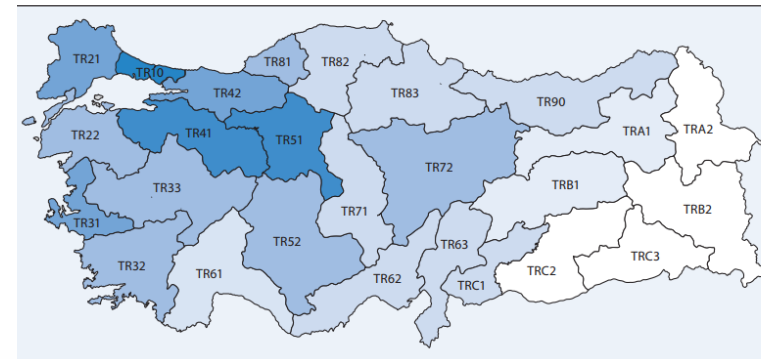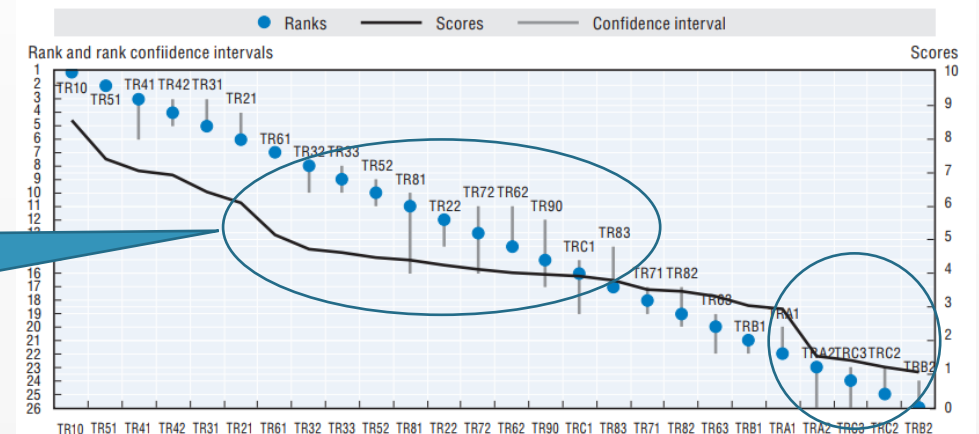 - Auditoría: piloto de la herramienta "hágalo Ud. mismo" (yo para JRC)

Figure 5. **Robustness analysis of rankings in the regional competitiveness index**
Regions ranked in descending order

Note: Regions ordered by their rank in the overall index.
Source: All data sources are included in Annex C.

Scores: variable continua, aquí "plana"
Rankings: cambios discretos, poca "robustez"
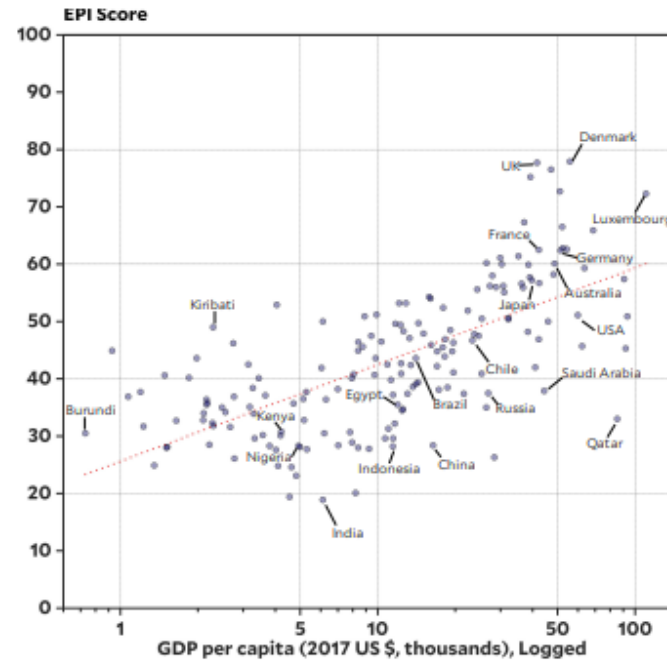
Etapa 9: Relación con otros indicadores

Figure ES-1. EPI scores are correlated with country wealth, although some countries outperform their economic peers while others lag.

Figure 12 Innovation overperformers, relative to their economic development

● Performing above expectation for level of development

Source: Global Innovation Index Database, WIPO, 2023.

Note: Bubbles sized according to population. The cubic spline trendline shows the expected level of innovation performance at different levels of GDP per capita for all economies covered in the GII 2023.

- PIB per cápita (PPP) suele ser muy buen "predictor"
  - Environmental Performance Index
  - Global Innovation Index

GII original (2015) ↘

←Scientific American

The Economist↓

Etapa 10: Visualización

Preguntas y receso

SDG Gender Index

- Los índices permiten:
  - Ordenar marcos conceptuales,
  - Desarrollar estadísticas,
  - Establecer agendas multilaterales,
  - Detectar mejores prácticas,
  - Etc

Gender Gap Report 2023

Indicator	Rank	Score*	Compare with Global average		Difference F-M	Female vs Male			Min Max
			0	1		Min		Max	
🔖 **Economic Participation and Opportunity**	96th	0.642			–	–			–
Labour-force participation rate %	98th	0.677			-22.23	46.67 ◆—		—◆ 68.90	0-100
Wage equality for similar work 1-7 (best)	72nd	0.624			–	–			–
Estimated earned income int'l $ 1,000	101st	0.576			-13.73	18.64 ◆—◆ 32.36			0-150
Legislators, senior officials and managers %	92nd	0.436			-39.26	30.37 ◆—		—◆ 69.63	0-100
Professional and technical workers %	1st	1.000			4.94	47.53 ◆◆ 52.47			0-100
📖 **Educational Attainment**	64th	0.994			–	–			–
Literacy rate %	59th	0.999			–	–			–
Enrolment in primary education %	84th	0.992			-0.82			99.12 ◆ 99.94	0-100
Enrolment in secondary education %	89th	0.991			-0.95	103.16 ◆ 104.11			0-200
Enrolment in tertiary education %	1st	1.000			15.38	84.10 ◆◆ 99.48			0-200
➕ **Health and Survival**	69th	0.970			–	–			–
Sex ratio at birth** %	1st	0.944			–	–			–
Healthy life expectancy** years	83rd	1.030			–	–			–
🏛 **Political Empowerment**	12th	0.502			–	–			–
Women in parliament %	38th	0.550			-29.00	35.50 ◆—		—◆ 64.50	0-100
Women in ministerial positions %	1st	1.000			16.67	41.67 ◆—◆ 58.33			0-100
Years with female/male head of state (last 50)	18th	0.191			-33.99	8.01 ◆—		—◆ 42.00	0-50

2/3: Oportunidad de colaboración entre partes interesadas (*stakeholders*)

- Informes emblemáticos (*flagships*) de los organismos que los desarrollan

  - Organismos internacionales

  - ONGs / *think tanks*

  - Institutos académicos

  - Firmas patrocinantes

  - Agencias estadísticas

  - Crecientemente fuentes privadas de datos (Google, Scopus, Thomson Reuters, Clarivate Analytics, SCImago, ZookNIC, etc.)

3/3: Herramienta destinada a la acción pública

- Punto de partida de un diálogo técnico

- Promoción de una agenda normativa implícita

- Señalar: señalan las ramificaciones multidisciplinarias

- Perfiles: permiten detectar fortalezas y debilidades

- Sub-índices, cuadros, infografías: elementos para comparar desempeño absoluto, en el tiempo, relativo a otros países (regiones, universidades, etc.)

Table 9: FAVIEW treatment of indicators

Code	Weight	Direction of effect	Conceptual framework	Source, scaling, imputation of missing data	Bounds [lower, upper]	Transformation and scores Weighted arithmetic average (WAA) of sub-dimension scores, unless specified
Index			The Food and Agriculture Vulnerability Index for Early Warning (FAVIEW)			
Sub-index	0.6	1	Exposure to Risk Sub-Index			
1.	0.5	1	Pillar 1: Severity of shocks			
1.1	0.4	1	Severity of natural disasters			
1.1.1	0.75	1	People affected by natural disasters		[0, 1]	Average of slow and sudden disaster scores
	2/3	1	Severity of slow disasters (biological, climatological)		[0, 1]	Average of number and share scores
	1/3	1	Severity of sudden disasters (geophysical, hydrological, meteorological, extra-terrestrial)		[0, 1]	Average of number and share scores
	0.5		Total (people)	CRED EM-DAT, blanks replaced by 0 if positive numbers in 1980-2015	[1, 300 million]	$f(x) = \ln(x)$, and 0 scores 0
	0.5	1	Share (per thousand population)	Total divided by population * 1000	[0, 1'000] ‰	$f(x) = \ln(x+1)$
1.1.2	0.25	1	Penalty for a decline in cereal output per capita		[0, 1]	$Penalty = \frac{share\ decline}{20} - 25$, and growth scores 0
			Decline in cereal output per capita (%)			$Decline = \left(\frac{Output\ pc_t}{Av.output\ pc_{t-1,t-2,t-8}} - 1\right) * 100$
			Cereal output per capita (tons)	Cereal output divided by population		
			Cereal output (thousand tons)	CCBS, no imputation of missing data		
		*	Share of cereal in agriculture output (%)			$Share = Cereal\ output/Agric.output * 100$
			Cereals, total gross production value (constant 2004-2006 1000 I$)	FAOSTAT, imputation for 2014-15		
			Agriculture (PIN), gross production value (constant 2004-2006 1000 I$)	FAOSTAT, imputation for 2014-15		
1.2	0.6	1	Severity of man-made disasters			
1.2.1	0.8	1	Severity of conflicts		[0, 1]	Average of scores by origin and by asylum/residence
	0.5		IDPs and refugees by country of origin		[0, 1]	Average of number and share scores
	0.5		IDPs and refugees by country of asylum/residence		[0, 1]	Average of number and share scores
	0.5	1	Total (people)	UNHCR ("*" replaced by 2.5 in 2015)	[1, 12 million]	$f = \ln(x)$, and 0 scores 0
	0.5	1	Share (per thousand population)	Total divided by population * 1000	[0, 650] ‰	$f = \ln(x+1)$
1.2.2	0.2	1	Inflation (%)	IMF WEO, no imputation of missing data	[-149, 152] %	1) Inflation of 0 to 3% scores 0 2) $x > 3: f = \ln(x-2)$ 3) $x < 0: f = \ln(abs(x)+1)$
2.	0.5	1	Pillar 2: Aggravating factors			
2.1	1/3	1	Import dependency			
2.1.1	0.5	1	Cereal import dependency ratio (%),	CCBS, no imputation of missing data	[0, 100] %	$Import\ dependency = \frac{imports\ I - exports\ X}{output\ P + I - X}$, three-year average (t, t-1, t-2)

Code	Weight	Direction of effect	Conceptual framework	Source, scaling, imputation of missing data	Bounds [lower, upper]	Transformation and scores Weighted arithmetic average (WAA) of sub-dimension scores, unless specified
2.1.2	0.5	-1	Energy self-sufficiency (ratio)	IEA, imputation for 2014-15	[0, 2]	Three-year average (t, t-1, t-2), also note that self-sufficiency + import dependency = 1
2.2	1/3	1	Economic diversification			
2.2.1	0.5	1	Ecosystem health [0, 100]	Yale EPI, linear interpolation for 2013, last available data for 2015	[0, 100]	
2.2.2	0.5	1	Agriculture value added (% of GDP)	UNSD, imputation for 2015	[0, 65] %	
2.3	1/3	1	Market access			WAA of 2.2.1 and 1.2.2, multiplied by 1.2 for LLDCs
2.3.1	0.5	-1	Logistics Performance Index (1-5)	WB LPI, linear interpolation	[1, 5]	
2.3.2	0.5	-1	Political stability and absence of violence (std)	WB WGI, linear interpolation	[−3.3, 1.7]	
2.3.3	n/a	1	Penalty for landlocked countries	UNSD, LLDC 1, otherwise 0 (dummy)		
	0.4	1	Resilience Sub-Index			
3.	0.6	1	Pillar 3: Social coping capacity			
3.1	0.5	1	Health and undernourishment			
3.1.1	0.5	1	Under five mortality rate (per thousand live births)	WHO, no imputation of missing data	[0, 330] ‰	$f = \sqrt{x}$
3.1.2	0.5	1	Prevalence of undernourishment (%)	FAOSTAT, no imputation of missing data	[5, 80] %	$f = \sqrt{x}$
3.2	0.5	1	Education			
3.2.1	0.5	-1	Adult literacy rate (%)	UNESCO, linear interpolation	[10, 100] %	$f = x^2$
3.2.2	0.5	-1	Secondary gross enrolment ratio (%)	UNESCO, linear interpolation	[5, 100] %	$f = x^2$
4.	0.4	1	Pillar 4: Economic coping capacity			
4.1	1/3		Economic performance			
4.1.1	1	-1	GDP per capita (current PPP$)	IMF WEO, no imputation of missing data	[700, 80'000] PPP$	$f = \ln(x)$
4.2	2/3	1	Resource mobilisation			
4.2.1	0.6	1	Short term debt (% of total reserves)	WB WDI, imputation for 2014-15 only	[0, 1'000] (%)	$f = \ln(x + 1)$
4.2.2	0.4		Remittances (index)	Imputation at the index level, only for 2014-15		$MIN\left(\frac{share}{20}, 0.6\right) * \left(1 + MAX\left(-1, \frac{30-growth}{60}\right)\right)$
4.2.2	0.5	1	Personal remittances, received (% of GDP)	WB, no imputation of missing data		
			Growth (decline) in remittances (%)			$Growth = \left(\frac{Remittances_t}{Av.\,remittances_{t-1,t-2,t-3}} - 1\right) * 100$
			Remittances (current US$)	WB, no imputation of missing data		
			Total population (both sexes combined)	UNPD, no imputation of missing data		

Recursos en línea – Género

- SDG Gender Index (Equal Measures 2030), 49 de 144: https://www.equalmeasures2030.org/wp-content/uploads/2023/06/Country_Profile_Chile.pdf

- Gender Inequality Index (UNDP): https://hdr.undp.org/data-center/thematic-composite-indices/gender-inequality-index#/indicies/GII

- Gender Social Norms Index (UNDP): https://hdr.undp.org/system/files/documents/hdp-document/gsni202303pdf.pdf

- Social Institutions and Gender Index (OECD): https://www.oecd.org/stories/gender/social-norms-and-gender-discrimination/sigi/dashboard?country=CHL

- Gender Gap Report, 27 de 146 países: https://widgets.weforum.org/GGGR/edition-23-ranking/pdf/2023/gggr_index_2023_031_CHL.pdf

- Female Opportunity Index, 28 de 100: https://n26.com/en-eu/female-opportunity-index

- Gender Equality Strategy monitoring portal (sólo EU): https://composite-indicators.jrc.ec.europa.eu/ges-monitor

Recursos en línea – Agricultura

- Environmental Performance Index (Yale University), 65 de 180, https://epi.yale.edu/epi-results/2022/country/chl

- Global Food Security Index (The Economist): https://impact.economist.com/sustainability/project/food-security-index/explore-countries/chile

- Notre Dame-Global Adaptation Country Index, 33 de 185 (5 en Vulnerability – Food): https://gain.nd.edu/our-work/country-index/rankings/

- Planetary pressures–adjusted Human Development Index (UNDP), Chile -9,4% respect a HDI: https://hdr.undp.org/planetary-pressures-adjusted-human-development-index#/indicies/PHDI

- Green Growth Index (Global Green Growth Institute): https://ggindex-simtool.gggi.org/SimulationDashBoard/country-profile

Conclusión

- Visibilizar tema multi-disciplinario
- Organizar y resumir información
- Fomentar diálogo y colaboración
- Orientar políticas públicas
- Comparar desempeño
- Fomentar compilación de estadísticas
- Difusión y comunicación

- Modelos teóricos a menudo débiles
- Arbitrariedad indicadores y parámetros
- Compensaciones (*tradeoffs*) discutibles
- Rankings poco "robustos"
- Índices mal diseñados pueden llevar a conclusions equivocadas
- Opacidad

Gracias!