World Bank Group - HD
Chief Economist Office

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HUMAN CAPITAL MATTERS
WHAT IS HUMAN CAPITAL?

Human capital includes education, training medical care, and other additions to knowledge and health [...] accumulated work and other habits.


Human capital matters for:

Individuals
Investment in human capital is a dynamic process akin to investment in physical capital

Economies
Human capital is a key ingredient for higher income and growth

Societies
Education is associated with more civic participation, trust, and political awareness
DETERMINANTS OF AGGREGATE INCOME

GDP (Y) is a function of Technology (A), Physical Capital (K) and Human Capital (H)

\[ Y = f(A, K, H) \]

Human Capital affects aggregate income in three ways:
1. Directly, as it accumulates and increases H
2. Indirectly, as it complements physical capital in the production process
3. Indirectly, as it affects A – influence on technological progress

Source: Flabbi and Gatti, 2018
HUMAN CAPITAL INDEX

METHODOLOGY
HUMAN CAPITAL INDEX: COMPONENTS

Three ingredients reflect the building blocks of the next generation’s human capital:

SURVIVAL
Will children born today survive to school age?

SCHOOL
How much school will they complete and how much will they learn?

HEALTH
Will they leave school in good health, ready for further learning and/or work?
HUMAN CAPITAL OF AN INDIVIDUAL

- Based on standard measures of human capital per worker from development accounting literature:

\[ h_i = e^{\phi s_i + \gamma z_i} \]

where:
- \( h_i \) is human capital of individual \( i \)
- \( s_i \) is learning-adjusted years of school of individual \( i \)
- \( z_i \) is latent health of individual \( i \) (mapping to stunting, ASR)
- \( \phi, \gamma \) are “returns” to education and health
AGGREGATING THE HCI: DISTANCE TO THE FRONTIER

- For ease of interpretation, we express HCI relative to benchmark of complete education \((s^*)\) and full health \((p^*, z^*)\)

\[
HCI = \frac{p}{p^*} \times e^{\phi(s_{NG}-s^*)} \times e^{\gamma(z_{NG}-z^*)}
\]

- The HCI measures the expected productivity as a future worker of a child born today relative to this benchmark, i.e. \(0 < HCI \leq 1\)
- A value of \(0 \leq x \leq 1\) means that the expected productivity as a future worker of a child born today is only a fraction \(x\) of what it would be under the benchmark of complete education and full health
- Meaningful units mean no need for rankings
HUMAN CAPITAL INDEX
2020 UPDATE

PROTECT AND INVEST in people
THE 2020 HCI UPDATE

Human Capital Index 2020 (Boys & Girls)

Human Capital Index 2020, by region (Boys & Girls)

Natural logarithm of GDP per capita 2020

PROTECT AND INVEST in people
HUMAN CAPITAL FOR GIRLS AND BOYS

[Bar chart showing girl-to-boy ratios in HCI for different regions.]

PROTECT AND INVEST in people
CHANGES IN HUMAN CAPITAL OVER TIME
HCI 2010-2020
COMPARING HCI 2020 AND HCI 2010 FOR 103 COUNTRIES

Human Capital Index 2010 to 2020 (Boys & Girls)

Human Capital Index 2010 to 2020, decomposition (Boys & Girls)

Child Survival

Pre-primary

Primary

Lower-secondary

Upper-secondary

Harmonized test scores

Health

PROTECT AND INVEST in people
COMPARING HCI 2020 AND HCI 2010
by countries in Europe & Central Asia (N=41)

Child survival (2010-2020)

HCl (2010-2020)

Expected years of school (2010-2020)

Harmonized test scores (2010-2020)

Europe & Central Asia

Health (2010-2020)

PROTECT AND INVEST in people
CATCHING UP IN HUMAN CAPITAL

PROTECT AND INVEST in people
HUMAN CAPITAL FOR GIRLS AND BOYS OVER THE DECADE
HCI AND GROWTH
THE HCI IS A FLOW MEASURE: INVESTMENTS TAKE TIME TO MATERIALIZE
HCI AND GROWTH

HCI’s development accounting origins means we can link it to future levels of growth:

$$y = Ak^\alpha h^{1-\alpha}$$

Holding physical capital-to-output constant, for any two future scenarios where the entire population takes on $h_{sq}$ versus $h^*$, relative output is:

$$\frac{y_{sq}}{y^*} = \frac{h_{sq}}{h^*}$$
HCI AND GROWTH

Relative income per capita

Poverty

Source: Collin and Weil, 2018
DISAGGREGATION OF HCI
BEYOND THE HEADLINE INDEX: SOCIO-ECONOMIC DISAGGREGATION
BEYOND THE HEADLINE INDEX: SUBNATIONAL DISAGGREGATION

Governments can look to ‘high performers’ within the country ‘home-grown’ solutions to closing human capital gaps.

Using multiple methodologies improves targeting effectiveness in reaching the vulnerable and marginalized.

Tacna, the region with the highest HCl score in Peru (0.69) is at par with Luxembourg.
HUMAN CAPITAL
IN THE TIME OF
COVID-19
COVID-19 THREATENS HUMAN CAPITAL GAINS

Shock to children under 5

- Economic shock due to pandemic and the interruption to health coverage are the main transmission channels
- Projected loss of human capital, as measured by HCI, of almost half a percent
- Losses are expected to be highest for low-income countries nearing 1 percent

A TEMPORARY SHOCK WITH LONG LASTING EFFECTS
COVID-19 THREATENS HUMAN CAPITAL GAINS

Shock to children in school

- Based on education team’s simulations
- Closures and income losses are the channels of impact
- Predicted loss of 0.56 of a school year once learning is factored in (LAYS) for a 5-month school closure
- Higher loss for richer countries due to higher assumed learning gains over the school year
- Equivalent to 4.5% of HCl or ~2.5 points of the index

COVID-19 puts at risk the gains achieved over the past decade

Source: Azevedo et al. (2020)
UTILIZING
HUMAN CAPITAL
UTILIZATION-ADJUSTED HUMAN CAPITAL INDEX (UHCI)

- Adjusts the HCI for labor-market underutilization of human capital, as:
  1. A child born today may not be able to get a job in the future (especially girls)
  2. Even if they do, it might not be a job where can fully utilize human capital

\[ UHCI = \text{Utilization Rate} \times \text{HCI} \]

- UHCI available for 160+ countries, with similar economic interpretation as the HCI

- Basic Utilization Rate: employment/population (captures 1)
- Full Utilization Rate: (i) “better employment”/population (captures 1+2)
  (ii) how much human capital to underutilize
**UTILIZATION RATES**

- Gender gap in utilization not present in HCI → UHCI lower for women than men
- Utilization U-shaped in income level → middle income countries lowest utilization

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**Diagram Description**

- **Boys**
- **Girls**

- Countries represented on the scatter plots vary in employment-to-population ratio (basic utilization rates) against log GDP per capita at USD PPP, circa 2020.

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**Protect and Invest in People**
HUMAN CAPITAL PROJECT
HUMAN CAPITAL PROJECT

> What is it?

THE HUMAN CAPITAL PROJECT IS A GLOBAL PLATFORM TO ACCELERATE MORE AND BETTER INVESTMENTS IN PEOPLE GLOBALLY.


2. Measurement & Research: A program of measurement, research, and analysis that helps to invest in and protect human capital.

3. Country engagement: Support and peer-learning for countries as they develop and implement accelerated priorities for human capital development.
HOW DOES IT SUPPORT COUNTRIES

• Signals a country’s prioritization of HC and creates space for a cross-ministry, “whole of government”, vision

• Facilitates alignment around country human capital priorities for World Bank Group, partners, and donors

• Provides a peer-learning platform for high-level government officials across regions & incomes

• Builds capacity of country stakeholders by providing key knowledge & tools linked to human capital agenda

• Facilitates concrete operational support from the World Bank Group, such as for policy operations and analytics

“Mainstream expertise, tools, approaches, partnerships, and collaboration to protect and invest in people”
EXAMPLES OF ANALYTICS

Human Capital Reviews (HCRs)

➢ Presents a Framework for a Coordinated Multi-sectoral Approach to human capital formation

➢ Analytical framework applies the Life Cycle Approach with multiple interventions at each stage of life to achieve optimal human capital results

➢ Ongoing in Eastern Partnership Countries in ECA

Life Cycle Approach to Human Development: Ensure that all children receive a comprehensive package of services at the critical periods of childhood and early youth to reach their full potential

<table>
<thead>
<tr>
<th>Early Childhood</th>
<th>School-age Children</th>
<th>Youth to Adulthood</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Good health, nutrition, care and stimulation to ensure optimal cognitive, physical and emotional development</td>
<td>➢ Equip children with strong foundational (literacy and numeracy) skills that are critical for life-long learning</td>
<td>➢ Ensure that youth are prepared to enter the job market as healthy, skilled, and productive adults including through the acquisition of relevant skills</td>
</tr>
</tbody>
</table>
| ➢ Ensure children enroll in preschool and are well-nourished, attentive and ready to learn | ➢ Ensure children are healthy (and not anemic), enroll and stay in school, and acquire real learning in the classroom | }
EXAMPLES OF ACTIVITIES: **Knowledge Exchange**

“**A temporary national hotline was set up and could be dialed by any person needing food assistance.**”

Djamila Ismailova, Head, State Benefits Unit, Ministry of Labor and Social Development, Kyrgyz Republic

“**Success does not depend on policies but on successful implementation of those policies.**”

Ho Peng, Advisor, Ministry of Education, Singapore

“**Local government acted on three main fronts: citizen mobilization, social assistance, and enforcement of social distancing.**”

Samuel Dusengiyumwa, Permanent Secretary, Ministry of Local Government, Rwanda

**Just-in-time COVID-related webinars**

- **Kyrgyz Republic:** How to safeguard people and continue education during COVID-19.
- **Singapore:** The education system’s COVID-19 response.
- **Rwanda and the Republic of Korea:** How to protect people and markets in a pandemic and track and trace disease using ICT.

[https://dlc.worldbank.org/content/human-capital-project-focal-points-network-knowledge-exchange-series](https://dlc.worldbank.org/content/human-capital-project-focal-points-network-knowledge-exchange-series)
QUESTIONS?

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THANK YOU

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