Outline

- Meaning and dimensions of population wellbeing
- Examples of human development indices linked to population wellbeing
    - Sustainable Development Goals (SDG) Index
    - Human Development Index (HDI)
    - Gender Equality Index (World Economic Forum)
- Population Development Composite Index (PDCI) – Arab States Region
    - Purpose
    - Construction process and properties
    - Results and implications
- Potentials for the PDCI within the Arab States Region (and beyond)
    - Some ideas for the way forward

What is population wellbeing?

- Enhancing population wellbeing is a primary objective of governments.

- Wellbeing is multifaceted:
  - Material living conditions – social indicators of progress – e.g., life expectancy, unemployment rates, gross domestic product, poverty rate, school attendance, infant mortality rate, etc.
  - Subjective feeling – quality of life; happiness.
  - Sustainability of the socio-economic and natural systems – impact of human activities on various forms of capital i.e., natural, economic, human and social.

- Macro-economic measures - Gross Domestic Product (GDP), Gross National Income (GNI), do not tell the full story.

- **Indices are important for monitoring progress and ensuring accountability of governments for the realization of defined development targets**

Measuring population wellbeing: SDG Index and HDI

Sustainable Development Goals Index

- The SDG Index assesses each country's overall performance on the 17 SDGs, with equal weight to each Goal on a 0–100 points scale.

- Trend analysis helps countries to identify priorities for further actions

- The 2023 SDG Index edition includes 97 global indicators:
  - Two-thirds utilize data from official statistics
  - One-third are based on data from other non-traditional statistics – NGOs; research centers, universities, etc

- Elaborate procedures and assumptions are applied to impute missing data and set upper performance limits (*see Lafortune, G. et al. 2018. SDG Index and Dashboards: Detailed methodological paper*)

- The global index has been peer-reviewed and statistically validated.

SDG index construction

Steps:

- censor extreme values from the distribution of each indicator - 2.5th percentile as the minimum value for the normalization

- rescale the data to ensure comparability across indicators

- aggregate the indicators within and across SDGs.

Normalization

$$xs = \left(\frac{x - \min(x)}{\max(x) - \min(x)} \right) * 100$$

Weights

- Equal weights adopted after consideration of alternatives – Mathematical (principal component analysis), expert opinion and subjective/flexible weights

Human Development Index (HDI)

Human Development Index (HDI)

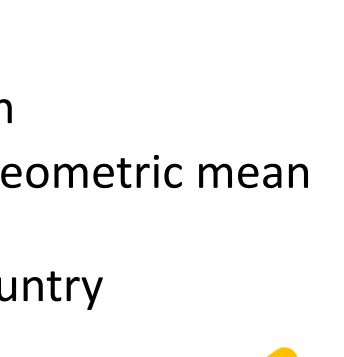|	DIMENSIONS	**Long and healthy life**	**Knowledge**		**A decent standard of living**
	INDICATORS	Life expectancy at birth	Expected years of schooling	Mean years of schooling	GNI per capita (PPP $)
	DIMENSION INDEX	Life expectancy index	Education index		GNI index

Human Development Index (HDI)

- The Human Development Index (HDI) is a summary measure of achievements in three key dimensions of human development
- Its construction follows three steps:
  - Creating the dimension indices based on
  - Aggregating the dimensional indices – geometric mean of each index
  - Estimating missing values using cross-country regression models

HDI construction

Dimension	Indicator	Minimum	Maximum
Health	Life expectancy (years)	20	85
Education	Expected years of schooling (years)	0	18
	Mean years of schooling (years)	0	15
Standard of living	GNI per capita (2017 PPP$)	100	75,000

$$\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

$$HDI = \left(I_{Health} \cdot I_{Education} \cdot I_{Income}\right)^{\frac{1}{3}}$$

Indicator	Value
Life expectancy at birth (years)	65.3
Expected years of schooling (years)	7.9
Mean years of schooling (years)	3.8
Gross national income per capita (2017 PPP $)	3,829

$$\text{Health index} = \frac{65.3 - 20}{85 - 20} = 0.6971$$

$$\text{Expected years of schooling index} = \frac{7.9 - 0}{18 - 0} = 0.4380$$

$$\text{Mean years of schooling index} = \frac{3.8 - 0}{15 - 0} = 0.2513$$

$$\text{Education index} = \frac{0.4380 + 0.2513}{2} = 0.3447$$

$$\text{Income index} = \frac{\ln(3{,}829) - \ln(100)}{\ln(75{,}000) - \ln(100)} = 0.5506$$

$$\text{Human Development Index} =$$
$$(0.6971 \cdot 0.3447 \cdot 0.5506)^{\frac{1}{3}} = 0.510$$

2023 Global SDG Index dashboard

2023 SDG index level and trends by income group and region
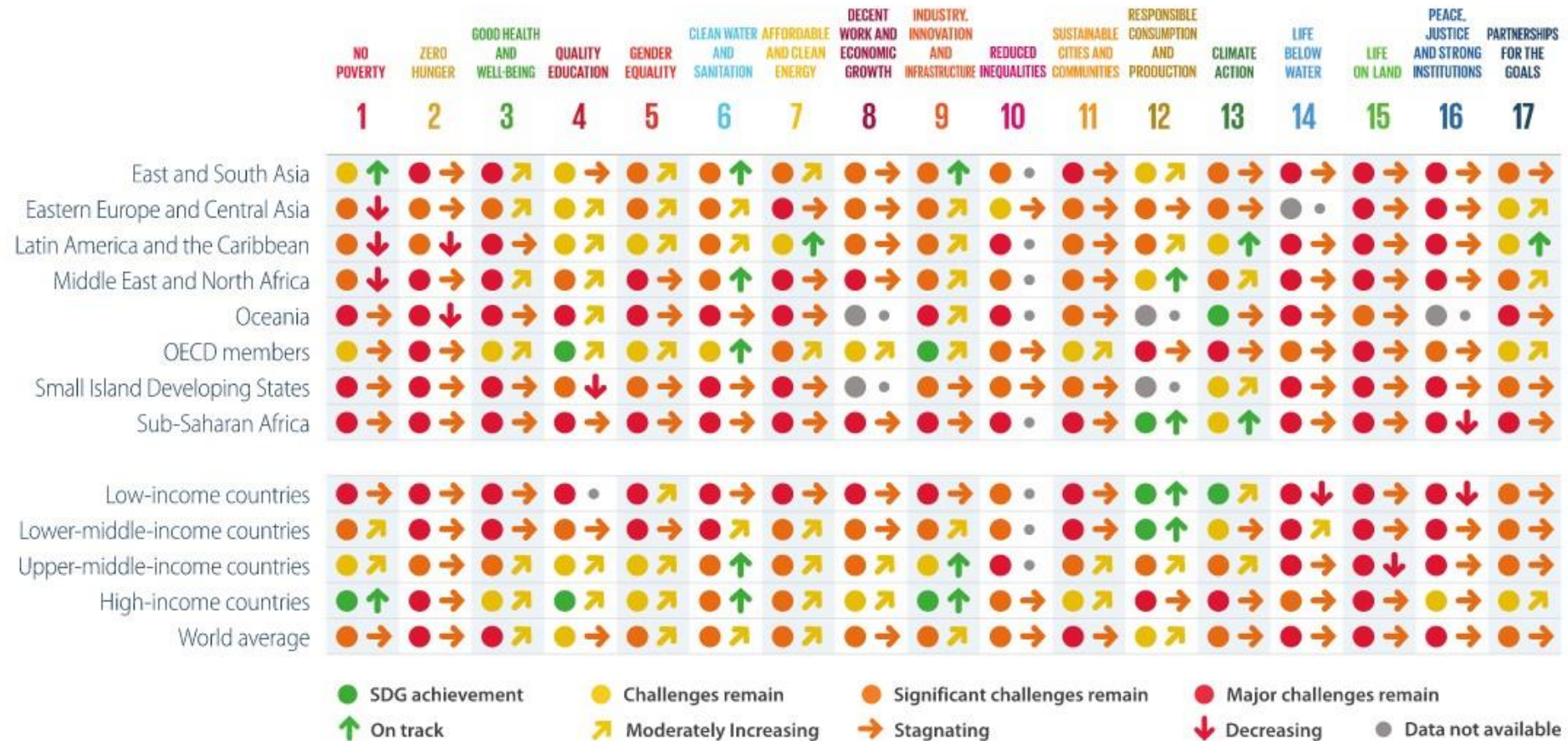
SDG and HDI scores among GCCs

SDG Index Rank	SDG Index Score
111 /166	63.7

SDG Index Rank	SDG Index Score
108 /166	64.4

SDG Index Rank	SDG Index Score
90 /166	68.6

HDI Score	HDI rank
0.875	35/191

HDI Score	HDI rank
0.831	50/191

HDI Score	HDI rank
0.816	53/191

SDG and HDI scores among GCCs

Qatar:

SDG Index Rank **100**/166
SDG Index Score **66.2**

HDI Score	HDI rank
0.855	42/191

Saudi Arabia:

SDG Index Rank **94**/166
SDG Index Score **67.7**

HDI Score	HDI rank
0.875	35/191

UAE:

SDG Index Rank **79**/166
SDG Index Score **69.7**
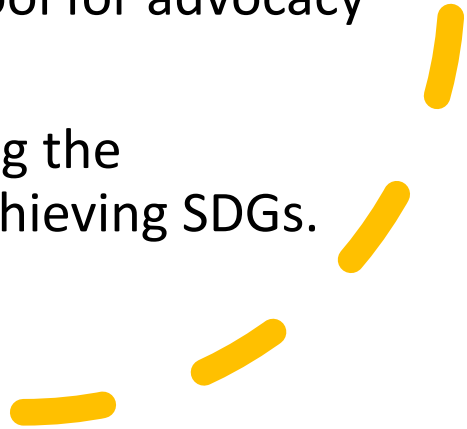
HDI Score	HDI rank
0.911	26/191

Population and Development Composite Index (PDCI)

- The UNFPA Arab States Regional Office (ASRO) developed the Population and Development Composite Index (PDCI) to quantify progress of implementation of the 20-year population and development commitments identified through the 1994 International Conference on Population and Development's Program of Action (ICPD PoA) and renewed in 2014 within the context of the 2015 Global Sustainable Agenda (SDGs).

The objectives of the index are to:

- provide a scientific measure and policy tool for advocacy for people-centered SDGs

- demonstrate the importance of integrating the population agenda as a key enabler for achieving SDGs.

Construction of the PDCI

- Followed a similar process for the development of the SDG Index

    - Identification of the conceptual framework
    - Selection of indicators
    - Calculation of the index scores
    - Statistical validation
    - Collaboration with experts

- Like the SDG Index, the PDCI measures absolute country performance (not relative to other countries performance), highlighting the distance to the realization of the ideal (ICPD and SDG targets).

Conceptual framework of the PDCI
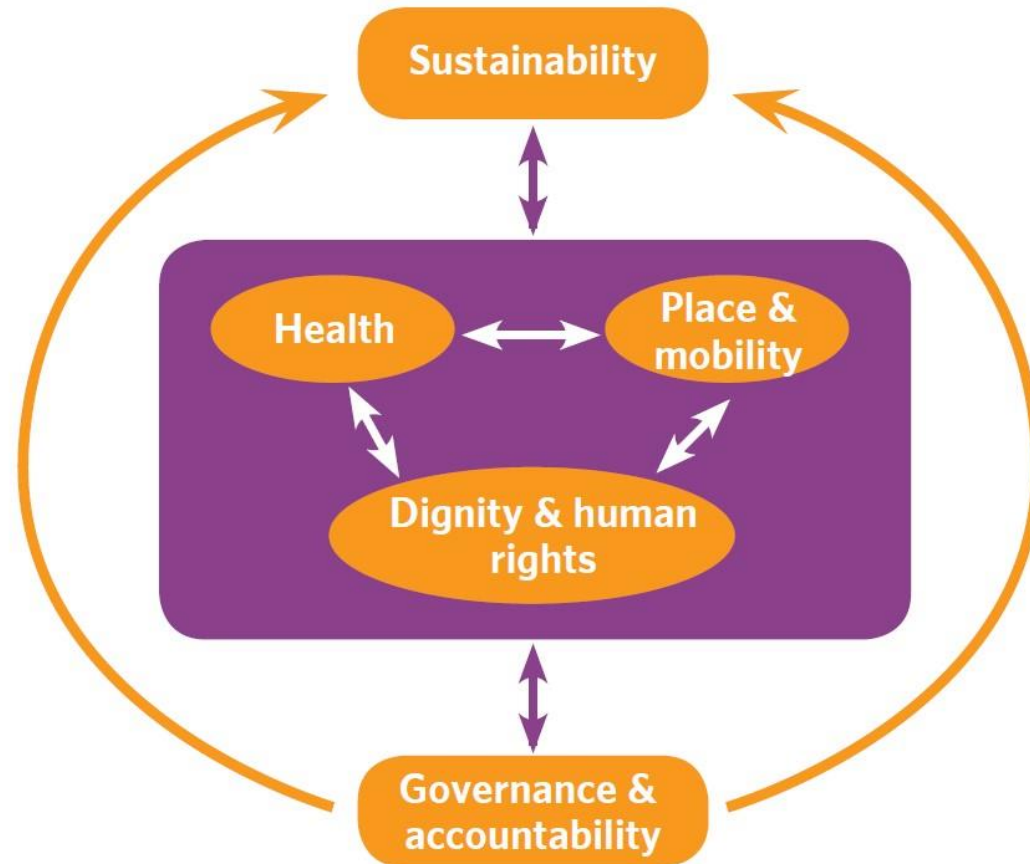
Component level elements

Dignity and human rights
- Gender equality
- Adolescents & youth
- Poverty & inequality
- Population ageing
- Non-discrimination

Health (SRH)
- SRH, including maternal health
- SRH of young people
- Contraception and unmet need for FP
- HIV/AIDS and STI

Place and mobility
- International migration
- Internal migration and urbanization
- IDPs and refugees

Governance and accountability
- Cooperation and partnerships
- Participation e.g. civil society, Women & youth
- Integrating population dynamics into development planning
- Strengthening knowledge and accountability

Sustainability
- Population dynamics
- Environmental sustainability
- Climate change

Mapping the PDCI indicators to the SDGs

Dignity & human rights

Goal 1. No poverty; Targets 1.3 & 1.4
Goal 4. Quality education; Target 4.1
Goal 5. Gender equality; Targets 5.1, 5.2, 5.3 & 5.5
Goal 8. Decent work and economic growth; Targets 8.5, 8.6 & 8.8
Goal 10. Reduced inequalities; Target 10.3
Goal 16. Peace, justice, and strong institutions; Targets 16.7 & 16.b

Health (SRH)

Goal 3. Good health and well-being; Targets 3.2, 3.3 & 3.7
Goal 5. Gender equality; Target 5.6

Place & mobility

Goal 8. Decent work and economic growth; Target 8.8
Goal 10. Reduced inequalities; Target 10.7
Goal 11. Sustainable cities and communities; Targets 11.1 & 11.3
Goal 16. Peace, justice, and strong institutions; Target 16.1

Mapping the PDCI indicators to the SDGs

Indicator selection criteria

- **Relevance**: The indicators are relevant to monitoring achievement of the ICPD agenda and comparable to allow for direct comparison of performance across countries.

- **Adequacy**: The indicators selected represent valid and reliable measures

- **Timeliness**: The indicators selected are updated and published on a regular basis.

- **Coverage**: Data must be available for at least 70% of the Arab countries

- **Data quality**: The indicators represent the best available measure for a specific topic and derive from official national or international sources (e.g., national statistical offices or international organizations

Dignity and human rights

1. FGM prevalence (% among girls aged 15-19)[25]
2. Child marriage by age 18 (% of women ages 20-24 who are married)
3. Ever-married women who ever suffered intimate partner physical and/or sexual violence (%)
4. Gender Parity Index for secondary education (%)
5. Female to male labour force participation rate (%)
6. Share of seats in parliament (% held by women)
7. Youth unemployment rate (ages 15-24)
8. Share of seats in parliament (% held by members aged under 40)
9. Vulnerable employment (% of total employment)
10. Secondary school dropout rate among youth
11. Population living below the national poverty line (%)
12. Old-age pension recipients (%)
13. Freedom of choice (%)[26]

Place & mobility

20. Score of the Measures on international migration (%)[27]
21. Refugees and IDPs by country of origin (% of population)
22. Urban population living in slums (%)
23. Country is in a conflict (yes/no)

Governance and accountability

24. Birth registration (% under age 5)
25. Completeness of death registration (%)[28]
26. Scores of developing national population related policies/strategies (%)
27. Average normalized scores of the World Governance Indicators (WGI) (%)
28. Population using the internet (%)

Health (SRH)

14. Neonatal mortality rate (per 1,000 live births)
15. Births attended by skilled health personnel (%)
16. Antenatal care coverage- at least four visits (%)
17. Adolescent fertility rate (births per 1,000 adolescent females aged 15 to 19)
18. Demand for family planning satisfied by modern methods (% of females)
19. New HIV infections (per 1,000 uninfected population)

Sustainability

29. Renewable energy consumption (% of total final energy consumption)
30. Number of directly affected persons attributed to disasters per 100,000 population
31. Crude death rate attributed to household and ambient air pollution (per 100,000 population)
32. Expenditure on research and development (% of GDP)
33. Population using at least basic sanitation services (%)

Selected indicators

Data Sources and imputation

Data Sources: National data and UN databases e.g., UN-DESA, UNICEF, ILO, World Bank, WHO,...etc.

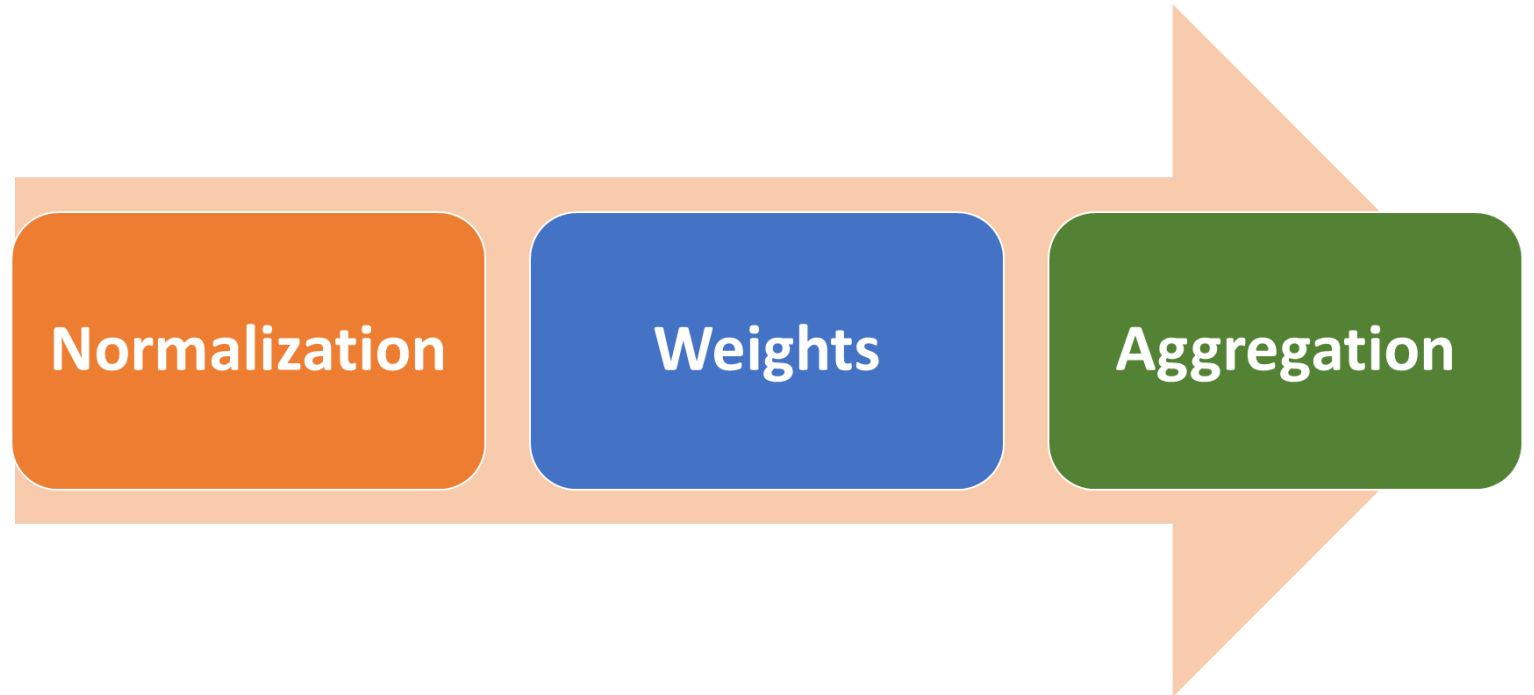Complementary data, collected through UNFPA COs in the Arab region.

Missing data imputation:

Regression model based on data from 157 out of 193 countries

Estimation by the average of the countries in similar conditions

Computation using micro-datasets

Main three steps for calculating index scores

| Normalization | Weights | Aggregation |

Scores and performance thresholds

The PDCI dimension-specific and composite index are normalized to a scale of 0-100, with a 4-level grading of country performance in population and development:

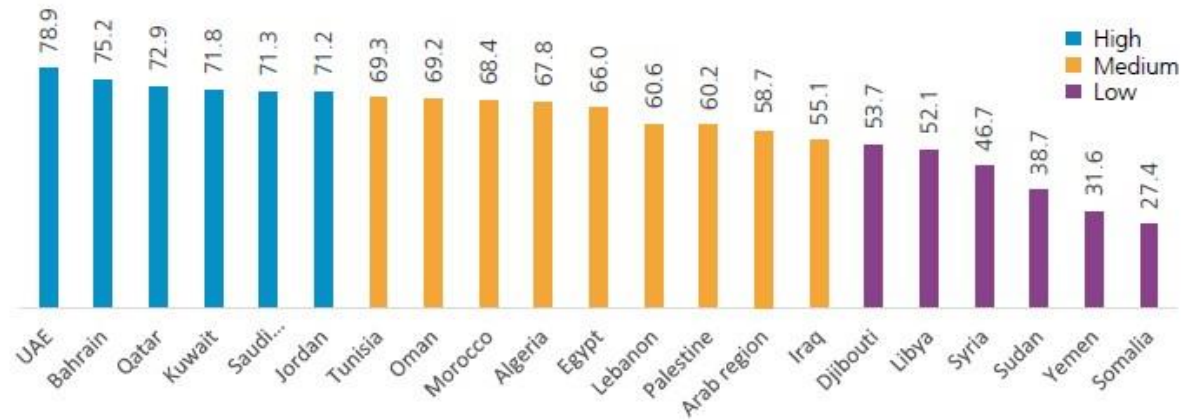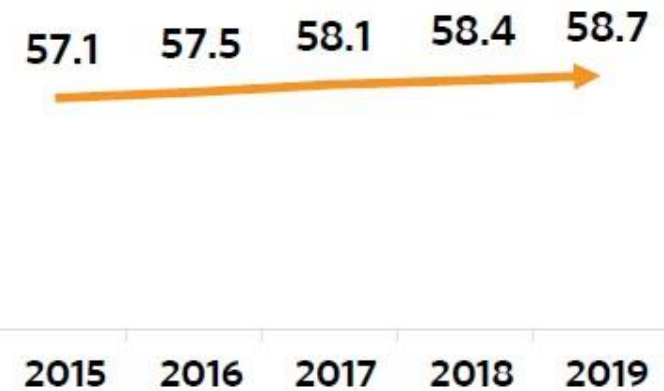| low [less than 55%];	medium [55% - 69%];	high [70-79%] and	very high [80% and above].

Country and regional data visualization dashboard are provided based on these thresholds.

Key findings: Composite scores

PDCI scores by country, Arab States Region, 2019

PDCI trend analysis, Arab states region

Key findings dimension-specific scores by country, 2020

Country	Dignity & human rights	Health (SRH)	Place and mobility	Governance	Sustainability
Algeria	56.0	79.4	87.9	63.1	57.9
Bahrain	69.2	96.5	80.9	74.6	59.5
Djibouti	53.5	58.0	64.4	41.0	54.3
Egypt	46.8	78.9	87.3	64.6	60.0
Iraq	55.2	62.2	57.2	45.4	57.0
Jordan	50.5	82.1	94.5	75.5	61.9
Kuwait	66.9	94.2	69.7	75.2	57.9
Lebanon	49.3	94.1	48.7	61.1	59.3
Libya	58.0	72.1	37.2	41.4	59.8
Morocco	55.4	72.0	95.4	62.4	63.1
Oman	63.8	78.5	85.2	62.6	59.5
Palestine	47.4	84.2	48.7	67.7	60.3
Qatar	67.6	87.8	75.0	74.1	62.3
Saudi Arabia	59.1	94.0	79.9	66.5	62.3
Somalia	26.8	29.1	28.1	12.8	55.2
Sudan	35.7	47.0	28.8	30.3	59.1
Syria	34.9	77.5	33.0	44.8	55.3
Tunisia	57.4	82.6	84.2	64.1	62.4
UAE	71.0	95.9	78.8	83.9	67.9
Yemen	31.4	38.8	37.6	14.5	47.3
Statistics					
Minimum	26.8	29.1	28.1	12.8	47.3
Maximum	71.0	96.5	95.4	83.9	67.9
Standard deviation	12.4	18.8	22.6	19.6	4.1
Coefficient of variation[8]	23.5	25.0	34.7	34.8	6.9

Medium Very High
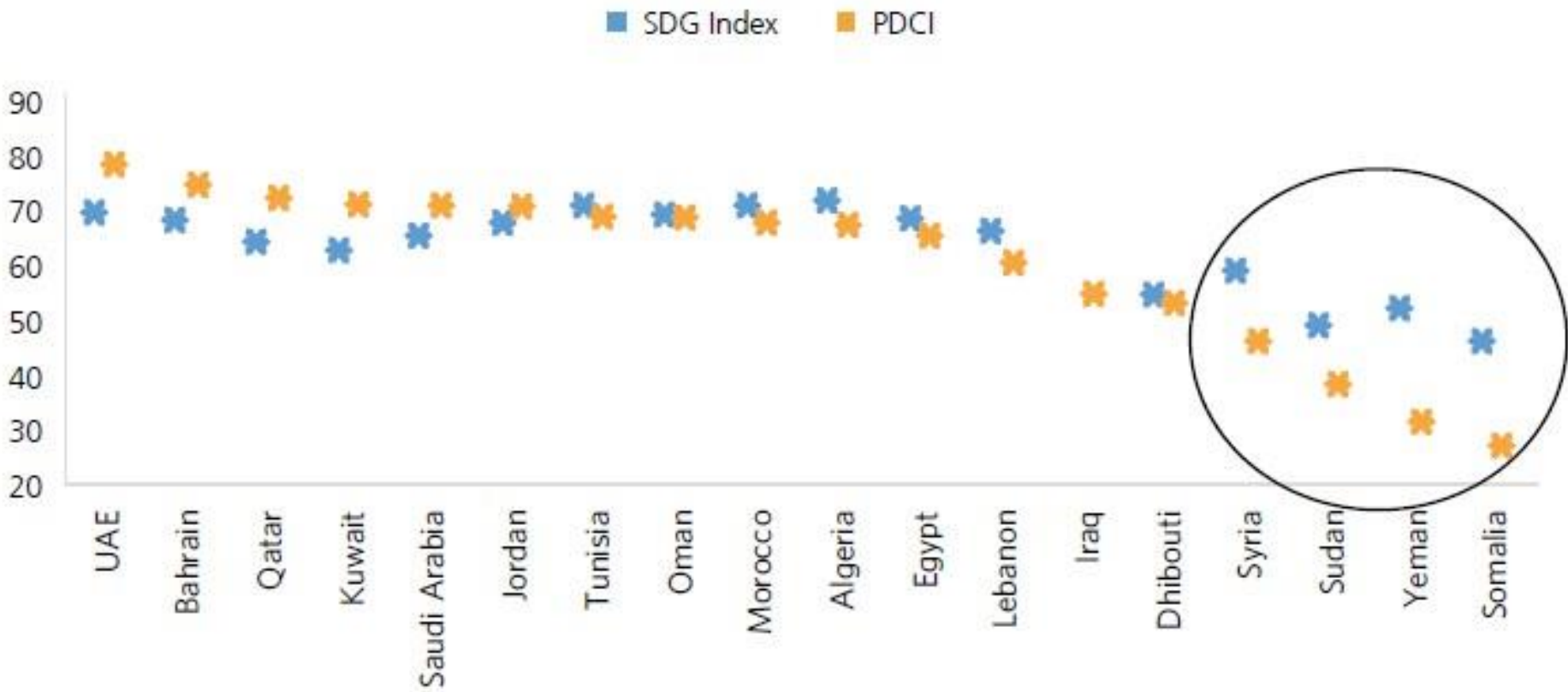Low High

Source: Author's calculations
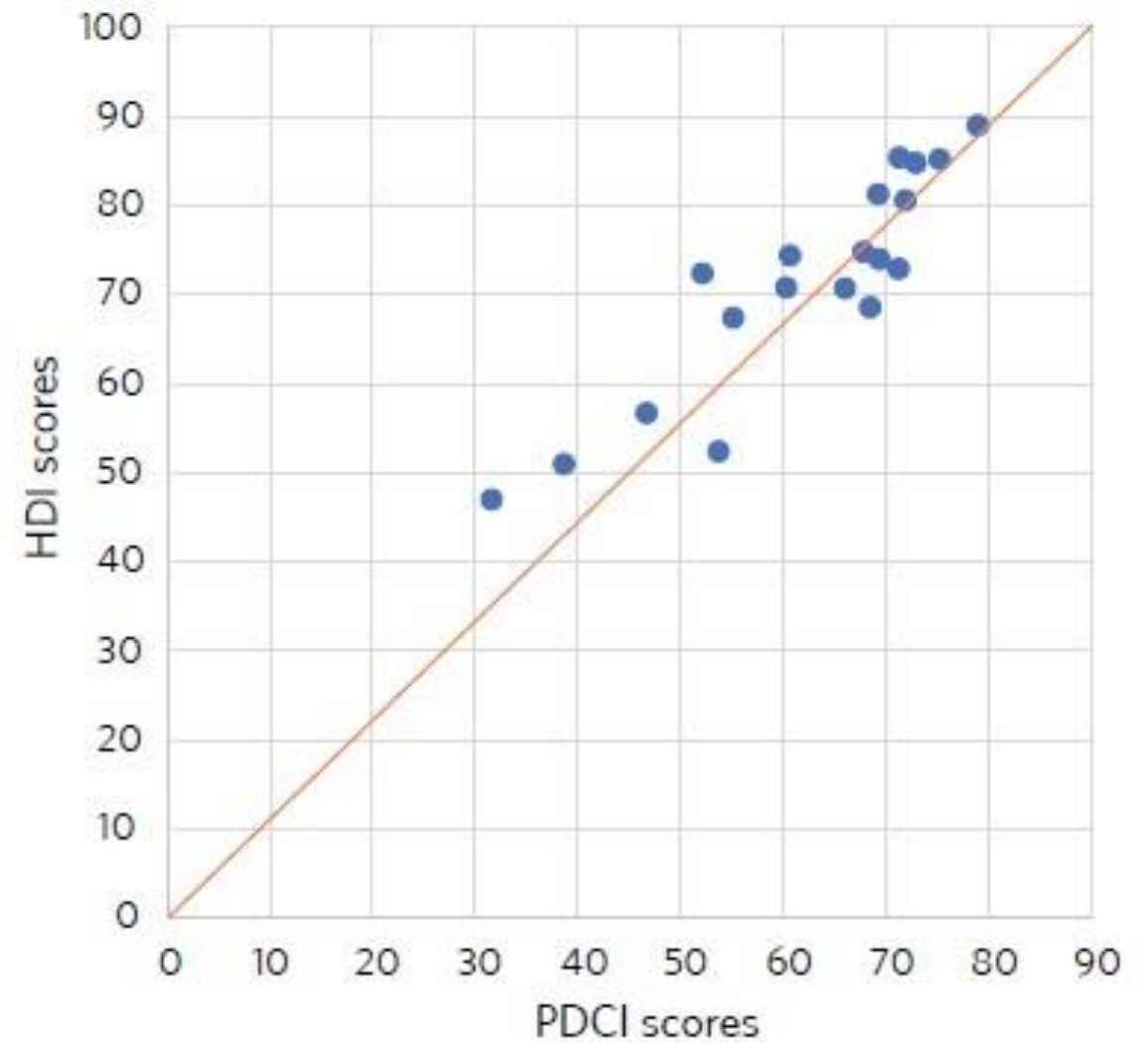
Different paths lead to similar results
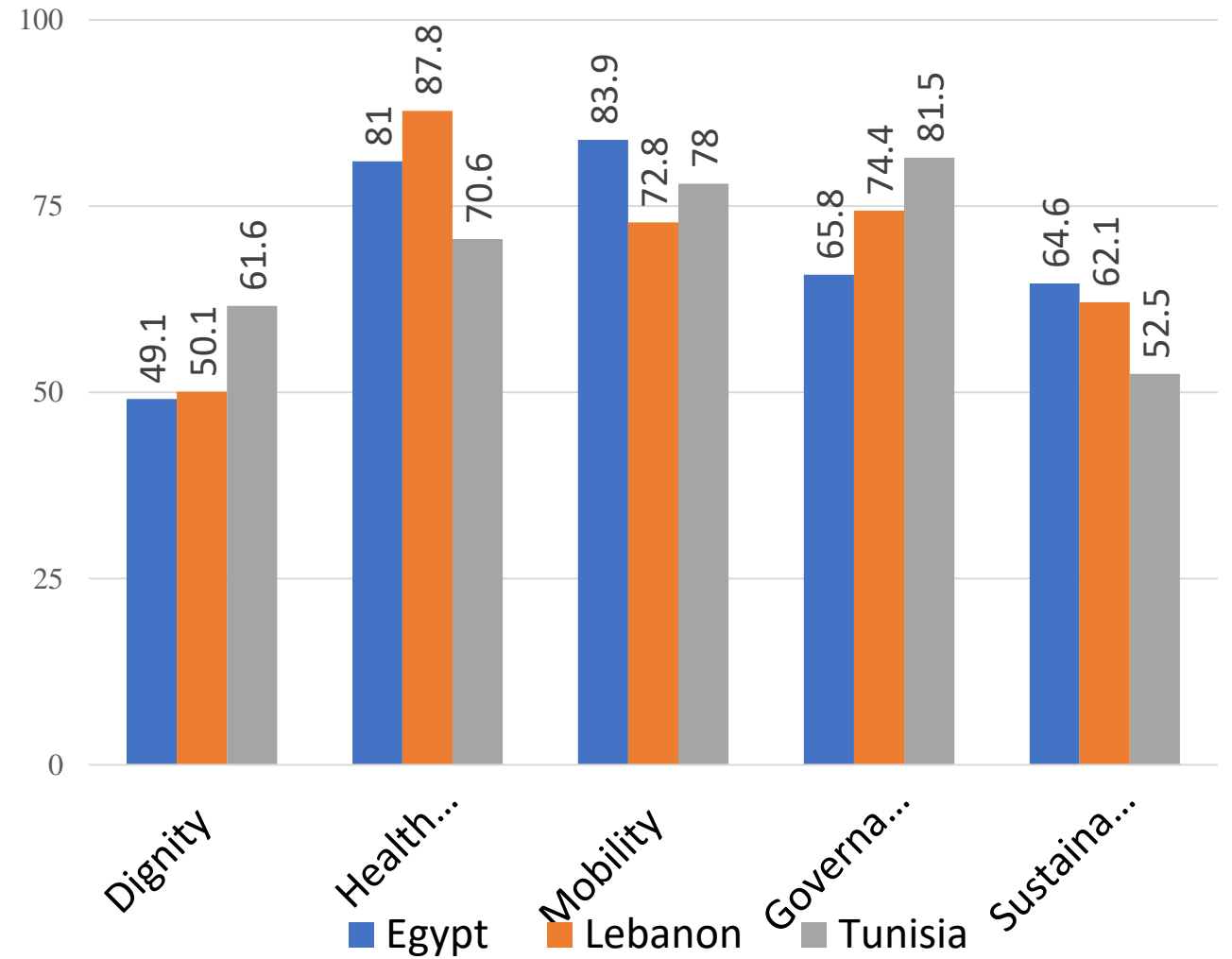
PDCI and Other Indices

PDCI and the SDG Index, 2020

PDCI and HDI scores, Arab Region, 2020

Limitations

- Data paucity for certain indicators
  - Discrimination against disabled persons
  - Discrimination against migrants
  - Supporting environment for older persons
  - Harassment and human trafficking
  - Disparities between urban and rural communities
  - Urbanization and internal migration
  - Labor rights protections
  - Engagement of civil society
  - Women empowerment in terms of own informed decisions regarding SRH

Population wellbeing: Implications of the PDCI

- Puts a spotlight on indicators relevant to population and development

- Highlights variations by countries
  - Potential for sub-national analysis to help identify disparities by location and population groups

- Dimension-specific indicators provide data that can inform policy action:
  - Identification of strengths and weaknesses in various programs
  - Establishment of Key Performance Indicators by the government
  - Resource allocation and prioritization of interventions
  - Progress monitoring and benchmarking
  - Engendering evidence-based policy interventions

- Facilitation of cross-country learning on facilitators and hindrances to population wellbeing and sustainable development

Potential way forward

- Revalidate the tool based on current data

- Undertake follow-up analysis

- Explore modalities to institutionalize

  - Identify various partners – e.g., national statistical offices (NSOs), intergovernmental organizations, research and academic institutions, centers of excellence, etc.
  - Define roles and responsibilities
  - Determine periodicity of analysis
  - Data dissemination and use strategies

Thank You