WELL-BEING AND THE DIGITAL TRANSFORMATION

Understanding the opportunities and risks of the digital transformation for people's well-being

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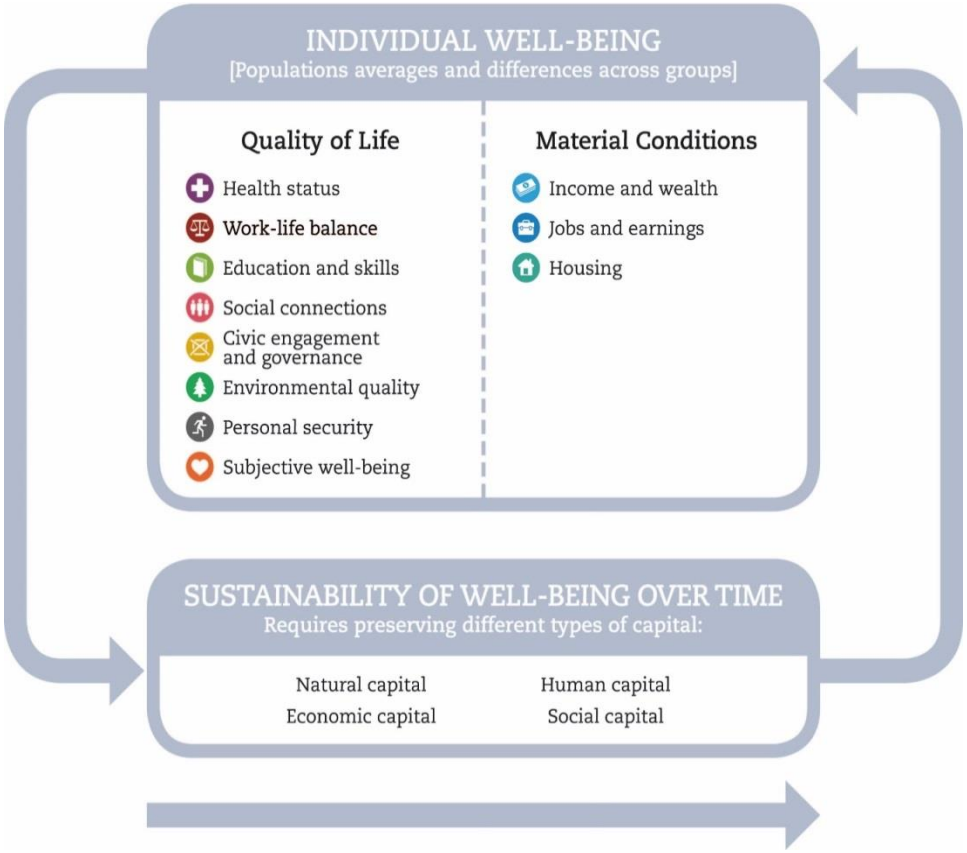
Policy Context: The "Beyond GDP" policy agenda

- Report by the Commission on the Measurement of Economic Performance and Social Progress (2009), i.e. **Stiglitz-Sen-Fitoussi Report**, yielding the **creation of OECD HSPM Division,** the **OECD Better Life Initiative** and the associated **OECD Well-being measurement framework** (*How's Life?* 2013, 2015, 2017)
- **EU 2020** and Communication on "GDP and beyond"
- **UN Resolution** 65/309 (2012): "Happiness: towards a holistic approach to development"
- **Rio+20** "The Future We Want" declaration, June 2012
- Wide range of **well-being national initiatives (UK, NZL, ISR…)**
- OECD work on **Inclusive Growth** and **Multi-dimensional Living Standards**
- **SDG as a prominent multi-dimensional policy agenda**

The OECD Well-being framework



- Puts **people** at the centre of the assessment
- Focuses on well-being **outcomes**, rather than inputs and outputs
- Includes outcomes that are both **objective** and intrinsically **subjective**
- Considers the **distribution** of well-being outcomes across the population

The Digital Transformation and well-being

- OECD **Going Digital project** includes a vast new body of research on the implications of the digital transformation for the economy, society and policymakers

- Existing key publications (STI Scoreboard [OECD, 2017], Measuring the Digital Economy [OECD, 2014] and Digital Economy Outlook [OECD, 2017]), focus primarily on the digital transformation as it relates to the economy and society as a whole

→ Increased need to review **the opportunities and risks** of the digital transformation for people's well-being, using the OECD Well-being framework as a starting point

Goals of this paper

- **Map the opportunities and risks** of the Digital Transformation for Well-being in each dimension of the OECD Well-being framework
- Highlight the **data gaps** that need to be addressed in the future
- Show the **different paths** countries take in seizing opportunities and mitigating risks of the digital transformation

Key identified opportunities and risks

	Opportunities	Risks
ICT Access and use	*Access to* ***digital infrastructures*** is a prerequisite to reap the benefits of the digital transformation	There may be ***inequalities of Internet usage*** even when there is equality in access
	Diversity of Internet use allows greater benefits to individuals	
Education and skills	Students and adults need ***digital skills*** to participate in a digital society and economy	Emergence of a ***digital skills gap*** between those who do and those who do not have digital skills
	Digital resources at school help prepare students for a digital society and economy	Negative side effects of digital resources at school such as ***digital distractions*** may reduce learning outcomes
	Online education and digital learning tools allow for lifelong learning and new learning models	
Income and consumption	Digital skills confer a ***wage premium*** upon workers	The gap between workers with high and low digital skills fuels a ***wage gap***
	Online consumption and the ***sharing economy*** have the potential to increase consumer surplus	
Jobs	***New jobs in ICT*** and ***new jobs in other sectors*** become available	The digital transformation has an ***impact on job polarisation***
	Online job search helps job seekers find employment opportunities	Digital technologies may destroy ***job at risk of automation***
	Positive job quality effects can arise due to lower physical demands, increased task discretion and self-realisation	***Negative job quality effects*** can arise from increased job stress and emotional demands
Work-life balance	***Teleworking*** allows people to spend ***less time in transportation*** and has the potential to improve gender balance by *sharing childcare responsibilities*	Constant connectedness may increase *worries about work when not working*
Health	Healthcare delivery becomes more efficient due to ***improved communication with healthcare services*** and ***universal health records***	Digital technologies may yield ***digital addiction*** *among children* and other ***negative mental health effects***
	The ***digitalisation of health technologies*** has the potential to yield better health outcomes	
	Health information online has the potential to improve patient experiences	

Key identified opportunities and risks

	Opportunities	Risks
Social connections	***Increased online interactions*** among friends and social networks	*Digital addiction may crowd out real-life interactions*
	Potential decrease in loneliness as a result of new means of maintaining social networks	*Cyberbullying* and *online harassment* negatively impact the social experiences of children and adults
		Discrimination against minority groups and women using hate speech
	Improved civic engagement associated with ***increased expression of opinion online***	People's trust in institutions may be challenged by higher exposure to information and *misinformation*
Governance and civic engagement	Increased ***engagement of citizens*** in societal and political communities	Discrimination against individuals with poor digital skills to ***access digital public platforms***
	Citizens are ***consumers and prosumers of news***	Intelligent systems may be biased against minorities or specific individuals leading to ***unfair treatment in public service delivery***
	Open data allows improved transparency and accountability of government	Potential increase in ***political polarization*** due to algorithm-led media consumption
	The ***uptake of blockchain-based technologies*** may enhance safety of transactions and information exchange	Individuals are at risk of ***data privacy violations*** in various domains
Security		***Cyber-security incidents*** may compromise people's online safety
		New physical security risks emerge as a result of automation and intelligent systems
Environment	***A reduction in carbon emissions*** can stem from improved energy efficiency of networks, shared transportation options (car-share, bike-share), reduced need for travel	Digital technologies generate rebound effects that ***increase energy use*** (e.g. data centers, blockchain)
		E-waste can increase as people consume more technological products
Housing	Households using ***Smart Home Technologies*** can improve house management	
Subjective well-being	Internet access may ***increase some aspects of subjective well-being***	Wider social comparisons and digital addiction may have ***negative effects on psychological well-being***

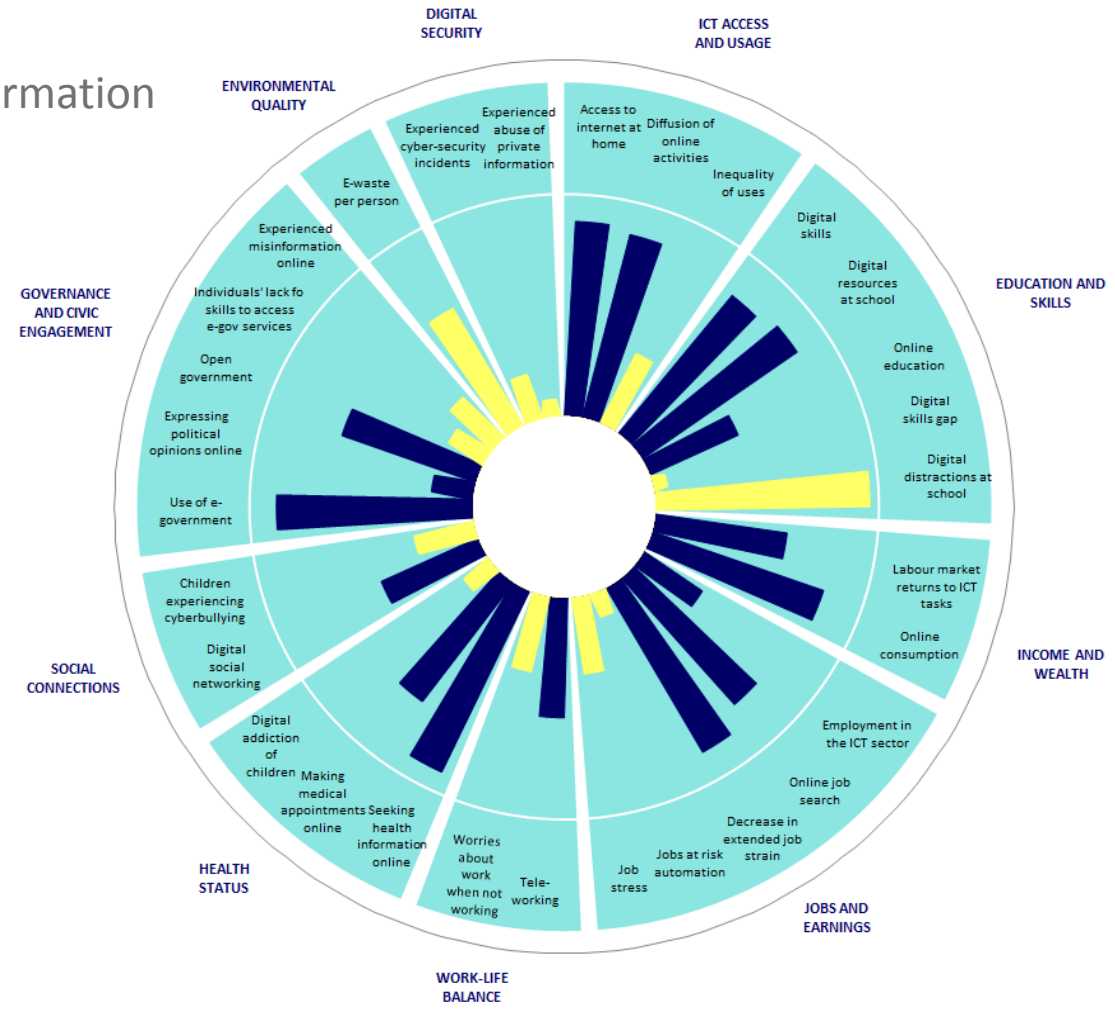
Available indicators

Dimension		Indicator	Opportunity/Risk
ICT Access and use	1.	Access to digital infrastructures	Opportunity
	2.	Diversity of Internet use	Opportunity
	3.	Inequality of Internet uses	Risk
Education and skills	4.	Digital skills	Opportunity
	5.	Digital skills gap	Risk
	6.	Digital resources at school	Opportunity
	7.	Digital distractions at school	Risk
	8.	Online courses	Opportunity
Income and consumption	9.	Wage premium associated with digital skills	Opportunity
	10.	Access to online consumption services	Opportunity
Jobs	11.	Employment in the ICT sector	Opportunity
	12.	People using the Internet when looking for a job	Opportunity
	13.	Mean job automatibility	Risk
	14.	Positive job quality effects associated with computer-intense jobs	Opportunity
	15.	Increase in job stress associated with computer-intense jobs	Risk
Work-life balance	16.	Penetration of teleworking	Opportunity
	17.	Increased worries about work when not working	Risk
Health	18.	Making medical appointments online	Opportunity
	19.	Accessing health information online	Opportunity
	20.	Digital addiction among children	Risk
Social connections	21.	Using online social networks	Opportunity
	22.	Children experiencing cyberbullying	Risk
Governance and civic engagement	23.	People expressing opinions online	Opportunity
	23.	Individuals interacting with public authorities online	Opportunity
	24.	Availability of open government data	Opportunity
	25.	Individuals excluded from e-government services due to lack of skills	Risk
	27.	Individuals experiencing misinformation	Risk
Environmental quality	28.	E-waste generated per capita	Risk
Security	29.	Individuals experiencing cyber-security events	Risk
	30.	Individuals experiencing abuse of personal information	Risk

An illustrative digital well-being wheel

- Considers measurable Impacts of the digital transformation
- Distinguishes clearly between risks and opportunities of digital transformation
- Assesses country performance in seizing opportunities and mitigating risks

Illustrative country wheel: Finland



Comparative analysis of country progress

Opportunities and risks often go together….

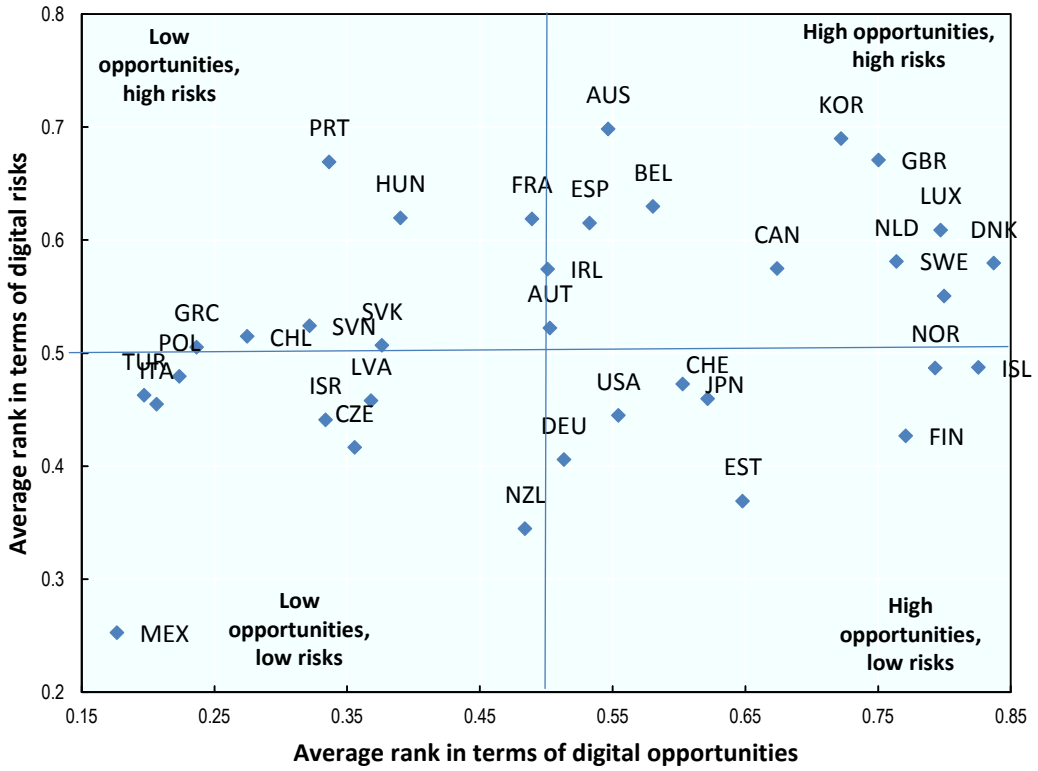
- e.g. high risks/high opportunities (KOR, GBR, Nordic countries)
- e.g. low risks/low opportunities (MEX)

…but some countries seize opportunities without risks

- e.g. EST – countries with strong digital strategies

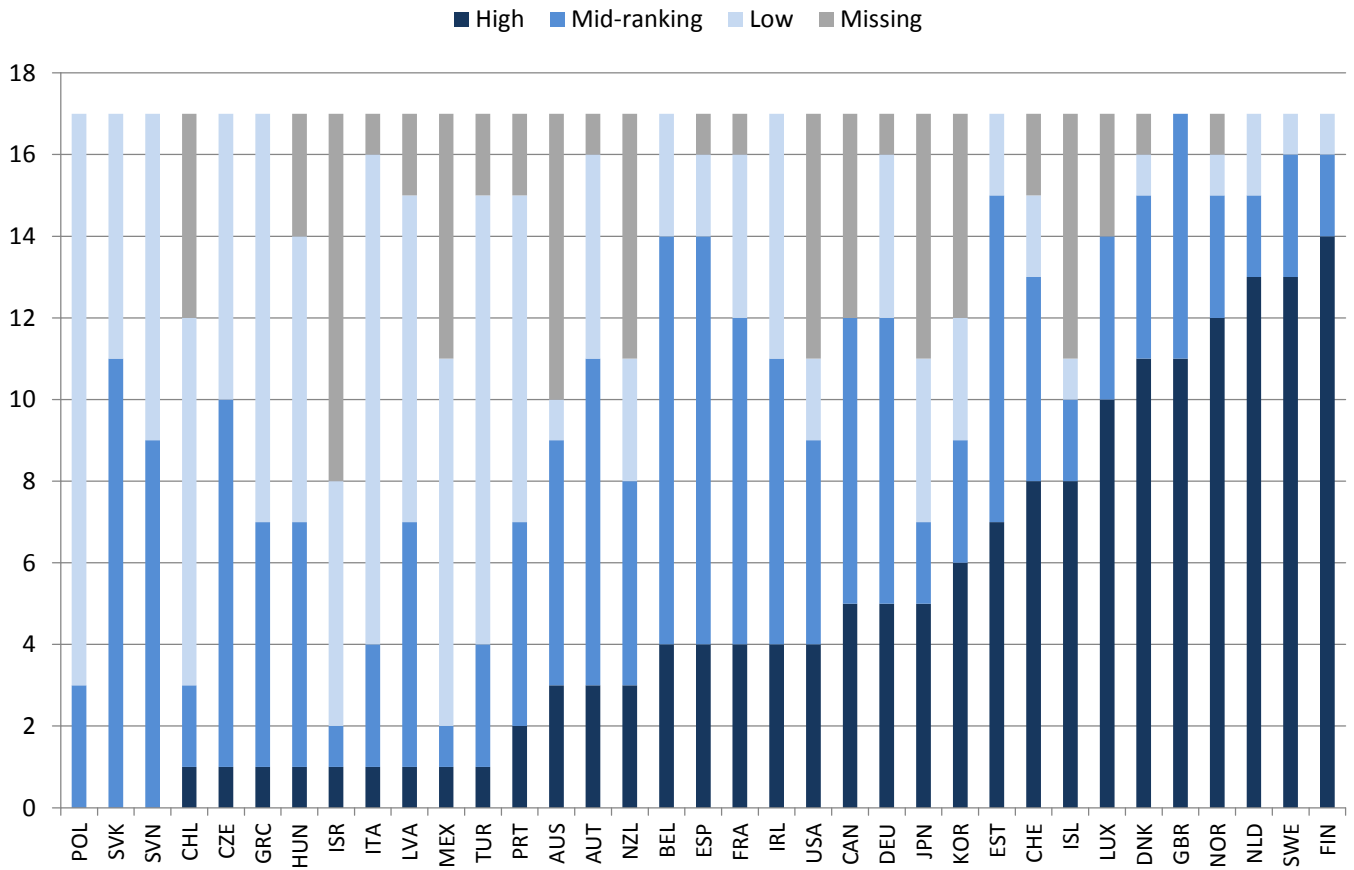
… while others are exposed to risk without reaping the benefits

e.g. PRT, HUN



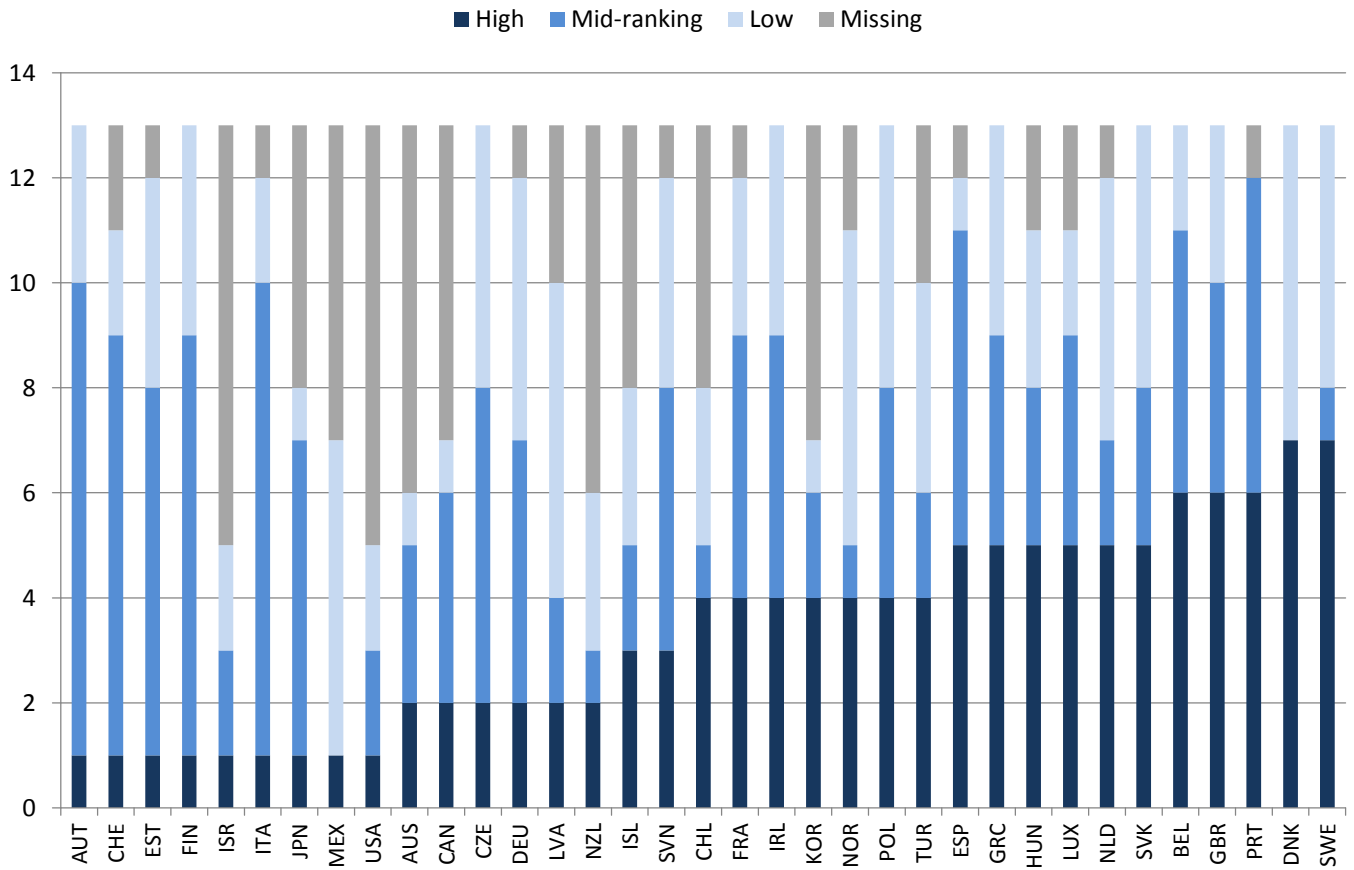
Country ranking in terms of opportunities

Number of indicators in which the country ranks in the top, mid or bottom third across all available countries



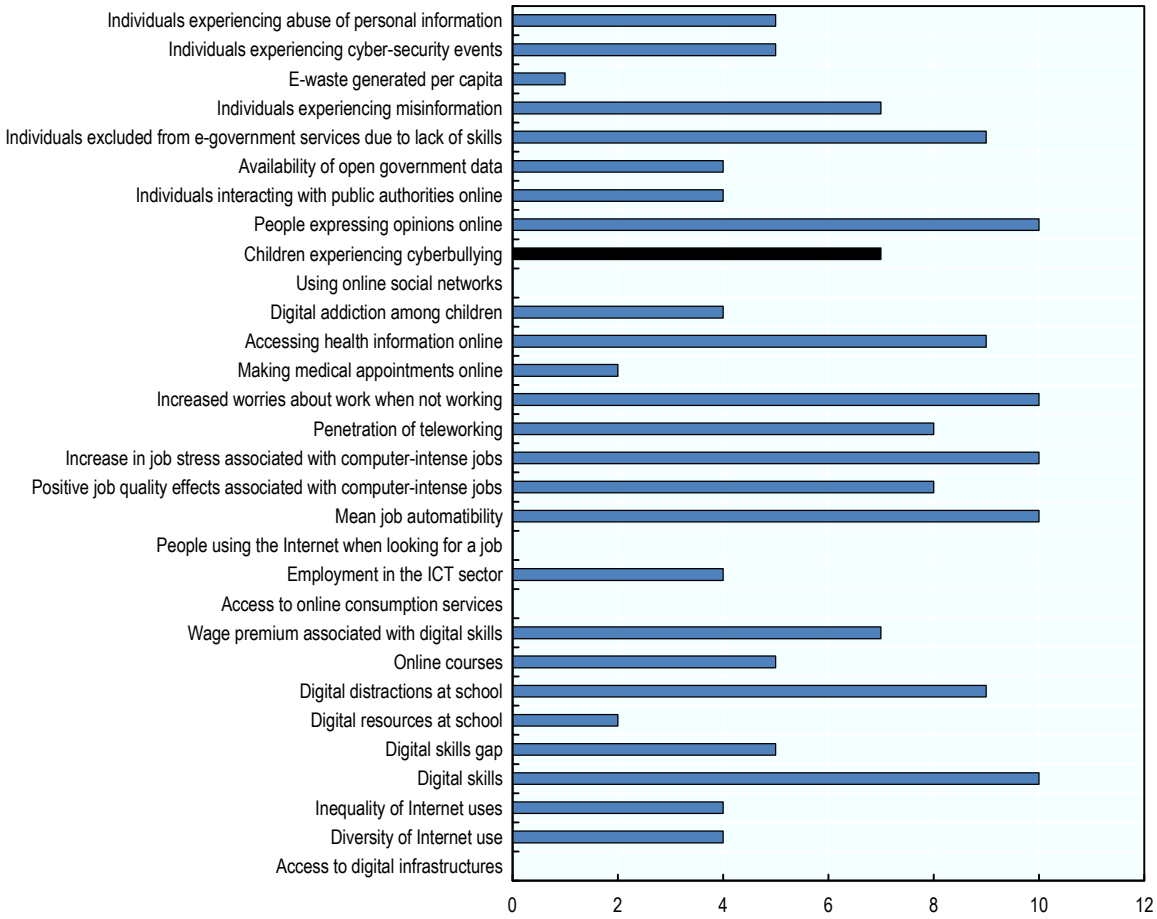
Country ranking in terms of risks

Number of indicators in which the country ranks in the top, mid or bottom third across all available countries



Missing data by indicator in current indicator set

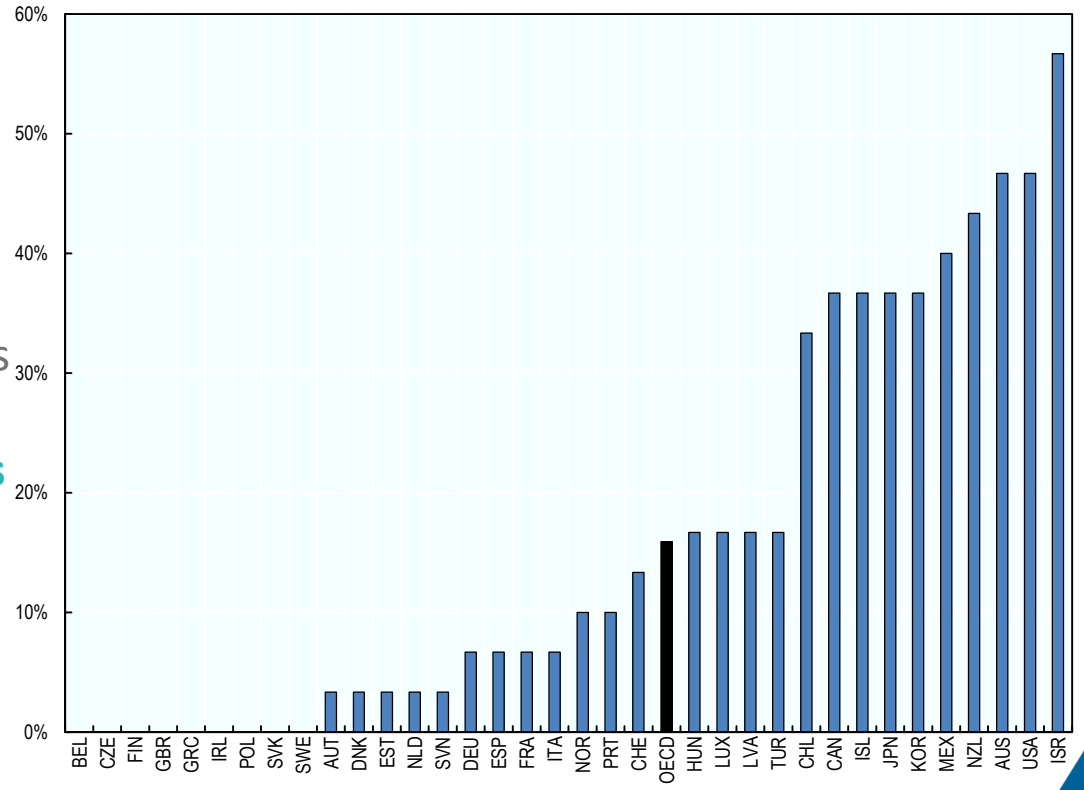
Number of missing country observations by indicator



Missing data by country in current indicator set

- Lack of harmonisation limits country comparisons
- EU countries benefit from Eurostat's standardised survey on ICT usage in households and individuals, which closely follows the **OECD Model Survey on ICT access and usage by households and individuals (2015)**
- But some countries have a significant number of missing values, which limits cross-country comparisons

% of indicators missing, by country



Some data gaps to be filled

Dimension	Name of indicator	Survey type	Feasibility
ICT Access and Use	Frequency of use of mobile devices	ICT Surveys	High
Jobs	ICT-driven jobs in other sectors	Labour force surveys, PIAAC	High
	Extent of job polarisation driven by digital skills and job automation	Labour force surveys, PIAAC	Medium
Work Life Balance	Decrease in time spent in transportation associated with telework	Time use surveys	High
	Increase in sharing of childcare responsibilities associated with telework	Time use surveys	Medium
Health	Diffusion of health monitoring tools	Health surveys	High
	Improvement in health technologies due to digital innovations	PREMS/PROMS	Low
	Mental health effects of digital devices on adults	GSS, Health, ICT surveys	Medium
	Crowding out of healthy behaviour	Time use surveys	High
Social connections	Reduced frequency of offline contact	Time use surveys	High
	Hate speech and online harassment	Victimisation surveys or innovative techniques	High/Medium
Governance	Digital skills of civil servants	Civil servants surveys	Civil servants surveys
Security	Physical injury associated with automated technology	Victimisation surveys	High
Environment	Net carbon footprint of digital activities and technologies	Energy accounts	Low
	Reduced personal automobile mileage associated with digital vehicle sharing options	Household consumption surveys	Low
Housing	Diffusion of Smart Home Technologies	Household consumption surveys	High
Subjective well-being	Change in life satisfaction associated with having Internet access Change in net affect balance associated with having Internet access Change in eudaimonic well-being associated with having Internet access	ICT Surveys, General Social Surveys	Medium