# 2. QUALITY-ADJUSTED HUMAN DEVELOPMENT

The quality-adjusted human development challenge index measures shortfalls in achievements in healthy lives, quality education and equally distributed income. No region has a very low quality-adjusted human development challenge index, which means there is still much to be achieved even in the world's most developed regions, North America and Europe and

## A. Main findings

Sub-Saharan Africa is the most challenged region as was the case two decades ago (figure 9). Despite some progress, deprivations are acute, resulting from many factors, including poor governance, civil wars and shocks such as the AIDS pandemic.<sup>18</sup> Another region witnessing a high level of challenges is South Asia yet it also shows the greatest decline in challenges from 2000 to 2020. The least challenged region, North America, is the only region that witnessed an increase in its quality-adjusted human development challenge index in 2020 compared with 2010, after an improvement between 2000 and 2010.

For all regions, except Latin America and the Caribbean and North America, the largest share of the qualityadjusted human development challenge index comes from the education dimension (figure 9). The largest share in North America and Latin America and the Caribbean comes from the income component. This was also the case for North America since 2000, but this region's qualityadjusted human development challenge is very low; all its dimension scores are below 0.3. For Latin America and the Caribbean, the education component had the largest share in 2000 and 2010. A change to the income dimension having the largest share is not surprising given the upward trend in many educational indicators in the region over the past 15 years.<sup>19</sup> Yet future data might show different trends, especially after the COVID-19 pandemic caused an unprecedented education crisis.<sup>20</sup>

## Central Asia. Sub-Saharan Africa faces very high challenges, followed by South Asia and the Arab region, which scored high and medium, respectively.

Within the index, the quality-adjusted education component has the most significant share in most regions, followed by the quality-adjusted income index. Since some countries in South Asia have improved their challenge scores from very high to high, the number of people living in very high-challenge countries has declined. The largest share of the world population now lives in countries with medium quality-adjusted human development challenges.



"For Latin America and the Caribbean, the **education** component had the **largest share** in 2000 and 2010."





The Arab region is particularly challenged in education, with shares of 48 per cent in 2020, 50 per cent in 2010 and 49 per cent in 2000 in the overall quality-adjusted human development challenge index. This is not surprising given the well-documented and very high inequality in education between and within Arab countries.<sup>21</sup> It is crucial to address gaps in education, which is often referred to as the great equalizer, given myriad effects on other challenges and especially in view of the Fourth Industrial Revolution.

In terms of global population shares at each level of the quality-adjusted human development challenge index, the highest share in 2020 was in the medium-challenge category (figure 10). This is an important improvement from 2000, when

the highest share was in the very high-challenge category. The change is mainly due to improved scores of some highly populated countries in South Asia, however, such as Bangladesh and India, which moved from the very high- to the high-challenge category between 2000 and 2010. Pakistan made this move between 2010 and 2020. Another reason for global improvement is progress in some countries in East Asia and the Pacific, such as Indonesia, which moved from the high- to the medium-challenge category between 2000 and 2010. Most people still living in very high-challenge countries are in Sub-Saharan Africa. Some progress has been made in countries with low challenges. France, Germany, the Republic of Korea and Singapore moved from the low- to the very lowchallenge category between 2000 and 2010.



# **Figure 10.** Population in each quality-adjusted human development challenge index category by region, 2000, 2010 and 2020

Nine of the 10 most challenged countries are in Sub-Saharan Africa (figure 11). While several reasons explain this poor performance, the fact that almost all of the most challenged countries are in this region underlines the need for major improvements in basic dimensions of development. Other regions, having notably reduced basic development concerns, should focus on tackling environmental and governance challenges.

Some subregional variations are evident. For instance, the tenth country in the most challenged group, Haiti, is in Latin America and the Caribbean, where the regional challenge level is lower than the global average. While North America is the least challenged region, the 10 least-challenged countries are all from Europe and Central Asia; five are Nordic countries. These variations could be attributed to several country-specific reasons. In Haiti, political instability and multiple shocks to the economy have led to high and increasing poverty rates and very high inequality. Health and education outcomes are poor. The World Bank expects a child born today in Haiti to be only 45 per cent as productive as they could be with a full education and health care.<sup>22</sup>







Over 2000-2020, many countries witnessed an increase in quality-adjusted human development challenge index scores. This occurred for different reasons, although conflict was among the main drivers. Three of the 10 countries with the highest deterioration in ranking on the index are conflict-affected Arab States, Libya, Yemen and the Syrian Arab Republic, respectively (figure 12). Egypt and Lebanon, which have witnessed significant political instability and economic hardships, are in the same group. Peru has registered the highest global decline in qualityadjusted human development challenges through solid reforms that increased public expenditures on health, education and infrastructure, and led to lower inequality and poverty.<sup>23</sup> Following economic and social achievements since the early 2000s,<sup>24</sup> Türkiye also appears among the top 10 countries globally in improvements, along with four countries from Sub-Saharan Africa. It is more difficult for a country starting from a point of relatively low challenges to make noticeable improvements, which explains the **Figure 12.** Top 10 deteriorations (left) and improvements (right) in rank on the quality-adjusted human development index (2020 rank minus 2000 rank)



#### (B) Top 10 improvements in rank



presence of high- and very high-challenge countries in the group with the greatest improvements.

While all countries' HDI scores were discounted by quality-adjustment variables to calculate the index, some were more affected than others (figure 13). Some outliers have fewer quality-adjusted human development challenges than other countries with similar HDI ranks. For example, Ukraine has the highest rank improvement on the quality-adjusted human development index compared with the standard HDI. This is because Ukraine is the best performer in reducing income inequality. Following Ukraine, Viet Nam, Uzbekistan, Moldova and Kyrgyzstan, respectively, saw the best improvements. Among countries with the best improvements in rank, 7 of the top 10 are from Europe and Central Asia. The remaining countries are from East Asia and the Pacific (two) and the Arab region (one). Some countries below the regression line have higher challenges than other countries with similar HDI levels. One is Bahrain, with the greatest loss in rank, mainly due to poor performance on the inequality-adjusted income component compared with a very high HDI income score. Poor income performance is driven by factors including low-quality education for poor families resulting in fewer chances of getting jobs with appropriate salaries, which exacerbates income inequality.<sup>25</sup> The top 10 countries in terms of the greatest deteriorations in rank include four from Latin America and the Caribbean, three from Sub-Saharan Africa, two from the Arab region and one from North America (figure 12).





#### Figure 13. Quality-adjusted human development challenge index rank and HDI rank, 2020

### **B.** Influencing factors

Three indicators particularly influence the quality-adjusted human development challenge index: the pupil-teacher ratio, the number of doctors and number of hospital beds per 1,000 individuals, and knowledge use in the economy, often captured by economic diversification and complexity indices.<sup>26</sup> Countries striving to improve these variables generally show the best outcomes on the index. Additional factors that directly or indirectly influence these inputs are the use of technology, decent employment, gender equality and institutional strength, especially government effectiveness.

These relationships should not be taken as unidirectional causalities running from one variable to another. In some

cases, greater causality is expected from some indicators to others, such as from having more and better trained doctors to having more years of healthy life. In other cases, there may be bidirectional causality. For example, higher incomes could help generate more decent jobs and introduce more knowledge in the production process and hence induce a more complex economy. But initial conditions and policies conducive to diversification, decent employment and knowledge use in production often result in higher incomes and lower inequalities. These issues are not of much concern to this report since defining the most effective factors for overcoming development challenges rests on considering each country's specificities.

#### Health and education system capacities and knowledge

There are high negative correlations between the healthy life expectancy challenge index and the capacity of the health system index, based on the simple average of the two indicators of the number of doctors and number of hospital beds per 1,000 individuals (figure 14). Similar patterns are evident between the quality-adjusted education challenge index and the pupil-teacher ratio index (figure 15). Both indices were rescaled so that a higher number of per capita doctors and/or hospital beds was associated with lower health challenges and a lower number of students per teacher was associated with lower educational challenges.

Poor health and educational outcomes in many countries are a logical result of insufficient institutional capacities, such as a lack of nearby hospitals, doctors or teachers. Outliers show differences in the use of resources, however. Many countries, especially in Sub-Saharan Africa and the Arab region, have greater challenges than expected given their input indicators, which suggests poor use of health and education capacities. Countries below the regression line, such as the Nordic countries, likely demonstrate better use of available capacities.<sup>27</sup>

Access to and use of technology is an important driver to consider given its direct influence on education quality and more generally on opportunities from the Fourth Industrial Revolution. One basic indicator of the use of technology that has wide country coverage is the number of Internet users as a percentage of the population. While this is not a good proxy for technological knowledge or skills, it still suggests the level of access to information, which is a key pillar of knowledge acquisition and quality education.



#### Figure 14. Healthy life expectancy challenge index and capacity of health system index



Figure 15. Quality-adjusted education challenge index and pupil-teacher ratio index (rescaled)

Source: ESCWA calculations.

Consistent with this hypothesized nexus, there is a very strong correlation between the quality-adjusted education challenge index and Internet users (figure 16). Interestingly, most Arab and Latin American and Caribbean countries appear above the regression line while many European and Central Asian countries fall below it. This shows that when including these indicators, poorer and more challenged countries perform better than expected given their educational and overall developmental challenge levels. Less challenged countries in Europe and Central Asia perform worse, relatively. With technology in general and the Internet in particular, more widely available, performance on the Internet indicator is almost the same in high- and low-challenge countries. Exceptions remain, however, with Sub-Saharan Africa negatively impacted by including such indicators mostly due to enduring – and in some cases widening – technology gaps.

A more important measure of technological advancement is the degree to which a country generates knowledge and ultimately translates it into human development gains. One index capturing this dimension is the economic complexity index. It naturally sits well with the quality-adjusted human development income and education challenge indices and correlates with the inequality-adjusted income







challenge index (figure 17). This is in line with findings that show that the level of economic diversification and knowledge content of the production process predict current and future levels of income and possibly even income distribution.

Again, the presence of outliers is explained by the fact that some countries have greater efficiencies in the use of their economic resources, such as Finland and Norway. Others have lower efficiencies resulting in high inequality-adjusted income challenges relative to their level of economic complexity, such as Mexico and South Africa. Improving health and education sector capacities by increasing the numbers of doctors, hospital beds and teachers is essential to reducing quality-adjusted health and education challenges. So is higher investment in knowledge-intensive, high value-added sectors, as they tend to generate broad-based decent employment and improve economic complexity. These combined effects will diminish inequality-adjusted income challenges, especially with the increasing digitalization which will gravely affect low-skill, low-wage jobs. That said, today's technological trends will further increase the inequality-adjusted income challenge if these root causes are not addressed.

# 2

#### **Decent work and the Fourth Industrial Revolution**

Employment is vital to quality human development achievements, especially the income dimension. Through employment, quality education can translate into higher and better-distributed incomes.

Employment in general and youth employment in particular remain pressing challenges in most countries, however, especially those in the lowincome group.



Figure 17. Inequality-adjusted income challenge index and economic complexity index

**Source:** ESCWA calculations and the Harvard Growth Lab, https://atlas.cid.harvard.edu/rankings.

Globally, the total unemployment rate for those aged 15 and above was 6.6 per cent in 2019. The rate for youth (aged 15-24) was 15.2 per cent, more than double the overall rate. Total and youth unemployment rates were 5.6 per cent and 9.1 per cent, respectively, in low-income countries.

While the unemployment rate is an important indicator for labour market performance, it cannot provide a full picture. In fact, lower unemployment in low-income countries compared to the global average could arise from several reasons, including the inability of many people to afford being unemployed, which forces them to accept any job. High rates of informality and vulnerability occur in more challenged, lower-income countries. For instance, 62 per cent of total employment worldwide is informal compared to a much higher 88 per cent in low-income countries.<sup>28</sup> The share of vulnerable employment in total employment is 44 per cent globally compared to 79 per cent in lowincome countries.<sup>29</sup>

The quantity of jobs alone is not sufficient. Jobs must be decent and high in productivity, providing safe and stable working conditions and incomes. Creating such jobs can support the transition towards knowledge-based economies, which ultimately rely on increasing skilled labour across sectors.

Decent work, income levels and distribution, and economic complexity correlate with each other. It is not surprising to see poor correlations between the unemployment rate and both the inequality-adjusted income challenge index and the vulnerable employment indicator (figures 18 and 19). This contrasts with a strong correlation between the vulnerable employment indicator and the inequalityadjusted income challenge index (figure 20).







Figure 19. Unemployment and vulnerable employment rates

Source: ESCWA calculations and ILOSTAT, www.ilo.org/shinyapps/bulkexplorer20/?lang=en&segment=indicator&id=UNE\_2EAP\_SEX\_AGE\_RT\_A.





Source: ESCWA calculations and World Bank data, https://data.worldbank.org/indicator/SL.EMP.VULN.ZS.

Since decent jobs lead to more complex economies and in turn higher and better-distributed incomes, accounting for decent employment in development indices is important. While vulnerable employment is a good proxy for decent employment as shown by these correlations, the two concepts are not the same. For instance, decent employment entails decent working time, access to paid leave and career advancement opportunities, to name a few dimensions, which is by no means an easy task.<sup>30</sup> Therefore, vulnerable employment represents only one important aspect of a much broader concept.

This is also vital as the world is changing rapidly in the course of the Fourth Industrial Revolution, and gaps

between developing countries and developed countries will widen due to the digital divide. For instance, exponentially increasing knowledge and productivity in some countries, leading to improved complexity, will help these countries to cope with the new technologies and changing demands. On the other hand, other countries will be left behind and unequipped with the skills needed amid these fundamental changes. It is therefore important to adopt active cabour market programmes (skill development and training for workers in particular) which will result in the creation of more decent and knowledge-intensive jobs that are less vulnerable to technological changes.

## **3** Gender equality

Gender disparities in education, employment and incomes are major obstacles to human development. Despite significant improvements in the past decades, women and girls still face many inequalities in basic indicators of human development. Factoring in the quality of development shows even sharper inequalities.





Source: UNDP, 2020.

Education is among the most important aspects of gender inequality. While the gender gap has improved globally in the last few years, it is still prominent, especially for poorer and more challenged countries. Most countries still achieve fewer years of schooling for women than for men (figure 21). This gender gap is widest for countries with an average of less than 10 years of schooling, with a few exceptions such as Kuwait, Lesotho and Libya.

Globally, on average, women's GNI per capita is \$10,000 less than that of men (\$24,458 for men compared with \$14,441 for women).<sup>31</sup> In average monthly wages, a woman in informal employment earns only 47 per cent of what a man in formal employment earns.<sup>32</sup> Women in the formal sector earn only 79 per cent of what men in formal employment earn.<sup>33</sup> This income gender gap is highest for Arab and South Asian countries (figure 22).





#### **Governance and quality human development: a mutual reinforcement**

What makes some countries perform better on drivers of human development achievements? In short, they have good governance and institutional effectiveness, which equips them to create requisite policies and make them work.<sup>34</sup> Without such capacities, a country will likely end up with high challenges relative to its endowments.

Governance is both an enabler of and an essential condition for inclusive development. The two are mutually reinforcing. Good governance can facilitate development, while development can bolster State capacity.<sup>35</sup> A strong and capable State can provide important services critical to development, such as adequate health care, infrastructure, education, environmental protection, disease control and research, and development support for entrepreneurship. Equally, economic development can contribute to the fiscal health of the State, providing revenues to deliver on these objectives. Top performers on governance are generally

also among the top performers on development, shown in the positive correlation between the governance challenge index and the quality-adjusted human development challenge index (figure 23).

The positive relationship between governance and qualityadjusted human development depends on a country's initial circumstances. With very high human development challenges, marginal improvements will not sufficiently change State capacity and governance. The same can be said for marginal improvements in governance not noticeably impacting human development. As both governance and development make more significant improvements, however, this can lead to more noticeable advances in both.<sup>36</sup> Countries without significant initial challenges are more likely to improve governance by improving their development status.



#### Figure 23. Governance challenge index and quality-adjusted human development challenge index

**C.** Conclusion

All regions have witnessed declines in quality-adjusted human development challenges over the past decade, except North America, which nevertheless is still the least challenged region. In almost all regions, the highest share of the quality-adjusted human development challenge index comes from the education component, which demonstrates the need for educational system reforms globally. The highest share of the world's population is now living in countries with medium quality-adjusted human development challenges, a major improvement since 2000 when the highest share was in very high-challenge countries.

Health and education system capacities and knowledge use in the economy influence quality-adjusted human development outcomes. Countries striving to improve these policy-oriented input variables have generally shown the best outcomes. This influence takes place through various channels, including, most importantly, decent employment, gender equality and institutional strength. Influence is strongly affected by governance frameworks and institutional effectiveness but does not flow only in one direction, as better quality-adjusted human development results also lead to improved institutions.

The relationship between good governance and human development is far more robust at lower levels of challenges. Countries with low and very low qualityadjusted human development challenges have more consistent governance performance owing to the presence of strong and reliable institutions. This is not the case for other countries where there are clear disparities below and above the regression line. This complex relationship between governance and human development is the subject of further scrutiny in Chapter 4, where the internal structure of the governance challenge index and shares of its various aspects will be analysed in more depth.