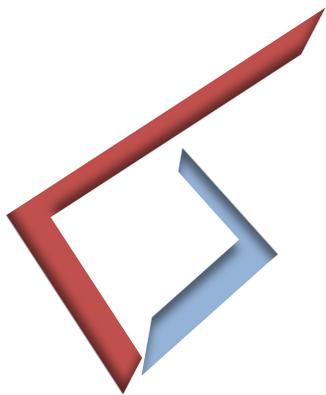
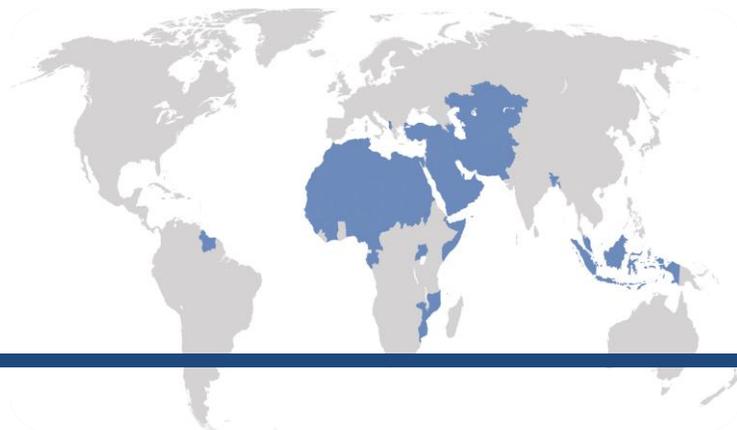


# EDUCATION AND SCIENTIFIC DEVELOPMENT IN OIC COUNTRIES

2016







# **EDUCATION AND SCIENTIFIC DEVELOPMENT IN OIC COUNTRIES 2016**



ORGANISATION OF ISLAMIC COOPERATION  
STATISTICAL ECONOMIC AND SOCIAL RESEARCH AND  
TRAINING CENTRE FOR ISLAMIC COUNTRIES (SESRIC)

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Kudüs Cad. No: 9, Diplomatik Site, 06450 Oran, Ankara –Turkey

Telephone +90-312-468 6172

Internet [www.sesric.org](http://www.sesric.org)

E-mail [pubs@sesric.org](mailto:pubs@sesric.org)

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For additional information, contact Research Department, SESRIC through: [research@sesric.org](mailto:research@sesric.org)

This report has been prepared by a research team at SESRIC led by Kenan Bağcı and comprising Cem Tintin, Mazhar Hussain, Fadi Farasin, Davron Ishnazarov, Cihat Battaloğlu and Adam Ben Said.

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# Foreword

Education is one of the most important investments a country can make in its people and its future. It is the core of human capital formation and central to development of a society. It is widely accepted that investment in education and quality research at various national institutions are vital in achieving higher economic growth and reducing poverty and inequality. Quality education generates benefits to the society that go beyond the gains secured by the individuals involved. There is overwhelming evidence that education improves personal health, encourages stronger national identity and promotes peace and stability.

It has been also paid a great attention to the role of education in reducing inequalities that exist in many countries, particularly in developing societies with lower levels of income. The high correlation between the level of education and income or wealth is considered from the equity perspective as a justification for public intervention when the conventional market mechanisms do not function efficiently to ensure equality. Therefore, public intervention in the education sector, particularly in primary education, is universally acknowledged today.

Demand for education in many parts of the world continues to increase, which in turn offers developing countries an invaluable opportunity to prepare a well-

trained workforce for growth and development. Educated, or skilled, workers are able to perform complex tasks and thereby contribute to producing more technologically sophisticated products. Especially in developing countries, skilled workers increase the absorptive capacity of the country by acquiring and implementing the foreign knowledge and technology, which is of crucial importance in successful economic diversification and development in OIC member countries.

However, it is found that OIC countries as a group are lagging far behind the other country groups in terms of educational outcomes. Although great achievements have been observed in many OIC countries in improving access to education, it appears that there is still a long road ahead to improve the teaching conditions and quality of education in order to realize more concrete achievements in the area of science and technology.

This report has been prepared by SESRIC primarily for the 8<sup>th</sup> Islamic Ministers of Higher Education and Scientific Research to be held in Bamako, Mali during 14-15 November 2016 with a view to providing the most recent statistics on the developments in the area of education and scientific development in OIC member countries.

Amb. Musa Kulaklıkaya  
Director General  
SESRIC



# Executive Summary

## Background

In order to highlight some basic indicators related to education, school age population at different levels of education, average years of schooling and literacy rates are discussed. **School age population** at pre-primary level is comparably lower than the population at other levels of education in OIC countries. In 2015, there were 101 million at pre-primary school age in OIC countries. While 204 million children were at the age of primary schooling, 207 million children were at the age of secondary schooling and additional 146 million were at the level of tertiary schooling. The total school age population reached 655 million in OIC countries.

**Average years of schooling** have substantially increased over the last 40 years. In 20 OIC member countries, the mean years of schooling is still below 5. On the other hand, it is above 8 years in 16 member countries. Moreover, compared to other country groups, average years of compulsory education in OIC countries are relatively lower. With an average of 8.8 years, OIC countries as a group lag behind the averages of developed (10.2) and non-OIC developing countries (9.9).

On the other hand, the **literacy rates** in the OIC countries remain relatively low. With an average adult literacy rate of 74.5% in 2014, OIC countries as a group lagged well behind the world average of 84.3% and also the non-OIC developing countries' average of 87%. Still in 9 member countries, literacy rates are below 50%. Literacy rates among youth are comparably better than adult literacy rates in OIC countries. On average, 83.8% of youth are literate, which is, however, once again below the world average (90.6%) and average of non-OIC developing countries (93.3%) and developed countries (99.8%).

## Participation in Education

The total number of **enrolments** in *pre-primary* schools in OIC countries increased from 13.4 million to 28.2 million between 2000 and 2014, based on the most available data in both years. The number of pre-primary school teachers, on the other hand, not only improved in absolute terms but also as percentage of both developing countries and the world as a whole. Despite notable improvements, average pre-primary school gross and net enrolment rates (GER and NER) in OIC countries compare unfavourably to other developing and developed countries, as well as the world.

OIC countries increased their share in the total numbers of both *primary* school enrolments and teaching staff. The number of primary school pupils in OIC member countries reached 194.5 million, representing 27.1% and 29.8% in total world and developing country primary school enrolments, respectively. With 7.1 million primary school teachers in 2014, OIC countries also improved their share in total primary school teachers in both the world and developing countries. On the other hand, average gross rates for primary school enrolment (i.e., GERs) have increased all over the world, except for developed countries, during the period 2000-2014. More importantly, this upward trend was particularly strong in OIC countries. The average GER in the member countries increased from 91.9% in 2000 to as high as 99.3% in 2014, according to most recent data available in both years. The average NER in OIC countries was rather stable and recorded most recently at 82.0%. This translates into the fact that some one-fifth of the primary school age children in OIC countries are out of schools.

In 2014, 128.7 million children in OIC countries were enrolled in *secondary* schools, compared to 77.5 million in 2000. The total number of teachers qualified for secondary schools also increased from 3.0 million to 6.3 million between 2000 and 2014. In 2014, OIC countries accounted for 22.7% of the total secondary school pupils in the world and 26.4% in developing countries. As far as the total number of secondary school teachers is concerned, the shares were at 19.6% and 24.4%, respectively. Notably, average OIC secondary school GER increased from 51.4% in 2000 to 62.1% in 2014, although improvement was relatively stronger in other country groups. On the other hand, average NER in OIC countries, which was recorded at 58.1% in 2014, compared favourably to that in other developing countries (64.1%). Yet, more needs to be done to improve secondary education enrolment rates to levels at which the education system can be deemed fair and inclusive. Particularly large gap between OIC secondary school GER and NER figures in most education levels highlight the problems of outreach and quality of education in OIC countries, which manifest themselves through prevalence of over-aged enrolments and high repetition rates.

As a particularly promising development for the OIC community, total number of *tertiary* school students in the member countries increased more than two-fold from 14.0 million to 33.6 million between 2000 and 2014. More tertiary school graduates apparently mean more qualified, highly skilled workforce, this is. The number of teaching staff employed in tertiary schools of OIC countries also increased steadily over the last decade and reached 1.5 million in 2014. During the period, OIC member countries increased their shares in the total number of tertiary school students and teaching staff in the world. However, OIC countries, with an average GER of 25.4% as of 2014, still lag behind the developed country GER levels (74.3%).

### Progression and Completion in Education

The **completion rate** indicates the total number of students completing (or graduating from) the final year of primary or secondary education. OIC member countries, on average, achieved to increase the completion rate from 80.8% in 2008 to 83.4% in 2014, which was still lower than the world average of

91% in the same year. The increased investment on education, programs to raise parents awareness and higher use of information and computer technologies are among the reasons behind this change.

The **repetition rate** is a key indicator for analysing and projecting student flows from one grade to a higher grade within an educational cycle. The repetition rates in OIC member countries, on average, decreased at primary school levels thanks to education reforms. In primary schools, the average of OIC decreased from 7.4% in 2008 to 5.3% in 2014, which was still above the world average of 4.8% in 2014. In secondary schools, among all country groups analysed, only the OIC group failed to reduce the repetition rates in the period under consideration, which increased from 8.6% to 10.1%.

The share of children enrolled in the first grade of primary school who eventually reach the last grade of primary is known as the survival rate. Despite the existence of large variation among OIC member countries, on average, a small decrease from 79.9% in 2008 to 79.0% in 2013 in the survival rate of the OIC group was observed.

The **transition rate** measures the rate of students' transition from primary school to secondary school. A lower transition rate might indicate the existence of severe problems in secondary schools and in education system in general. In this regard, OIC member countries, on average, successfully increased their average transition rate from 84.5% in 2008 to 88.5% in 2013.

### Educational Resources and Teaching Conditions

Governments around the world spent, on average, 4.8% of GDP on education in 2004 while this figure slightly increased by 0.1 percentage point in a decade to reach 4.9% in 2014. **Public spending on education** in developed countries accounted for 4.9% of the GDP in 2004 and this ratio increased further to 5.1% by 2014. However, governments in non-OIC developing countries could spend only 4% of their GDP on the education sector in 2004 and this ratio increased by 0.8 percentage points in a decade to reach 4.8% in 2014. The situation in OIC countries was not optimistic though government spending on education accounted for 4.1% of their GDP in 2004

which decreased by 0.6 percentage points to 3.5% in 2014.

The **share of a government's spending on education in its total expenditures** measures the relative importance of the education sector on part of the government. In OIC member countries, governments' spending on the education sector accounted for 15.8% of their total expenditures in 2004. This ratio was 12.9% in developed countries and 13.7% in non-OIC developing countries, with the world average being 13.1%. By 2014, the ratio increased to 16.5% in OIC member countries and 14.8% in non-OIC developing countries while it decreased to 12.7% in developed countries, leading to a slight increase in the world average to 13.2%.

At the micro-level, **government expenditures on education per pupil** increased all over the world between 2004 and 2014. In primary education, while OIC countries spend on average \$332, non-OIC countries spend more than \$500 and developed countries spend more than \$9,200 in 2014. Again in secondary level of education, OIC countries spend the lowest amount per student with \$546. When it comes to tertiary level education, the gap between OIC and developed countries slightly narrows down. Non-OIC developing countries are on average spending around 50% more than OIC countries in all levels of education. On the other hand, developed countries spend almost 30 times more than OIC countries at primary level, 20 times more in secondary level and 10 times more at tertiary level.

A lower **student-teacher ratio** is one of the main indicators on the good quality of education in any country. In a classroom with a low student number, more interaction between teacher and students occur. The attentiveness of students on the lecture is also more likely to sustain longer, if there are limited number of students in the same classroom. In primary schools, OIC member countries achieved to reduce the student-teacher ratio from 27.4 in 2004 to 26 in 2014. Like in primary schools, in the OIC group, the student-teacher ratio in secondary schools fell from 18.7 in 2004 to 17.1 in 2014. In tertiary schools, however, the student-teacher ratio in the OIC group went up from 19.1 in 2004 to 20.9 in 2014.

The number of **students pursuing studies abroad** continues to surge not only because of rising demand

for quality education but also due to rising competition among higher education institutions around the world for the best and brightest minds. In 2013, more than 4 million students went abroad to study, up from 2 million in 2000. The number of students going abroad for tertiary education continuously increased from OIC countries almost doubled since 2000 and reached over 920,000 in 2013. The main reasons for substantial increases are, among others, growing number of youth in higher education and economic growth of the countries that created opportunities for students to get an education at international education institutions. According to the latest data available, Saudi Arabia was the most attractive destination within OIC for foreign students by hosting more than 71,700 students from all around the world.

### Scientific Development

Research in science and technology is of great importance and key to progress towards a knowledge-based and innovation-driven economy. It promotes better understanding on different aspects of life and helps to improve the standard of living by generating new knowledge and technological innovation. Today, there is severe competition among countries to become the most competitive and knowledge-based economy in the world. Gaining a comparative advantage against other countries, which is of particular importance to the OIC member countries in catching-up within this competitive world of knowledge economy, depends on how well they perform in research activities.

The availability of abundant and highly qualified **researchers** is an essential condition to foster innovation and promote the scientific and technological development of a country. Inhabiting 661 researchers per million people on average, OIC member countries fall well behind the world average of 1643. The gap gets even larger when compared to the EU average of 5101. In terms of **female researchers**, women represent around 35.6 % of the total researchers in the OIC, higher than the world average of 22.5% and EU average of 33.1%. In the recent decades, women, with better access to training and education facilities, have become more qualified and motivated to participate in the labour force.

However, the progress achieved so far in the field of R&D seems unsatisfactory neither globally nor at the OIC level as the percentage of women researchers is higher than the men in only 13 of countries in the world.

With regard to **Gross Domestic Expenditures on R&D (GERD)**, OIC countries account for only 2.9% of the world total or 9.8% of the other developing countries whereas the GERD of China is more than 7 times the OIC total. GERD as a percentage of GDP, known as **R&D Intensity**, is another measure reflecting the innovative capacity of a country. The average R&D intensity of the OIC countries, 0.37%, is significantly lower than the world average of 1.75% as well as the targeted rate of 1% of the OIC Ten Year Programme of Action (TYPOA).

**High-technology exports (HTE)**, defined as products with high R&D intensity, mostly depend on an advanced technological infrastructure and inward FDI in high-tech industries. Confirming the lack of adequate infrastructure and FDI in most of OIC countries, it is observed that all the member countries for which data are available accounted for only 3.3% of the world total HTE of \$2.34 trillion or 10% of the total HTE of developing countries in 2014.

**Intellectual property rights**, especially patents, are key factors contributing to advances in innovation and scientific development. As a product of R&D activities, patents strengthen the link between science and technology, as the outcomes of research translate into new products or services. In this regard, the quantity of patent applications is considered as a proxy for the degree of innovative capability in a country. With 46,781 patents, OIC member countries accounted for nearly 1.7% of total patent applications around the world.

Academic research is one of the most important components of research activities conducted in a country. To a certain extent, the performance in academic research can be well reflected by the quantity and growth of the **scientific articles** published in indexed journals. In 2016, OIC member countries as a whole published 121,020 articles which represent a six-fold increase compared to 20,242 articles published in 2000. Nevertheless, the total amount reached is still below those of some individual countries in the world. In terms of articles per million people, a similar trend can be observed. On average, OIC member countries produced only 29.75 articles per million people in 2000 while this number increased to 107.38 in 2016, which could still be considered low given that this number reached over one thousand in many developed countries.

**Capacity for Innovation**, published by World Economic Forum (WEF), aims to compare the overall capacity of countries for innovating new products and processes through measuring the way the technology obtained by companies. The average value of Capacity for Innovation in OIC countries was 3.79, which is below the average of the world (4.02) and also developed countries (4.86).

**Global Innovation Index (GII)**, prepared by INSEAD Business School and the World Intellectual Property Organization (WIPO), gauges elements of the national economy which embodies innovative activities to compare countries in terms of their enabling environment to innovation. According to a 2015 version of GII, the average value of the index in OIC countries is 29.5, which is lower than the world average (36.9) and the average of non-OIC developing countries (32.9).

## Policy Recommendations

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### Education

Evidence shows that learning levels rather than years spent in school are what drive social and economic returns on investment in education, including employability, productivity and growth (Brookings Institution, 2011). However, in many parts of the

world, children leave school without acquiring the basic knowledge and skills they need to lead productive, healthy lives and to attain sustainable livelihoods. Poor quality education is jeopardizing the future of millions of children and youth across the OIC region. But evidence-based decision making is

also highly challenging due to lack of sufficient data and capacity to systematically measure and track learning outcomes over time in many countries. Therefore, capacities for collecting quality data should be improved to analyse the extent of the learning crisis.

Human capital is one of the main determinants of long-term growth. Skilled and well-educated workforce facilitates the absorption of foreign knowledge and technology from other countries through channels including international trade and foreign direct investments. But, it is the absorptive capacity that determines the level of diffusion. Investment in human capital accumulation or education has, therefore, the potential to increase the capacity to obtain and utilize the knowledge developed elsewhere. Since the majority of the OIC member countries need such capacities to promote development, the issue of human capital development remains critical in widening the potentials to achieve long-term sustainable growth.

Development policy today recognizes the role of education but focuses most attention on ensuring that everybody is in school and ignoring the quality and efficiency of the learning that takes place in educational institutions. Promoting the quality of education at international and regional level is highly critical for creating better opportunities of growth and development. It is observed that despite some improvement in school attendance, there are OIC countries with considerably low level of schooling. The quality of education also remains a critical concern in many OIC countries. For effective human capital development that can lead to higher productivity and better competitiveness levels, attendance as well as quality of education at all levels (pre-primary, primary, secondary, and tertiary) and all types (vocational, formal, and evening) should be supported through effective programmes and policies. Low literacy rates and low levels of scientific outcomes reflect the dimensions of learning crisis in OIC countries. New and effective strategies should be devised to improve the learning outcomes in addition to improving participation to education. Educational resources and teaching conditions should also be upgraded to translate the higher participation to better learning outcomes.

Whatever gains made in access to education, it should be supported with an equivalent improvement in quality. According to the available data and information, the successful improvements in accession to education in many member countries obviously could not be accompanied with similar improvements in the quality of education, which plays significantly greater role in increasing the capacity of people to utilize knowledge.

Given the shortage of skilled workers, effective policies and programmes need to be devised and implemented for better education and training as they are critical factors for technological readiness to raise productivity and diversify into more sophisticated products. Enhancing firm productivity, upgrading technologies, developing high-value added services and achieving more competitive status in the world economy necessitate the assurance of better educated and trained human resources that match the needs of the labour market.

## Scientific Development

The current stance of science and technology (S&T) in OIC member countries is twofold. First, major indicators on research and scientific development display a large disparity within the OIC member countries. Second, the OIC members, individually or as a group, lag far behind the rest of the world, particularly the developed countries, with a few exceptions.

While the availability of researchers varies considerably across the OIC member countries, most of these countries lag behind the world, with inadequate quantity of researchers employed in R&D activities. On the other hand, spending on the research and development is significantly low in the OIC countries. The low R&D intensity introduces major challenges for OIC member countries, as only one member country is spending more than 1% of GDP on R&D in comparison to the world average of 1.8%. While some countries have recorded significant increases in their R&D intensity in the last ten years, most of them reported stable expenditures on R&D. Although the OIC Ten-Year Programme of Action called upon the member countries to encourage R&D programmes and ensure their individual R&D

intensity is not inferior to half of the world average, the OIC countries are still far away from this target and, with the current trends, it seems difficult to meet the Programme target on time. Therefore, there is a dire need for more efforts to be exerted in this area in order to close the gap with the rest of the world. To achieve this, R&D should be stimulated through government and private sector initiatives and coordination among the OIC member countries.

As another important indicator on research and scientific development, production of scientific articles is concentrated in a few of the OIC members. Moreover, the number of articles was just less than 100 in 14 member countries. To close the gap with the rest of the world and among the members, higher education and academic research should be supported rigorously by the governments. The establishment of universities and research centres through funds and financial incentives should be encouraged. OIC member countries should improve living standards for scientists to reduce brain drain from member countries to other countries and to lead brilliant minds to academic work. The participation of women in university education should be improved through the elimination of the obstacles that prevent them from attending higher education. Academic research should be promoted through research grants and lesser teaching loads.

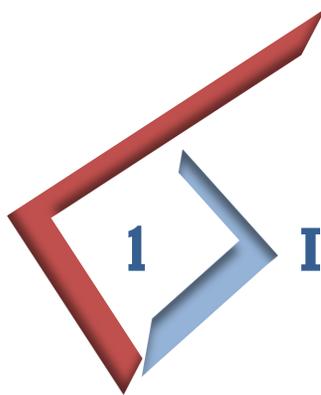
In this connection, intra-OIC networking opportunities could be facilitated through projects, similar to the Framework Programmes of the European Union, to support research and technological development in the Islamic world and to promote joint research initiatives among the member countries. Additionally, joint ventures among companies in OIC member countries in research intensive sectors should be encouraged towards more effective and cost efficient R&D investments. OIC countries may also take advantage of R&D spillovers by rapidly learning about new technologies developed in other countries and improving them, and by importing technological goods and services from their high-tech trade partners.

Moreover, patent applications are below the world average and mostly filed by non-residents, implying

that indigenous innovation capability in most of the OIC countries is at low levels. The OIC member countries have no choice but to adopt measures to encourage patenting and technology licensing. In particular, it is critical to educate small and medium-sized enterprises about the benefits and regulations of the patent system. Additionally, an OIC level patent system, similar to African Regional Intellectual Property Organization or European Patent Organisation, can be developed to increase incentives for patent application in the Islamic world. Such a system not only brings higher benefits for patent holders through the right of being granted patents in a larger geography, but also will foster the establishment of relationships between the members in matters relating to R&D and patents, and promote exchange of ideas, research, and studies on industrial property matters.

As a result of the low R&D intensity coupled with inadequate technological infrastructure, high technology exports of the OIC member countries are quite limited, accounting for only 3.3% of the world high technology exports in 2014. In this context there is a dire need to increase the share of high technology products in the exports of manufactured goods of the OIC member countries.

Finally, OIC Member Countries need to adapt to the very dynamic global market place in a timely manner, and take their part in the new phase of scientific development. As nanotechnology is envisioned by many scientists and researchers as the next major advancement in science and technology, it is very critical that special attention is given to this important area by the governments, science community and the private sector through public-private partnerships and OIC-wide networking. It is imperative that joint research and investment on nanotechnology is initiated among the OIC countries as the pioneers of this new technology will benefit enormously from their early investment in this area.



# 1 Introduction

While investment in physical capital and assets is critical for economic development, it is even more critical to invest in people and human capital through providing a good quality education. Investment in education has typically wider benefits than any other investment made on physical capital in improving the standards of life. There is overwhelming evidence that education improves personal health, encourages stronger national identity and promotes peace and stability. Moreover, quality education generates benefits to the society that go beyond the gains secured by the individuals involved. The development literature has also drawn attention to the role of education in reducing inequalities that exist in many countries, particularly in developing societies with lower levels of income. The high correlation between the level of education and income or wealth is considered from the equity perspective as a justification for public intervention when the conventional market mechanisms do not function efficiently to ensure equality. Therefore, governments today play an active role in expanding the outreach and quality of education in their efforts to promote socio-economic development.

The benefits from investing in human capital are not necessarily linked with attaining higher enrolment ratios, since poor quality may decrease returns of education and lead to high dropout rates. With a comprehensive approach to education, it is important that the education policy should provide people with learning opportunities that will assist

them in developing skills to engage in new undertakings.

Education gives people the knowledge and skills they need to live better lives. It can boost productivity and open doors to jobs and better earnings. According to UNESCO (2010), each additional year of schooling raises average annual gross domestic product (GDP) growth by 0.37%. Similarly, education is associated with lower levels of child mortality and better nutrition and health. Children of mothers with secondary education or higher are twice as likely to survive beyond age 5 as those whose mothers have no education. Each extra year of a mother's schooling reduces the probability of infant mortality by 5% to 10% (UNESCO, 2010). Education is also the key to addressing gender-based inequalities and exclusion. Another critical aspect of education is that it helps people make decisions that meet the needs of the present without compromising those of future generations. Education for sustainable development is fundamental to changing values, attitudes and behaviours.

Against this background, this section provides some preliminary information on the status of education under three main subsections. The first one deals with school age population at different levels of education. Then a brief analysis is made on average years of schooling and compulsory education in OIC countries. Finally, to draw a loose picture on the achievement of education, literacy rates for both adult and young population are depicted.

## 1.1 School Age Population

According to the definition of UNESCO, school age population is the population of the age group theoretically corresponding to a given level of education as indicated by theoretical entrance age and duration.

Figure 1.1 compares the total number of population at different levels of education for different country groups. The total number of population at different levels of education is closely related to the duration of the education at that level. Clearly, school age population at pre-primary level is comparably lower than the population at other levels of education due to shorter duration of education. In 2015, there were 101 million at pre-primary school age in OIC countries. While 204 million children were at the age of primary schooling, 207 million children were at the age of secondary schooling and additional 146 million were at the level of tertiary schooling. The total school age population reached 655 million in OIC countries.

These figures on school age population become more insightful when the share of OIC countries in world is considered for each level of schooling. The share of OIC in total world population in 2015 was around 23%. Figure 1.2 clearly depicts that in all levels of education the group of OIC countries account for higher share of schooling age population than their share in total world population. At primary school level, this share exceeds 30%. Even at tertiary level, OIC countries account 25.3% of total world population. This indicates that OIC countries have younger population compared to other regions and, as also identified in the OIC Economic Outlook 2016 of SESRIC, as an important strength of the OIC countries.

A further interesting outcome of the analysis is the distribution of school age population within OIC countries. While 15% of all school age population in OIC countries are at pre-primary school level, 31% of them are at primary level as of 2015 (Figure 1.3). Furthermore, 32% of school age population are at secondary level and 22% of them are at tertiary level. Although these figures are pretty much similar to the

Figure 1.1: School Age Population (2015)

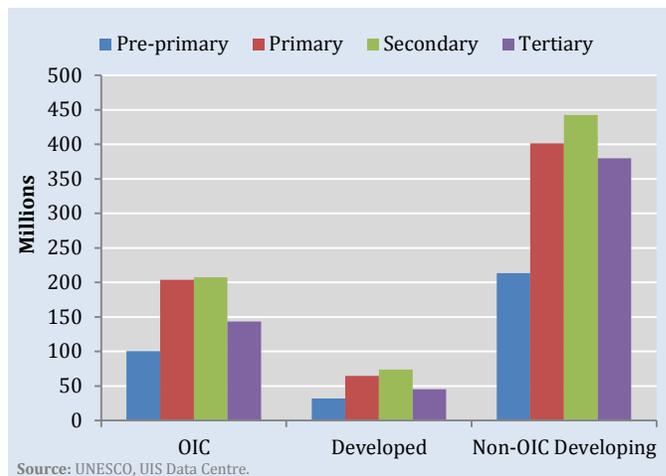


Figure 1.2: Share of OIC Countries in Total Worldwide School Age Population (2015)

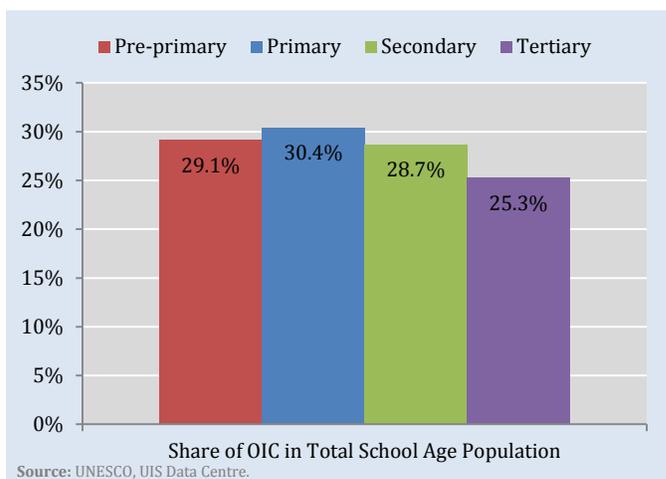
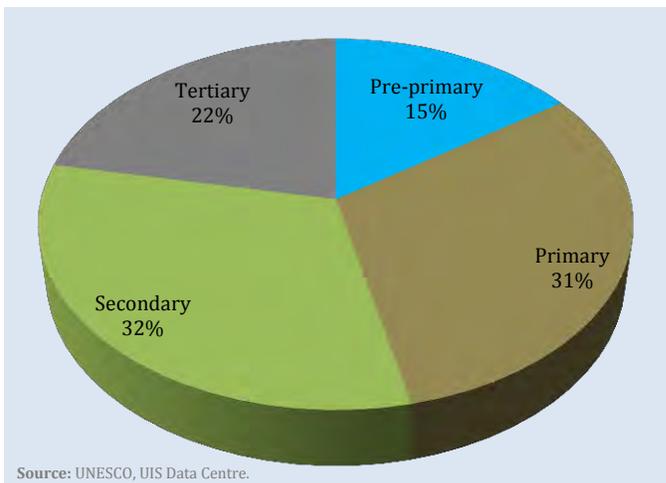


Figure 1.3: Distribution of School Age Population in OIC Countries (2015)



distribution in other country groups, it is observed that the shares of tertiary and secondary level population are relatively higher in developed and non-OIC developing countries.

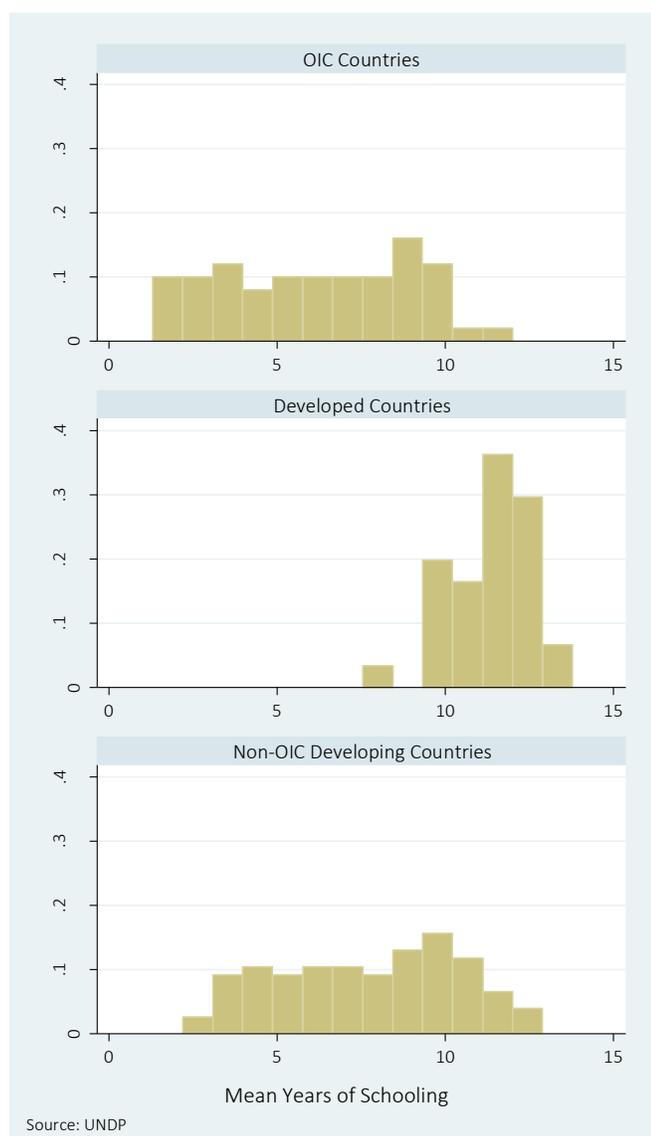
## 1.2 School Attendance

As noted in earlier editions of the Report, average years of schooling have substantially increased in OIC member countries over the last 40 years. However, overall performance of OIC countries remains well behind the performances of other country groups, as the distribution of OIC countries

in average years of schooling shows (Figure 1.4). In 20 OIC member countries, the mean years of schooling is still below 5. On the other hand, it is above 8 years in 16 member countries.

At individual country level, Central Asian countries take the lead with highest average school attendance with almost 10 years or above schooling (Figure 1.5). They are followed by Jordan, Malaysia and Bahrain. On the other hand, countries in sub-Saharan Africa are not able to offer education for long enough years to build up their human capital. In Burkina Faso, Niger, Chad and Guinea, average years of schooling were even below 2 years. This clearly points to a deficit in investment in human capital.

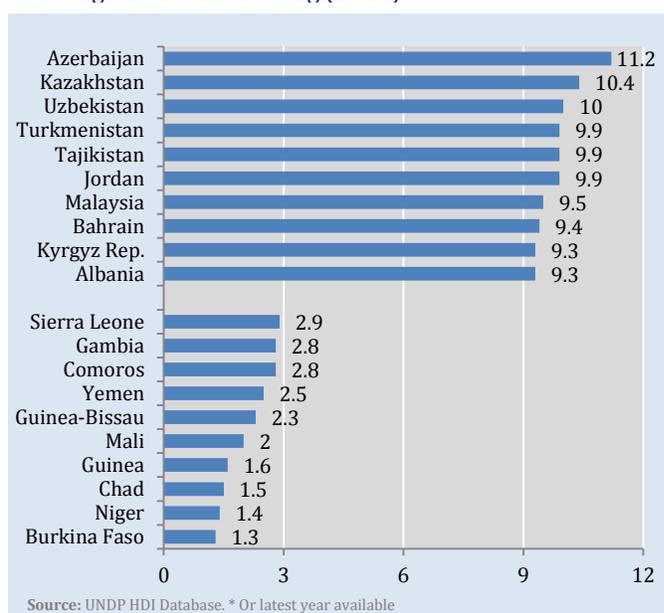
**Figure 1.4: Average Years of Schooling (2013)**



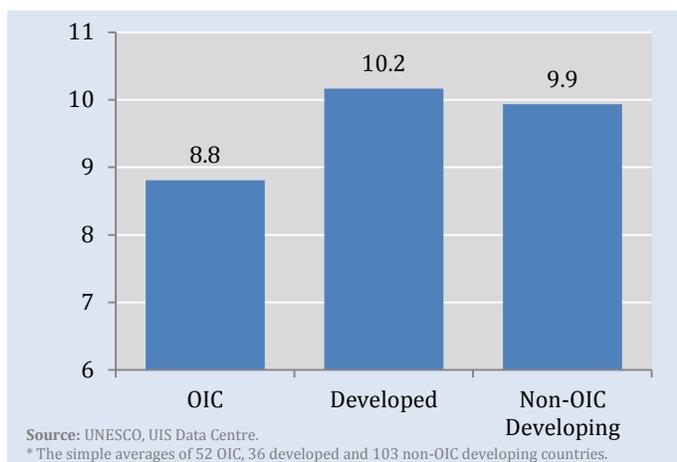
In order to increase the school attendance and enhance the human capacities, governments set targets with regulations on compulsory education. However, compared to other country groups, average years of compulsory education in OIC countries are relatively lower (Figure 1.6). With an average of 8.8 years, OIC countries as a group lag behind the averages of developed (10.2) and non-OIC developing countries (9.9).

As the distribution of compulsory education shows, most of the OIC countries set the compulsory duration of education at 9 years (Figure 1.7).

**Figure 1.5: OIC Countries with Highest and Lowest Average Years of Schooling (2013)\***



**Figure 1.6: Duration of Compulsory Education\* (2014)**

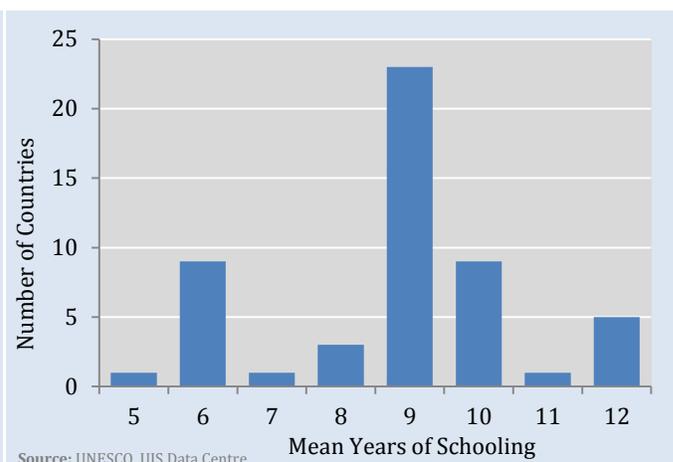


However, it is worrisome that there are still at least 10 OIC countries that do not expect from its people to proceed with their education more than 6 years. In 15 countries, the compulsory duration of education is 10 years and above, where Turkey, Pakistan, Turkmenistan, Egypt and Uzbekistan are the top countries with 12 years of compulsory education (Figure 1.8).

The ability to produce and use knowledge is a major factor in sustaining development and achieving comparative advantage. Demand for education in many parts of the world continues to increase, which in turn offers developing countries an invaluable opportunity to prepare a well-trained workforce for growth and development. Educated, or skilled, workers are able to perform complex tasks and thereby contribute to producing more technologically sophisticated products. Especially in developing countries, skilled workers increase the absorptive capacity of the country by acquiring and implementing the foreign knowledge and technology, which is of crucial importance in successful economic diversification and development.

Theoretical models of human capital and growth are built around the hypothesis that knowledge and skills embodied in humans directly raise productivity and increase an economy’s ability to develop and to adopt new technologies. Empirical literature also provides strong evidence on the impacts of higher educational inputs on productivity

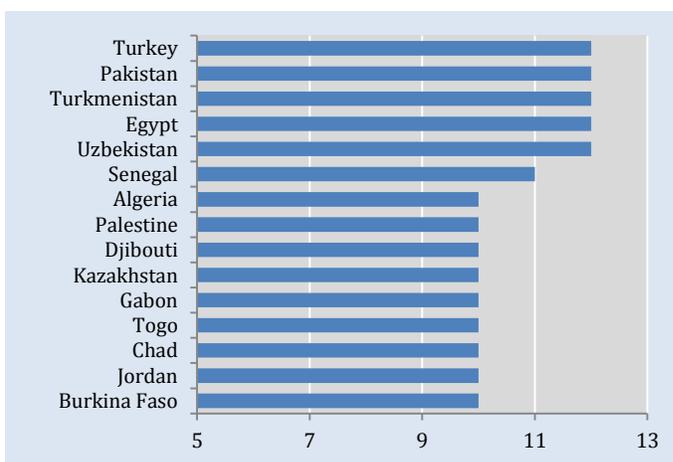
**Figure 1.7: Distribution of Compulsory Education**

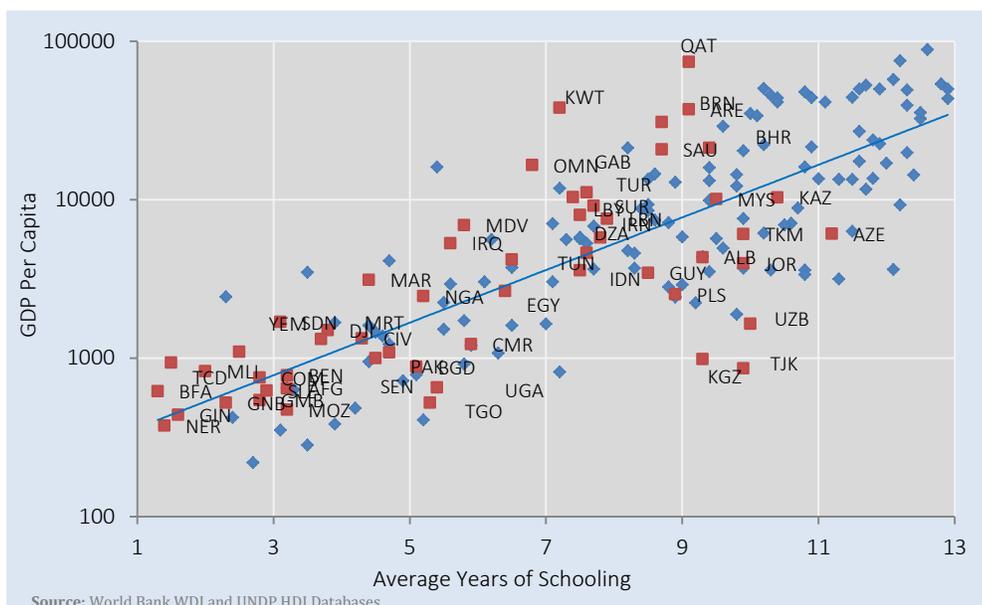


and growth. OECD (2007) notes that if the average time spent in education by a population rises by one year, then economic output per head of population should grow by between 4% and 6% in the long run. Figure 1.9 shows the relationship between average years of schooling and GDP per capita for 2013. Mean number of years that a representative worker has spent at school roughly determines the absorptive capacity that a worker can use in utilizing the knowledge developed elsewhere. Obviously, there is a strong relationship between income levels and educational attainment both in OIC countries (square) and non-OIC countries (diamond).

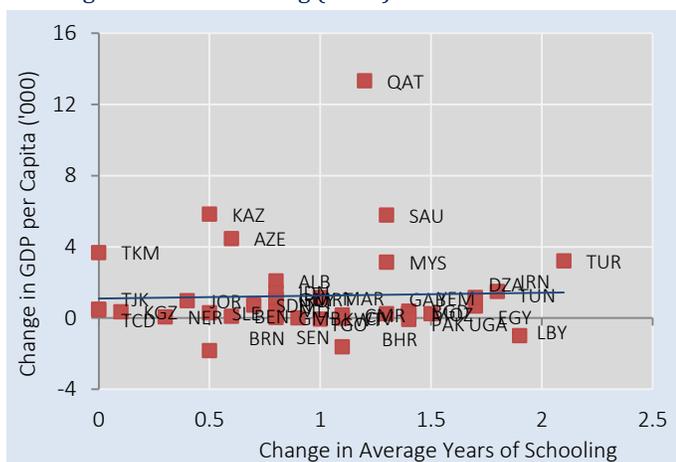
Moreover, it is argued that differences in economic growth across countries are closely related to

**Figure 1.8: Top OIC Countries in Compulsory Education**



**Figure 1.9: Per Capita Income vs Average Years of Schooling (2013)\***

progress in educational achievements (Hanushek and Woessmann, 2015). Figure 1.10 shows the relationship between change in per capita income levels and change in average years of schooling over the period between 2000 and 2013 in the case of OIC countries. Evidently, the correlation is quite weak. While some countries, such as Qatar, Saudi Arabia, Malaysia and Turkey experienced an increase in their per capita income levels with the increase in the years of schooling, many OIC countries experienced either a decrease or no significant

**Figure 1.10: Change in Per Capita Income vs Change in Average Years of Schooling (2013)**

Source: World Bank WDI and UNDP HDI Databases.

increase in the average income levels. This shows once again the mere school attainment is not enough to support economic growth and development.

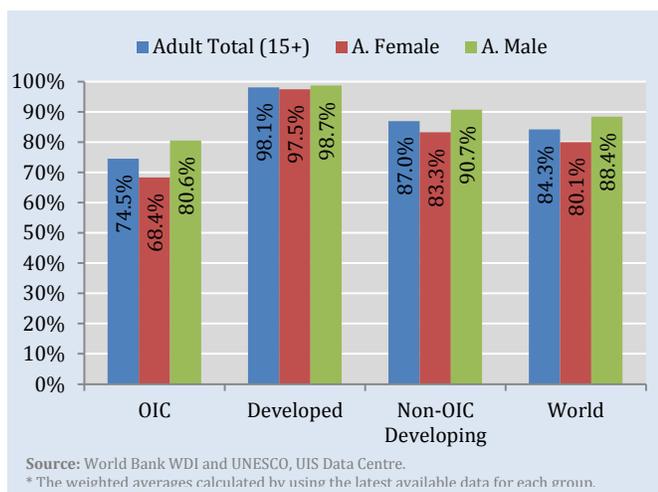
In this regard, the quality of education carries significant importance in building productive capacities. Education policies typically favoured providing quantifiable inputs (resources, infrastructure, textbooks, etc.) to schools and institutions. However, improving educational

inputs does not guarantee that learning will take place. There are many challenges one needs to address to ensure quality of education. The literature identifies a number of policies that seem to be important to consider in terms of student learning performance. These include, among others, qualified teachers, class size, curriculum, learning materials, standards and performance evaluation, pedagogy, system and school level management, financing and external conditions such as family and nutrition.

## 1.3 Literacy Rates

### 1.3.1 Adult Literacy Rate

Adult literacy rate is one of the developmental indicators included in the measurement of Human Assets Index as well as Human Development Index. It is regarded, therefore, as an important indicator of social development. Despite the progress being made, the literacy rates in the OIC countries remain laggard. With an average adult literacy rate of 74.5% in 2015, OIC countries as a group lagged well behind the world average of 84.3% and also the non-OIC developing countries' average of 87% (Figure 1.11). Still in 9 member countries, literacy rates are below 50% (Figure 1.8). There is a larger disparity

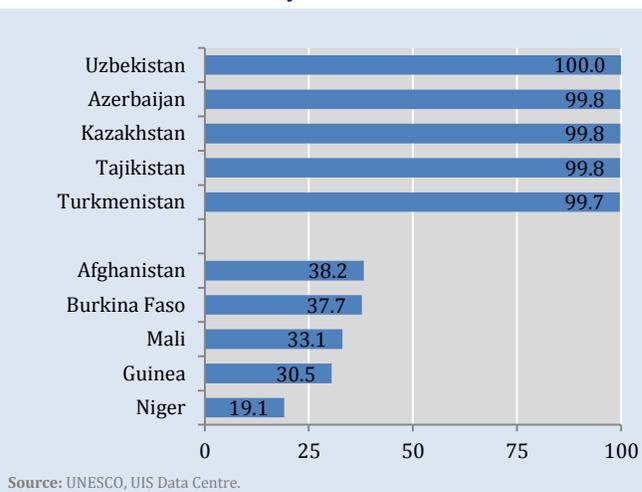
**Figure 1.11: Adult Literacy Rates in Comparison\***

across genders in the group of OIC countries compared to other country groups. On average, out of 100 women, only 68.4 can read and write while 80.6 of male population are literate, indicating more than 12% disparity. While the average adult literacy rate among males in OIC countries is comparably better, it is still below the average of non-OIC developing countries (90.7%) and the world (88.4%). The gap in literacy rates of female population between the OIC and the world averages is close to 12 percentage points. These comparisons indicate the low levels of investments in education, which will have adverse consequences on economic and social development in the OIC member countries.

With respect to the best performing countries in adult literacy rates, central Asian countries occupy the top five positions. According to the latest data available, Uzbekistan, Azerbaijan, Kazakhstan, Tajikistan and Turkmenistan achieved adult literacy rate over 99%. On the other end, Niger (19%), Guinea (31%), Mali (33%), Burkina Faso (38%) and Afghanistan (38%) had the lowest rates of adult literacy in the OIC region (Figure 1.12).

### 1.3.2 Youth Literacy Rate

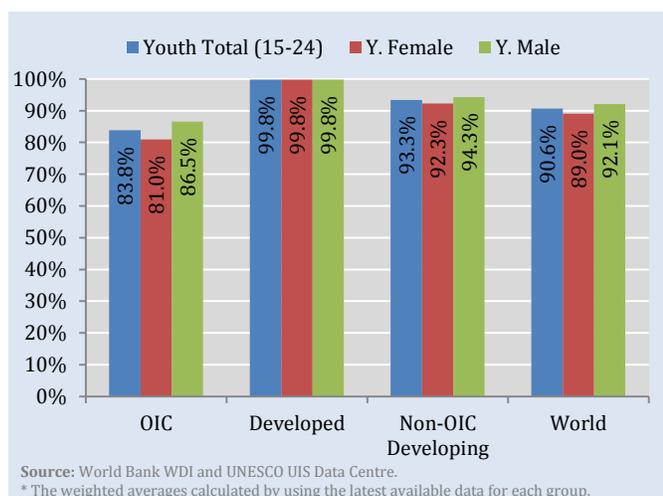
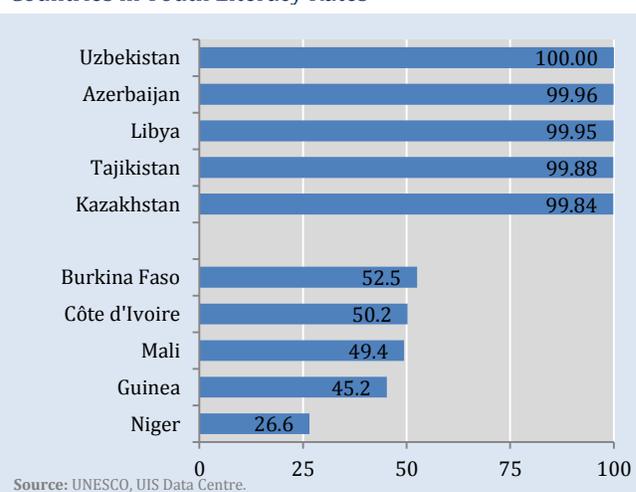
Despite being an important strength of the OIC countries, young population faces considerable challenges in the social and economic life in a significant number of member countries. Inadequate

**Figure 1.12: Highest and Lowest Performing OIC Countries in Adult Literacy Rates**

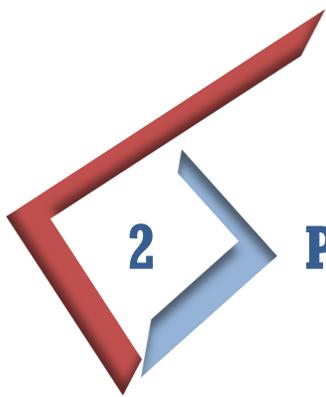
education and lack of required skills make it especially difficult for youth in finding jobs in the labour market. In addition to its impact on economic development and productive capacity, long-term unemployment among the young people may trigger some major social problems within the affected communities.

According to the latest data available, literacy rates among youth are comparably better than adult literacy rates in OIC countries (Figure 1.13). On average, 83.8% of youth are literate, which is, however, once again below the world average (90.6%) and average of non-OIC developing countries (93.3%). The discrepancy between male (86.5%) and female literacy rates (81%) among young population narrows down to 5.5%, compared to 12.2% difference in adult population.

The distribution of OIC countries with respect to their rates of literacy is more favourable for youth as compared to that of adult population in the member countries. In majority of the member countries, youth literacy rates are above 90%. On the other hand, eight member countries have youth literacy rates that are lower than 60%. 25 countries achieved youth literacy rates of 97% or above. Uzbekistan, with youth literacy rate of 100%, is the best performing OIC member country (Figure 1.14), followed by Azerbaijan (99.96%), Libya (99.95%), Tajikistan (99.88%) and Kazakhstan (99.84%). Niger, with a rate of 26.6%, is the country with

**Figure 1.13: Youth Literacy Rates in Comparison\*****Figure 1.14: Highest and Lowest Performing OIC Countries in Youth Literacy Rates**

lowest youth literacy within the OIC community. It is followed by Guinea (45.2%), Mali (49.4%), Cote d'Ivoire (50.2%) and Burkina Faso (52.5%). It should be noted that Guinea and Burkina Faso made great progress since 2012 and increased the literacy rates from 31.4% and 39.3%, respectively, to the values reported above.



## 2

# Participation in Education

This section profiles the trends in enrolment at all levels of education, including technical and vocational programmes, as a key indicator of the scope of and access to educational services. As the size of the population and rates of enrolment in a population group change, so does enrolment. These changes in enrolment have implications for the demand for educational resources such as qualified teachers, physical facilities, and funding levels required to provide a high-quality education for the nation's students. Poverty also poses a serious challenge to children's access to high-quality learning opportunities and their potential to succeed in school. All in all, the differences in enrolment among OIC countries, as well as geographical and income clusters within the OIC group, can offer insights into the potential for intra-OIC cooperation in eliminating discrepancies in access and participation in education, issues that are of central concern.

Early childhood education programs, such as pre-primary schools, are intended to prepare children socially and academically for formal schooling. Primary (or elementary) and secondary education provide knowledge, skills, and habits of minds that prepare students for further learning and productive membership in society. Because enrolment at the primary and secondary levels is mandatory in most of the countries, changes in enrolment are driven by shifts in the size of the school-age population. This population fluctuates due to changes in birth rates,

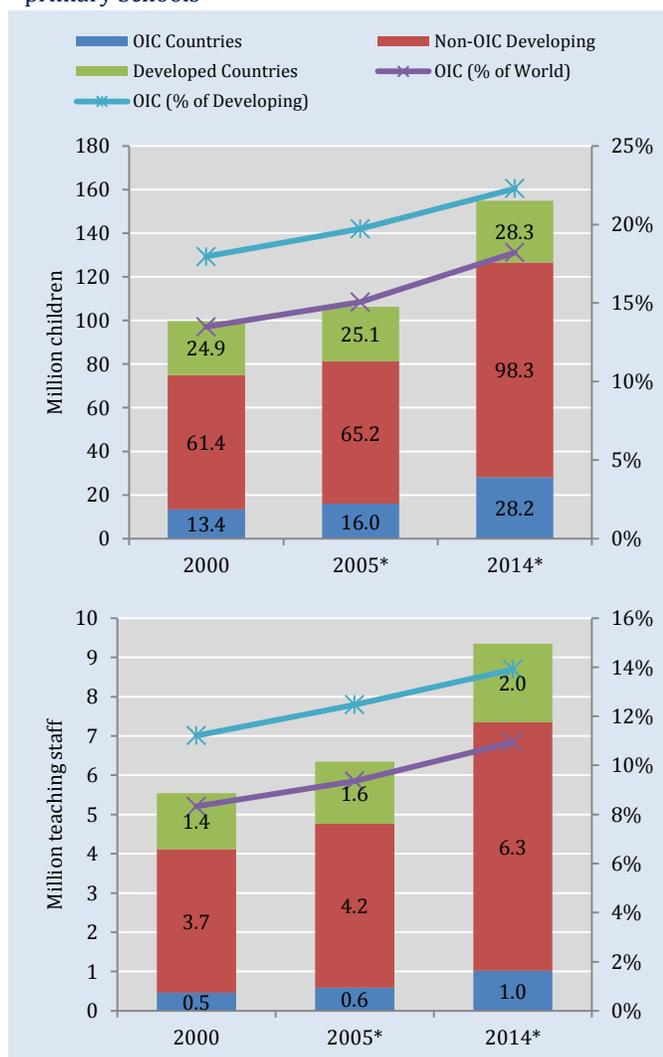
immigration, and other factors. Post-secondary or tertiary education, on the other hand, provides students with opportunities to gain advanced knowledge and skills either immediately after secondary school or later in life. Because tertiary education is voluntary, changes in total tertiary school enrolments reflect fluctuations in the perceived availability and value of tertiary education as well as the size of the traditional tertiary-school-age population.

The rest of this section highlights some and more of these points and identify the current trends in participation in education, with particular emphasis on the relative performance of the OIC member countries in comparison to non-OIC developing as well as developed countries.

## 2.1 Pre-primary Schools

Participation in pre-primary education programs not only improve the subsequent primary school performance of children, but also serve as childcare for working parents. Between 2000 and 2014, the number of children who attend pre-primary schools all over the world has risen from 99.8 million to 154.8 million (Figure 2.1, top).<sup>1</sup> For OIC countries,

<sup>1</sup> The analysis spans the time period 2000-2014 and '2005\*' means that the data belongs to the latest year available between 2001 and 2005 both inclusive) and '2014\*' means that the data belongs to the latest year available between 2010 and 2014 (both inclusive).

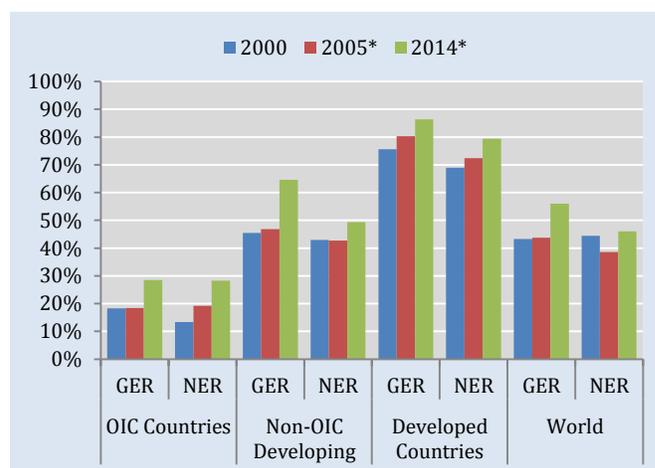
**Figure 2.1: Total Enrolment and Teaching Staff in Pre-primary Schools**


Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics.

the pace of growth in pre-primary school enrolment has been promising and the number of pre-primary education enrolments has increased from 13.4 million to 28.2 million during 2000-2014. Meanwhile, the share of OIC countries in world was recorded at 18% in 2014 compared to 13% in 2000. In non-OIC developing countries, the number of pre-primary school attendants has increased from 61.4 million in 2000 to 98.3 million in 2014. Despite substantial increase in the participants of pre-primary schools in non-OIC developing countries, the share of OIC countries in developing countries increased from 18% to 22% over the period under consideration.

As far as the number of teaching staff at pre-primary schools is concerned, in line with the global trends, OIC countries have experienced an increase in the volume of their pre-primary school teaching staff. The number of teaching staff at the pre-primary schools of OIC countries has increased from 0.5 million to 1.0 million between 2000 and 2014. This improvement has helped the member countries increase their share in both developing countries and the world as a whole.

Figure 2.2 displays the average gross and net pre-primary school enrolment ratios in OIC countries. Despite stagnation witnessed during the 2000-2005 period, both the average gross enrolment rate (GER) and net enrolment rate (NER) in OIC countries improved significantly during the 2005-2014 period, reaching 28.5% and 28.3%, respectively.<sup>2</sup> Yet, the current enrolment levels in OIC countries compare poorly to non-OIC developing as well as developed countries. The world average GER and NER stood at 56.0% and 46.0% in 2014, respectively. Figure 2.3, on the other hand, lists top 10 OIC countries according to their GERs and NERs. Apparently, the OIC member countries in Middle East and Asia dominate both lists, with the exceptions of Guyana, Suriname, Albania, Algeria and Kazakhstan. Malaysia, Guyana, Suriname, UAE, Albania,

**Figure 2.2: Pre-primary School Enrolment Rates**


Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics. \* Or latest year

<sup>2</sup> The average figures in the remainder of this section are calculated by weighting the GERs (or NERs) for a specific level of education by the size of population falling into the official age interval recognized for that education level.

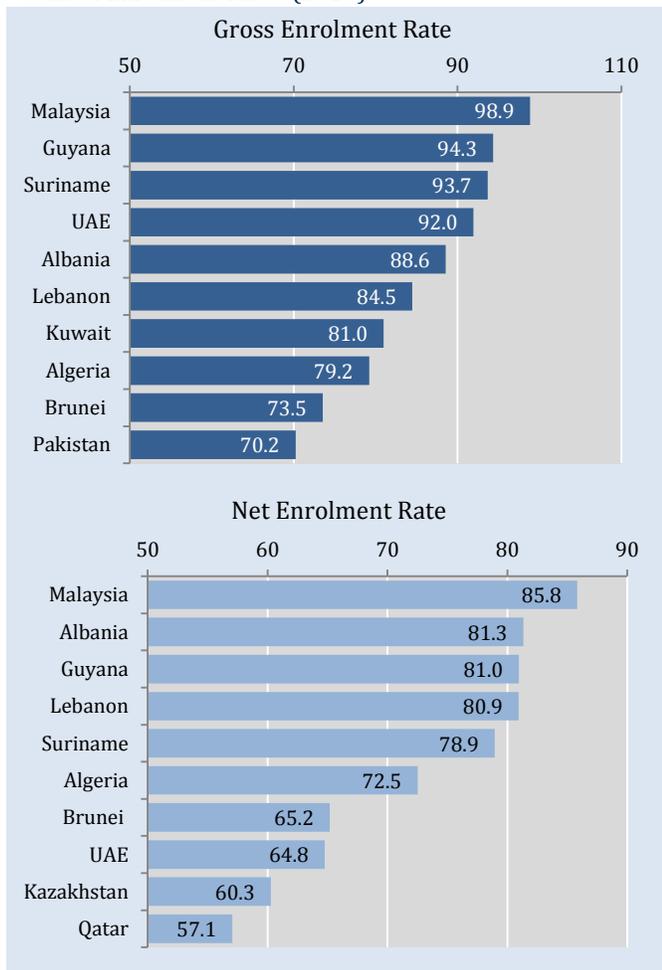
Lebanon, Algeria, and Brunei have higher levels of pre-primary school enrolment in both gross and net terms.

## 2.2 Primary Schools

Primary or elementary education involves programmes normally designed on a unit or project basis to give pupils a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art and music. In this connection, Figure 2.4 reflects the trends in primary school participation and number of primary school teaching staff in OIC member countries as compared to other country groups and the world.

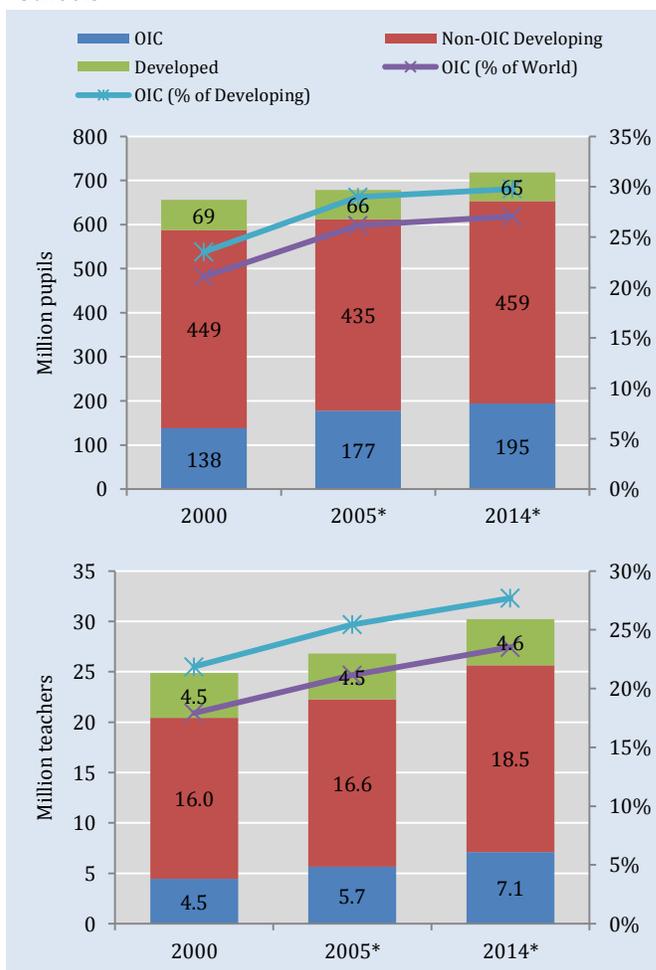
As apparent from the figure, the shares of the OIC countries as a group in the total numbers of both primary school enrolments and teaching staff have been on the rise. Based on most recent data available as of 2014, the number of primary school pupils in OIC member countries reached 194.5 million, representing 27.1% and 29.8% in total world and developing country primary school enrolments, respectively. In year 2000, these two shares were at 21.1% and 23.5%, respectively. On the other hand, the shares of OIC countries in total primary school teachers in the world and in developing countries have also improved over the period under consideration and, with 7.1 million primary school teachers in 2014, OIC countries accounted for 23.5% and 27.7% in the total primary school teachers in the world and developing countries, respectively.

**Figure 2.3:** OIC Countries with Highest Pre-primary School Enrolment Rates (2015)



Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics.

**Figure 2.4:** Total Enrolment and Teachers in Primary Schools

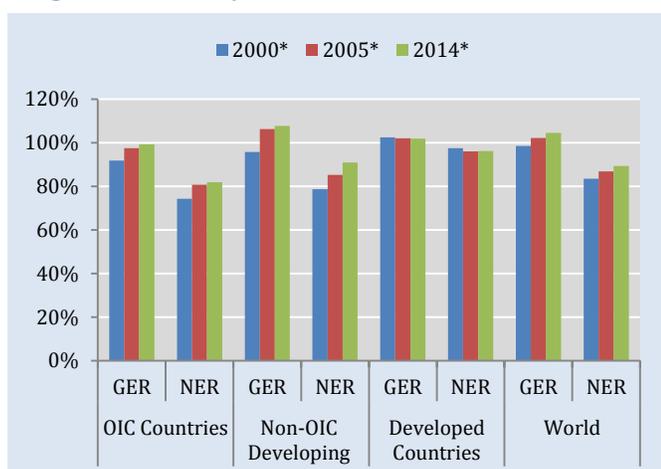


Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics. \* Or latest year

At the individual country level, based on 2014 (or most recent) data, Indonesia, Nigeria, Bangladesh, Pakistan, and Egypt collectively accounted for more than half of the total number of primary school students in the OIC countries, with a total number of students of 39.8, 21.6, 19.4, 18.4 and 11.1 million, respectively. As for primary school teachers, Indonesia alone hosted over a quarter (25.4%) of the total OIC primary school teacher population by employing 1.8 million teachers as of 2014. Indonesia was followed by Nigeria, Egypt, Bangladesh, and Pakistan with individual shares of 8.1%, 6.8%, 6.4% and 5.9 %, respectively.

Average gross rates for primary school enrolment (GERs), as depicted in Figure 2.5, have increased all over the world but developed countries during the period 2000-2014. This upward trend was particularly strong for the OIC countries as the average GER in the member countries has improved from 91.9% in 2000 to as high as 99.3% in 2014. The average GER in non-OIC developing countries, on the other hand, reached 107.7% in the same year. Notwithstanding the positive developments in GERs, NERs have displayed a rather stable trend all over the world during the period under consideration. The average NER in the world has increased slightly by 5.8 percentage points since 2000 and reached 89.3% in 2014. The average NER in OIC countries has registered a similar increase and was recorded at 82.0% based on most recent data as of 2014. This

**Figure 2.5: Primary School Enrolment Rates**

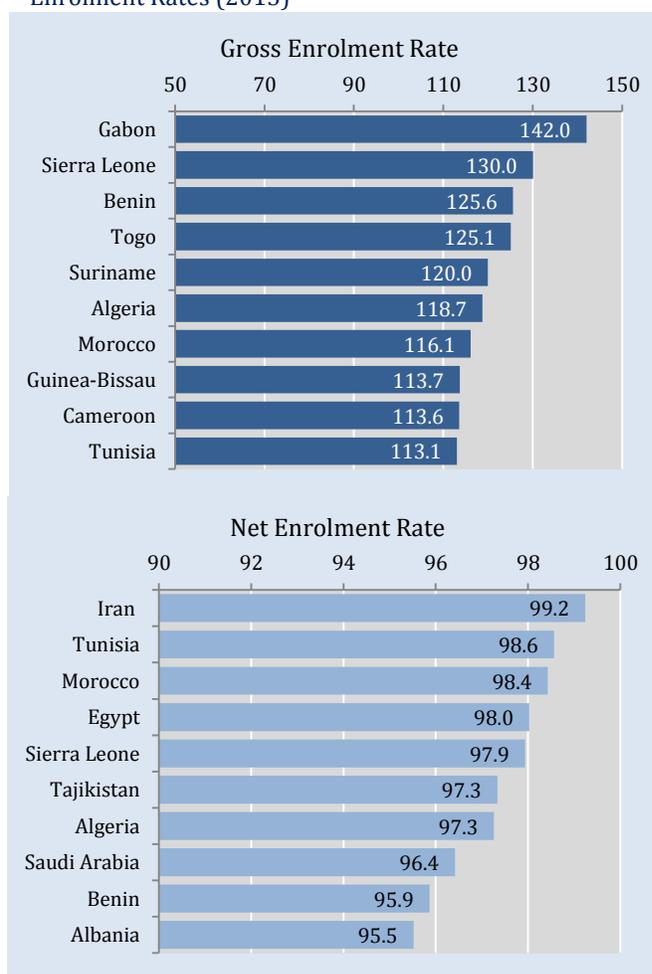


Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics. \* Or latest year

indicates that around one-fifth of the children in OIC countries who are at their primary school age have not registered in primary schools – as compared to only 4% in developed countries. Non-OIC developing countries have seen their NERs improving more significantly as the average NER in these countries has increased by 12.2 percentage points from 78.8% to 91.0% in the same period.

In terms of the difference between primary school GER and NER, the developed countries have apparently had the narrowest gap, i.e., 5.8%, indicating a low incidence of under- or over-aged enrolments as well as grade repetitions. On the other hand, this gap, and therefore the number of incidences of such enrolments, is largest in

**Figure 2.6: OIC Countries with Highest Primary School Enrolment Rates (2015)**



Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics.

developing countries, with OIC member countries being no exception. Calculations on the most recent data as of 2014 show that, in OIC countries, the number children who are associated with under- or over-aged enrolments as well as grade repetitions accounts for 17.3% of the total number of children at primary school age, whereas this figure is 16.3% in non-OIC developing countries.

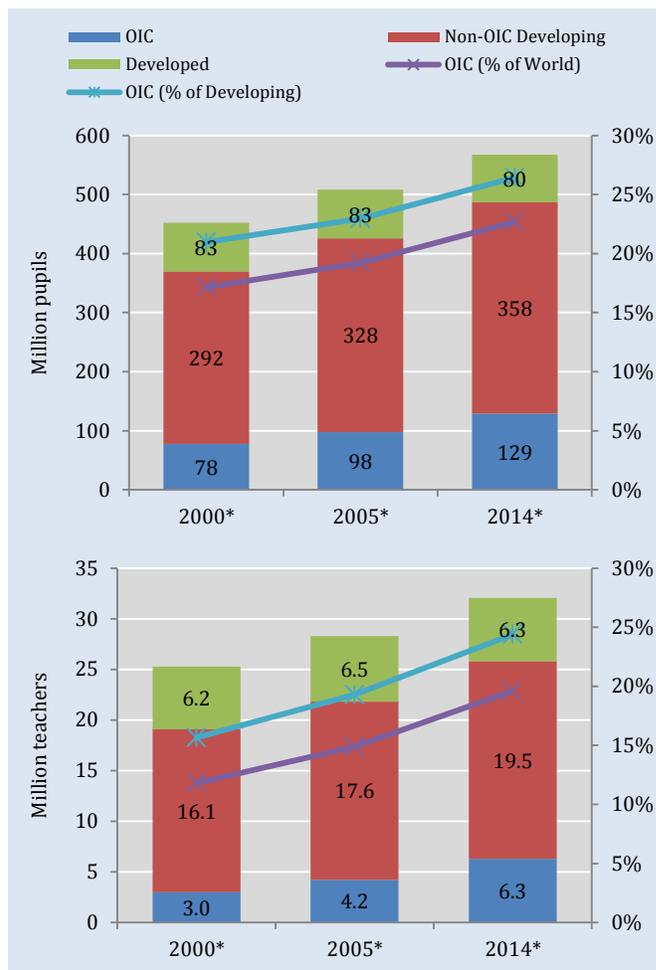
At the individual country level and based on most recent data available as of 2014, Gabon, Sierra Leone, Benin, Togo, and Suriname registered the highest primary school GERs (Figure 2.6, top). Notably, in Gabon, the number of pupils enrolled in primary schools corresponds to 142.0% of the children who are at their primary school age. As far as the NER is concerned, Iran, Tunisia, Morocco, Egypt, and Sierra Leone are among the highest scorers of primary school NER with average primary school NERs above that of developed countries (96.2%) as of 2014 (Figure 2.6, bottom). At the other extreme, in Sudan, Djibouti, Mali, Niger and Nigeria, more than one-third of the primary school age children are reportedly not enrolled in the primary schools.

### 2.3 Secondary Schools

Formally, secondary education refers to the programmes at International Standard Classification of Education (ISCED) Levels 2 and 3. Lower secondary education (ISCED Level 2) is generally designed to continue the basic programmes of the primary level but the teaching is typically more subject-centric – which, in turn, requires more specialized teachers for each subject area. The end of this level often coincides with the end of compulsory education. In upper secondary education (ISCED Level 3), the final stage of secondary education in most countries, courses are often classified into various subject areas and offered by typically more qualified teachers – as compared to ISCED Level 2 – in terms of their level of subject specification.

According to Figure 2.7 (top), the total number of students enrolled in the secondary schools in OIC countries increased from 77.5 million in year 2000

**Figure 2.7: Total Enrolment and Teachers in Secondary Schools**



Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics. \* Or latest year

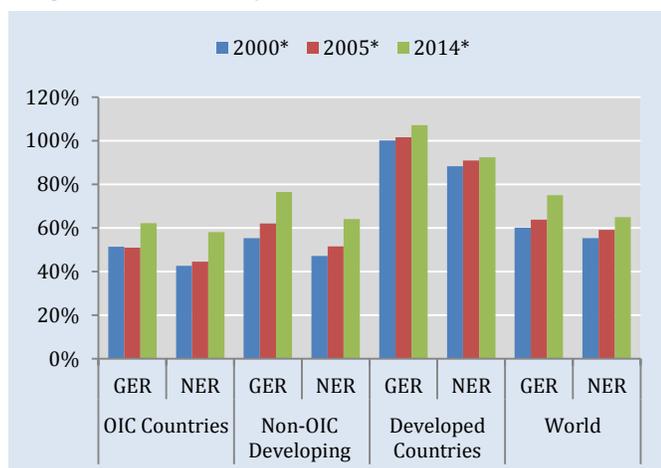
to 128.7 million according to most recent data available as of year 2014. The total number of teachers qualified for secondary schools (Figure 2.7, top) has also followed a similar trend and increased from 3.0 million to 6.3 million over the same period. The figures on secondary school enrolments also reveal that the total number of secondary school pupils and teaching staff in OIC countries increased at a slightly higher pace when compared to non-OIC developing countries and the world as a whole. As of year 2014, the OIC member countries accounted for 22.7% and 26.4% of the total secondary school students in the world and developing countries, respectively. As far as the total number of secondary school teachers is concerned, the shares of the OIC member countries in the developing country and

world total number of secondary school teaching staff was recorded at 19.6% and 24.4%, respectively.

Like GERs for primary schools, GERs for secondary schools have also exhibited an upward trend all over the world – again excluding developed countries where the average secondary school GER has relatively been more stable (Figure 2.8). In OIC countries, the average secondary school GER has increased from 51.4% in 2000 to 62.1% in 2014. In other group of countries, however, this improvement was relatively more significant. According to most recent data available in 2014, non-OIC developing countries registered an average secondary school GER of 76.5%, as compared to only 55.3% in 2000. Parallel to the developments in developing countries, the world average secondary school GER also followed a similar trend and increased from 60.1% to 75.0% during the same period.

Despite having generally a lower average secondary school GER as compared to non-OIC developing countries, average NER in OIC countries, which was recorded at 58.1% in 2014, compares favourably to average NER in non-OIC developing countries (64.1%). Yet, more needs to be done by the member countries to increase their secondary education enrolment levels at which the education system can be deemed fair and inclusive. The developed countries where 92.4% of the secondary school age population is registered with secondary schools, in that sense, offer a good example. Finally, the

**Figure 2.8: Secondary School Enrolment Rates**

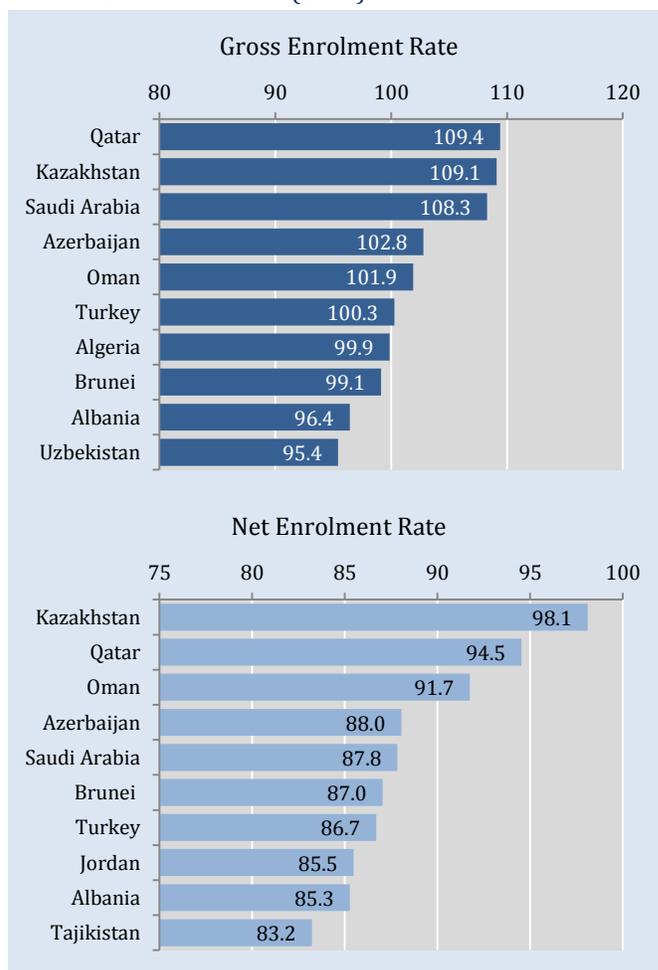


Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics. \* Or latest year

differential between secondary school GER and NER were again highest in developing countries, including the OIC member countries, bringing to the forefront the problems with the outreach and quality of the secondary school education that again manifest themselves through prevalence of over-aged enrolments and high repetition rates.

At the individual country level, based on 2014 or most recent data, Qatar, Kazakhstan, Saudi Arabia, Azerbaijan, Oman, and Turkey registered some of the highest secondary school GERs; whereas Kazakhstan, Qatar, Oman, Azerbaijan, Saudi Arabia and Brunei were among the highest scorers of secondary school NER (Figure 2.9). In Kazakhstan and Qatar, for instance, over 90% of the secondary school age children are registered within the

**Figure 2.9: OIC Countries with Highest Secondary School Enrolment Rates (2015)**



Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics.

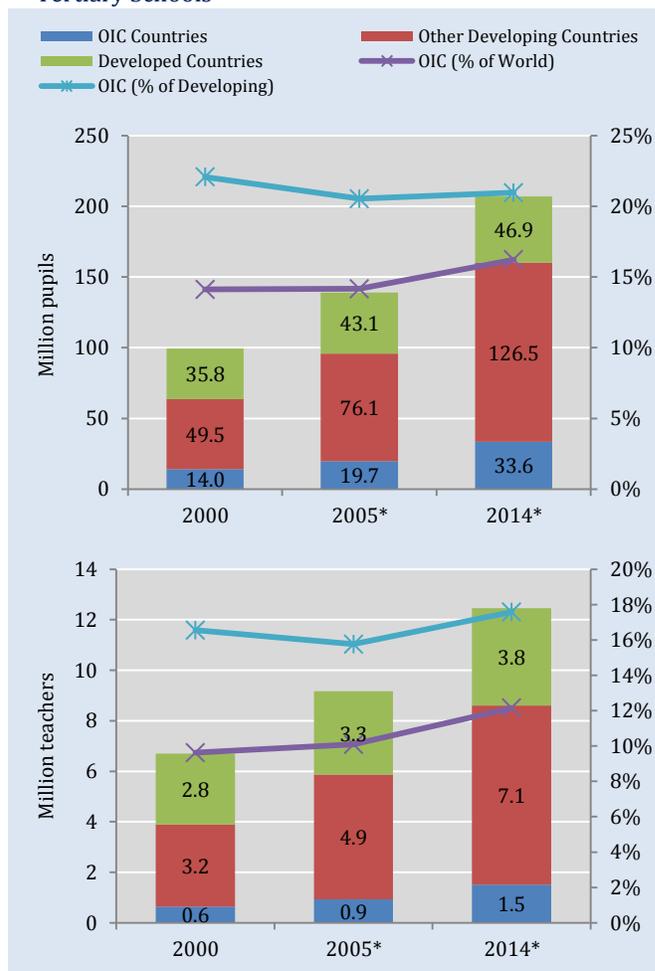
secondary education pool and the NERs of these countries are even higher than the average of developed countries. On the flip side, however, in Niger, Chad, Mozambique, Uganda and Mauritania more than 70% of the secondary school age children are not registered with such schools.

## 2.4 Tertiary Schools

Tertiary or post-secondary education includes programmes with an educational content which is more advanced than those offered at ISCED Levels 3 and 4. The first stage of the tertiary education, ISCED Level 5, covers Sub-levels 5A and 5B. The former is comprised of theoretical programmes that are intended to provide sufficient qualifications for entering more advanced research programmes and professions with higher skill requirements. In the latter, offered programmes are generally more practical, technical and, sometimes, more occupation-centric. The second stage of the tertiary education, ISCED Level 6, comprises programmes that are geared towards obtaining advanced research qualifications.

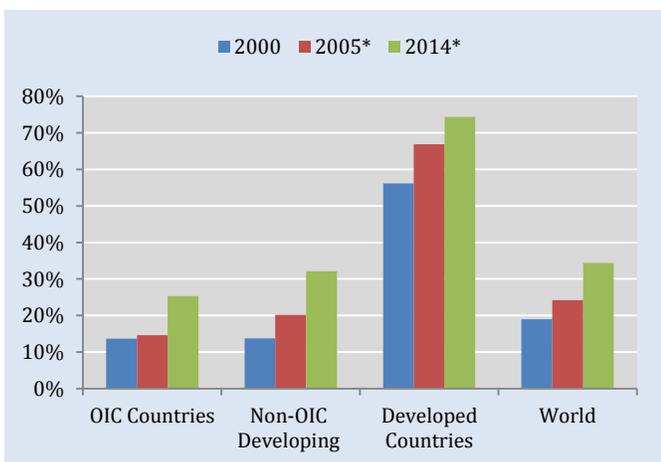
Figure 2.10 shows the total numbers of enrolled students and teaching staff in tertiary schools. The total number of tertiary school students in the OIC countries increased more than two-fold from 14.0 million to 33.6 million between 2000 and 2014, based on the most recent data available in each

**Figure 2.10: Total Enrolment and Teaching Staff in Tertiary Schools**



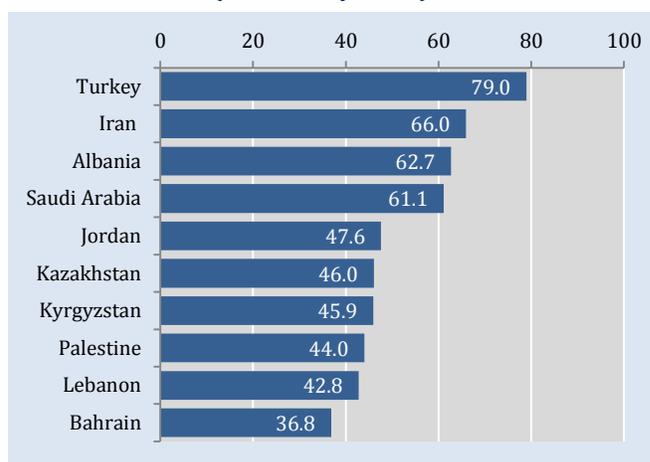
Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics. \* Or latest year

**Figure 2.11: Tertiary School Enrolment Rates (GER only)**



Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics. \* Or latest year

**Figure 2.12: OIC Countries with Highest Tertiary School Enrolment Rates (% GER only, 2013)**



Source: SESRIC; UNESCO; World Bank WDI and World Bank Education Statistics.

period. As more tertiary school graduates means more qualified, highly skilled workforce, this is a particularly promising development for the OIC community. As far as the number of teaching staff employed in tertiary schools of OIC countries is concerned, similarly, the figure has increased steadily over the past decade – reaching 1.5 million in 2014. When benchmarked against non-OIC developing countries and world as a whole, it is observed that the shares of OIC member countries in total world tertiary school students and teaching staff have been both on the rise. The tertiary school students in the member countries represented 16.2% of those in the world in 2014, vis-à-vis 14.1% in 2000. Similarly, the share of the member countries in total tertiary school teaching staff in the world also increased from 9.6% to 12.1% over the same period. A cursory look at the evolvement of their shares in total developing country tertiary students and teaching staff, on the other hand, offers rather a mixed picture. As of 2014, OIC countries accounted

for 21.0% (down from 22.1% in 2000) and 17.6% (up from 16.6% in 2000) of total developing country tertiary students and teaching staff, respectively.

For tertiary education, NER is not pertinent because of the difficulties in determining an appropriate age group due to the wide variations in the duration of programmes at this level of education (UNESCO, 2009). In terms of tertiary school GER, OIC countries, with an average enrolment rate of 25.4% as of 2014, lagged behind non-OIC developing countries (32.1%) and far behind the developed countries (74.3%). In the same year, the world average GER was 34.4% (Figure 2.11).

According to the most recently available data as of 2014, OIC member countries, namely, Turkey, Iran, Albania, and Saudi Arabia all recorded GERs above 60.0% (Figure 2.12). Yet, in some member countries, namely, Niger, Gambia, Chad, Uganda, Burkina Faso, and Djibouti, the tertiary school GERs are even lower than 5.0%.

### Box 2.1: OIC-VET Programme of SESRIC

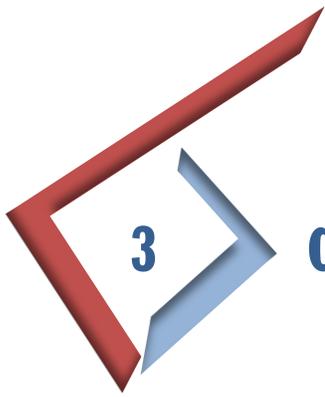


The idea of *Vocational Education and Training Programme for the Member Countries of the Organization of Islamic Cooperation (OIC-VET)* was put forth by SESRIC to improve the quality of vocational education and training in the public and private sectors of the member countries. It was approved by the 24th Session of the COMCEC, the permanent OIC committee established for strengthening intra-OIC economic and commercial cooperation, which was held in Istanbul on 20-24 October 2008. OIC-VET was officially inaugurated by H.E. Abdullah Gul, President of the Republic of Turkey and Chairman of the COMCEC, during the COMCEC Economic Summit in Istanbul, Turkey, on 9 November 2009 with the participation of the heads of states and governments of the OIC member countries.

The Programme is geared towards increasing accessibility and raising the quality of vocational education and training (VET) programmes in the member countries, and provides an opportunity for participating organizations to build intra-OIC partnerships, exchange best practices, and increase the expertise of their staff by developing their skills and competencies.

Currently, within the framework of OIC-VET Programme, SESRIC has various Capacity Building Programmes which were designed as part of the attempt to enhance the capacity of the relevant national institutions in OIC member countries in various areas and fields through matching the needs and capacities of these institutions by mobilizing skilled experts to conduct short-term training programmes. This include Statistical Capacity Building, Agriculture Capacity Building, Multilateral Trading Systems Capacity Building, ISMEK Master Trainer Programme, International Student Internship Programme, IbnSina Health Capacity Building, ICT Capacity Building, Occupational Safety and Health Capacity Building, Poverty Alleviation Programme, OIC Tourism Capacity Building Programme and many others

For more information on OIC-VET Programme, see <http://www.oicvet.org/>.



# 3

## Completion and Progression in Education

Staying in schools, going on education until the last grade and most importantly graduating successfully from the educational institutions are other important steps of the education life. In this connection, the previous section looked at the participation rates in education by using enrolment ratios. Yet, enrolling into a school is only the first step of the education life. Therefore, this section analyses progression and completion in education by using specific indicators on completion ratios in primary schools, repetition rates in primary and secondary schools, survival rate in primary schools, and transition rate from primary to secondary schools for the OIC group, non-OIC developing countries, developed countries and the world.

### 3.1 Completion Ratios

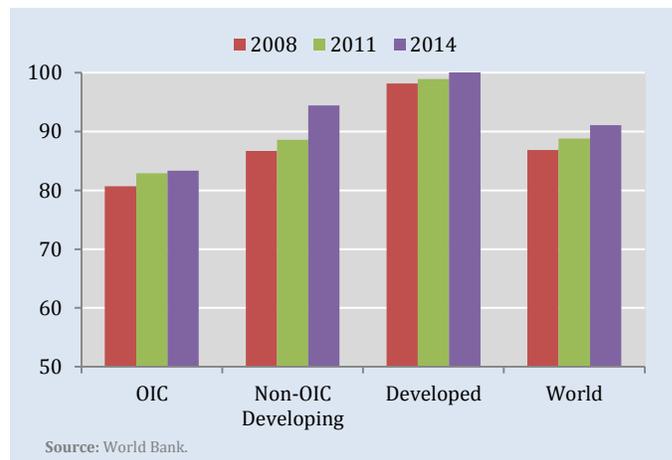
Completion rate indicates the total number of students completing (or graduating from) the final year of primary or secondary education, regardless of age, expressed as a percentage of the population of the official graduation age.

Figure 3.1 displays the completion rates for different country groups from 2008 to 2014. The world average of completion rate increased during the period under consideration. Global completion rate measured as around 91% in 2014, which was higher than its average in 2008 and 2011. On average, during the same period, developed countries witnessed an increase of nearly 5 percentage points.

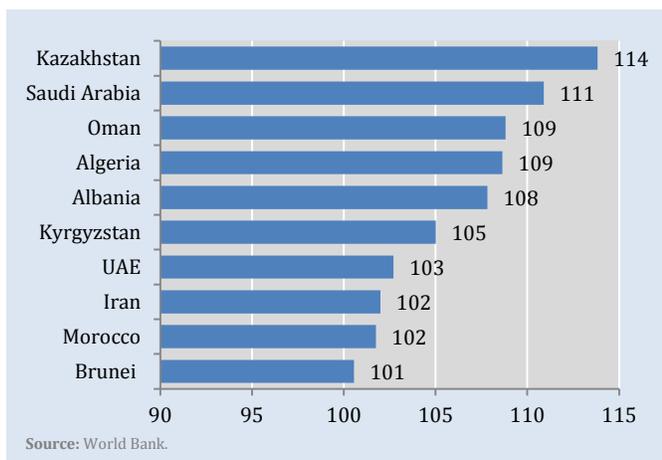
Innovative technology, no doubt, played an important role which not only led to higher graduation rates but also resulted in a decrease in retention. The non-OIC developing countries group recorded a remarkable increase from 86.7% in 2008 to 94.4% in 2014. Similarly, OIC member countries, on average, achieved to increase their completion rates from 80.8% in 2008 to 83.4% in 2014 (Figure 3.1). Despite this improvement in the OIC group, its average still lags behind the averages of non-OIC developing countries, developed countries and the world as of 2014.

The completion rate is also known as gross intake rate to the last grade of primary school. The ratio can exceed 100% due to over-aged and under-aged children who enter primary school late/early and/or repeat grades. In 2014, only 14 OIC countries,

**Figure 3.1: Completion Ratios in Primary School**



**Figure 3.2: OIC Member Countries in with Highest Completion Rates, 2014**



among those for which the data are available, achieved higher completion rate than the world average of 91%. At the individual country level, in 2014 Kazakhstan took the lead with completion rates of 113.8% (Figure 3.2).

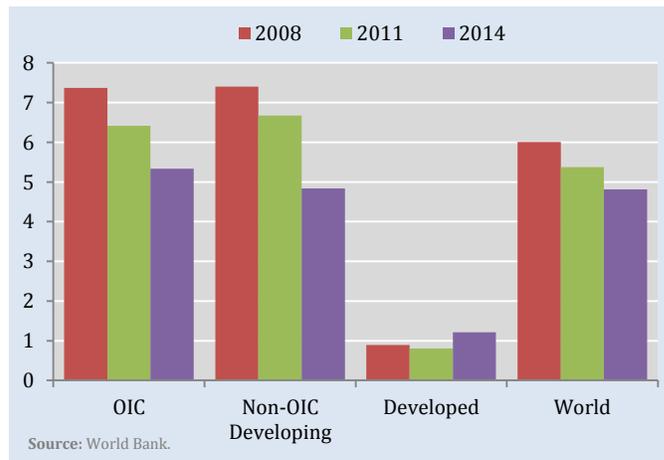
### 3.2 Repetition Rates

Repetition rate is the proportion of students from a cohort enrolled in a given grade at a given school-year who studies in the same grade in the following school-year. It simply measures the phenomenon of students repeating a grade, and its effect on the internal efficiency of educational systems. In addition, it is one of the key indicators for analysing and projecting student flows from one grade to a higher grade within an educational cycle.

#### 3.2.1 Repetition Rates in Primary Schools

Figure 3.3 shows the repetition rates in primary school for different country groups between 2008 and 2014. The global repetition rate in primary school decreased from 6% in 2008 to 4.8% in 2014. However, in the developed countries group, the primary school repetition rate went up from 0.9% in 2008 to 1.2% in 2014. Both the non-OIC developing countries group and the OIC group reduced their repetition rates in the period under consideration. The OIC group successfully reduced the rate from 7.4% in 2008 to 5.3% in 2014, which was above the world average of 4.8% in 2014 (Figure 3.3). This

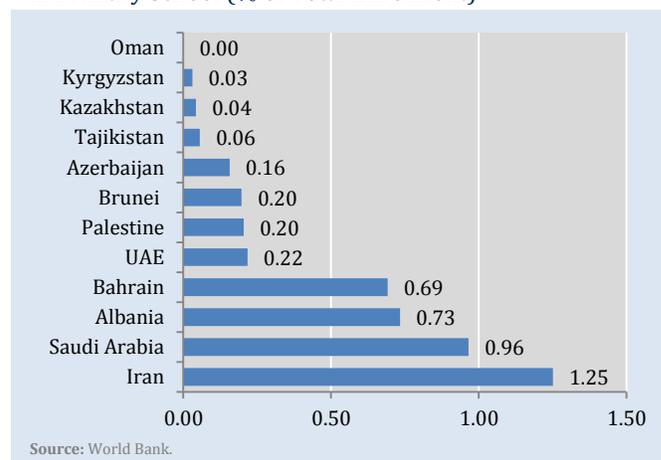
**Figure 3.3: Repetition Rates in Primary School (% of Total Enrolment)**



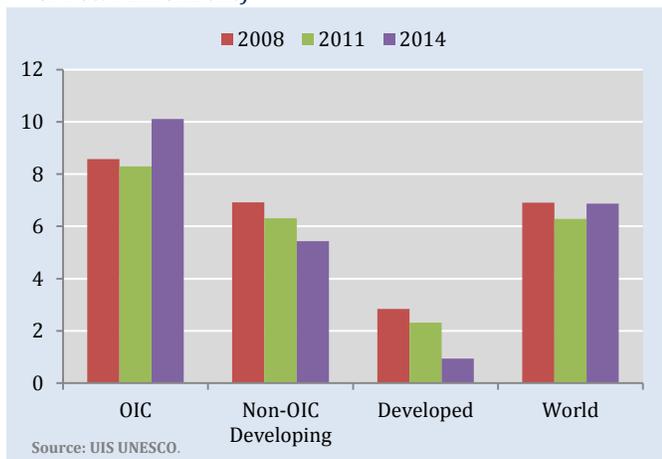
decreasing trend in developing countries, including the OIC members, throughout the last decade is mainly stemming from the improving education system, higher quality of teaching staff and increasing number of distance learning alternatives. However, the figures indicate that the group of OIC countries has to show further progress in order to reduce the repetition rates to the level of developed countries.

At the individual country level, 19 OIC member countries achieved lower repetition rates in primary schools than the world average of 4.8% in 2014. Among them Oman stood first by possessing zero repetition rate in primary schools (Figure 3.4). It is followed by Kyrgyzstan (0.03%), Kazakhstan (0.04%) and Tajikistan (0.06%).

**Figure 3.4: OIC Countries with Lowest Repetition Rates in Primary School (% of Total Enrolment)**



**Figure 3.5: Repetition Rates in Secondary School (% of Total Enrolment)**



### 3.2.2 Repetition Rates in Secondary School

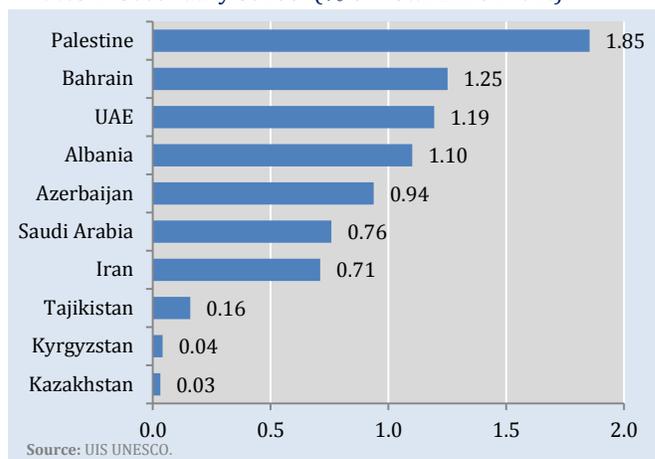
Figure 3.5 shows the repetition rates in secondary school for different country groups between 2008 and 2014. In the OIC countries an increasing trend was observed in the secondary school repetition rates, which went up from 8.6 % in 2008 to 10.1% in 2014. Yet, in the group of non-OIC developing countries the repetition rate decreased from 6.9% in 2008 to 5.4% in 2014. Similarly, repetition rates in developed countries went down from 2.8 % in 2008 to 0.9 % in 2014. The global repetition rate in secondary school also recorded a decrease from 6.90% to 6.87% during the period under consideration.

At the individual country level, 15 OIC member countries achieved lower repetition rates in secondary schools than the world average of 6.87% in 2014. Among them Kazakhstan stood first by possessing 0.03% repetition rate in secondary schools (Figure 3.6). It is followed by Kyrgyzstan (0.04%), Tajikistan (0.16%) and Iran (0.71%).

### 3.3 Survival Rate

Survival rate is an indicator which shows the share of children enrolled in the first grade of primary school who eventually reach the last grade of primary school. Figure 3.7 shows the survival rates for different country groups between 2008 and 2013. The global survival rate slightly reduced from 83.5%

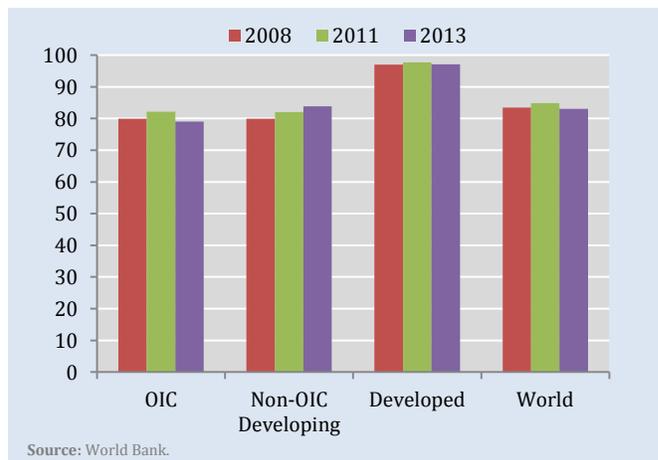
**Figure 3.6: OIC Countries with Lowest Repetition Rates in Secondary School (% of Total Enrolment)**



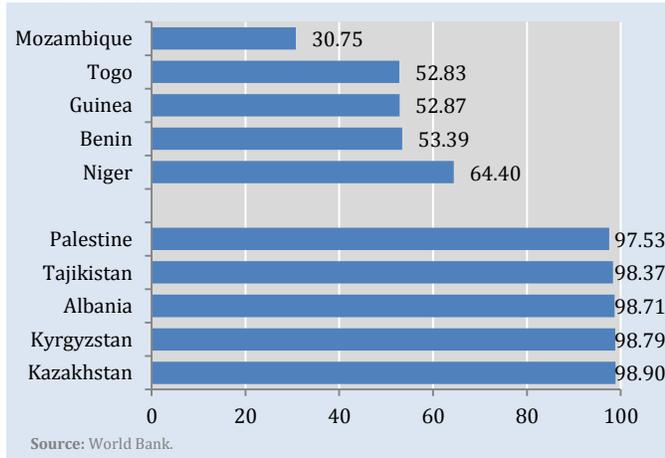
in 2008 to 83.1% in 2013 whereas in the developed countries group the rate slightly increased from 96.9% to 97.1% during the same period. Non-OIC developing countries, on average, also experienced an increase from 79.9% to 83.8% during the period under consideration, which is being very close to the world average of 83.1% as of 2013. However, in the group of OIC countries, on average, survival rate decreased from 79.9% to 79.0% during the same period, which reflects problems associated with students' and their families' commitment on continued education (Figure 3.7).

At the individual country level, OIC member countries exhibited large variations over a wide scale. On the one hand, countries like Kazakhstan, Kyrgyzstan, Albania and Tajikistan possess survival

**Figure 3.7: Survival Rate to Last Grade of Primary School**



**Figure 3.8: OIC Countries with Highest and Lowest Survival Rates**



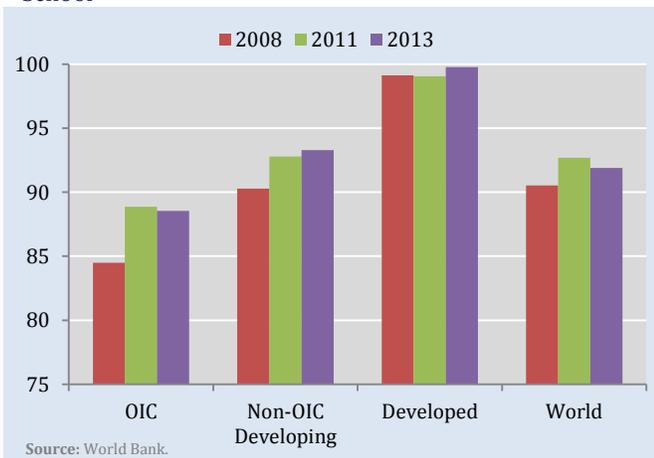
rates that are greater than 98%. On the other hand, there is a member country like Mozambique where about only around one-third of the students could reach the last grade of the primary school (Figure 3.8).

### 3.4 Transition Rate

Transition rate is the number of new entrants to the first grade of secondary education in a given year, expressed as a percentage of the number of students enrolled in the final grade of primary education in the previous year.

Figure 3.9 shows the transition rates for different country groups between 2008 and 2013. The global transition rate went up from 90.5% in 2008 to

**Figure 3.9: Transition Rate from Primary to Secondary School**



91.9% in 2013. Similarly, the rate in developed countries increased from 99.1% in 2008 to 99.8 % in 2013. OIC member countries, on average also successfully increased their average transition rate

#### Box 3.1: Factors contributing to school failure: The Case of Qatar

Failure at school and grade-level retention are complex, multi-faceted social issues reflective of a range of inter-linked personal, social, economic, educational and family-related factors. Recently policymakers on both national and international levels are looking for comprehensive approaches that focus on the root causes of school failure so that they may reduce grade failure in a sustained way.

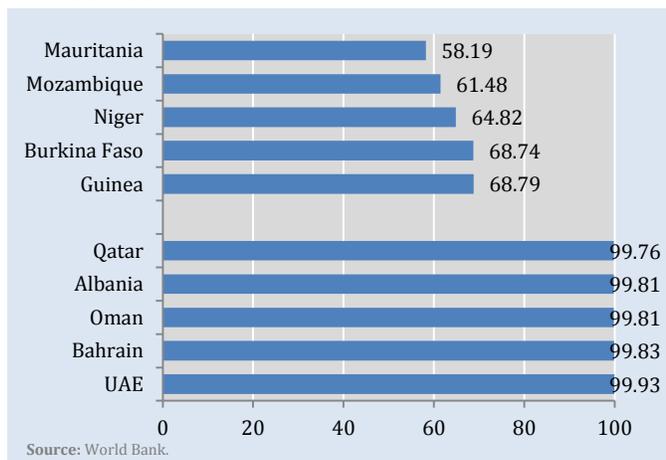
A study conducted by Kamal and Bener (2009) examines the factors contributing to school failure among 699 students in the state of Qatar. The results of this study show that the majority of the study population had more than one contributing factor to their failure. In that regard, emotional disturbance as a cause of school failure was described in many cases presented as anxiety and exam fear. About 38.2% of the study population hates their schools and 33.3% of the children were regularly absent and these percentages were comparable across boys and girls.

Chronic illness is also marked as a factor leading to school failure by increasing school absence during exacerbations of health conditions. Other conditions, such as sleep disturbances, proper nutrition are the other findings that have a strong correlation with school performance and grade retention. Moreover, the duration of TV viewing, playing video games and time spent on the internet is inversely associated with school performance; almost 43.8% of students who failed their grades had spent most of their time engaged in such activities.

It is apparent that a plethora of conditions and myriad factors are behind this phenomenon, with its far reaching implications on cultural development, and socioeconomic wellbeing. More critically, it is necessary to identify alternative means of educational delivery to compensate for education-influencing contingencies, and strategies based on shared good practices to enrich a vital aspect of strategic human societal capital.

Source: Kamal and Bener (2009).

**Figure 3.10: OIC Countries with Highest and Lowest Transition Rates**



from 84.5% in 2008 to 88.5% in 2013. Yet, the average of the OIC group still lags behind the world average of 91.9%. Survival rate in non-OIC developing countries also went up from 90.3% to 93.3% during the period under consideration (Figure 3.9).

Figure 3.10 displays the transition rates for the best and worst performing OIC countries in 2013. As shown, United Arab Emirates recorded the highest transition rate (99.9%) in 2013, followed by Bahrain (99.83%), Oman (99.81%), Albania (99.81%) and Qatar (99.76%). It is clear from the figure that the OIC member countries exhibited significant variations over a wide scale, where some OIC member countries exhibited very low transition rates, such as Mauritania (58.2%), Mozambique (61.5%) and Niger (64.8%).

**Box 3.2: Policies on Progression and Completion in Education: The Case of Turkey**

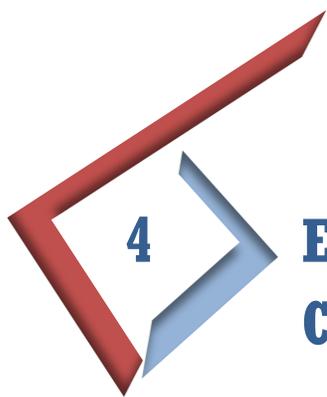
The education system in Turkey has recently gone through tremendous changes and transformation. With the current educational reforms, Turkey has become one of major countries, launched innovative and comprehensive policies on progression and completion in Education. In that regard, Ministry of Education in Turkey initiated ECEC initiative to increase participation, the Mobile Classroom for children 36-66 months from low-income families and the Summer Preschool for Children 60-66 months.

To strengthen parent co-operation, the Childhood Development and Education Project and the pilot Pre-primary Parent-Child Education Programme Project (1999-2012) were implemented. A structural reform (2012) increased the length of compulsory education from 8 to 12 years and redefined the system into 3 levels (primary, lower and upper secondary) of 4 years each. It implies additional funding, personnel and restructuring of schools to provide separate primary and lower secondary institutions.

Several initiatives aimed to increase participation in education include a complementary transitional training programme for 10-14 year-olds not in education; the Education with Transport programme for students who cannot get to school; and the Address-Based Population Register System which, among other objectives, can help education authorities track children not in education.

Moreover, the Project for Increasing Enrolment Rates Especially for Girls (ISEG, 2011-13) was a pilot project implemented in 16 provinces with the lowest enrolment rates to increase primary and secondary school participation and improve family educational awareness and links to the labour market participation as part of the Master Implementation Plan (2001-05), which includes the Attendance of Girl Pupils to Schools project and the Girls to Schools Now campaign (2001-05). The Special Education Project (2004), the International Inspiration Project (2011-13) and the Strengthening Special Education Project (2011-13) have helped improve outcomes for disadvantaged and special need students in Turkey.

Source: OECD (2013).



## 4 Educational Resources and Teaching Conditions

While basic indicators on education in terms of participation, progression and completion are crucial for understanding the overall situation of the education system, they do not adequately capture the available resources and quality aspect. In this regard, this section focuses on the indicators that are related with the resources allocated for education. These include government expenditures on education, student-teacher ratios (in primary, secondary and tertiary schools). It also assesses the availability of teachers per student as well as international student mobility in OIC countries.

### 4.1 Government Expenditures on Education

The recent studies on the importance of education for inclusive economic development and the need for public intervention in education have important implications for the provision and financing of education by governments. In this respect, this section analyses the levels of government expenditures on education in the group of OIC countries in comparison with their counterparts in other groups by using the latest data available.<sup>3</sup>

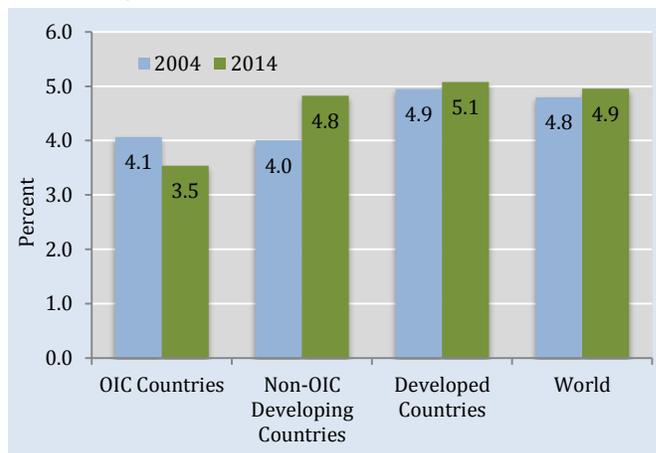
<sup>3</sup> Data used for the construction of the figures in this section are for the year 2014 or the latest year available, unless otherwise stated. Figures that compare decade-long performances use data for the latest year available between 2000 and 2004 for indicative year of 2004 and data for the latest year available between 2010 and 2014 for indicative year of 2014.

#### 4.1.1 Share of Government Expenditures on Education in GDP

In most countries, governments are the main providers of finance for education. Countries that pay greater attention to development of their human capital traditionally invest more of their resources on education. Due to differences in the sizes of economies, it would be misleading to compare the absolute expenditures on education by governments. A standard approach to consider the differences in economic sizes across countries is to evaluate the share of government expenditures on education in total GDP of an economy.

As shown in Figure 4.1, governments around the

**Figure 4.1: Government Expenditures on Education as Percentage of GDP\***



Source: World Bank, WDI Database.

\*Data for 2004 is the latest year available between 2000 and 2004 and data for 2014 is the latest year available between 2010 and 2014.

world spent, on average, 4.8% of GDP on education in 2004, while this figure slightly increased by 0.1 percentage point in a decade to reach 4.9% in 2014. Developed countries have been spending more than developing countries. Public spending on education in developed countries accounted for 4.9% of the GDP in 2004 and this ratio increased further to 5.1% by 2014. However, governments in non-OIC developing countries could spend only 4.0% of their GDP on the education sector in 2004 and this ratio increased by 0.8 percentage points in a decade to reach 4.8% in 2011.

The situation in OIC countries was not optimistic as the average government spending on education accounted for 4.1% of their GDP in 2004, which was higher than the average of the non-OIC developing countries at that time. However, it decreased by 0.6 percentage points to 3.5% in 2014. Over a decade, differences in expenditure on education expanded to 1.3 percentage points in favour of non-OIC developing countries, reflecting the lack of investment in education by OIC countries (Figure 4.1).

At the individual country level, government spending on education accounted for 6.8% of the GDP in Kyrgyzstan and Niger, which were the highest rate among the OIC countries with data available for the latest year between 2010 and 2014. Together with these two countries, Mozambique (6.7%), Malaysia (6.3%), Tunisia (6.2%), Senegal (5.6%), Maldives (5.2%), Comoros (4.9%), Togo (4.8%), and Benin (4.8%)

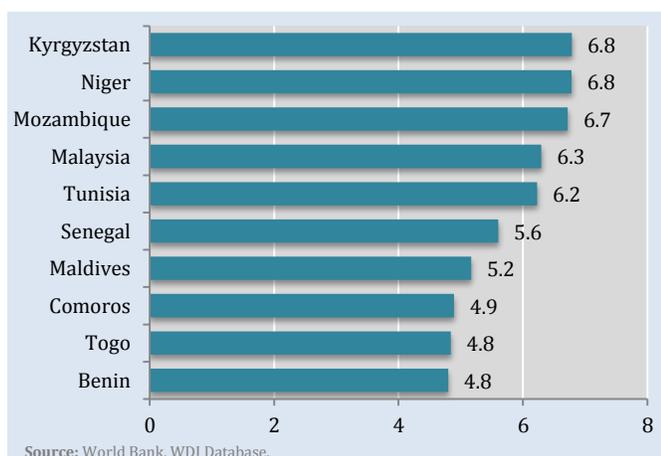
(5.6%), Maldives (5.2%), Comoros (4.9%), Togo (4.8%) and Benin (4.8%) comprised the top 10 OIC countries by government expenditures on education as percentage of GDP (Figure 4.2). It is noteworthy that six of these countries are among the least developed countries (LDCs) as classified by the United Nations.

#### 4.1.2 Share of Government Expenditures on Education in Total Government Expenditures

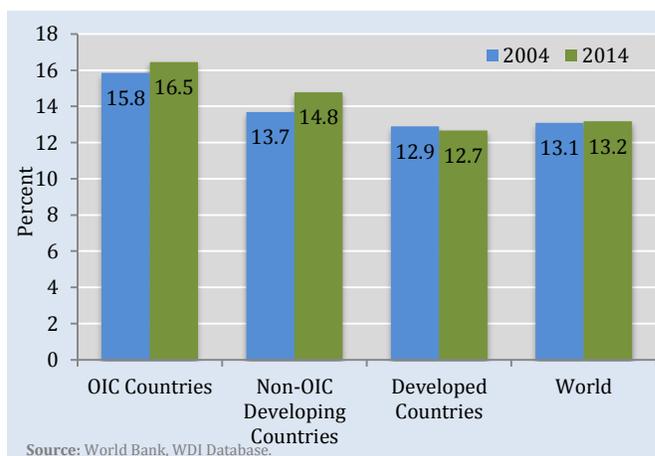
The share of a government’s spending on education in its total expenditures is another major indicator that measures the relative importance of the education sector on part of the government. The higher the share of education expenditures in total government expenditures, the higher is the government’s support for the education sector.

The share of government expenditures on education in total government expenditures was higher in OIC member countries than in both developed and developing countries in the period under consideration (Figure 4.3). This implies that the governments in OIC member countries, on average, have spent on the education sector proportionally more than the developed and world averages. In OIC member countries, governments’ spending on the education sector accounted for 15.8% of their total expenditures in 2004. This ratio was 12.9% in developed countries and 13.7% in non-OIC

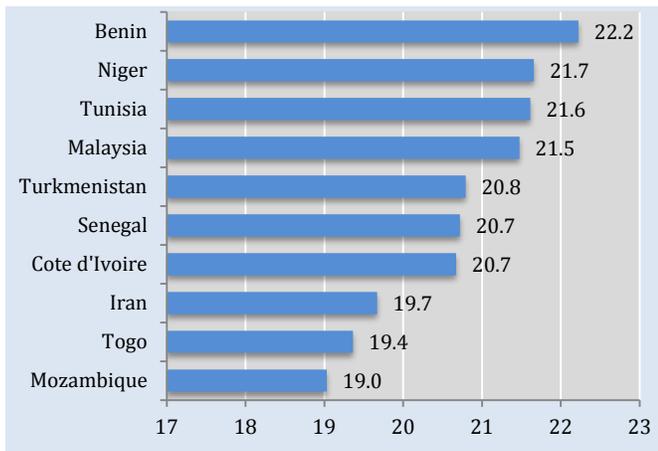
**Figure 4.2: Top OIC Countries by Government Expenditures on Education as Percentage of GDP**



**Figure 4.3: Government Expenditures on Education as Percentage of Total Government Expenditures**



**Figure 4.4: Top OIC Countries by Government Expenditures on Education as Percentage of Total Government Expenditures**



Source: World Bank, WDI Database.

developing countries, with the world average being 13.2%. By 2014, the ratio increased to 16.5% in OIC member countries and 14.8% in non-OIC developing countries while it decreased to 12.7% in developed countries, registering an overall increase of a percentage point in the world average to 13.2%.

Among the OIC member countries with available data, Benin has the highest ratio of government expenditures on education with 22.2% share of total government expenditures (). It was followed by Niger (21.7%), Tunisia (21.6%), Malaysia (21.5%), Turkmenistan (20.8%), Senegal (20.7%) and Cote d'Ivoire (20.7%), all dedicating over one fifth of the total government expenditures to the education sector. Together with these countries, Iran (19.7%),

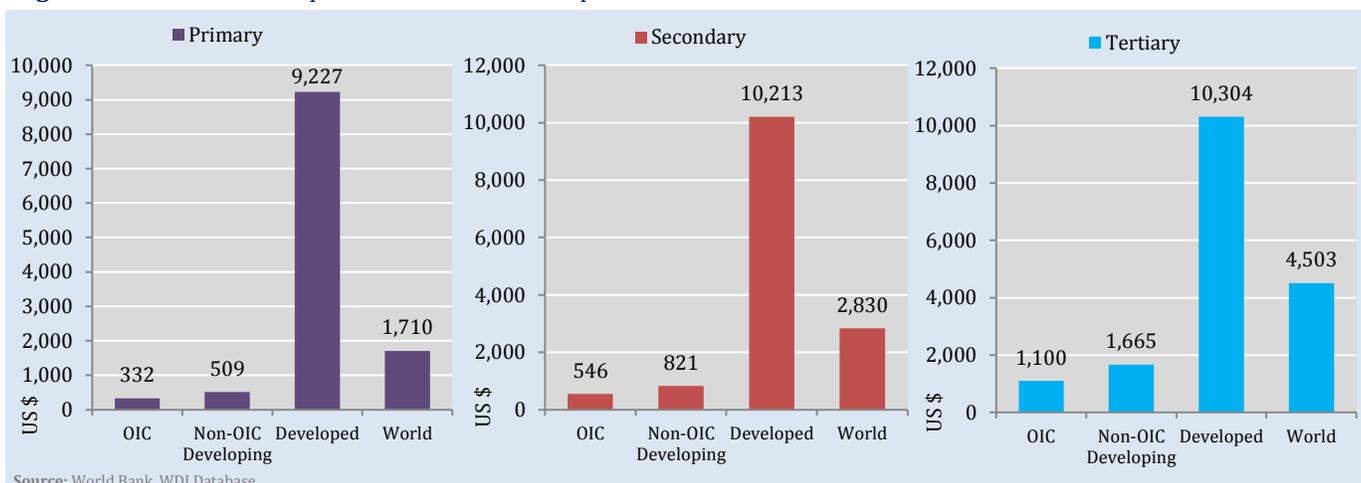
Togo (19.4%) and Mozambique (19%) were also among the top 10 countries (Figure 4.4).

### 4.1.3 Government Expenditures on Education per Pupil

In addition to the abovementioned macro-level indicators that compares government expenditures on education with GDP or total government expenditures, governments' financial contribution to education sector can also be assessed at micro-level by measuring how much is spent by the government per student. Unlike the former ones, this approach focuses directly on the level of government spending on education regardless of the size of the economy or the total expenditures of the government.

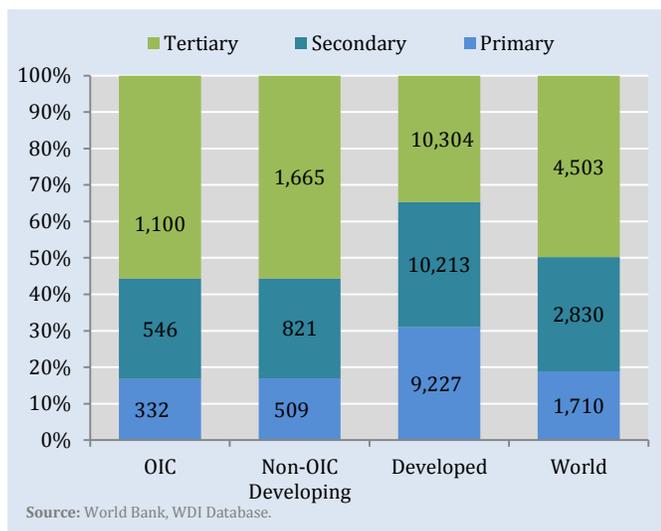
According to the latest statistics, government expenditures on education per student show great discrepancies across regions (Figure 4.5). In primary education, while OIC countries spend on average \$332, non-OIC countries spend more than \$500 and developed countries spend more than \$9,200. Again in secondary level of education, OIC countries spend the lowest amount per student with \$546. When it comes to tertiary level education, the gap between OIC and developed countries slightly narrows down. Non-OIC developing countries are on average spending around 50% more than OIC countries in all levels of education. On the other hand, developed countries spend almost 30 times more than OIC countries at primary level, 20 times more in secondary level and 10 times more at tertiary level.

**Figure 4.5: Government Expenditures on Education per Student**



Source: World Bank, WDI Database.

**Figure 4.6:** Distribution of Government Expenditures on Education per Student

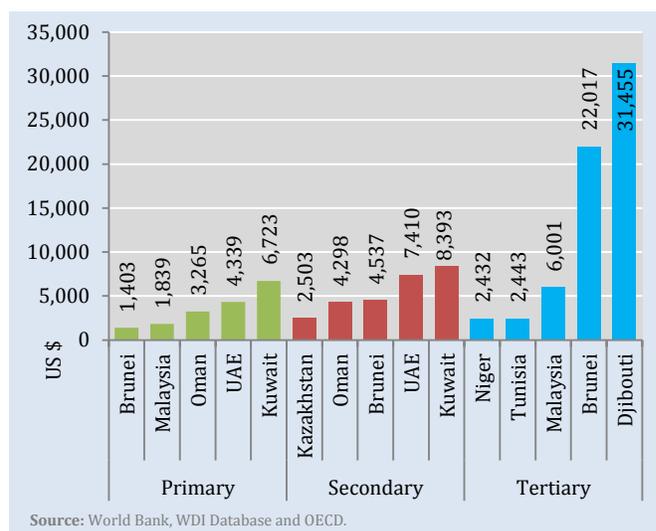


Lack of investment in education has naturally its consequences on the stock of human capital and skilled labour force of these economies, with further implications on economic growth and development.

Moreover, while developed countries spend almost equal amount for students at all levels, OIC and non-OIC developing countries spend greater amounts for students at tertiary levels and lower amount for students at primary level (Figure 4.6). Among the OIC countries with available data, Kuwait has the highest government expenditure on education per pupil at primary level (\$6,723), followed by United Arab Emirates (\$4,339) and Oman (\$3,265). At secondary level, top OIC countries are Kuwait (\$8,393), United Arab Emirates (\$7,410) and Brunei Darussalam (\$4,537). At tertiary level, Djibouti takes the lead with \$31,455, followed by Brunei Darussalam (\$22,017) and Malaysia (\$6,001) (Figure 4.6). The high number in Djibouti can be attributed to the low number of students enrolled in tertiary level, which was below 5,000 in 2011.

Analysing the government expenditures on education per pupil in absolute terms may again be misleading when comparing countries with widely different levels of nominal and real income. In order to partly eliminate this problem and ensure more comparability among countries, the absolute value of government expenditures on education per pupil

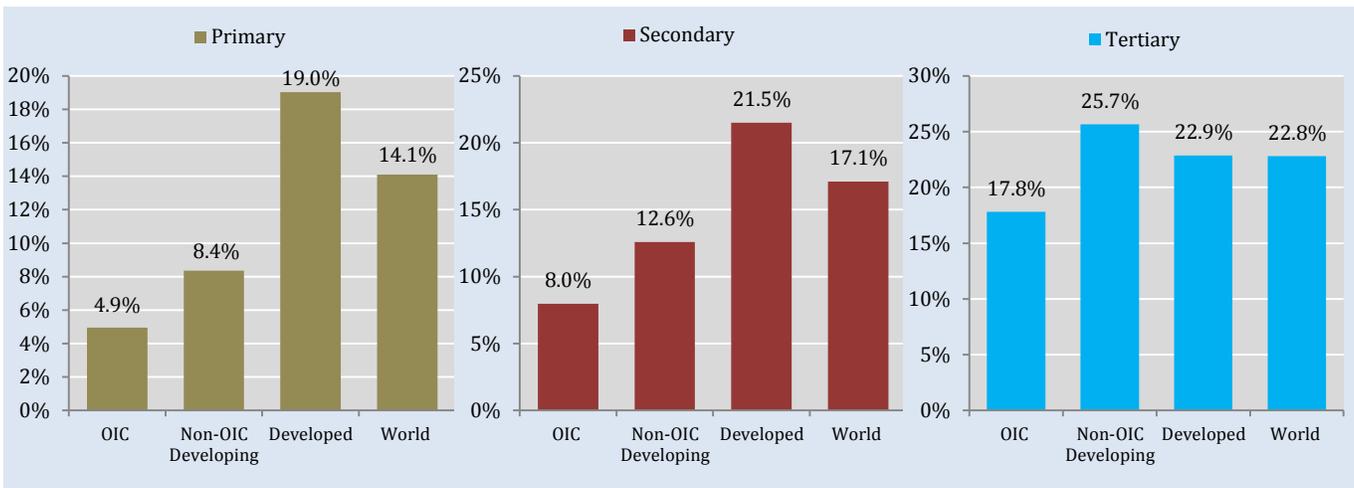
**Figure 4.7:** Top OIC Countries by Government Expenditures on Education per Student (US \$)



expressed as a percentage of GDP per capita will be used, whereby it becomes more reasonable to make comparison between countries as governments' spending are measured with respect to the income level of countries. As shown in Figure 4.8, where significant disparities remain between OIC countries and other country groups at primary and secondary levels of education, but the gap appears to be smaller at tertiary level of education. At all levels of education, OIC countries spend on average the lowest share of GDP per capita for education. Strikingly, non-OIC developing countries spend even larger share of their income for education at tertiary level.

At individual country level, top five countries that spend the largest share of their per capita income at different levels of education are shown in Figure 4.9. Again, there are vast differences in expenditure behaviours across the levels of education in OIC countries, with larger shares of income being spent for higher levels of education. Due to lower levels of income, low-income countries tend to exhibit higher share of spending on education per student. Particularly at tertiary level, mean spending per student exceeds the per capita income in 12 out of 36 OIC member countries for which data are available.

**Figure 4.8: Government Expenditure per Student as % of GDP per Capita**



Source: World Bank, WDI Database.

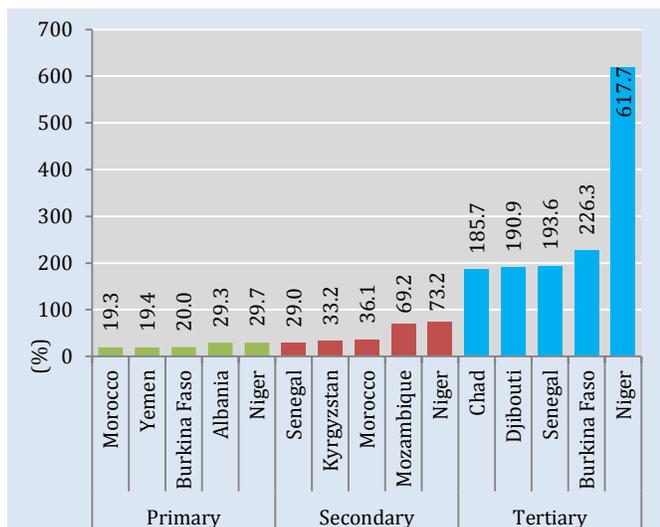
## 4.2 Student – Teacher Ratios

Student–teacher ratios give the number of students enrolled in a school per the number of teachers working at that institution. While low student-teacher ratio is indicative of quality education, high student-teacher ratio often gives evidence about proportionately underfunded schools or school systems, or need for legislative change or more funding for education. Additionally, too many students in a class results in a diverse group of

students with varying degrees of learning ability and information uptake. Consequently, the class will spend more time for less skilled students to digest the information, when that time could be better spent progressing through the curriculum. It is also argued that the lower student-teacher ratios are better at teaching students complex subjects such as mathematics, chemistry and physics than those with a higher ratio of students to teachers.

It is shown that students attending schools with a lower student-teacher ratio and a better educated teaching staff find jobs more easily and earn higher wages after graduation. In this connection, there are countries enacting legislations mandating a maximum student-teacher ratio for specific grade levels to improve quality of education.

**Figure 4.9: Top OIC Countries by Government Expenditure per Student as % of GDP per Capita**



Source: World Bank, WDI Database and OECD.

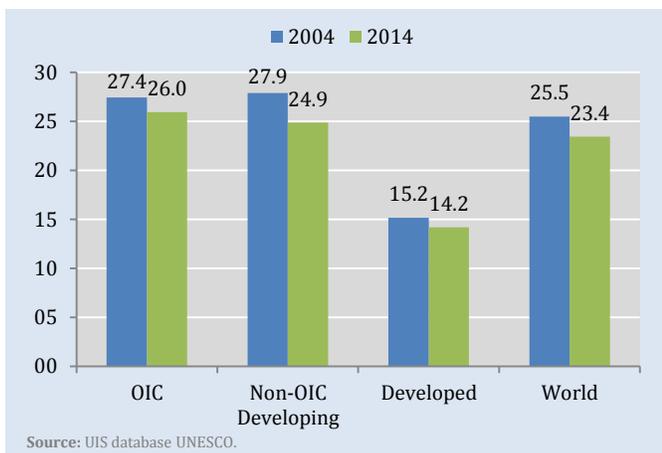
### 4.2.1 Primary Schools

Given the high population growth rates in many OIC countries, the growth in student enrolment surpasses the growth in the number of teachers. As a result, OIC countries, on average, see high student-teacher ratios. In 2014, the OIC average was measured as 26 whereas the non-OIC developing countries group has an average ratio of 24.9. In the same year, the world average scored as 23.4 students per teacher, which went down from 25.5 in 2004. During the period under consideration, it becomes evident that the most significant improvement took place in the group of

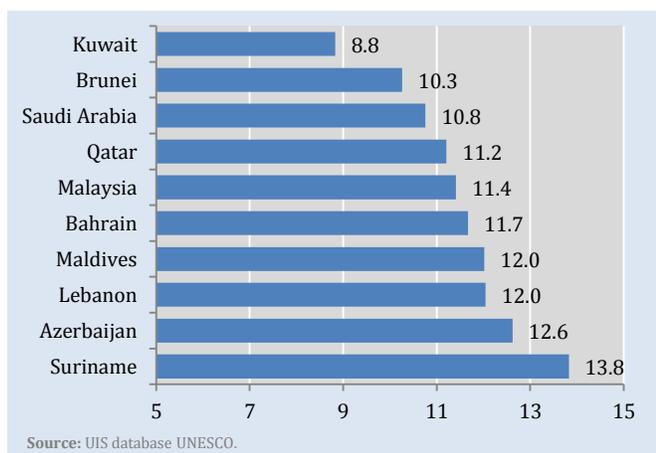
non-OIC developing countries, which have now lower student-teacher ratio compared to the group of OIC countries. This implies that even though OIC member countries achieved to reduce the student-teacher ratio in primary schools from 27.4 in 2004 to 26 in 2014, more needs to be done to accelerate the process and achieve a ratio that is closer to the average of developed countries. (Figure 4.10)

At the individual country level, Kuwait (8.8), Brunei (10.3), Saudi Arabia (10.8), Qatar (11.2) and Malaysia (11.4) provide a good number of teachers to their students in primary schools. Together with other OIC countries in the top 10 list, these countries demonstrate student-teacher ratios that are lower than the average of developed countries (13.4) (Figure 4.11).

**Figure 4.10:** Student – Teacher Ratios at Primary Schools



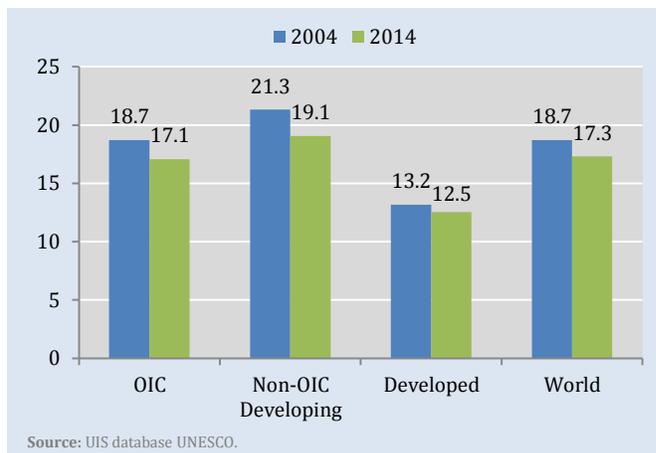
**Figure 4.11:** OIC Member Countries with the Lowest Student – Teacher Ratios in Primary Schools



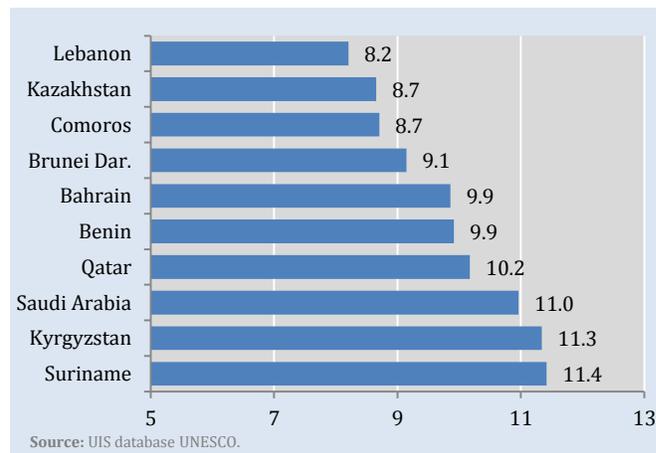
## 4.2.2 Secondary Schools

The average number of secondary school students per teacher decreased all over the world during the period between 2004 and 2014 (Figure 4.12). The largest improvement is again observed in the group of non-OIC developing countries. In the same period, the OIC group reduced the ratio from 18.7 to 17.1 and continued to have a lower ratio than the group of non-OIC developing countries. The reduction in the group of developed countries was rather modest, as the ratio was already low. Consequently, as of 2014, 17.1 students were taught by a single teacher in OIC member countries whereas this number was only 12.5 students in developed countries but 19.1 in non-OIC developing countries.

**Figure 4.12:** Student – Teacher Ratios at Secondary Schools



**Figure 4.13:** OIC Member Countries with the Lowest Student – Teacher Ratios in Secondary Schools



As shown in Figure 4.13, all OIC member countries in the top 10 list have a lower student-teacher ratio than the average developed countries. Lebanon (8.2), Kazakhstan (8.7), Comoros (8.7), Brunei (9.1), Bahrain (9.9) and Brunei (9.9) were the OIC countries with lower than 10 student per teacher at secondary level of education. At the other end of the spectrum, Bangladesh, Mozambique and Sudan were the countries having more than 30 secondary school students per teacher.

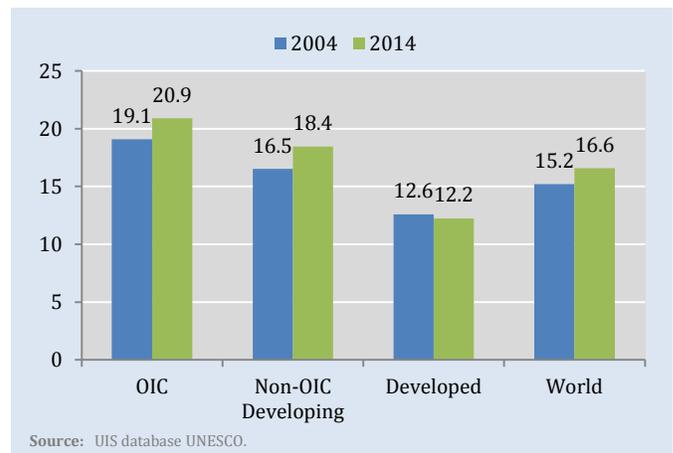
### 4.2.3 Tertiary Schools

As lower student-teacher ratios are generally considered to indicate the quality of education system, it is striking to observe an increasing trend for student-teacher ratios at tertiary level schools globally, except a slight fall in the group of developed countries. Though the average number of students per teacher had remained same or displayed a decreasing trend for primary and secondary schools, as depicted in Figures 4.10 and 4.12, average world student-teacher ratio increased to 16.6 in 2014 at tertiary level of education (Figure 4.14). The rise in these ratios means that the number of teachers entering the education sector is not sufficient to match the growth rate of tertiary level students so as to enhance the quality of education by decreasing the average number of students per teacher.

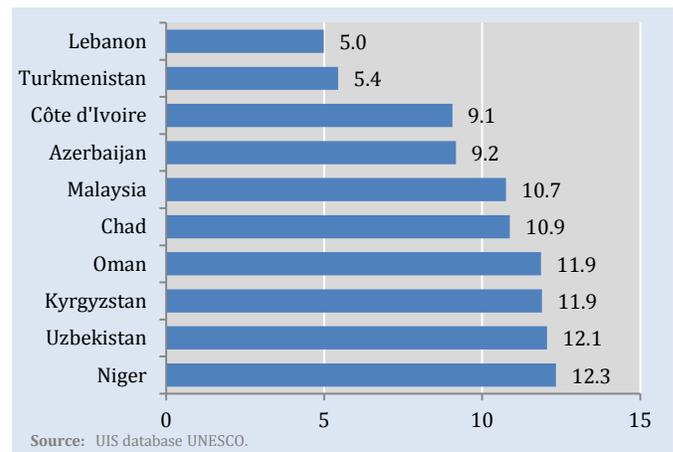
The student-teacher ratio in the OIC group increased from 19.1 in 2004 to 20.9 in 2014. Non-OIC developing countries have also witnessed an increase of almost equal magnitude in the ratio, which reached 18.4 in 2014. Accordingly, the world average increased from 15.2 to 16.6 during the same period. Overall, OIC countries continued to have the highest ratio in student-instructor ratio at tertiary level.

Overall, the average performance of the OIC member countries was not satisfactory during the period under consideration. However, in terms of student-teacher ratios, OIC member countries exhibited great variations over a wide scale individually. On the one hand, 9 member countries had student-teacher ratios less than that of the developed countries average of

**Figure 4.14: Student – Teacher Ratios at Tertiary Schools**



**Figure 4.15: OIC Member Countries with the Lowest Student – Teacher Ratios in Tertiary Schools**



12.2 students per teacher (Figure 4.15). OIC member countries, Lebanon (5), Turkmenistan (5.4), Côte d'Ivoire (9.1), Azerbaijan (9.2), and Malaysia (10.7) had the most sparse tertiary school classes. On the other hand, an instructor taught as high as 52.4 tertiary level students in Mali, 46.4 students in Sudan and 43 students in Mauritania. Even in a relatively more advanced country like Turkey, the ratio was as high as 38.1, reflecting the gap in the number of instructors at higher level of education.

### 4.3 International Student Mobility

The number of students pursuing studies abroad continues to surge not only because of rising demand for quality education but also due to increasing competition among higher education

institutions around the world for the best and brightest minds. International recognition of qualifications and the availability of scholarships, reflecting the demand from both sides, are mainly the leading motivation for increasing mobility. In 2013, more than 4 million students went abroad to study, up from 2 million in 2000, according to UNESCO UIS database.

China, India, and South Korea are the countries where international student mobility is the highest. With 712 thousand students, China accounts 20% of all internationally mobile students, followed by India with 182 thousand students. On the other hand, three OIC countries, Saudi Arabia, Malaysia and Nigeria are among the top 10 countries in terms of outbound student mobility, with a cumulative number of 182 thousand students.

The inbound mobility largely reflects the level of development of the education industry in that country. During 2013-14, five destination countries hosted nearly 50% of total mobile students: the United States (21%), United Kingdom (11%), Australia (6.5%), France (5.7%), and Russia (5.2%). But the top five also saw their share of international enrolment decline from 55% in 2000 to 48% in 2013. In developed countries, tertiary education transformed from government-subsidized institution into one of the most profitable private sectors of the economy and people already understood that spending on education is a long term investment into future prosperity.

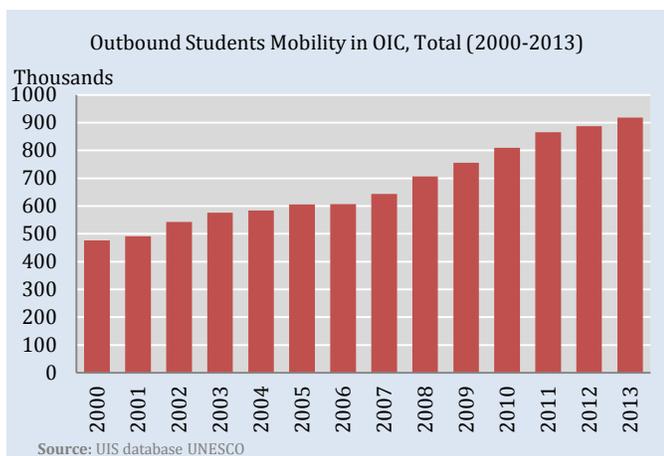
OIC member countries are also becoming popular destinations for tertiary education due to significant investments and reforms of education sector, which lead to increase in quality of education and created opportunities for both local and international students. This subsection will analyse the trends in students' outbound and inbound mobility in OIC countries.

### 4.3.1 Outbound student mobility

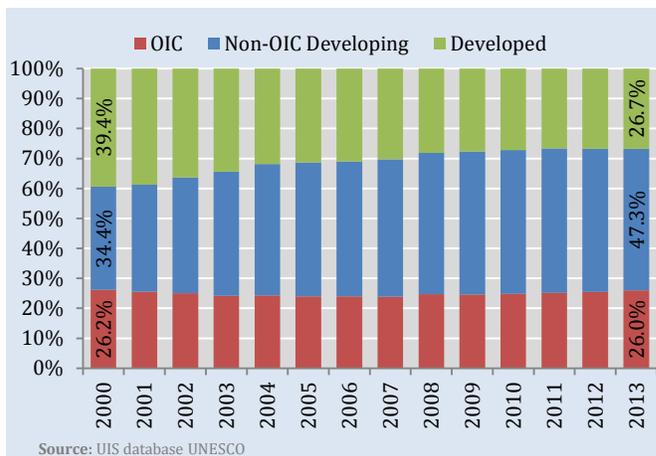
Outbound mobility rate is the share of students studying outside to total number of enrolments in the country. As depicted in Figure 4.16, the number of the students going abroad for tertiary education continuously increased from OIC over the period 2000-2013. During this period, the number of students studying abroad almost doubled and reached over 920,000 in 2013. The main reasons for substantial increases are, among others, growing number of youth and higher economic growth in the member countries that created opportunities for students to pursue their education at international education institutions.

Despite the considerable increase in the total number, the share of OIC countries in total outbound student mobility did not increase during the same period. In 2000, OIC countries were accounting 26.2% of all international outbound students, but this rate slightly decreased to 26% in 2013 (Figure 4.17). On the other hand, non-OIC developing countries, driven largely by China,

**Figure 4.16:** Outbound Students Mobility in OIC, Total



**Figure 4.17:** Share of OIC in Outbound Students Mobility

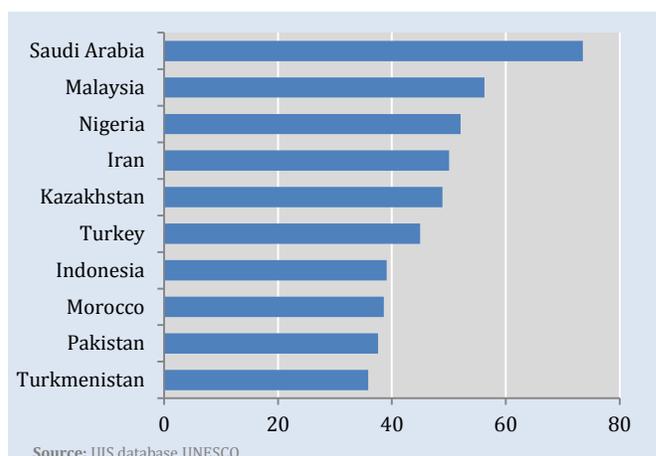


increased their share from 34.4% in 2000 to 47.3% in 2013. The share of outbound mobile students from developed countries has sizably decreased from 39.4% to 26.7% during this period.

At individual country level, Saudi Arabia (73.5 thousand), Malaysia (56.3 thousand), Nigeria (52 thousand), Iran (50 thousand), Kazakhstan (48.9 thousand) and are top five countries within OIC and account for 30% of all outgoing students in the OIC region (Figure 4.21). The main destinations for students from these and from the majority of other OIC member states are the countries with developed education industries, including the US, the UK and some other European Countries, which are also top destinations in the world for international outbound mobile students.

The largest increase in the number of outbound students in OIC region during the period 2000-2013 was observed in Saudi Arabia with an increase of 63 thousand, followed by Nigeria (36 thousand) and Turkmenistan (31 thousand).

**Figure 4.18: Top OIC Countries by Outbound Students Mobility (Thousand)**



### 4.3.2 Inbound student mobility

Inbound student mobility shows the number of students coming from other countries to study within the country. Data on inbound student mobility is not as extensively available as the data on outbound student mobility. Therefore, it is not possible to make a trend analysis with respect to inbound student mobility.

#### Box 4.1: The OIC Educational Exchange Programme

Excellence in knowledge, research and innovation is imperative for the Muslim world to reclaim its rightful place in the international arena. The OIC Vision 1441H for Science and Technology and the Ten Year Programme of Action acknowledge the political, developmental, social, cultural and educational challenges facing the Muslim world and outline ways and means to address them in an objective and pragmatic manner.

OIC General Secretariat recently started to pursue the 'Educational Exchange Programme: Solidarity through Academia in the Muslim World'. The purpose of this programme is to enrich education experience of students as well as faculty. Accordingly, the Secretariat has particularly focused on the promotion of cooperation between the OIC countries in these fields. This initiative has been enthusiastically supported by the member states and leading academic institutions of Turkey, Malaysia, Pakistan, Azerbaijan and many others started to cooperate.

The OIC Educational Exchange Programme deals with the post-graduate, masters, research levels and include exchange of students, faculty members and researchers for short durations (6-10 weeks) between interested institutions of higher education in the member states. It includes the following components: scholarships, faculty exchange, distance learning, research project and specialized courses. A considerable number of students have already benefited from education scholarships offered under the programme and many more opportunities are going to be realized soon.

There is an increasing interest of the member states in the programme, but in order to attain more success, greater support and active participation is required from member states in the Educational Exchange Programme. Therefore, member states should further advocate, promote and publicize through the means of media opportunities available for students and faculty under the programme.

See the official website for more information: <http://www.oic-oci.org/oicv2/subweb/eep/index.html>

According to the latest data available, Saudi Arabia is the most attractive destination within OIC for foreign students by hosting more than 71,700 students from all around the world (Table 4.1). It is followed by United Arab Emirates (64.1 thousand), Turkey (54.4 thousand), Egypt (47.8 thousand) and Malaysia (38.6 thousand). Among the important factors in gaining popularity as a destination for education include various reforms in the education system, significant investments, bilateral and multilateral cooperation and some other measurements implemented by the governments.

In the Arab states, Saudi Arabia, United Arab Emirates and Egypt are making efforts to recruit students from abroad. The share of mobile students studying within the Arab region increased from 12% to 26% between 1999 and 2012. These three countries hosted 4.5% of the global share of mobile students. United Arab Emirates now outpaces the United Kingdom in attracting students from the Arab States and has become the third most popular destination (followed by France, the United States) for students from the region, suggesting that it created a very competitive environment to traditional destinations. Turkey also made great achievements in attracting more foreign students, which increased the total inbound students from 12,700 in 2003 to 54,400 in 2013.

Inbound mobility rate (IMR) is the number of students from abroad studying in a given country, as a percentage of the total tertiary enrolment in that country. According to Table 4.1, UAE and Qatar have the highest rate with 44.8% and 39.9%, respectively and in 8 out of 36 OIC countries for which data are available; this rate is over 5%.

Overall, both numbers of inbound and outbound mobile students is growing dramatically all around the world. Despite the increases in absolute numbers, the share of OIC countries in total outbound internationally mobile students has not changed significantly.

**Table 4.1:** International Inbound Students Mobility in OIC Countries

Country	Inbound Students	Inbound Mobility Ratio
Saudi Arabia (2014)	71,773	4.80
UAE (2014)	64,119	44.82
Turkey (2013)	54,387	1.09
Egypt (2014)	47,815	1.78
Malaysia (2014)	35,592	3.62
Jordan (2012)	27,931	9.11
Lebanon (2014)	17,495	7.64
Uganda (2011)	15,035	10.73
Kyrgyzstan (2014)	12,071	3.96
Yemen (2011)	11,393	4.26
Iran (2014)	11,288	0.24
Qatar (2014)	10,078	39.90
Kazakhstan (2015)	9,977	1.52
Benin (2010)	9,060	7.92
Morocco (2010)	8,604	1.92
Algeria (2014)	7,953	0.64
Indonesia (2012)	7,235	0.12
Tunisia (2013)	6,236	1.85
Bahrain (2014)	5,036	13.21
Azerbaijan (2014)	4,406	2.25
Albania (2014)	3,667	2.11
Cameroon (2012)	3,059	1.39
Côte d'Ivoire (2014)	2,960	1.68
Oman (2014)	2,579	3.04
Burkina Faso (2013)	2,154	2.90
Tajikistan (2015)	1,866	0.83
Niger (2012)	1,181	5.43
Chad (2011)	978	4.02
Guinea (2012)	930	0.92
Mozambique (2014)	582	0.37
Mali (2011)	462	0.53
Uzbekistan (2011)	378	0.14
Brunei (2014)	360	3.19
Turkmenistan (2014)	87	0.20
Guyana (2012)	34	0.38
Comoros (2012)	2	0.03

Source: UNESCO UIS Data Centre.

On the other hand, some OIC countries are making significant progress in attracting foreign students, reflecting the importance given to the development of the education sector in these countries. Regional hubs like Malaysia, Turkey and UAE are still not

attracting a larger share of the globally students, but they are becoming favoured destinations for students within regions, and factors such as lower travel costs and cultural familiarity support such endeavours.

#### Box 4.2: Economic growth in developing countries: The role of human capital

**Differences in economic growth across countries are closely related to cognitive skills as measured by achievement on international assessments of mathematics and science.** In fact, once cognitive skills are incorporated into empirical growth models, school attainment has no independent impact on growth.

The general focus on universal school attainment underlying the campaigns of Education for All and Millennium Development Goals, while seemingly reasonable and important, have not put the developing countries in a good position for growth. Specifically, while emphasizing school attainment – a readily available quantitative measure – they have not ensured that the quality of schools has had a commensurate improvement.

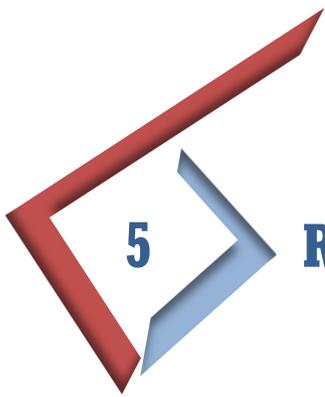
The data on improvements in school attainment has been impressive, but the very large gaps in achievement lead to a different interpretation of progress. In terms of cognitive skills, little closing of the gaps between developed and developing countries has occurred. A surprisingly large proportion of students completing nine years of schooling is uncompetitive in terms of international skill levels.

A focus on quality does, however, complicate decision making. It appears to be generally easier to understand how to expand access than to improve quality. Simple approaches to improving quality have not proved very effective. Past research has indicated that just providing more resources to schools is generally ineffective. Political problems may also accompany an emphasis on quality. For any given amount of funds, if resources are focused on a smaller set of schools in order to improve quality, it implies that less access to schooling can be provided.

Certainly, in order to provide quality schooling, there must be both infrastructure and access. However, the evidence from the growth analysis indicates that providing schools that fail to teach basic skills does no good. Therefore, slowing the pace of the provision of schools to a rate that also permits the development of quality schools appears to be a good solution.

One other element enters into the calculations. The rapid expansion of new digital technologies – both as blended learning with teachers and technology and as standalone approaches – suggests that many of the past decisions both on access and on quality might rapidly change.<sup>23</sup> The potential in developing countries appears especially large.

*Source: Hanushek (2013).*



## 5

# Research and Scientific Development

**R**esearch in science and technology is of great importance, and key to progress towards a knowledge-based and innovation-driven economy. It promotes better understanding on different aspects of life, and helps to improve the standard of living by generating new knowledge and technological innovation. Today, there is severe rivalry among countries to become the most competitive economy in the world. Gaining a competitive advantage against other countries, which is of particular importance to the OIC member countries in catching-up more advanced countries, depends basically on how well they perform in research activities.

In the golden age of Islam, Muslim world was at the forefront of science, philosophy, culture and economic development. However, today many OIC member countries allocate limited amount of resources for research and development activities, which restricts their contributions to the development of science and technology. Yet, the accomplishments of some member countries provide some hope for optimism with their rapid economic growth and achievements in higher education.

Today, a great diversity exists among OIC member countries not only due to their geographical dispersion, but also their level of development in a broad spectrum of socio-economic areas, with research and development (R&D) being no exception. Acknowledging the fact that the Muslim world has long faced a knowledge gap due to its deficiency in science, technology and innovation, in its Vision 1441H document, OIC adopted some key

objectives in steering the science and technology (S&T) development in OIC member countries. These included the achievement of the following targets related to R&D by 2020: 14% shares in world's scientific output by 2020 and 1.4% of GDP invested in R&D by 2020.

Since innovation is universally accepted as one of the engines of economic growth, policy-makers need reliable and timely indicators to establish effective national innovation systems, to make healthy cross-national comparisons and monitor the evolution of relevant policies. R&D, in this regard, is an important component of a country's national innovation systems. Furthermore, there is also an increasing demand for R&D indicators from policy-makers of OIC member countries. Yet, the lack of capacity to generate these indicators in an effective manner remains a major challenge. This, in turn, makes it difficult to benchmark OIC member countries against other international country groups and to monitor the progress in achieving the targets outlined in the Vision 1441H document.

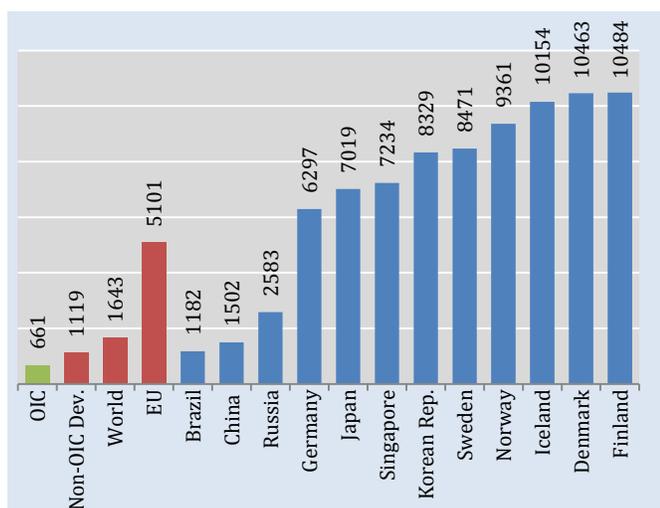
This section presents an overview of the current developments in the OIC member countries in the field of research and scientific development. In particular, the current stance of the OIC member countries in terms of fundamental indicators of research and scientific development, such as human resources in R&D, R&D expenditures, high technology exports, scientific publications and patent applications, is analysed in a detailed manner in comparison with other country groups.

## 5.1 Human Resources in Research and Development

The availability of abundant and highly qualified researchers is an essential condition to foster innovation and promote the scientific and technological development in a country. However, figures indicate that OIC member countries, on average, fall well behind the world average in terms of researchers per million people, which are 661 in OIC countries and 1,643 in the world. Even in non-OIC developing countries, average number of researchers exceeds 1,100 per million people. However, the gap gets even larger when compared to the EU average of 5,101, which is more than 7 times of the OIC average. More strikingly, per million inhabitants, Finland, Denmark and Iceland have at least 15 times more researchers than the OIC average (Figure 5.1).

Map 5.1 illustrates the distribution of researchers employed in R&D in OIC countries. It reveals that only 12 of the 38 member countries with available data have more than 1,000 researchers per million people, with Tunisia (2770), Malaysia (2,573), Turkey (2216), Jordan (1,913), Azerbaijan (1,676), Iran (1,559), Egypt (1,349), Iraq (1,272), Kuwait (1,194), Morocco (1,145), Uzbekistan (1,097) and Kazakhstan (1,045) are being the top countries. Among these countries, the values of Tunisia,

**Figure 5.1: Researchers per Million People\***



Source: UNESCO, UIS Data Centre, 2016

\* Headcount data for the most recent year available.

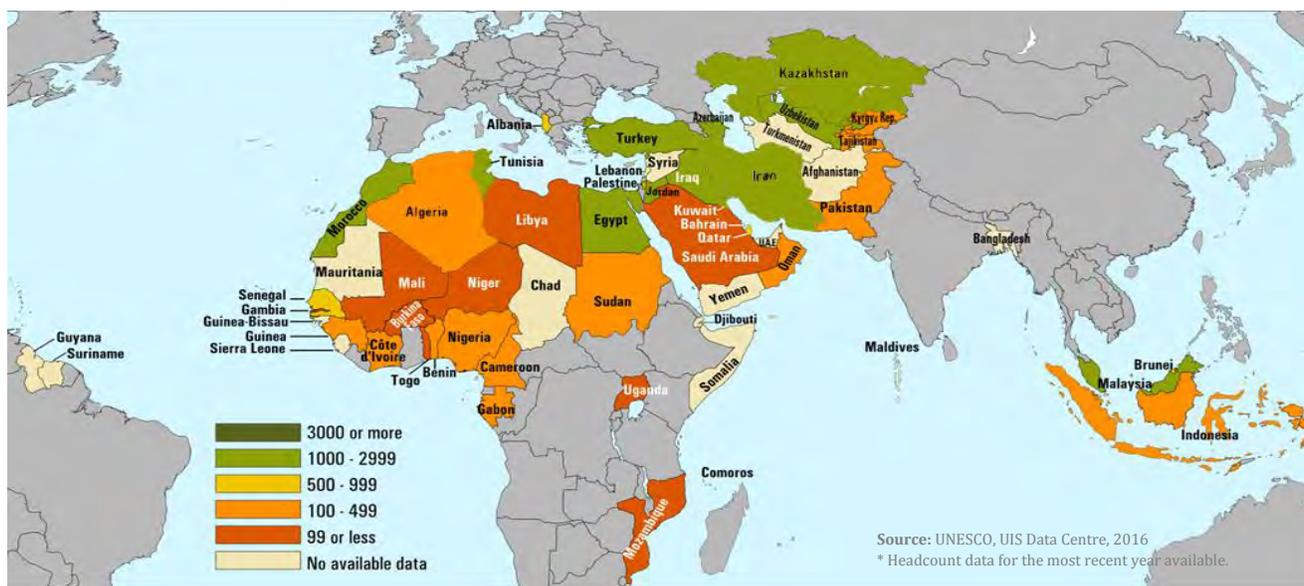
Malaysia, Turkey, Jordan and Azerbaijan are also above the world average. Moreover, nine member countries have less than 100 researchers per million people, most of which are in Sub-Saharan Africa. Consequently, large disparity exists among the member countries. While Tunisia has 2,770 researchers per million inhabitants, Niger has merely 9.8 at the other extreme.

In the last decades, women with better access to training and education facilities, thanks to the rising awareness on gender in/equality, have become more qualified and motivated to participate in the labour force. Nevertheless, the progress achieved so far in the field of R&D seems unsatisfactory neither globally nor at the OIC level. Worldwide in 13 countries, the percentage of women researchers is higher than the men. In Myanmar and Bolivia, the percentage of female researchers is as high as 85.5% and 62.7% of total researchers, respectively. Women researchers represent around 35.5% of the total researchers in the OIC region, higher than the world average (22.5%) and the average of non-OIC developing countries (21.3%). Even compared with the average of developed countries (26%), OIC countries as a group perform comparatively better. Only some individual countries, such as New Zealand and Portugal, have higher rates than the average of the OIC countries (Figure 5.2).

Overall, the share of women in total researchers is above the world average in 27 of the 37 OIC member countries with available data. 16 of them outperform the EU average as well. According to regional averages, OIC countries in Europe & Central Asia, East Asia & the Pacific and Middle East & North Africa report higher rates of women researchers, often above the world average.

Intra-regional difference is wider in the Middle East and North Africa. On the one hand, there are countries like Tunisia, Egypt and Kuwait where women represent more than 35% of researchers; on the other hand, there also are countries where women's share is less than 5% as in the case of Saudi Arabia.

Map 5.1: Researchers\* per Million People in OIC Member Countries

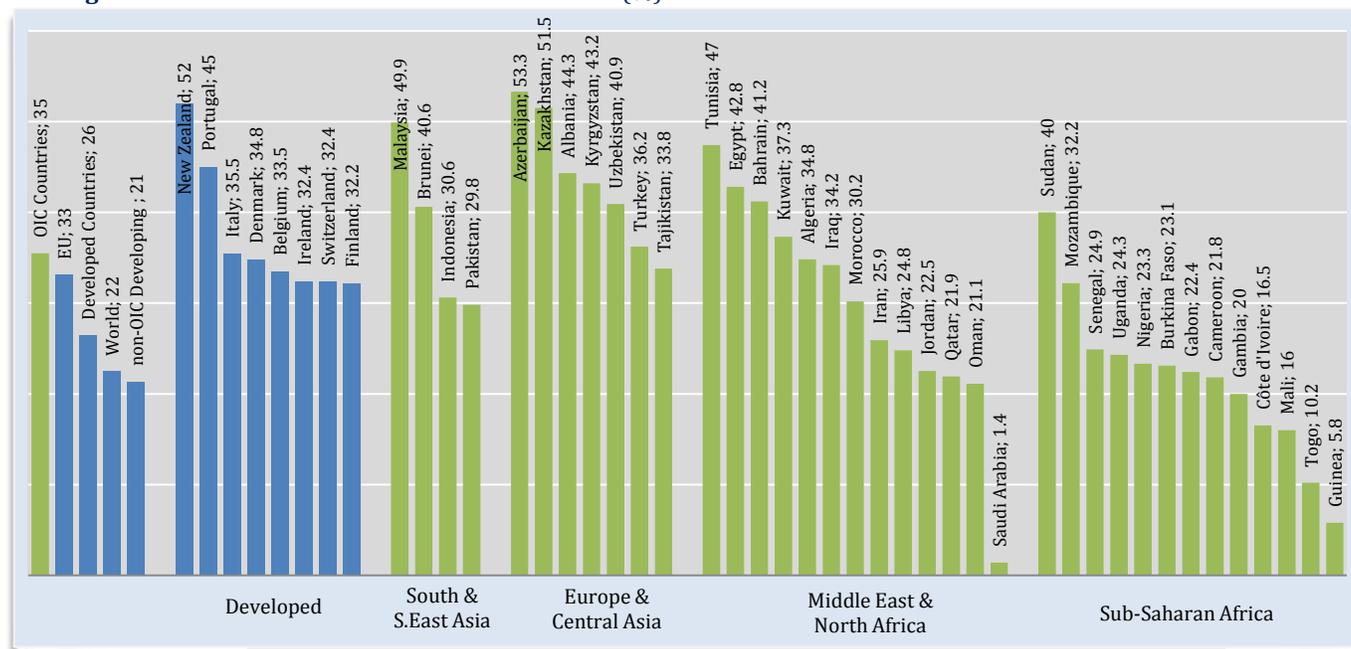


Azerbaijan and Kazakhstan are the member countries that have more women researchers than men. Malaysia, Tunisia, Albania, Kyrgyzstan, Egypt, Bahrain, Uzbekistan, Brunei and Sudan—all with over 40% women researchers—are also close to achieving gender parity.

## 5.2 Expenditures on Research and Development

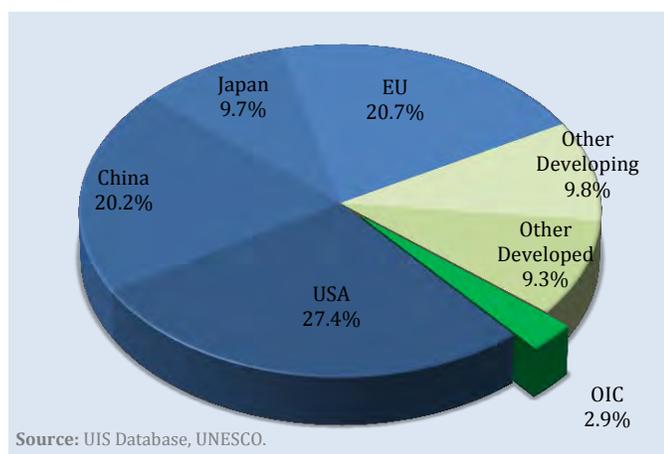
Today, nearly 86% of the global R&D expenditures are spent by developed countries, of which 27.4% by the USA, 20.7% by the member countries of the EU, and 9.7% by Japan (Figure 5.3). The OIC countries account for only 2.9% of the world total Gross

Figure 5.2: Women as a Share of Total Researchers (%)\*



Source: UNESCO, UIS Data Centre. \* Headcount data for the most recent year available.

**Figure 5.3: GERD, % of World Total**



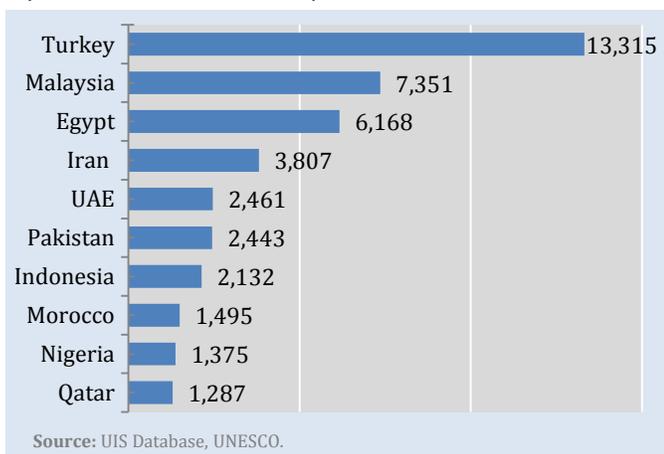
Domestic Expenditures on R&D (GERD). More strikingly, the GERD in China alone is almost 7 times higher than the OIC total.

Among the member countries, Turkey is the leading country by spending \$13.3 billion on R&D (Figure 5.4). Together with Malaysia (\$7.3 billion) and Egypt (\$6.1 billion), these three countries make up 56.5 % of OIC total expenditures on research and development. Iran, UAE, Pakistan and Indonesia are the other member countries with GERD over \$2 billion.

### 5.2.1 R&D Intensity

What is more important than the volume of GERD is its weight in the total expenditures or, in other words, in GDP. Accordingly, R&D intensity (GERD

**Figure 5.4: Top OIC Countries by GERD**  
(current million USD in PPP)



as a percentage of GDP) is a widely used indicator of S&T activities. It reflects the innovative capacity of a country in that a higher R&D intensity indicates that relatively more resources are devoted to the development of new products or production processes.

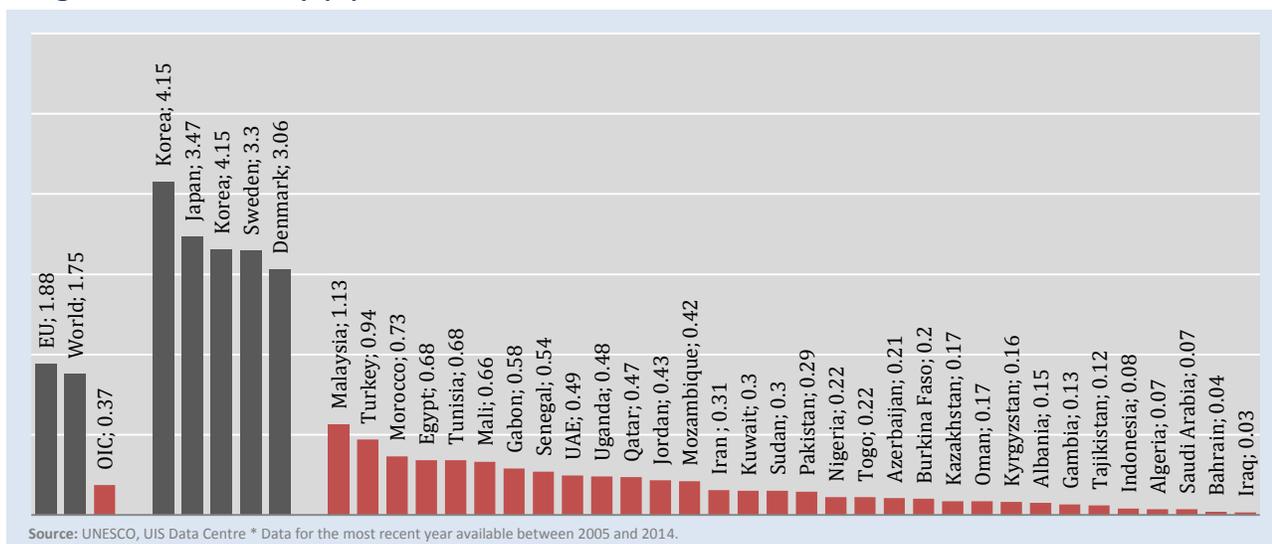
In this connection, the OIC Ten-Year Programme of Action (The OIC - 2025), which was adopted at the Thirteenth Session of the Islamic Summit held in Istanbul in April 2016, calls upon Islamic countries to advance the development and utilization of science, technology and innovation for sustainable development through encouraging research, technological capabilities in all sectors, innovation and domestic technology development by ensuring a conducive policy environment.

Nevertheless, available data show that OIC member countries' spending on R&D activities is significantly lower than the world average. R&D intensity for the OIC member countries averages 0.37%, which is quite lower than the EU average of 1.88% and the world average of 1.75 % (Figure 5.5).

Among the member countries with available data, only Malaysia has exceeded the 1% threshold with R&D intensity above 1.1%. Turkey is close to exceeding this threshold with a share above 0.9%. 20 member countries spend less than the OIC average of 0.37%. The lowest spending level is recorded by Iraq (0.03%). Among the few Sub-Saharan members that can provide data, Mali, Gabon, Senegal, Uganda and Mozambique allocate higher shares of their GDP to R&D than the OIC average, which is quite notable. On the other hand, some major economies within OIC, such as Saudi Arabia and Indonesia are reported to spend still less than 0.1% of their GDP for research and development.

It should be noted that the figures observed in some developed countries, such as Republic of Korea (4.2%), Japan (3.5%), Finland (3.3%), Sweden (3.3%) and Denmark (3.1%), are closely linked to their investments in advanced technology and success in achieving and sustaining the economic growth and prosperity in these countries. It is evident that OIC member countries need to allocate

Figure 5.5: R&D Intensity (%)\*



much more resources to R&D activities to bridge the gap with developed countries.

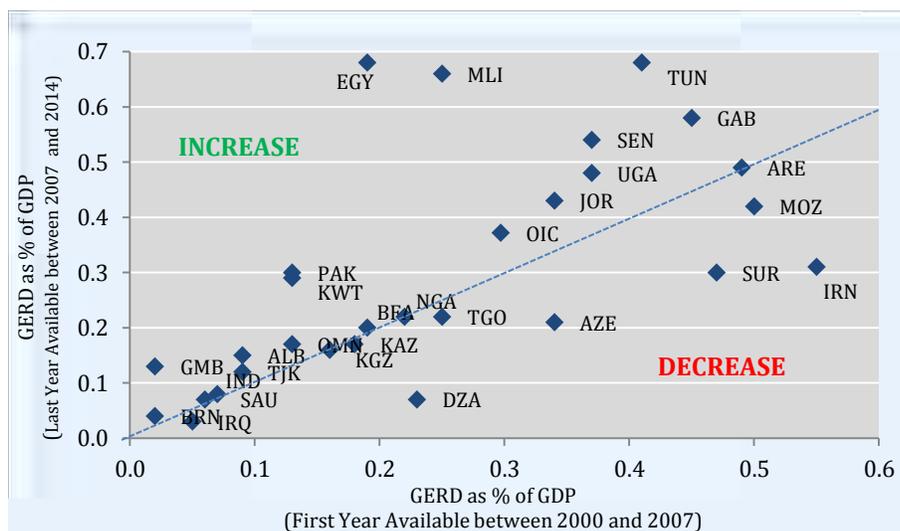
Figure 5.6 illustrates the change in R&D intensity between 2000 and 2014 for the OIC member countries for which data are available. It reveals that in eight member countries (Iran, Suriname, Algeria, Azerbaijan, Mozambique, Togo, Iraq and Kazakhstan), R&D intensity has decreased. On the other hand, Malaysia, Egypt, Turkey, Mali, Tunisia, Senegal, Kuwait and Pakistan managed to significantly increase their R&D intensity. Accordingly, although Morocco, Iran and Mozambique had the highest R&D intensity rates in 2000; Malaysia, Turkey and Morocco outperformed them by 2014 and become the top OIC countries in terms of R&D intensity.

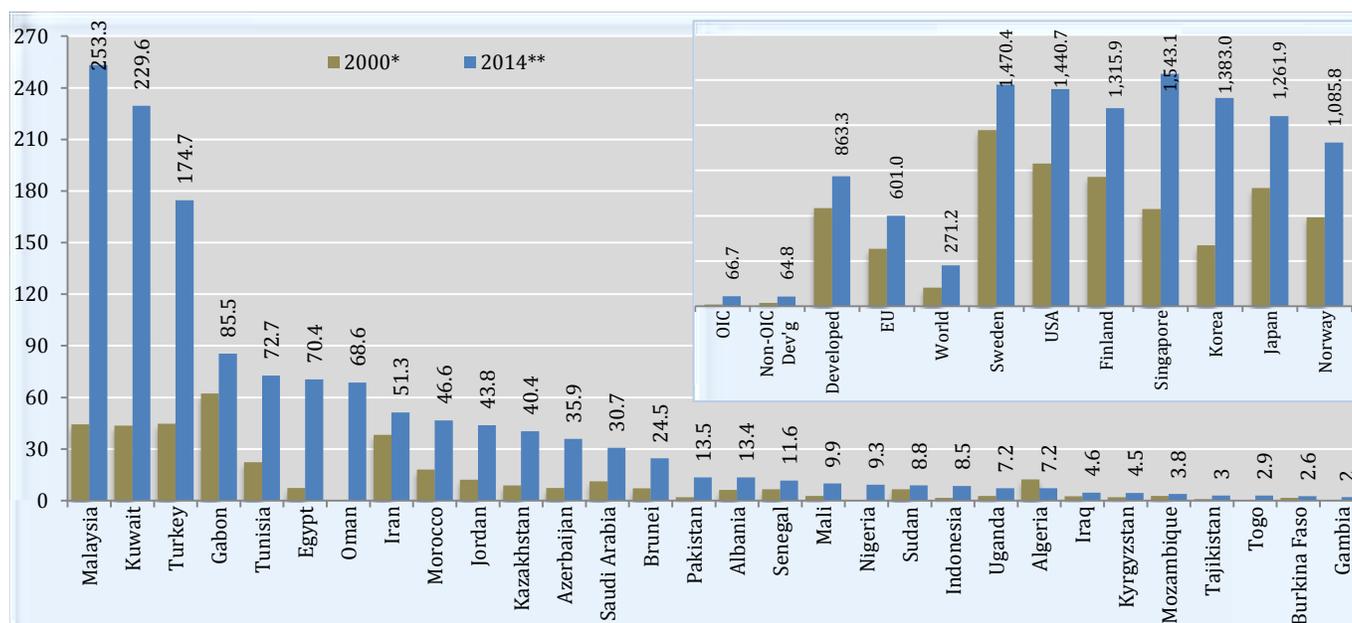
Iran, Suriname, Algeria and Azerbaijan reported a significant decrease in their R&D intensity during the period under consideration. Consequently, during the same period, the average of the OIC countries increased by 0.07 percentage points.

### 5.2.2 R&D Expenditures per Capita

R&D expenditures per capita is a frequently used indicator to make comparisons among countries in terms of the level of spending on R&D. Figure 5.7 presents data for R&D expenditures per capita in the last decade. It shows that of the 31 OIC countries with available data, only Malaysia (\$253.3), Kuwait (\$229.6) and Turkey (\$174.7) have per capita levels above one hundred dollars as of 2014. They are followed by Gabon (\$85.5), Tunisia (\$72.7), Egypt (\$70.4)

Figure 5.6: Trends in R&D Intensity



**Figure 5.7: R&D Expenditures per Capita (PPP \$)**


Source: UNESCO, UIS Data Centre. \* Or first year available before 2000. \*\* Or last year available before 2014.

The lowest rates are recorded in Gambia, Burkina Faso, Togo, Tajikistan, Mozambique and Kyrgyzstan and Iraq, all allocating less than \$5 expenditure on R&D per capita.

The average R&D expenditure per capita in OIC countries is calculated as \$66.7, which is well below the world average (\$271) and the average of developed countries (\$863), but slightly higher than the average of non-OIC developing countries (\$65). In top performing countries in the world, Sweden and USA, this figure is even above \$1,440, which is more than 21 times of the OIC average.

From 2000 to 2014, R&D expenditures per capita increased by an average of only \$54 in the group of OIC countries, compared to \$147 in the world and \$210 in developed countries, which could be considered as another source and indicator of divergence between OIC countries and the rest of the world in the area of scientific development.

In terms of change in their GERD per capita during the period 2000-2014, Malaysia, Kuwait and Turkey were the top three countries with \$209, \$186 and \$130 increments, respectively. In addition to these, 23 OIC countries with available data reported also an increase in their GERD per capita ranging

between \$63.1 (Egypt) and \$1 (Burkina Faso). On the other hand, only Algeria reported a decline in their GERD per capita. Algeria experienced the sharpest decline during this period, as its GERD per capita fell down from \$12.4 to \$7.2.

### 5.2.3 Sectoral Distribution of R&D Expenditures

GERD is the sum of R&D in all sectors that reflects the overall performance of countries altogether. However, it is often useful to disaggregate data at the sectoral level to see the investments made in different sectors. From a policy-making perspective, disaggregation of R&D data at the sectoral level allows decision-makers to undertake a more in-depth analysis and develop relevant policy tools. This sectoral disaggregation is based on the United Nations classification that defines four major sectors of performance: government, business enterprise, higher education and private non-profit.

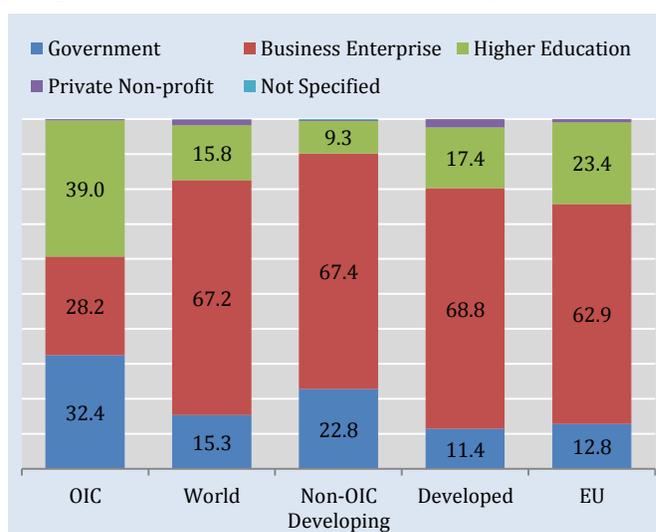
In this respect, an examination of GERD by sector of performance reveals that the higher education sector (39%) accounts for the largest share of the expenditure on R&D in OIC countries, while government (32.4%) and business enterprise

(28.2%) have shares that are closer to each other. However, the average share of government in OIC countries is more than double the government sector share in the world (15.3%), about three times higher than the share in developed countries (11.4%) and also visibly higher than the non-OIC developing countries (Figure 5.8). While around two-thirds of the expenditures on R&D are made by private sector in the rest of the world, participation of businesses to research and development activities in OC countries appears to be comparatively weak. However, strong presence of higher education institutions in OIC countries is noteworthy.

At individual country level, in 13 OIC member countries, more than 50% of GERD is spent by the government sector. This share reaches over 90% in Iraq and Brunei. Despite having a share of less than 50%, government sector in Oman (41.6%), UAE (39.6%), Indonesia (39.4%) and Uganda (38.6%) is still the dominant sector, spending more on R&D than the other sectors do (Figure 5.8).

The share of business enterprise in GERD is highest in Malaysia with 64.4 %. It was followed by Turkey, where 47.5 % of the total GERD is spent by private sector. Moreover, in Uganda (34.8%) and Sudan (33.7%), enterprises account for more than 30% of

Figure 5.8: Sectoral Distribution of GERD (%)\*

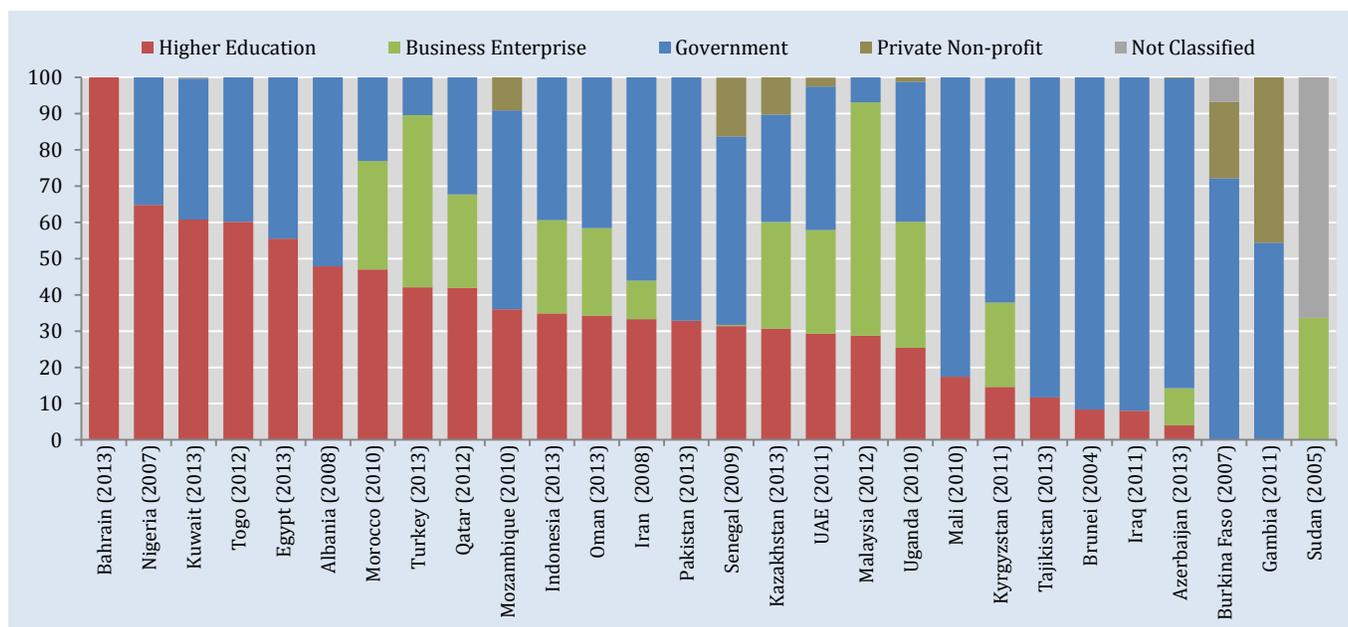


Source: UNESCO, UIS Data Centre. \* Data for the most recent year available.

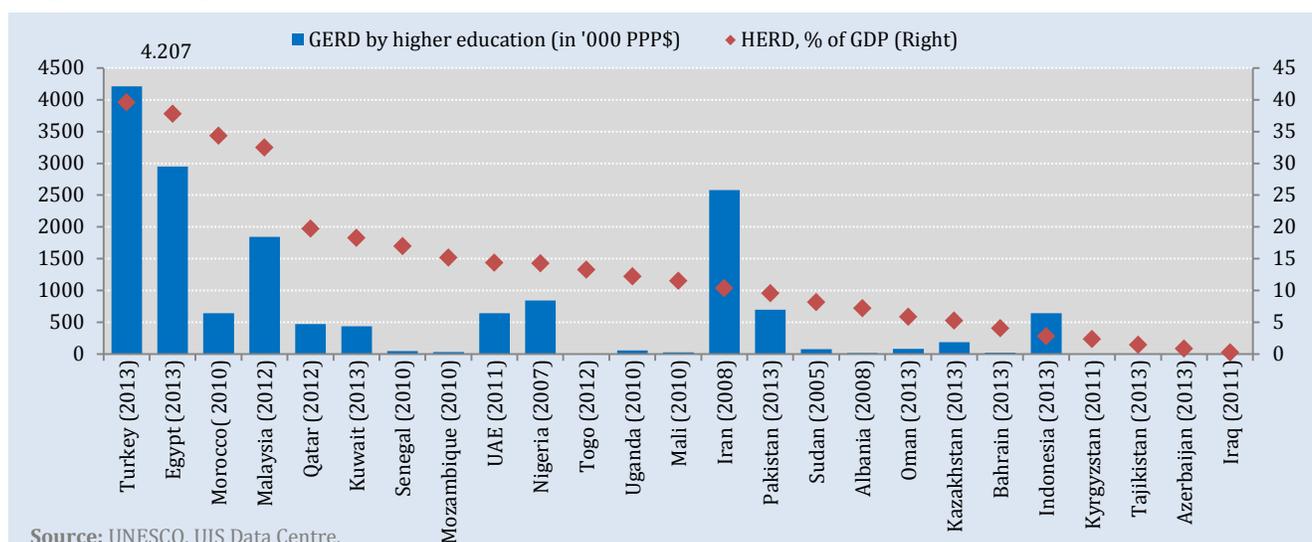
the GERD. Private sector activity in R&D is not available or only at negligible levels in Bahrain, Nigeria, Kuwait, Togo, Egypt, Albania, Mozambique, Pakistan, Mali, Tajikistan, Brunei, Iraq, Burkina Faso and Gambia.

In Bahrain, higher education sector accounts for up to 100% of the total GERD. It was followed by Nigeria (64.8%), Kuwait (60.8%) and Togo (60.2%). Higher education is also the leading sector in Egypt,

Figure 5.9: Sectoral Distribution of GERD (%)\* in OIC Member Countries

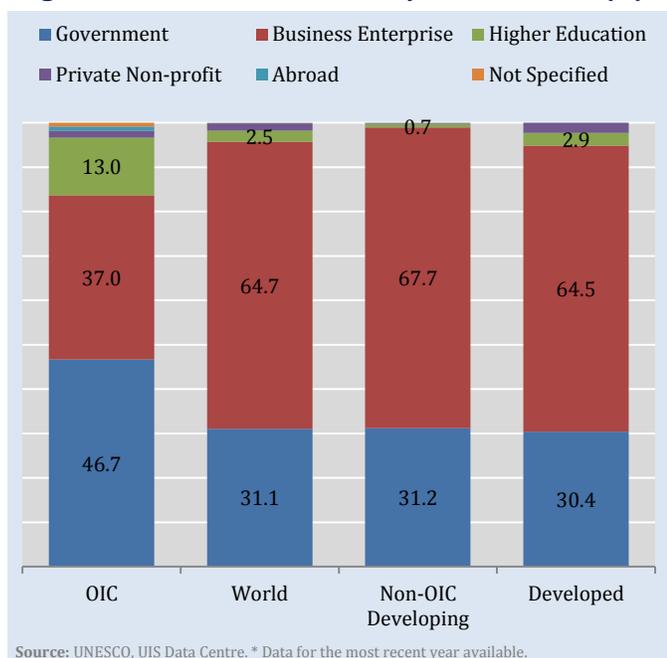


Source: UNESCO, UIS Data Centre. \* Data for the most recent year available.

**Figure 5.10: Higher Education Expenditure on R&D in OIC Countries**


Morocco and Qatar accounting respectively for 55.5%, 47% and 41.9%, of the total GERD. Furthermore, more than one third of the GERD in Turkey, Mozambique, Indonesia, Oman, Iran, Pakistan, Senegal and Kazakhstan are also recorded by this sector.

The share of R&D expenditures by the private non-profit sector is at a negligible level in all of the member countries except in Gambia (45.6%),

**Figure 5.11: Distribution of GERD by Source of Funds (%)**


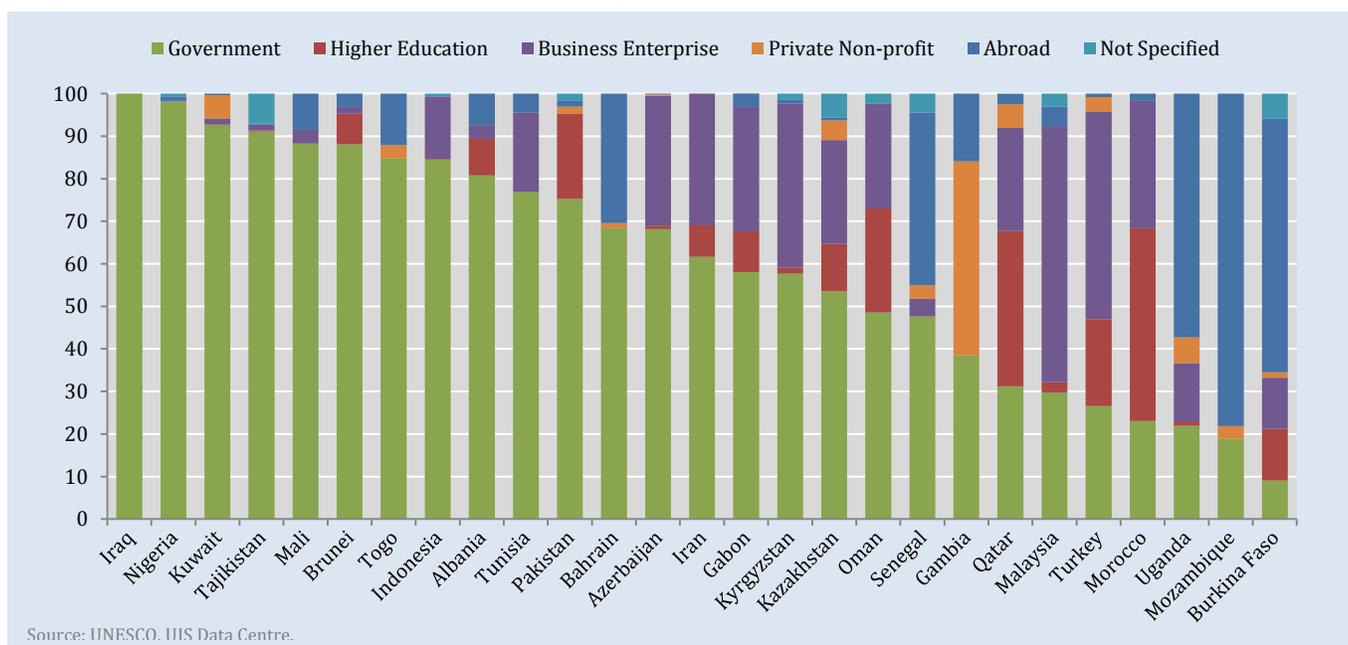
Burkina Faso (21.1%), Senegal (16.2%), Kazakhstan (10.2%), Mozambique (9.1%), UAE (2.4%), Uganda (1.2%) and Azerbaijan (0.2%).

Accounting for 38.9% of total R&D spending, higher education expenditure on R&D (HERD) is proportionally greater in the OIC than the averages of developed countries (17.4%), world (15.7%) and non-OIC developing countries (9.2%). Figure 5.10 shows the OIC countries with respect to HERD as a percentage of GDP and absolute HERD in constant million PPP\$. The investment by higher education sector in Turkey is most notable here both in terms of total GERD expenditure on higher education and the HERD as a percentage of GDP (39.5%). It was followed by Egypt and Iran, where higher education sector spends more than two million dollars.

### 5.3 R&D Funds by Source

Figure 5.11 presents information on the funding sources of R&D by country groups. Source distribution of the GERD has been made again on a sectoral basis as specified in the analysis of GERD by sector of performance, yet including additionally the funds from abroad. The R&D funding of OIC member countries is again proportionally more dependent on government sector, which constitutes 46.7% of the total funding, while the share of higher education is around 13%. Indeed, it is usually the

**Figure 5.12: Distribution of GERD by Source of Funds (%) in OIC Member Countries**



case that a significant share of higher education expenditure on R&D is also government-funded R&D.

Globally, business sector is the major R&D funder with a share of 64.7%, while 37% of the GERD is financed by business enterprises in OIC countries. This suggests a relatively underperforming business sector in many OIC countries.

At individual country level, R&D is mainly financed by the government sector in most of the OIC member countries. Out of the 27 member countries for which data are available, 17 countries receive more than %50 of R&D funds from the government. In Iraq, all of the GERD is financed by the government. The share of government funding is also over 90% in Nigeria, Kuwait and Tajikistan. Despite having a share of less than 50%, government sector in Oman (48.5%) and Senegal (47.6%) and is the dominant sector, providing more R&D funds than the other sectors. The lowest rate in terms of government’s share in R&D funding is observed in Burkina Faso (9%)

Private sector funding for R&D is particularly strong in relatively more advanced OIC countries. The sector accounts for 60.1% of the total R&D funds in

Malaysia. Business sector is also dominant in Turkey, which provides 48.8% of the total R&D funds. On the other hand, the R&D funding by business enterprises is less than 2% in Brunei, Kuwait, Tajikistan, and Nigeria.

Higher education sector in Morocco provides 45.3% of the total R&D funds, which is the highest rate among all OIC countries with available data. It was followed by Qatar and Oman where the shares of higher education sector in GERD funding were 36.5% and 24.4%, respectively. Additionally, sector’s share exceeds 10% in Turkey, Pakistan, Burkina Faso and Kazakhstan.

In Mozambique, 78.1% of the R&D was financed by funds from abroad. Burkina Faso and Uganda also deserve special attention as their R&D funds mostly come from abroad, 59.6%, and 57.3% respectively.

### 5.4 Patent Applications

Intellectual property rights, especially patents, are among the key factors contributing to advances in innovation and scientific development. As a product of R&D activities, patents strengthen the link between science and technology, as output of research translates into new products or services. In

this regard, while not all inventions are patented, the number of patent applications may be considered as a proxy for the degree of innovative capability in a country.

According to statistics from the World Intellectual Property Organization (WIPO), the total number of patent applications around the world in 2014 is estimated to be 2.68 million, including 160,191 applications filed by Regional Patent Offices (RPOs).<sup>4</sup> With 46,781 patents overall, OIC member countries accounted for nearly 1.74% of total patent applications (Figure 5.13). Meanwhile, 78.6% of global patents are filed by 5 countries, namely China (34.6% with 928,177 patents), USA (21.6% with 578,802 patents), Japan (12.2 % with 325,989 patents), Republic of Korea (7.8% with 210,292 patents) and Germany (2.5% with 65,965 patents).

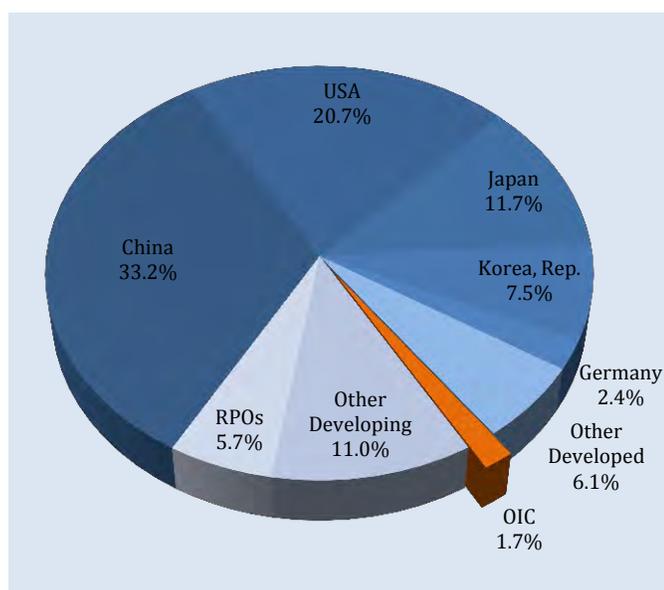
Underlining its relatively strong business sector within the OIC, Iran demonstrated the highest patent activity with 13,802 applications in 2014. It was followed by Indonesia with applications

reaching 8,023 in 2014 (Figure 5.14). Adding the patent applications of Malaysia (7,620) and Turkey (5,097) to those of Iran and Indonesia, these four OIC countries alone constitute nearly 74% of the OIC total. Egypt (2,136), Kazakhstan (2,013), UAE (1,472) and Morocco (1,097) are other member countries that filed over 1000 applications each.

In most of OIC countries for which data are available, applications by non-residents are higher than those filed by residents. In 28 of the 31 countries, non-resident applications account for more than 46% of the total applications. In quantity, they are the highest in Indonesia (7,321) and Malaysia (6,267), accounting for 17% and 16% of total applications, respectively. Applications by residents dominate only in 12 out of 31 member countries, and in quantity, they are highest in Iran (13,683) and Turkey (4,766).

Such low numbers clearly demonstrate that more could be done to link the OIC's research output to wealth creation and industry. The creation of robust intellectual property rights (IPR) regimes should be a priority across the OIC region. Consideration should also be given to measuring other key indicators such as the "impact factor" of patents (the percentage of patents that are commercialized), the number of new products developed, revenues from new products, and the number of start-up companies.

**Figure 5.13: Distribution of World Total Patent Applications by Office**



Source: World Intellectual Property Organization, Statistics on Patents, June 2016

<sup>4</sup> The Regional Patent Offices are African Intellectual Property Organization, African Regional Intellectual Property Organization, Eurasian Patent Organization, European Patent Office and Patent Office of the Cooperation Council for the Arab States of the Gulf.

## 5.5 Scientific Publications

Academic research is one of the most important components of research activities conducted in a country. To a certain extent, the performance in academic research can be well reflected by the number of scientific articles published in indexed journals. In this regard, the quantity and the growth of the research output, *i.e.*, articles, are indicators commonly used to measure the research performance of a given institution or country. Indeed, such bibliometric indicators have been widely used in national science and technology statistics publications to measure scientific capacity and linkages to world of science (UNESCO, 2005)

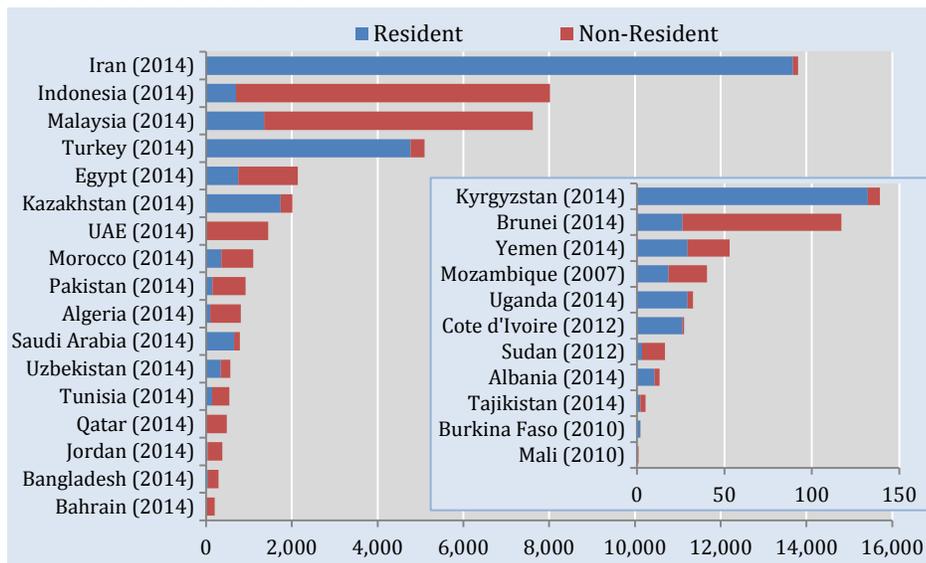
and particularly in national and international rankings of universities.<sup>5</sup>

In 2015, OIC member countries as a whole published 140,497 articles<sup>6</sup> in journals that are covered by Science Citation Index Expanded (SCI-EXPANDED), Social Science Citation Index (SSCI), and Arts & Humanities Citation Index (A&HCI). Although this represents more than a four-fold increase compared to 20,242 articles published in 2000, the total amount reached is still below those of some individual countries in the world, including the USA and China (Figure 5.15).

However, the overall trend for OIC countries is promising. Articles published in the world more than doubled from 924,000 to 2.07 million in 2015, while the OIC countries, as a group, experienced more than 594.1% increase in the same period. Consequently, the OIC's share of global publications steadily grew, from just 2.2% in 2000 to 6.9% in 2015 (Figure 5.16). In general, together with OIC countries, the shares of China and other developing countries have also substantially increased during the period under consideration.

Figure 5.17 presents information on the contribution of each OIC member country to this output. As shown, publication of articles in scientific journals is heavily concentrated in few of the OIC member countries. Nearly half of the total articles (43.45%) originate from only two member countries, Iran (22%) and Turkey (21.5%). Together with Saudi Arabia (9.7%), Malaysia (8.1%), Egypt (7.4%) and

**Figure 5.14: Patent Applications by Residents and Non-residents in OIC Member Countries (2014)**

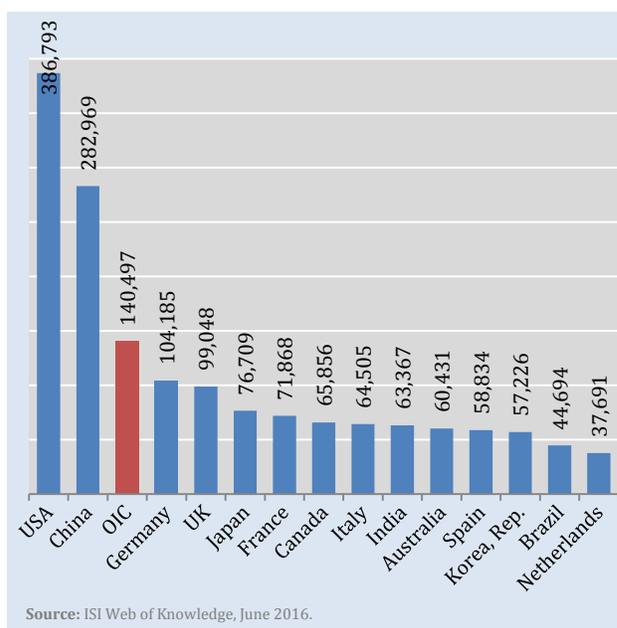


Source: World Intellectual Property Organization, Statistics on Patents, June 2016.

Pakistan (5.7%), these six countries alone account for 74.4% of all published articles in OIC.

11 member countries published articles within the range of 1,000-3,000, namely Algeria, Nigeria, Indonesia, United Arab Emirates, Morocco, Lebanon, Bangladesh, Jordan, Qatar, Iraq and Uganda. Nigeria (2,878) and Uganda (1,027) stand out as the only Sub-Saharan African members with over 1,000

**Figure 5.15: Total Number of Articles Published in 2015**

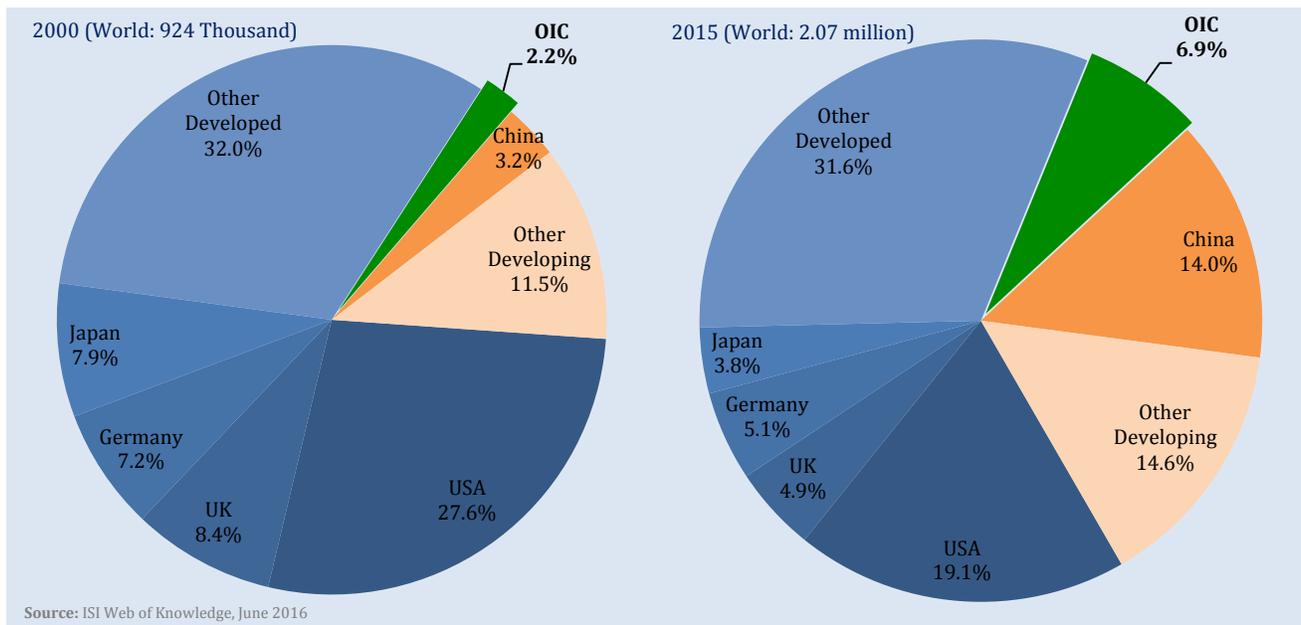


Source: ISI Web of Knowledge, June 2016.

<sup>5</sup> For example, Academic Ranking of World Universities by Shanghai Jiao Tong University (SJTU), World University Rankings by the Times Higher Education Supplement (THES), and also the OIC University Ranking make use of the research output as an important indicator in their ranking methodologies.

<sup>6</sup> The total reflects the sum of individual OIC countries and it is not refined for internationally co-authored papers.

**Figure 5.16:** Distribution of Global Articles Published (2000 vs. 2015)



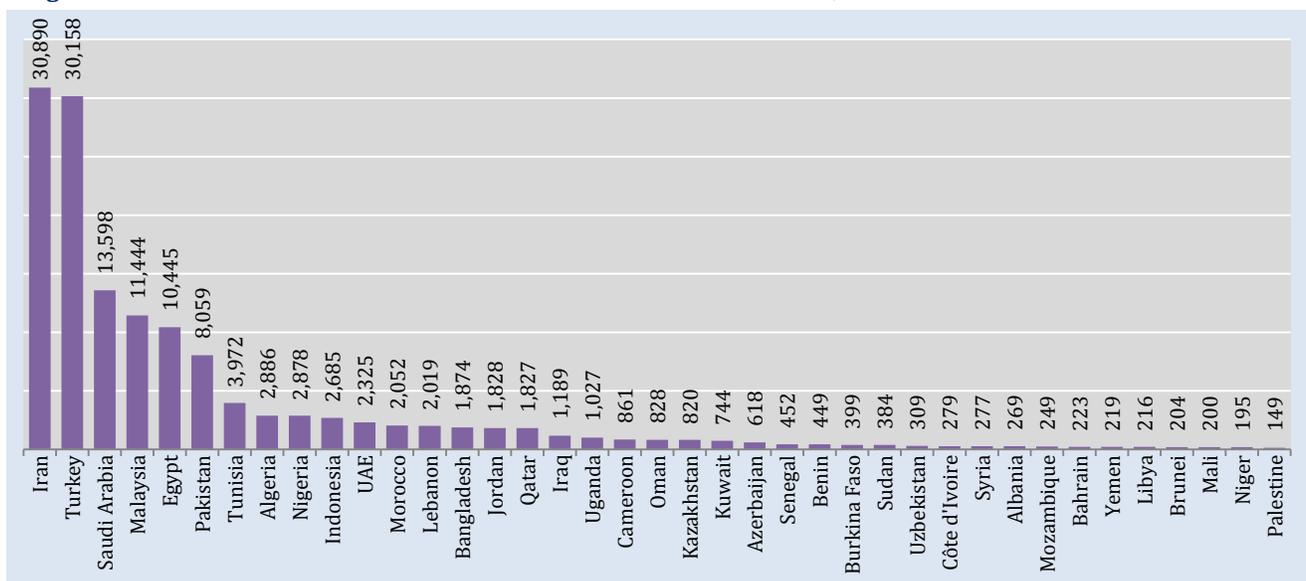
articles, the closest in the region being Cameroon with 861 publications.

Some other member countries in the Middle East & North Africa, South Asia, and East Asia & Pacific also perform well while those in Latin America, Sub-Saharan Africa, and Central Asia are generally lagging behind.

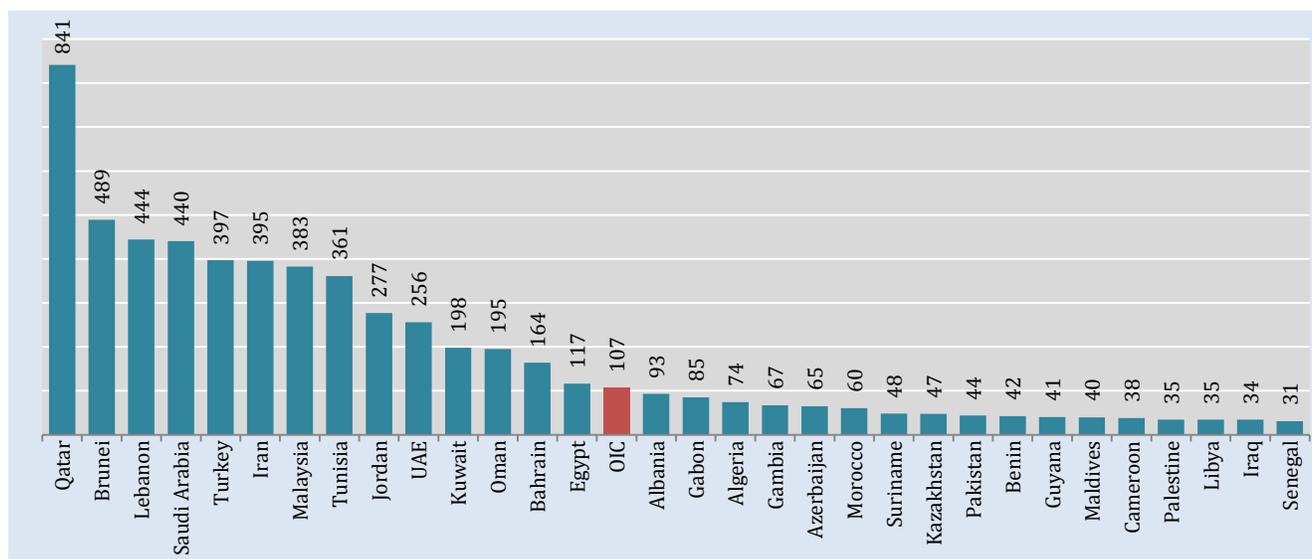
The number of countries having published less than 100 articles is 14, five of which published less than 20 articles in 2015. These countries are not concentrated in one region but dispersed across regions: for instance; from Somalia in Sub-Saharan Africa and Maldives in South Asia to Turkmenistan in Central Asia.

The growth in the number of articles on a per-capita

**Figure 5.17:** Total Number of Articles Published in OIC Member Countries\*, 2015



Source: ISI Web of Knowledge, June 2016. \* Total number of articles published in journals covered by Science Citation Index Expanded (SCI-EXPANDED), Social Science Citation Index (SSCI), and Arts & Humanities Citation Index (A&HCI).

**Figure 5.18: Articles per Million People in OIC Member Countries, 2015**


Source: ISI Web of Knowledge, August 2016

basis reflects a better indicator of productivity in scientific publications as it takes into account the relative size of the population in the countries compared. On average, OIC member countries produced only 16 articles per million people (PMP) in 2000 while this number increased to 83 in 2015, which is still very low compared to some advanced countries, such as Switzerland (3,469), Sweden (2,703) and Singapore (2,352). Overall, according to 2015 data, there are only 14 members with articles PMP above 100. Qatar, with 841 articles took the lead, followed by Brunei, Lebanon, Saudi Arabia, Turkey, Iran and Malaysia. Tunisia, Jordan, and UAE also produced over 200 articles per million people while Kuwait, Oman, Bahrain and Egypt succeeded in entering the top 16. On the other hand, 24 member countries produced less than 20 articles per million people in 2015 (Figure 5.18).

When the performance of individual member countries in 2015 are compared with its values in 2000, it is observed that 54 out of the 57 member countries recorded an increase in the number of published articles, but the increase was no more than 10 articles PMP in 20 of these countries (Figure 5.19). Qatar, in absolute terms, took the lead in boosting scientific productivity with an increase of 772 articles PMP, followed by Brunei (386), Saudi Arabia (375), Iran (375) Malaysia (346), Turkey

(312), Tunisia (301), and Lebanon (264). Nine other countries, namely United Arab Emirates, Jordan, Oman, Albania, Egypt, Bahrain, Algeria, Gabon and Azerbaijan recorded an increase of over 40 articles PMP.

Three out of the 57 members, namely Kuwait, Uzbekistan and Turkmenistan recorded a decrease in their articles PMP. The highest decrease was reported for Kuwait (61 articles), while the decrease for others was less than three articles. However, Kuwait still ranks in the twelfth place with respect to articles per million people in 2015. At the other side of the spectrum, there are member countries with even less than two articles PMP, namely Turkmenistan, Afghanistan and Somalia.

## 5.6 Knowledge and Innovation

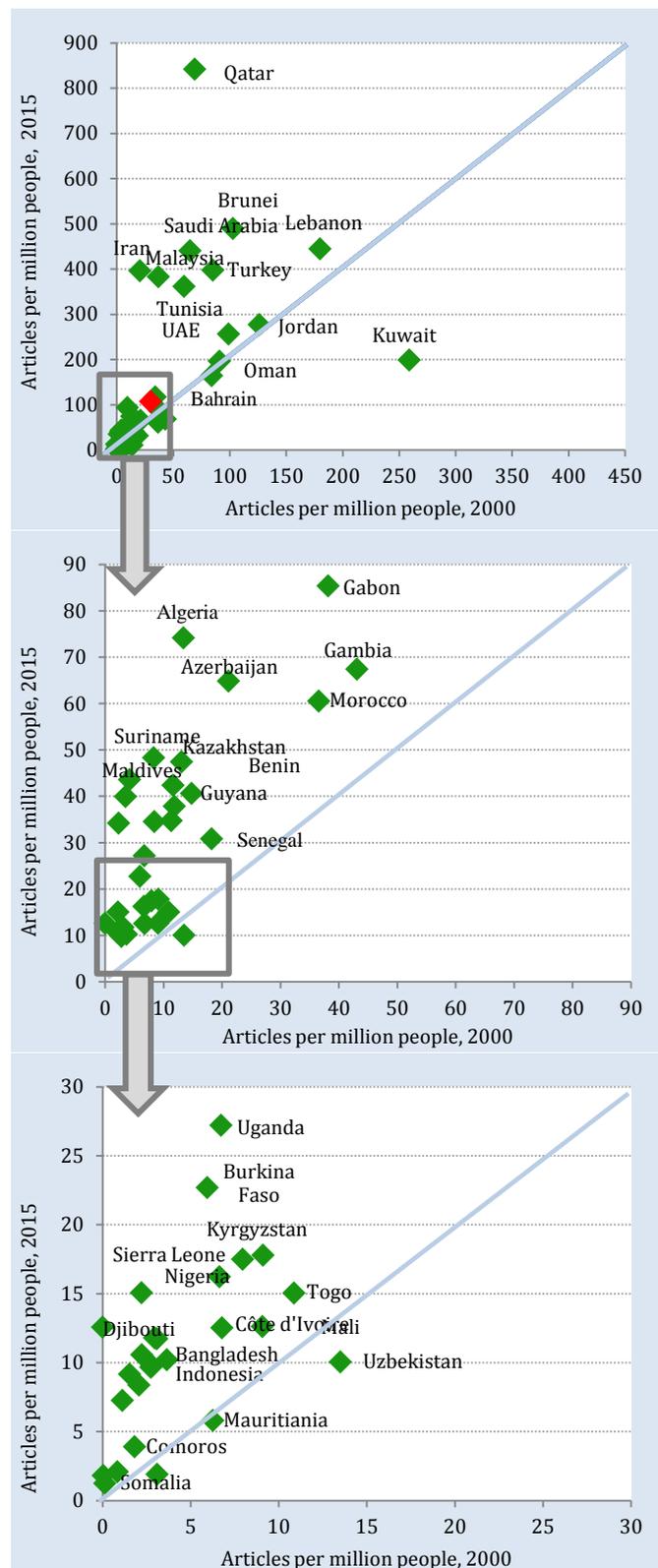
Higher education institutions and research and development programs are the main forces in helping to boost economic growth and competitiveness for the knowledge-based societies. However, for most of the developing countries, the transition to the knowledge economy is not an easy goal to achieve. In order to compare the innovative capacities of countries, two indices will be used. The first index, called “Capacity for Innovation”, measures the way the technology obtained by

companies and it is published by World Economic Forum (WEF). Scaling countries from 1 to 7, this index aims to gauge the overall capacity of countries for innovating new products and process. A country receives 1 if technology is obtained exclusively from licensing or imitating foreign companies and receives 7 if it is obtained by conducting formal research and pioneering their own new products and processes.

According to the latest data reported in World Competitiveness Report 2015-2016 of World Economic Forum (WEF), the average value of Capacity for Innovation in OIC countries was 3.79, which is below the world average (4.02) but close to the average of non-OIC developing countries (3.77). It is also well below the average of developed countries (4.86). As shown in Figure 5.20 (top), innovation capacity in only 9 OIC member countries is above the world average. Malaysia, UAE and Qatar are the top three member countries (7<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup>, respectively). The innovation capacity of Malaysia, UAE and Qatar exceeds the average of developed countries as well. Benin, Uganda, Indonesia, Senegal, Côte d'Ivoire, Lebanon, Cameroon and Jordan are the other OIC countries ranked within the top 50 countries in the world. On the other hand, 9 of the 20 worst performing countries belong to the OIC region.

The second index is called the “Global Innovation Index (GII)” and prepared by INSEAD Business School and the World Intellectual Property Organization (WIPO). It is a composite indicator that ranks countries/economies in terms of their enabling environment towards innovation and their innovation outputs. The latest version includes 143 economies, which represent around 95% of the world’s population and more than 99% of the world’s GDP (in current US dollars). The index is calculated as the average of two sub-indices: The Innovation Input Sub-Index gauges elements of the national economy which embodies innovative activities grouped in five pillars: (1) Institutions, (2) Human capital and research, (3) Infrastructure, (4) Market sophistication, and (5) Business sophistication. The Innovation Output

Figure 5.19: Evolution of Articles per Million People



Source: ISI Web of Knowledge, August 2016.

Sub-Index captures actual evidence of innovation results, divided in two pillars: (6) Knowledge and technology outputs and (7) Creative outputs.

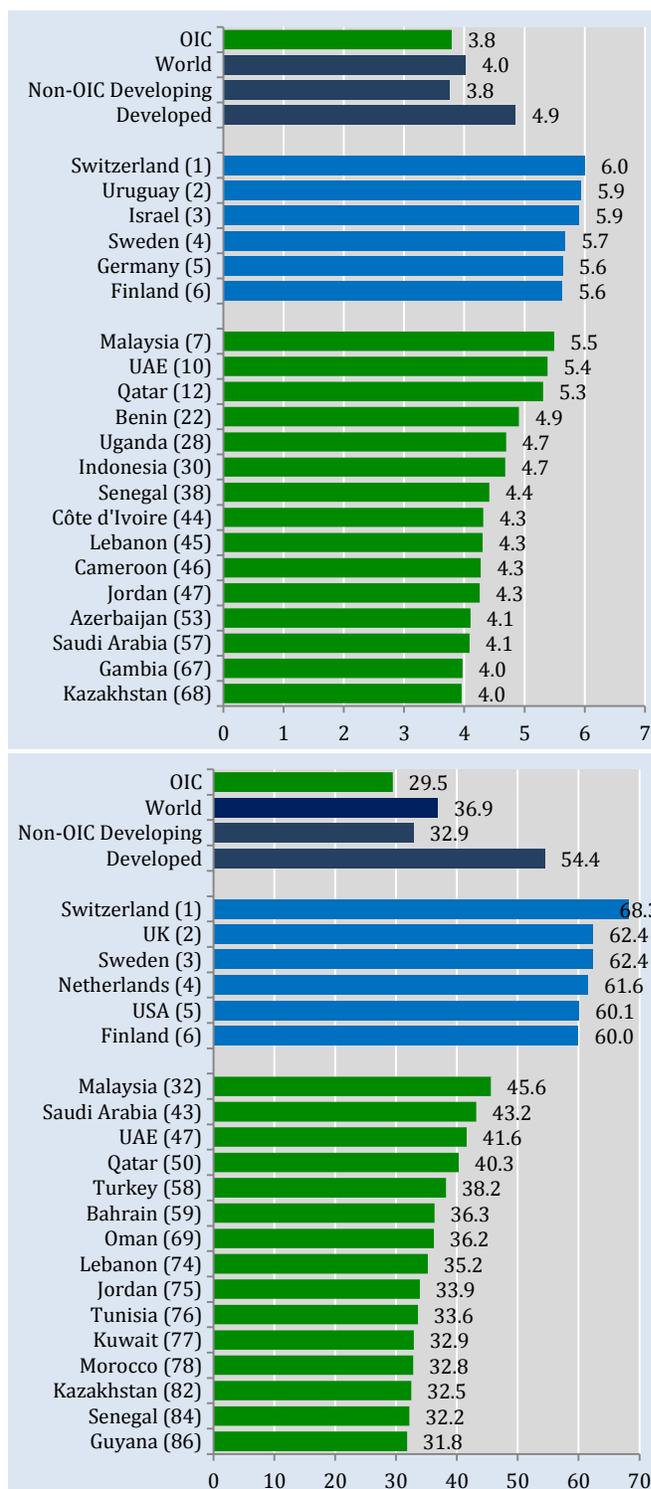
According to the 2015 version of the GII, the average value of the index in OIC countries is 29.5, which is lower than the world average (36.9) and the average of non-OIC developing countries (32.9). It is also well below the average of developed countries (54.4). The best performer is Switzerland with an index value of 68.3 and the worst performer is Sudan with an index value of 15. Malaysia, Saudi Arabia and the UAE are the three best performing OIC member countries ranking 32<sup>nd</sup>, 43<sup>th</sup> and 47<sup>th</sup>, respectively. Including Qatar and Turkey, five OIC countries have GII above the world average. Additionally, the score of ten member countries are higher than the average of non-OIC developing countries whereas there is no OIC country above the average of developed countries. On the other hand, 10 of 20 worst performers are OIC countries (Figure 5.20, bottom).

These two indices indicate that OIC countries, on average, are lagging behind in terms of their innovativeness. Therefore, they need to enhance their innovative capacities and improve their enabling environment for innovating new products and processes. This will ensure long term sustainable growth and help them to increase their competitiveness *vis-à-vis* other countries.

Being the key to productivity, innovation can be defined as the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.

To better understand innovation and its relation to economic growth in each country, indicators are needed for benchmarking national performance. Accordingly, UIS Data Centre disseminated the initial results of innovation data collection covering 64 countries in July 2014. This is the first time that a database with innovation indicators from countries at different stages of development has been produced and made publicly available.

**Figure 5.20: Capacity for Innovation (Top) and Global Innovation Index (Bottom), 2015\***



Source: World Economic Forum; INSEAD Business School and WIPO.

\* Capacity for Innovation is calculated for 148 countries and 42 OIC members while Global Innovation Index is calculated for 143 countries and 41 OIC members. The index values for the world, OIC and other country groups are calculated by taking simple averages of index values for the relevant countries. Numbers in parenthesis indicate the rank of the countries among the all included countries.

Percentage of innovation-active firms is one of the indicators used to measure the degree of innovativeness in a country. Firms that have had innovation activities during the period of the innovation survey, including those with ongoing and abandoned activities, are considered to be innovation-active regardless of whether the activity resulted in the implementation of an innovation.

Table 5.1 presents the countries with available data with respect to percentage of innovation-active forms in manufacturing. Among the seven OIC countries included in the survey, Uganda is the top country with a share of 77%. It was followed by Nigeria and Uganda where more than half of the firms in manufacturing are also innovation-active.

## 5.7 High-Technology Exports

High-technology exports (HTE) are defined as products with high R&D intensity, such as computers, consumer electronics, semiconductors, scientific instruments, electrical machinery and pharmaceuticals, which mostly depend on an advanced technological infrastructure and inward FDI in high-tech industries.

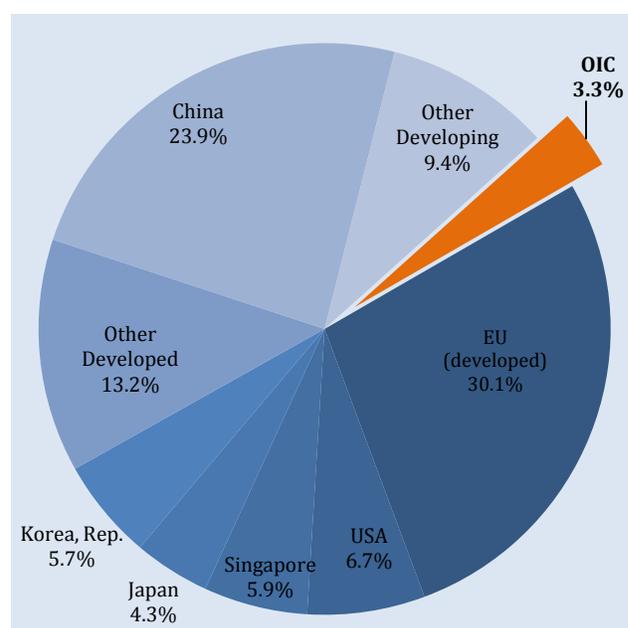
World high-technology exports increased to around \$2.34 trillion in 2014 from its \$1.98 trillion level observed in 2012. Around 63.4% of that amount originated from developed countries, 27.6% from EU members, 6.7% from the USA, 5.9% from Singapore, 4.3% from Japan, 5.7% from Korea

**Table 5.1: Percentage of Innovation-active Firms in Manufacturing**

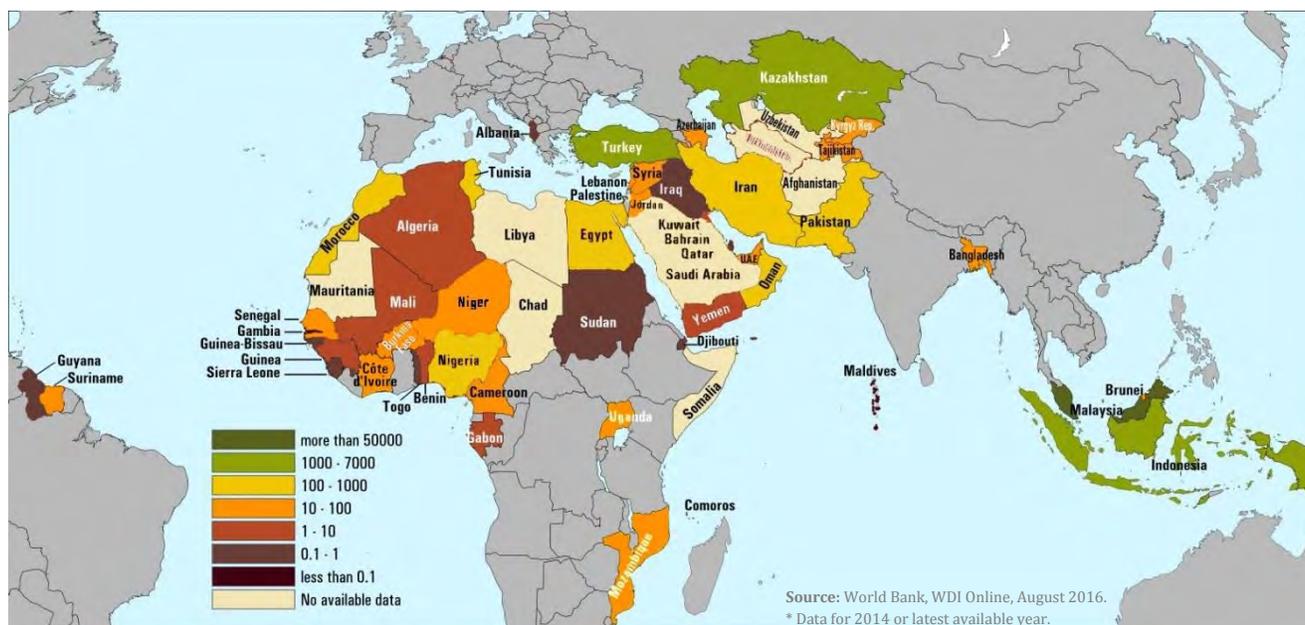
OIC (7)	YEAR	Developing (26)	YEAR	Developed (25)	YEAR
Uganda	77.0	2010	Cuba	81.2	2005
Nigeria	65.0	2010	Canada	74.8	2012
Malaysia	57.0	2011	Costa Rica	80.6	2011
Indonesia	32.0	2010	Ghana	72.5	2010
Turkey	29.8	2012	Tanzania	61.3	2010
Kazakhstan	12.5	2012	Ecuador	58.6	2011
Egypt	10.1	2010	Kenya	55.2	2011
			Philippines	50.2	2010
			Panama	47.3	2008
			Serbia	43.0	2012
			El Salvador	40.0	2012
			Argentina	39.0	2007
			Brazil	35.9	2011
			Croatia	35.2	2010
			Colombia	30.3	2010
			China	29.1	2006
			Uruguay	28.6	2009
			Belarus	25.1	2012
			S. Korea	24.2	2011
			South Africa	20.9	2007
			Bulgaria	20.6	2012
			Lithuania	20.2	2012
			India	18.5	2009
			Latvia	17.7	2012
			Poland	17.1	2012
			Hungary	16.5	2012
			Romania	16.0	2012
			Japan	33	2011
			Germany	63.3	2012
			Belgium	53.4	2012
			Ireland	52.4	2012
			Netherlands	50.3	2012
			Luxembourg	56.3	2012
			Iceland	50.7	2010
			Estonia	43.3	2012
			Finland	52.3	2012
			Austria	43.9	2012
			Sweden	49.3	2012
			Denmark	41.5	2012
			Italy	45.9	2012
			Portugal	39.8	2012
			Israel	36.2	2012
			New Zealand	49.4	2012
			Cyprus	31.4	2012
			France	42.7	2012
			Czech Rep.	40.4	2012
			Greece	35.5	2012
			UK	38.4	2010
			Malta	43.2	2012
			Norway	35.0	2010
			Slovakia	20.3	2012
			Spain	28.5	2012

Source: UNESCO, UIS Data Centre, 2016.

**Figure 5.21: HTE, % of World Total, 2014**



Source: World Bank. WDI Online.

**Map 5.2: High Technology Exports (Million US\$)\***


Republic and 13.2% from other developed countries (Figure 5.21). The HTE of Germany (199 billion \$) and France (115 billion \$) constitute nearly half of the total HTE of the EU, with 31 % and 18% individual shares, respectively.

With an export volume of 558.6 billion USD high technology products, China is the largest exporter of HTE, accounting for almost one fourth of the world total HTE and 65% of the total HTE of developing countries. Confirming the lack of adequate infrastructure and technological sophistication in most of OIC countries, it is observed that all the member countries for which data are available accounted for only 3.3% of the world total HTE of \$2.34 trillion or 9.1% of the total HTE of developing countries.

Map 5.2 shows the performances of individual OIC member countries. With an annual volume of more than \$63.3 billion, Malaysia accounts for nearly 82% of the total HTE of the OIC. It is also the 11<sup>th</sup> largest exporter of high-technology products in the world, accounting for 3.1% of the world HTE. Together with Indonesia (\$4.98 billion), the combined contribution of these two South East Asian OIC

countries is over 43% of the US \$155 billion HTE total.

These two countries are followed by Kazakhstan and Turkey with HTE volumes of \$3.32 billion and \$2.34 billion, respectively. With exception to these 4 countries, none of the OIC countries exceeded the threshold of \$1 billion. Morocco (\$869 million), Tunisia (\$616 million) and Iran (\$653 million) have a HTE of more than half a billion, whereas Pakistan, Oman, Egypt and Nigeria recorded HTE figures varying between \$140 million (Nigeria) and \$259 million (Pakistan).

It should be highlighted that Cote d'Ivoire, with \$72 million in HTE, is far ahead of other Sub-Saharan African members. It ranked as 13<sup>th</sup> largest exporter of high-technology products in the OIC. On the other hand, the HTE of the majority of other member countries fall below \$100 million. At the bottom end, Iraq and Qatar recorded HTE figures around \$40,000 while Guinea-Bissau exported even less than \$5,000 worth of high technology products.

## References

- Brookings Institution (2011), *The Global Compact on Learning: Policy Guide*. Washington, D.C.: The Center for Universal Education.
- Glewwe, P., Hanushek, E. A., Humpage, S. D., and Ravina, R. (2013), "School Resources and Educational Outcomes in Developing Countries: A Review of the Literature from 1990 to 2010," in P. Glewwe (Ed.), *Education Policy in Developing Countries*, Chicago: University of Chicago Press.
- Hanushek E. A. (2013), "Economic growth in developing countries: The role of human capital," *Economics of Education Review* 37, 204–212.
- Hanushek E. A. and L. Woessmann (2015), *The Knowledge Capital of Nations: Education and the Economics of Growth*, CESifo Book Series, Cambridge, MA: MIT Press.
- IMF, World Economic Outlook (WEO), Online Database, April 2016, International Monetary Fund, Washington, DC.
- ISI Web of Knowledge, Online Database, August 2016.
- Kamal M. & A. Bener (2009), "Factors contributing to school failure among school children in very fast developing Arabian Society." *Oman Med J* 24.3: 212-7.
- OECD (2007), *OECD Insights: Human Capital - How What You Know Shapes Your Life*, Organisation for Economic Cooperation and Development, OECD Publishing, Paris.
- OECD (2013), *Education Policy Outlook: Turkey*. October, 2013.
- SESRIC (2016), *OIC Economic Outlook 2016*, Ankara.
- UNESCO (2005), "What do bibliometric indicators tell us about world scientific output?", UNESCO Institute for Statistics (UIS) Bulletin on Science and Technology Statistics, Issue 2, September 2005.
- UNESCO (2009), *Education Indicators: Technical Guidelines*, United Nations Educational, Scientific and Cultural Organization, Paris.
- UNESCO (2010), *Education for All Global Monitoring Report*, United Nations Educational, Scientific and Cultural Organization, Paris.
- UNESCO Institute for Statistics, UIS Data Centre, August 2016, Paris.
- WEF (2015), *Global Competitiveness Report 2015-2016*, World Economic Forum, Geneva.
- WIPO, Statistics on Patents, July 2016.
- World Bank (2011), "Learning for All: Investing in People's Knowledge and Skills to Promote Development", World Bank Group Education Strategy 2020, Washington, DC.
- World Bank, World Development Indicators Online Database, August 2016, Washington, DC.



# COUNTRY PROFILES

## Data Sources:

International Labour Organization, Key Indicators of Labour Market 9<sup>th</sup> Edition

International Monetary Fund, World Economic Outlook Database

ISI Web of Knowledge

Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC), BASEIND Database

United Nations Development Program (UNDP), Human Development Report 2016

United Nations Educational, Scientific and Cultural Organization (UNESCO), UIS Data Centre

World Bank, Education Statistics

World Bank, World Development Indicators (WDI) Online Database

World Economic Forum, Global Competitiveness Report

World Intellectual Property Organization (WIPO), Statistics on Patents

## AFGHANISTAN

### GENERAL INFORMATION

Population (mln)	2015	32.53
Population Growth (%)	2015	2.80
Urban Population (% of total population)	2015	26.70
Labour Force Participation Rate (%)	2015	52.5
Unemployment Rate (% of labor force)	2015	9.6
GDP per capita (PPP, cur. \$)	2015	1,947
Infant Mortality (per 1,000)	2015	66.30
Life Expectancy at birth (years)	2015	52.30

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2003	0.8	...	...	2003	0.79
Primary Schools	2014	111.7	...	...	2014	0.70
Secondary Schools	2014	55.7	2014	48.75	2014	0.56
Tertiary Schools	2014	8.7	n/a	n/a	2014	0.28

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	3.2
Primary Completion Rate (Total)	...	...
Repetition Rates in Primary (all grades)	...	...
Repetition Rates in Secondary (all grades)	...	...
Survival Rate to Last Grade of Primary	...	...
Transition Rate from Primary to Secondary	...	...

### LITERACY RATES (%)

Youth	
Male	69.4
Female	46.1
Total	58.2
Adult	
Male	51.5
Female	23.9
Total	38.2

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2013	45.7
Public Education Spending (% of GDP)	2014	4.80
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	12,003
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	57
Articles (per million people)	2015	1.80

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.465	Low	171
Global Competitiveness Index (2015-2016)	..	...	..

## ALBANIA

### GENERAL INFORMATION

Population (mln)	2015	2.89
Population Growth (%)	2015	-0.16
Urban Population (% of total population)	2015	57.41
Labour Force Participation Rate (%)	2015	50.3
Unemployment Rate (% of labor force)	2015	17.3
GDP per capita (PPP, cur. \$)	2015	11,301
Infant Mortality (per 1,000)	2015	12.50
Life Expectancy at birth (years)	2015	68.80

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	88.6	2014	81.3	2014	0.98
Primary Schools	2014	112.5	2014	95.5	2014	0.98
Secondary Schools	2014	96.4	2014	85.3	2014	0.93
Tertiary Schools	2014	62.7	n/a	n/a	2014	1.41

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	9.3
Primary Completion Rate (Total)	2013	98.7
Repetition Rates in Primary (all grades)	2013	0.7
Repetition Rates in Secondary (all grades)	2013	1.0
Survival Rate to Last Grade of Primary	2013	98.7
Transition Rate from Primary to Secondary	2013	99.8

### LITERACY RATES (%)

Youth	
Male	98.98
Female	99.08
Total	99.03
Adult	
Male	98.4
Female	96.8
Total	97.6

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	18.9
Public Education Spending (% of GDP)	2013	3.5
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	21.9

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2008	262
Number of Students Studying Abroad for Tertiary Educ.	2013	24,147
GERD (% of GDP)	2008	0.15
GERD per capita (cur. PPP \$)	2008	13.42
Patent Applications (total)	2014	13
Scientific Published Articles	2015	269
Articles (per million people)	2015	92.94

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.733	High	85
Global Competitiveness Index (2015-2016)	3.93	n/a	93

## ALGERIA

### GENERAL INFORMATION

Population (mln)	2015	39.67
Population Growth (%)	2015	1.86
Urban Population (% of total population)	2015	70.73
Labour Force Participation Rate (%)	2015	43.7
Unemployment Rate (% of labor force)	2015	10.5
GDP per capita (PPP, cur. \$)	2015	14,504
Infant Mortality (per 1,000)	2015	21.90
Life Expectancy at birth (years)	2015	66.30

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2011	79.2	2011	72.5	2011	1.01
Primary Schools	2014	118.7	2011	97.26	2014	0.94
Secondary Schools	2011	99.9	...	...	2012	1.04
Tertiary Schools	2014	34.6	n/a	n/a	2014	1.53

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	10
Average Years of Schooling	2013	7.6
Primary Completion Rate (Total)	2013	93.4
Repetition Rates in Primary (all grades)	2013	7.2
Repetition Rates in Secondary (all grades)	2013	20.2
Survival Rate to Last Grade of Primary	2013	93.4
Transition Rate from Primary to Secondary	2013	99.4

### LITERACY RATES (%)

Youth	
Male	97.2
Female	96.3
Total	96.8
Adult	
Male	86.1
Female	73.1
Total	79.6

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	23.7
Public Education Spending (% of GDP)	2008	4.34
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2008	26.97

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2005	220
Number of Students Studying Abroad for Tertiary Educ.	2013	20,695
GERD (% of GDP)	2005	0.07
GERD per capita (cur. PPP \$)	2005	7.28
Patent Applications (total)	2014	813
Scientific Published Articles	2015	2,886
Articles (per million people)	2015	74.12

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.736	High	83
Global Competitiveness Index (2015-2016)	3.97	n/a	87

## AZERBAIJAN

### GENERAL INFORMATION

Population (mln)	2015	9.65
Population Growth (%)	2015	1.21
Urban Population (% of total population)	2015	54.62
Labour Force Participation Rate (%)	2015	65.0
Unemployment Rate (% of labor force)	2015	4.7
GDP per capita (PPP, cur. \$)	2015	17,993
Infant Mortality (per 1,000)	2015	27.90
Life Expectancy at birth (years)	2015	64.70

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	23.1	2014	18.9	2014	1.04
Primary Schools	2014	106.1	2014	95.2	2014	0.99
Secondary Schools	2014	102.8	2014	88.0	2014	0.99
Tertiary Schools	2014	23.2	n/a	n/a	2014	1.14

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	11.2
Primary Completion Rate (Total)	2013	97.3
Repetition Rates in Primary (all grades)	2013	0.2
Repetition Rates in Secondary (all grades)	2013	0.9
Survival Rate to Last Grade of Primary	2013	97.3
Transition Rate from Primary to Secondary	2013	99.1

### LITERACY RATES (%)

Youth	
Male	99.98
Female	99.93
Total	99.96
Adult	
Male	99.9
Female	99.7
Total	99.8

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	12.6
Public Education Spending (% of GDP)	2013	2.5
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2011	14.6

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	22,007
GERD (% of GDP)	2014	0.21
GERD per capita (cur. PPP \$)	2014	36.42
Patent Applications (total)	2014	168
Scientific Published Articles	2015	618
Articles (per million people)	2015	64.81

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.751	High	78
Global Competitiveness Index (2015-2016)	4.50	n/a	40

## BAHRAIN

### GENERAL INFORMATION

Population (mln)	2015	1.38
Population Growth (%)	2015	1.12
Urban Population (% of total population)	2015	88.78
Labour Force Participation Rate (%)	2015	69.2
Unemployment Rate (% of labor force)	2015	1.2
GDP per capita (PPP, cur. \$)	2015	50,095
Infant Mortality (per 1,000)	2015	5.30
Life Expectancy at birth (years)	2015	67.00

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	55.2	2014	54.2	2014	1.00
Primary Schools	1999	104.4	1999	96.92	1999	0.99
Secondary Schools	2006	99.4	2006	90.90	2006	1.04
Tertiary Schools	2014	36.8	n/a	n/a	2014	2.33

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	9.4
Primary Completion Rate (Total)	2011	97.8
Repetition Rates in Primary (all grades)	2013	0.7
Repetition Rates in Secondary (all grades)	2013	1.3
Survival Rate to Last Grade of Primary	2011	97.8
Transition Rate from Primary to Secondary	2013	99.8

### LITERACY RATES (%)

Youth	
Male	99.8
Female	99.7
Total	99.8
Adult	
Male	96.9
Female	93.4
Total	95.7

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	11.7
Public Education Spending (% of GDP)	2012	2.64
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2014	413
Number of Students Studying Abroad for Tertiary Educ.	2013	4,481
GERD (% of GDP)	2014	0.10
GERD per capita (cur. PPP \$)	2014	45.40
Patent Applications (total)	2014	205
Scientific Published Articles	2015	223
Articles (per million people)	2015	163.74

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.824	Very High	45
Global Competitiveness Index (2015-2016)	4.52	n/a	39

## BANGLADESH

### GENERAL INFORMATION

Population (mln)	2015	161.00
Population Growth (%)	2015	1.20
Urban Population (% of total population)	2015	34.28
Labour Force Participation Rate (%)	2015	62.2
Unemployment Rate (% of labor force)	2015	4.4
GDP per capita (PPP, cur. \$)	2015	3,607
Infant Mortality (per 1,000)	2015	30.70
Life Expectancy at birth (years)	2015	62.40

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2013	31.8	2011	22.8	2013	1.00
Primary Schools	2011	111.9	2010	90.0	2011	1.06
Secondary Schools	2013	58.3	2013	52.6	2013	1.08
Tertiary Schools	2014	13.4	n/a	n/a	2014	0.74

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	5
Average Years of Schooling	2013	5.1
Primary Completion Rate (Total)	2009	66.2
Repetition Rates in Primary (all grades)	2009	12.8
Repetition Rates in Secondary (all grades)	2010	2.9
Survival Rate to Last Grade of Primary	2009	66.2
Transition Rate from Primary to Secondary	2010	94.5

### LITERACY RATES (%)

Youth	
Male	80.62
Female	85.87
Total	83.20
Adult	
Male	64.6
Female	58.3
Total	61.5

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2011	40.2
Public Education Spending (% of GDP)	2013	2.0
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2009	13.5

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	24,112
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	2014	293
Scientific Published Articles	2015	1,874
Articles (per million people)	2015	11.78

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.570	Medium	142
Global Competitiveness Index (2015-2016)	3.76	n/a	107

## BENIN

### GENERAL INFORMATION

Population (mln)	2015	10.88
Population Growth (%)	2015	2.62
Urban Population (% of total population)	2015	43.95
Labour Force Participation Rate (%)	2015	71.7
Unemployment Rate (% of labor force)	2015	1.1
GDP per capita (PPP, cur. \$)	2015	2,113
Infant Mortality (per 1,000)	2015	64.20
Life Expectancy at birth (years)	2015	52.50

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	20.6	2012	9.7	2014	1.01
Primary Schools	2014	125.6	2014	95.87	2014	0.91
Secondary Schools	2014	54.4	2013	42.03	2014	0.68
Tertiary Schools	2013	15.4	n/a	n/a	2013	0.37

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	6
Average Years of Schooling	2013	3.2
Primary Completion Rate (Total)	2013	53.4
Repetition Rates in Primary (all grades)	2013	11.2
Repetition Rates in Secondary (all grades)	2013	24.1
Survival Rate to Last Grade of Primary	2013	53.4
Transition Rate from Primary to Secondary	2013	85.5

### LITERACY RATES (%)

Youth	
Male	62.6
Female	42.5
Total	52.5
Adult	
Male	49.9
Female	27.3
Total	38.4

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	45.9
Public Education Spending (% of GDP)	2014	4.38
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	20.35

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	4,095
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	449
Articles (per million people)	2015	42.36

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.480	Low	166
Global Competitiveness Index (2015-2016)	3.55	n/a	122

## BRUNEI DARUSSALAM

### GENERAL INFORMATION

Population (mln)	2015	0.42
Population Growth (%)	2015	1.38
Urban Population (% of total population)	2015	77.20
Labour Force Participation Rate (%)	2015	63.5
Unemployment Rate (% of labor force)	2015	1.9
GDP per capita (PPP, cur. \$)	2015	79,587
Infant Mortality (per 1,000)	2015	8.60
Life Expectancy at birth (years)	2015	70.30

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	73.5	2014	65.2	2014	1.02
Primary Schools	2014	107.4	...	...	2014	1.00
Secondary Schools	2014	99.1	2014	87.0	2014	1.00
Tertiary Schools	2014	31.7	n/a	n/a	2014	1.69

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	8.7
Primary Completion Rate (Total)	2011	96.4
Repetition Rates in Primary (all grades)	2013	0.2
Repetition Rates in Secondary (all grades)	2013	1.8
Survival Rate to Last Grade of Primary	2011	96.4
Transition Rate from Primary to Secondary	2013	99.7

### LITERACY RATES (%)

Youth	
Male	99.50
Female	99.72
Total	99.60
Adult	
Male	97.8
Female	95.4
Total	96.7

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	10.3
Public Education Spending (% of GDP)	2014	3.8
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	31.9

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2003	401
Number of Students Studying Abroad for Tertiary Educ.	2013	3,365
GERD (% of GDP)	2004	0.04
GERD per capita (cur. PPP \$)	2004	24.48
Patent Applications (total)	2014	117
Scientific Published Articles	2015	204
Articles (per million people)	2015	488.75

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.856	Very High	31
Global Competitiveness Index (2015-2016)	..	...	..

## BURKINA FASO

### GENERAL INFORMATION

Population (mln)	2015	18.11
Population Growth (%)	2015	2.89
Urban Population (% of total population)	2015	29.86
Labour Force Participation Rate (%)	2015	83.5
Unemployment Rate (% of labor force)	2015	2.9
GDP per capita (PPP, cur. \$)	2015	1,724
Infant Mortality (per 1,000)	2015	60.90
Life Expectancy at birth (years)	2015	52.60

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	4.2	2014	3.8	2014	1.04
Primary Schools	2014	86.9	2014	67.45	2014	0.96
Secondary Schools	2014	30.3	2013	21.66	2014	0.87
Tertiary Schools	2013	4.8	n/a	n/a	2013	0.49

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	10
Average Years of Schooling	2013	1.3
Primary Completion Rate (Total)	2013	69.5
Repetition Rates in Primary (all grades)	2013	7.2
Repetition Rates in Secondary (all grades)	2013	25.9
Survival Rate to Last Grade of Primary	2013	69.5
Transition Rate from Primary to Secondary	2013	68.7

### LITERACY RATES (%)

Youth	
Male	58.1
Female	46.7
Total	52.5
Adult	
Male	47.6
Female	28.3
Total	37.7

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	44.5
Public Education Spending (% of GDP)	2014	4.50
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	12.29

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2010	131
Number of Students Studying Abroad for Tertiary Educ.	2013	3,650
GERD (% of GDP)	2009	0.20
GERD per capita (cur. PPP \$)	2009	2.62
Patent Applications (total)	...	...
Scientific Published Articles	2015	399
Articles (per million people)	2015	22.68

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.402	Low	183
Global Competitiveness Index (2015-2016)	..	...	..

## CAMEROON

### GENERAL INFORMATION

Population (mln)	2015	23.34
Population Growth (%)	2015	2.48
Urban Population (% of total population)	2015	54.38
Labour Force Participation Rate (%)	2015	76.0
Unemployment Rate (% of labor force)	2015	4.6
GDP per capita (PPP, cur. \$)	2015	3,144
Infant Mortality (per 1,000)	2015	57.10
Life Expectancy at birth (years)	2015	50.30

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	34.4	2014	24.9	2014	1.02
Primary Schools	2014	113.6	2014	91.6	2014	0.89
Secondary Schools	2014	56.4	2014	43.1	2014	0.85
Tertiary Schools	2011	11.9	n/a	n/a	2011	0.73

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	6
Average Years of Schooling	2013	5.9
Primary Completion Rate (Total)	2011	69.8
Repetition Rates in Primary (all grades)	2011	13.2
Repetition Rates in Secondary (all grades)	2013	20.1
Survival Rate to Last Grade of Primary	2011	69.8
Transition Rate from Primary to Secondary	2011	65.1

### LITERACY RATES (%)

Youth	
Male	87.12
Female	80.45
Total	83.80
Adult	
Male	81.2
Female	68.9
Total	75.0

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	44.2
Public Education Spending (% of GDP)	2013	3.0
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	10.2

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	19,491
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	861
Articles (per million people)	2015	37.81

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.512	Low	153
Global Competitiveness Index (2015-2016)	3.69	n/a	114

## CHAD

### GENERAL INFORMATION

Population (mln)	2015	14.04
Population Growth (%)	2015	3.26
Urban Population (% of total population)	2015	22.47
Labour Force Participation Rate (%)	2015	71.6
Unemployment Rate (% of labor force)	2015	5.6
GDP per capita (PPP, cur. \$)	2015	2,634
Infant Mortality (per 1,000)	2015	85.00
Life Expectancy at birth (years)	2015	46.10

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2013	0.8	2012	1.3	2013	0.90
Primary Schools	2013	101.4	2013	84.44	2013	0.77
Secondary Schools	2012	22.4	2003	10.54	2012	0.46
Tertiary Schools	2014	3.4	n/a	n/a	2014	0.20

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	10
Average Years of Schooling	2013	1.5
Primary Completion Rate (Total)	2012	51.0
Repetition Rates in Primary (all grades)	2012	27.1
Repetition Rates in Secondary (all grades)	2012	25.2
Survival Rate to Last Grade of Primary	2012	51.0
Transition Rate from Primary to Secondary	2012	95.0

### LITERACY RATES (%)

Youth	
Male	55.3
Female	50.2
Total	52.7
Adult	
Male	48.4
Female	31.8
Total	40.0

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2013	62.4
Public Education Spending (% of GDP)	2013	2.85
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	31.70

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	3,998
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	28
Articles (per million people)	2015	2.06

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.392	Low	185
Global Competitiveness Index (2015-2016)	2.96	n/a	139

## COMOROS

### GENERAL INFORMATION

Population (mln)	2015	0.79
Population Growth (%)	2015	2.37
Urban Population (% of total population)	2015	28.30
Labour Force Participation Rate (%)	2015	57.4
Unemployment Rate (% of labor force)	2015	19.6
GDP per capita (PPP, cur. \$)	2015	1,519
Infant Mortality (per 1,000)	2015	55.10
Life Expectancy at birth (years)	2015	55.90

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2013	23.1	2013	20.9	2013	1.05
Primary Schools	2013	105.2	2013	83.2	2013	0.94
Secondary Schools	2013	58.3	2013	43.9	2013	1.04
Tertiary Schools	2014	8.9	n/a	n/a	2014	0.81

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	6
Average Years of Schooling	2013	2.8
Primary Completion Rate (Total)	2003	55.4
Repetition Rates in Primary (all grades)	2003	27.0
Repetition Rates in Secondary (all grades)	2003	17.9
Survival Rate to Last Grade of Primary	2003	55.4
Transition Rate from Primary to Secondary	2003	91.7

### LITERACY RATES (%)

Youth	
Male	86.83
Female	88.14
Total	87.48
Adult	
Male	82.0
Female	74.3
Total	78.1

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2013	27.8
Public Education Spending (% of GDP)	2012	5.1
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2012	8.2

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	4,151
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	3
Articles (per million people)	2015	3.90

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.503	Low	159
Global Competitiveness Index (2015-2016)	..	...	..

## COTE D'IVOIRE

### GENERAL INFORMATION

Population (mln)	2015	22.70
Population Growth (%)	2015	2.43
Urban Population (% of total population)	2015	54.18
Labour Force Participation Rate (%)	2015	67.0
Unemployment Rate (% of labor force)	2015	9.5
GDP per capita (PPP, cur. \$)	2015	3,316
Infant Mortality (per 1,000)	2015	...
Life Expectancy at birth (years)	2015	47.00

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	6.6	2014	6.0	2014	1.00
Primary Schools	2014	89.6	2014	74.68	2014	0.87
Secondary Schools	2014	40.1	...	...	2014	0.71
Tertiary Schools	2014	8.7	n/a	n/a	2014	0.58

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	...	...
Average Years of Schooling	2013	4.3
Primary Completion Rate (Total)	2013	74.0
Repetition Rates in Primary (all grades)	2013	15.8
Repetition Rates in Secondary (all grades)	2013	17.3
Survival Rate to Last Grade of Primary	2013	74.0
Transition Rate from Primary to Secondary	2013	88.0

### LITERACY RATES (%)

Youth	
Male	59.6
Female	40.7
Total	50.2
Adult	
Male	53.3
Female	32.7
Total	43.3

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	42.5
Public Education Spending (% of GDP)	2014	4.72
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	21.02

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	7,036
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	279
Articles (per million people)	2015	12.59

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.462	Low	172
Global Competitiveness Index (2015-2016)	3.93	n/a	91

## DJIBOUTI

### GENERAL INFORMATION

Population (mln)	2015	0.89
Population Growth (%)	2015	1.33
Urban Population (% of total population)	2015	77.34
Labour Force Participation Rate (%)	2015	52.3
Unemployment Rate (% of labor force)	2015	53.9
GDP per capita (PPP, cur. \$)	2015	3,204
Infant Mortality (per 1,000)	2015	54.20
Life Expectancy at birth (years)	2015	55.80

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2012	4.1	2012	3.3	2015	0.87
Primary Schools	2015	66.3	2015	57.4	2015	0.89
Secondary Schools	2015	47.1	2008	25.4	2015	0.80
Tertiary Schools	2011	5.0	n/a	n/a	2011	0.68

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	10
Average Years of Schooling	2013	3.8
Primary Completion Rate (Total)	2013	84.4
Repetition Rates in Primary (all grades)	2012	8.8
Repetition Rates in Secondary (all grades)	2014	6.7
Survival Rate to Last Grade of Primary	2013	84.4
Transition Rate from Primary to Secondary	2014	80.2

### LITERACY RATES (%)

Youth	
Male	n/a
Female	n/a
Total	n/a
Adult	
Male	n/a
Female	n/a
Total	n/a

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2015	33.0
Public Education Spending (% of GDP)	2010	4.5
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2010	16.5

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	1,846
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	2014	4
Scientific Published Articles	2015	11
Articles (per million people)	2015	12.55

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.470	Low	168
Global Competitiveness Index (2015-2016)	..	...	..

## EGYPT

### GENERAL INFORMATION

Population (mln)	2015	91.51
Population Growth (%)	2015	2.13
Urban Population (% of total population)	2015	43.14
Labour Force Participation Rate (%)	2015	49.4
Unemployment Rate (% of labor force)	2015	12.1
GDP per capita (PPP, cur. \$)	2015	11,850
Infant Mortality (per 1,000)	2015	...
Life Expectancy at birth (years)	2015	62.20

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	30.3	2014	27.2	2014	0.98
Primary Schools	2014	103.9	2014	98.03	2014	1.00
Secondary Schools	2014	86.1	2014	81.86	2014	0.99
Tertiary Schools	2014	31.7	n/a	n/a	2014	0.90

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	12
Average Years of Schooling	2013	6.4
Primary Completion Rate (Total)	2009	96.1
Repetition Rates in Primary (all grades)	2012	3.3
Repetition Rates in Secondary (all grades)	2013	9.4
Survival Rate to Last Grade of Primary	2009	96.1
Transition Rate from Primary to Secondary	2003	93.6

### LITERACY RATES (%)

Youth	
Male	94.5
Female	92.1
Total	93.3
Adult	
Male	83.6
Female	68.1
Total	75.8

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	23.1
Public Education Spending (% of GDP)	2008	3.76
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2014	1,246
Number of Students Studying Abroad for Tertiary Educ.	2013	19,744
GERD (% of GDP)	2014	0.68
GERD per capita (cur. PPP \$)	2014	71.46
Patent Applications (total)	2014	2,136
Scientific Published Articles	2015	10,445
Articles (per million people)	2015	116.60

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.690	Medium	108
Global Competitiveness Index (2015-2016)	3.66	n/a	116

## GABON

### GENERAL INFORMATION

Population (mln)	2015	1.73
Population Growth (%)	2015	2.20
Urban Population (% of total population)	2015	87.16
Labour Force Participation Rate (%)	2015	48.8
Unemployment Rate (% of labor force)	2015	20.5
GDP per capita (PPP, cur. \$)	2015	18,639
Infant Mortality (per 1,000)	2015	36.10
Life Expectancy at birth (years)	2015	57.20

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2011	37.1	2011	37.1	2011	1.04
Primary Schools	2011	142.0	...	...	2011	0.97
Secondary Schools	2002	53.3	...	...	1999	0.88
Tertiary Schools	2003	8.4	n/a	n/a	2003	0.59

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	10
Average Years of Schooling	2013	7.4
Primary Completion Rate (Total)	2002	59.8
Repetition Rates in Primary (all grades)	2002	34.2
Repetition Rates in Secondary (all grades)	...	...
Survival Rate to Last Grade of Primary	2002	59.8
Transition Rate from Primary to Secondary	...	...

### LITERACY RATES (%)

Youth	
Male	87.76
Female	90.51
Total	89.12
Adult	
Male	85.3
Female	81.1
Total	83.2

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2011	24.5
Public Education Spending (% of GDP)	2000	3.8
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	5,946
GERD (% of GDP)	2009	0.58
GERD per capita (cur. PPP \$)	2009	85.22
Patent Applications (total)	...	...
Scientific Published Articles	2015	144
Articles (per million people)	2015	85.32

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.684	Medium	110
Global Competitiveness Index (2015-2016)	3.83	n/a	103

## GAMBIA

### GENERAL INFORMATION

Population (mln)	2015	1.99
Population Growth (%)	2015	3.20
Urban Population (% of total population)	2015	59.63
Labour Force Participation Rate (%)	2015	77.3
Unemployment Rate (% of labor force)	2015	30.1
GDP per capita (PPP, cur. \$)	2015	1,646
Infant Mortality (per 1,000)	2015	...
Life Expectancy at birth (years)	2015	53.80

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	33.8	2014	29.6	2014	1.06
Primary Schools	2014	85.8	2014	67.93	2014	1.05
Secondary Schools	2010	57.5	...	...	2010	0.95
Tertiary Schools	2012	3.1	n/a	n/a	2012	0.68

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	2.8
Primary Completion Rate (Total)	2013	77.3
Repetition Rates in Primary (all grades)	2013	4.0
Repetition Rates in Secondary (all grades)	2013	3.5
Survival Rate to Last Grade of Primary	2013	77.3
Transition Rate from Primary to Secondary	2013	94.4

### LITERACY RATES (%)

Youth	
Male	75.6
Female	70.9
Total	73.2
Adult	
Male	63.9
Female	47.6
Total	55.6

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	36.8
Public Education Spending (% of GDP)	2013	2.77
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	10.73

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2011	602
Number of Students Studying Abroad for Tertiary Educ.	2013	1,297
GERD (% of GDP)	2011	0.13
GERD per capita (cur. PPP \$)	2011	2.03
Patent Applications (total)	...	...
Scientific Published Articles	2015	130
Articles (per million people)	2015	67.42

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.441	Low	175
Global Competitiveness Index (2015-2016)	..	...	..

## GUINEA

### GENERAL INFORMATION

Population (mln)	2015	12.61
Population Growth (%)	2015	2.68
Urban Population (% of total population)	2015	37.16
Labour Force Participation Rate (%)	2015	82.3
Unemployment Rate (% of labor force)	2015	1.8
GDP per capita (PPP, cur. \$)	2015	1,214
Infant Mortality (per 1,000)	2015	61.00
Life Expectancy at birth (years)	2015	51.70

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2011	15.2	2011	10.4	2011	0.96
Primary Schools	2014	91.3	2014	75.7	2014	0.85
Secondary Schools	2014	38.8	2014	31.8	2014	0.66
Tertiary Schools	2014	10.8	n/a	n/a	2014	0.45

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	6
Average Years of Schooling	2013	1.6
Primary Completion Rate (Total)	2013	65.9
Repetition Rates in Primary (all grades)	2013	14.2
Repetition Rates in Secondary (all grades)	2013	25.2
Survival Rate to Last Grade of Primary	2013	65.9
Transition Rate from Primary to Secondary	2013	68.8

### LITERACY RATES (%)

Youth	
Male	43.03
Female	47.51
Total	45.25
Adult	
Male	38.1
Female	22.9
Total	30.5

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	45.6
Public Education Spending (% of GDP)	2013	3.5
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	34.6

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	5,656
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	89
Articles (per million people)	2015	7.25

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.411	Low	182
Global Competitiveness Index (2015-2016)	2.84	n/a	140

## GUINEA-BISSAU

### GENERAL INFORMATION

Population (mln)	2015	1.84
Population Growth (%)	2015	2.40
Urban Population (% of total population)	2015	49.33
Labour Force Participation Rate (%)	2015	72.7
Unemployment Rate (% of labor force)	2015	7.6
GDP per capita (PPP, cur. \$)	2015	1,508
Infant Mortality (per 1,000)	2015	60.30
Life Expectancy at birth (years)	2015	51.50

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2010	6.5	2010	4.4	2010	1.05
Primary Schools	2010	113.7	2010	68.23	2010	0.93
Secondary Schools	2006	32.6	2000	8.13	2000	0.55
Tertiary Schools	2006	2.5	n/a	n/a	...	...

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	2.3
Primary Completion Rate (Total)	...	...
Repetition Rates in Primary (all grades)	2005	19.9
Repetition Rates in Secondary (all grades)	...	...
Survival Rate to Last Grade of Primary	...	...
Transition Rate from Primary to Secondary	...	...

### LITERACY RATES (%)

Youth	
Male	80.8
Female	73.5
Total	77.1
Adult	
Male	71.7
Female	48.1
Total	59.8

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2010	51.9
Public Education Spending (% of GDP)	2013	2.36
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	3.90

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	1,491
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	32
Articles (per million people)	2015	17.77

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.420	Low	178
Global Competitiveness Index (2015-2016)	..	...	..

## GUYANA

### GENERAL INFORMATION

Population (mln)	2015	0.77
Population Growth (%)	2015	0.42
Urban Population (% of total population)	2015	28.55
Labour Force Participation Rate (%)	2015	59.5
Unemployment Rate (% of labor force)	2015	11.2
GDP per capita (PPP, cur. \$)	2015	7,509
Infant Mortality (per 1,000)	2015	32.00
Life Expectancy at birth (years)	2015	59.00

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2012	94.3	2012	81.0	2012	0.98
Primary Schools	2012	85.4	2012	81.4	2012	0.97
Secondary Schools	2012	89.3	2011	82.5	2012	0.99
Tertiary Schools	2012	12.5	n/a	n/a	2012	2.03

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2016	6
Average Years of Schooling	2013	8.5
Primary Completion Rate (Total)	2011	92.2
Repetition Rates in Primary (all grades)	2008	0.8
Repetition Rates in Secondary (all grades)	2009	12.2
Survival Rate to Last Grade of Primary	2011	92.2
Transition Rate from Primary to Secondary	2009	95.2

### LITERACY RATES (%)

Youth	
Male	94.01
Female	94.73
Total	94.37
Adult	
Male	85.8
Female	89.2
Total	87.5

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2012	23.2
Public Education Spending (% of GDP)	2012	3.2
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2012	5.1

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	1,444
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	2014	20
Scientific Published Articles	2015	31
Articles (per million people)	2015	40.58

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.636	Medium	124
Global Competitiveness Index (2015-2016)	3.56	n/a	121

## INDONESIA

### GENERAL INFORMATION

Population (mln)	2015	257.56
Population Growth (%)	2015	1.21
Urban Population (% of total population)	2015	53.74
Labour Force Participation Rate (%)	2015	67.4
Unemployment Rate (% of labor force)	2015	5.8
GDP per capita (PPP, cur. \$)	2015	11,126
Infant Mortality (per 1,000)	2015	22.80
Life Expectancy at birth (years)	2015	62.10

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	58.2	2014	40.4	2014	1.03
Primary Schools	2014	105.7	2014	89.72	2014	0.98
Secondary Schools	2014	82.5	2014	75.02	2014	0.99
Tertiary Schools	2014	31.1	n/a	n/a	2014	1.12

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	7.5
Primary Completion Rate (Total)	2013	81.9
Repetition Rates in Primary (all grades)	2013	2.2
Repetition Rates in Secondary (all grades)	2013	1.7
Survival Rate to Last Grade of Primary	2013	81.9
Transition Rate from Primary to Secondary	2013	88.9

### LITERACY RATES (%)

Youth	
Male	99.7
Female	99.7
Total	99.7
Adult	
Male	97.1
Female	93.8
Total	95.4

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	16.6
Public Education Spending (% of GDP)	2014	3.30
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	15.05

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2001	240
Number of Students Studying Abroad for Tertiary Educ.	2013	39,098
GERD (% of GDP)	2013	0.08
GERD per capita (cur. PPP \$)	2013	8.48
Patent Applications (total)	2014	8,023
Scientific Published Articles	2015	2,685
Articles (per million people)	2015	10.55

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.684	Medium	110
Global Competitiveness Index (2015-2016)	4.52	n/a	37

## IRAN

### GENERAL INFORMATION

Population (mln)	2015	79.11
Population Growth (%)	2015	1.23
Urban Population (% of total population)	2015	73.38
Labour Force Participation Rate (%)	2015	44.5
Unemployment Rate (% of labor force)	2015	10.5
GDP per capita (PPP, cur. \$)	2015	17,251
Infant Mortality (per 1,000)	2015	26.50
Life Expectancy at birth (years)	2015	66.50

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	42.4	2014	38.1	2014	0.97
Primary Schools	2014	109.2	2014	99.2	2014	1.04
Secondary Schools	2014	88.4	2014	80.7	2014	0.99
Tertiary Schools	2014	66.0	n/a	n/a	2014	0.93

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	6
Average Years of Schooling	2013	7.8
Primary Completion Rate (Total)	2011	96.2
Repetition Rates in Primary (all grades)	2013	1.1
Repetition Rates in Secondary (all grades)	2013	0.7
Survival Rate to Last Grade of Primary	2011	96.2
Transition Rate from Primary to Secondary	2011	97.0

### LITERACY RATES (%)

Youth	
Male	98.27
Female	97.77
Total	98.03
Adult	
Male	91.1
Female	83.2
Total	87.2

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	25.9
Public Education Spending (% of GDP)	2014	3.0
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	28.3

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2012	1,062
Number of Students Studying Abroad for Tertiary Educ.	2013	50,053
GERD (% of GDP)	2012	0.33
GERD per capita (cur. PPP \$)	2011	54.76
Patent Applications (total)	2014	13,802
Scientific Published Articles	2015	30,890
Articles (per million people)	2015	395.30

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.766	High	69
Global Competitiveness Index (2015-2016)	..	...	..

## IRAQ

### GENERAL INFORMATION

Population (mln)	2015	36.42
Population Growth (%)	2015	3.21
Urban Population (% of total population)	2015	69.47
Labour Force Participation Rate (%)	2015	42.4
Unemployment Rate (% of labor force)	2015	16.9
GDP per capita (PPP, cur. \$)	2015	15,474
Infant Mortality (per 1,000)	2015	26.50
Life Expectancy at birth (years)	2015	60.00

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2007	6.6	2007	6.6	2007	1.01
Primary Schools	2007	108.1	2007	92.31	2007	0.84
Secondary Schools	2007	53.5	2007	44.78	2007	0.75
Tertiary Schools	2005	16.1	n/a	n/a	2005	0.60

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	6
Average Years of Schooling	2013	5.6
Primary Completion Rate (Total)	1999	49.5
Repetition Rates in Primary (all grades)	2003	8.1
Repetition Rates in Secondary (all grades)	1999	33.1
Survival Rate to Last Grade of Primary	1999	49.5
Transition Rate from Primary to Secondary	1999	77.3

### LITERACY RATES (%)

Youth	
Male	82.4
Female	80.6
Total	81.5
Adult	
Male	85.6
Female	73.8
Total	79.7

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2007	17.0
Public Education Spending (% of GDP)	...	...
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2014	109
Number of Students Studying Abroad for Tertiary Educ.	2013	16,039
GERD (% of GDP)	2014	0.04
GERD per capita (cur. PPP \$)	2014	5.82
Patent Applications (total)	...	...
Scientific Published Articles	2015	1,189
Articles (per million people)	2015	34.15

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.654	Medium	121
Global Competitiveness Index (2015-2016)	..	...	..

## JORDAN

### GENERAL INFORMATION

Population (mln)	2015	7.59
Population Growth (%)	2015	2.38
Urban Population (% of total population)	2015	83.68
Labour Force Participation Rate (%)	2015	40.0
Unemployment Rate (% of labor force)	2015	12.8
GDP per capita (PPP, cur. \$)	2015	12,123
Infant Mortality (per 1,000)	2015	15.40
Life Expectancy at birth (years)	2015	65.00

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2012	32.2	2012	32.2	2012	0.96
Primary Schools	2012	88.7	2012	87.5	2012	0.99
Secondary Schools	2012	84.3	2011	85.5	2012	1.05
Tertiary Schools	2012	47.6	n/a	n/a	2012	1.18

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	10
Average Years of Schooling	2013	9.9
Primary Completion Rate (Total)	2010	97.9
Repetition Rates in Primary (all grades)	2011	0.6
Repetition Rates in Secondary (all grades)	2011	2.6
Survival Rate to Last Grade of Primary	2010	97.9
Transition Rate from Primary to Secondary	2010	99.1

### LITERACY RATES (%)

Youth	
Male	99.11
Female	99.37
Total	99.23
Adult	
Male	98.5
Female	97.5
Total	98.0

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2003	19.9
Public Education Spending (% of GDP)	1999	4.9
Expenditure on Tertiary as % of Gov't Exp. on Educ.	1999	18.7

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	1998	5,182
Number of Students Studying Abroad for Tertiary Educ.	2013	19,366
GERD (% of GDP)	2008	0.43
GERD per capita (cur. PPP \$)	2008	43.81
Patent Applications (total)	2014	379
Scientific Published Articles	2015	1,828
Articles (per million people)	2015	276.68

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.748	High	80
Global Competitiveness Index (2015-2016)	4.23	n/a	64

## KAZAKHSTAN

### GENERAL INFORMATION

Population (mln)	2015	17.54
Population Growth (%)	2015	1.46
Urban Population (% of total population)	2015	53.25
Labour Force Participation Rate (%)	2015	71.2
Unemployment Rate (% of labor force)	2015	5.6
GDP per capita (PPP, cur. \$)	2015	24,268
Infant Mortality (per 1,000)	2015	12.60
Life Expectancy at birth (years)	2015	63.30

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	60.4	2015	60.3	2015	1.11
Primary Schools	2015	110.6	2015	86.33	2015	1.00
Secondary Schools	2015	109.1	2015	98.10	2015	1.03
Tertiary Schools	2015	46.0	n/a	n/a	2015	1.28

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	10
Average Years of Schooling	2013	10.4
Primary Completion Rate (Total)	2014	98.8
Repetition Rates in Primary (all grades)	2014	0.0
Repetition Rates in Secondary (all grades)	2014	0.0
Survival Rate to Last Grade of Primary	2014	98.8
Transition Rate from Primary to Secondary	2014	99.7

### LITERACY RATES (%)

Youth	
Male	99.8
Female	99.9
Total	99.8
Adult	
Male	99.8
Female	99.8
Total	99.8

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2015	16.2
Public Education Spending (% of GDP)	2009	3.06
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2009	13.13

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2013	1,028
Number of Students Studying Abroad for Tertiary Educ.	2013	48,875
GERD (% of GDP)	2012	0.17
GERD per capita (cur. PPP \$)	2013	40.43
Patent Applications (total)	2014	2,013
Scientific Published Articles	2015	820
Articles (per million people)	2015	47.43

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.788	High	56
Global Competitiveness Index (2015-2016)	4.48	n/a	42

## KUWAIT

### GENERAL INFORMATION

Population (mln)	2015	3.89
Population Growth (%)	2015	3.64
Urban Population (% of total population)	2015	98.34
Labour Force Participation Rate (%)	2015	69.2
Unemployment Rate (% of labor force)	2015	3.5
GDP per capita (PPP, cur. \$)	2015	70,166
Infant Mortality (per 1,000)	2015	7.30
Life Expectancy at birth (years)	2015	65.70

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2011	81.0	2011	66.7	2011	0.99
Primary Schools	2014	102.7	2014	92.9	2014	1.01
Secondary Schools	2014	93.6	2012	83.0	2014	1.11
Tertiary Schools	2013	27.0	n/a	n/a	2013	1.62

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	7.2
Primary Completion Rate (Total)	2012	95.7
Repetition Rates in Primary (all grades)	2012	0.6
Repetition Rates in Secondary (all grades)	2012	3.8
Survival Rate to Last Grade of Primary	2012	95.7
Transition Rate from Primary to Secondary	2012	98.3

### LITERACY RATES (%)

Youth	
Male	99.59
Female	99.39
Total	99.49
Adult	
Male	96.8
Female	95.2
Total	96.1

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	8.8
Public Education Spending (% of GDP)	2006	3.8
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2006	32.6

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2012	241
Number of Students Studying Abroad for Tertiary Educ.	2013	16,799
GERD (% of GDP)	2012	0.30
GERD per capita (cur. PPP \$)	2013	231.09
Patent Applications (total)	...	...
Scientific Published Articles	2015	744
Articles (per million people)	2015	198.24

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.816	Very High	48
Global Competitiveness Index (2015-2016)	4.59	n/a	34

## KYRGYZ REPUBLIC

### GENERAL INFORMATION

Population (mln)	2015	5.96
Population Growth (%)	2015	2.06
Urban Population (% of total population)	2015	35.71
Labour Force Participation Rate (%)	2015	62.9
Unemployment Rate (% of labor force)	2015	8.2
GDP per capita (PPP, cur. \$)	2015	3,363
Infant Mortality (per 1,000)	2015	19.00
Life Expectancy at birth (years)	2015	63.90

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	25.3	2014	24.0	2014	1.00
Primary Schools	2014	107.7	2014	89.69	2014	0.99
Secondary Schools	2014	90.8	2014	80.18	2014	1.01
Tertiary Schools	2014	45.9	n/a	n/a	2014	1.30

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	9.3
Primary Completion Rate (Total)	2013	98.8
Repetition Rates in Primary (all grades)	2013	0.0
Repetition Rates in Secondary (all grades)	2013	0.0
Survival Rate to Last Grade of Primary	2013	98.8
Transition Rate from Primary to Secondary	2013	99.7

### LITERACY RATES (%)

Youth	
Male	99.7
Female	99.8
Total	99.7
Adult	
Male	99.6
Female	99.4
Total	99.5

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	25.3
Public Education Spending (% of GDP)	2013	6.78
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	12.78

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	5,885
GERD (% of GDP)	2014	0.13
GERD per capita (cur. PPP \$)	2014	4.19
Patent Applications (total)	2014	139
Scientific Published Articles	2015	102
Articles (per million people)	2015	17.48

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.655	Medium	120
Global Competitiveness Index (2015-2016)	3.83	n/a	102

## LEBANON

### GENERAL INFORMATION

Population (mln)	2015	5.85
Population Growth (%)	2015	4.16
Urban Population (% of total population)	2015	87.79
Labour Force Participation Rate (%)	2015	47.0
Unemployment Rate (% of labor force)	2015	7.1
GDP per capita (PPP, cur. \$)	2015	18,240
Infant Mortality (per 1,000)	2015	7.10
Life Expectancy at birth (years)	2015	65.70

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2013	84.5	2013	80.9	2013	0.94
Primary Schools	2013	97.1	2013	86.6	2013	0.91
Secondary Schools	2013	58.3	2012	64.8	2013	1.01
Tertiary Schools	2014	42.8	n/a	n/a	2014	1.16

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	7.9
Primary Completion Rate (Total)	2011	93.3
Repetition Rates in Primary (all grades)	2011	8.2
Repetition Rates in Secondary (all grades)	2012	12.4
Survival Rate to Last Grade of Primary	2011	93.3
Transition Rate from Primary to Secondary	2012	98.3

### LITERACY RATES (%)

Youth	
Male	98.85
Female	99.32
Total	99.10
Adult	
Male	96.0
Female	92.0
Total	94.1

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2013	12.0
Public Education Spending (% of GDP)	2013	2.6
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	28.7

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	12,000
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	2,019
Articles (per million people)	2015	444.05

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.769	High	67
Global Competitiveness Index (2015-2016)	3.84	n/a	101

## LIBYA

### GENERAL INFORMATION

Population (mln)	2015	6.28
Population Growth (%)	2015	0.31
Urban Population (% of total population)	2015	78.55
Labour Force Participation Rate (%)	2015	53.2
Unemployment Rate (% of labor force)	2015	20.6
GDP per capita (PPP, cur. \$)	2015	14,650
Infant Mortality (per 1,000)	2015	11.40
Life Expectancy at birth (years)	2015	63.70

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2006	9.9	2006	8.5	2006	0.98
Primary Schools	2006	114.5	...	...	2006	0.96
Secondary Schools	2006	101.6	...	...	2006	1.18
Tertiary Schools	2003	61.1	n/a	n/a	2003	1.11

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	7.5
Primary Completion Rate (Total)	...	...
Repetition Rates in Primary (all grades)	...	...
Repetition Rates in Secondary (all grades)	...	...
Survival Rate to Last Grade of Primary	...	...
Transition Rate from Primary to Secondary	...	...

### LITERACY RATES (%)

Youth	
Male	100.0
Female	99.9
Total	100.0
Adult	
Male	97.0
Female	85.8
Total	91.4

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	...	...
Public Education Spending (% of GDP)	1999	
Expenditure on Tertiary as % of Gov't Exp. on Educ.	1999	52.73

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	6,448
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	216
Articles (per million people)	2015	34.51

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.724	High	94
Global Competitiveness Index (2015-2016)	..	...	..

## MALAYSIA

### GENERAL INFORMATION

Population (mln)	2015	30.33
Population Growth (%)	2015	1.42
Urban Population (% of total population)	2015	74.71
Labour Force Participation Rate (%)	2015	63.3
Unemployment Rate (% of labor force)	2015	2.9
GDP per capita (PPP, cur. \$)	2015	26,315
Infant Mortality (per 1,000)	2015	6.00
Life Expectancy at birth (years)	2015	66.50

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	98.9	2014	85.8	...	...
Primary Schools	2014	106.9	2012	94.6	...	...
Secondary Schools	2014	79.0	2014	69.1	...	...
Tertiary Schools	2014	29.7	n/a	n/a	...	...

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	6
Average Years of Schooling	2013	9.5
Primary Completion Rate (Total)	2013	94.2
Repetition Rates in Primary (all grades)	...	...
Repetition Rates in Secondary (all grades)	...	...
Survival Rate to Last Grade of Primary	2013	94.2
Transition Rate from Primary to Secondary	2013	89.1

### LITERACY RATES (%)

Youth	
Male	98.33
Female	98.50
Total	98.42
Adult	
Male	96.2
Female	93.1
Total	94.6

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	11.4
Public Education Spending (% of GDP)	2013	6.1
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	34.0

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2014	2,510
Number of Students Studying Abroad for Tertiary Educ.	2013	56,260
GERD (% of GDP)	2014	1.26
GERD per capita (cur. PPP \$)	2014	323.71
Patent Applications (total)	2014	7,620
Scientific Published Articles	2015	11,444
Articles (per million people)	2015	382.72

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.779	High	62
Global Competitiveness Index (2015-2016)	5.23	n/a	18

## MALDIVES

### GENERAL INFORMATION

Population (mln)	2015	0.41
Population Growth (%)	2015	2.02
Urban Population (% of total population)	2015	45.54
Labour Force Participation Rate (%)	2015	68.0
Unemployment Rate (% of labor force)	2015	11.8
GDP per capita (PPP, cur. \$)	2015	14,923
Infant Mortality (per 1,000)	2015	7.40
Life Expectancy at birth (years)	2015	69.50

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2007	83.6	2007	66.0	2007	1.04
Primary Schools	2009	102.4	2009	96.13	2009	0.97
Secondary Schools	2004	69.8	2002	47.90	2004	1.13
Tertiary Schools	2008	12.7	n/a	n/a	2008	1.12

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	...	...
Average Years of Schooling	2013	5.8
Primary Completion Rate (Total)	2012	82.2
Repetition Rates in Primary (all grades)	2012	3.2
Repetition Rates in Secondary (all grades)	2013	4.6
Survival Rate to Last Grade of Primary	2012	82.2
Transition Rate from Primary to Secondary	2012	96.5

### LITERACY RATES (%)

Youth	
Male	100.0
Female	99.5
Total	99.8
Adult	
Male	99.8
Female	98.9
Total	99.3

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	12.0
Public Education Spending (% of GDP)	2012	5.20
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2012	9.35

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	4,066
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	16
Articles (per million people)	2015	39.90

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.706	High	104
Global Competitiveness Index (2015-2016)	..	...	..

## MALI

### GENERAL INFORMATION

Population (mln)	2015	17.60
Population Growth (%)	2015	2.96
Urban Population (% of total population)	2015	39.92
Labour Force Participation Rate (%)	2015	66.2
Unemployment Rate (% of labor force)	2015	8.5
GDP per capita (PPP, cur. \$)	2015	2,199
Infant Mortality (per 1,000)	2015	74.50
Life Expectancy at birth (years)	2015	51.10

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	3.9	2014	3.7	2014	1.05
Primary Schools	2014	77.2	2014	59.4	2014	0.90
Secondary Schools	2014	43.5	2014	34.6	2014	0.76
Tertiary Schools	2012	6.9	n/a	n/a	2012	0.43

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	2.0
Primary Completion Rate (Total)	2011	61.6
Repetition Rates in Primary (all grades)	2011	19.2
Repetition Rates in Secondary (all grades)	2013	33.9
Survival Rate to Last Grade of Primary	2011	61.6
Transition Rate from Primary to Secondary	2013	85.1

### LITERACY RATES (%)

Youth	
Male	60.53
Female	39.21
Total	49.37
Adult	
Male	45.1
Female	22.2
Total	33.1

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	42.5
Public Education Spending (% of GDP)	2014	4.3
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	21.6

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2010	56
Number of Students Studying Abroad for Tertiary Educ.	2013	5,695
GERD (% of GDP)	2010	0.67
GERD per capita (cur. PPP \$)	2010	10.11
Patent Applications (total)	...	...
Scientific Published Articles	2015	200
Articles (per million people)	2015	11.71

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.419	Low	179
Global Competitiveness Index (2015-2016)	3.44	n/a	127

## MAURITANIA

### GENERAL INFORMATION

Population (mln)	2015	4.07
Population Growth (%)	2015	2.44
Urban Population (% of total population)	2015	59.86
Labour Force Participation Rate (%)	2015	47.2
Unemployment Rate (% of labor force)	2015	31.1
GDP per capita (PPP, cur. \$)	2015	4,395
Infant Mortality (per 1,000)	2015	65.10
Life Expectancy at birth (years)	2015	55.10

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	3.3	...	...	2014	1.30
Primary Schools	2014	98.0	2014	74.45	2014	1.06
Secondary Schools	2014	29.9	2014	23.10	2014	0.91
Tertiary Schools	2015	5.6	n/a	n/a	2015	0.50

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	6
Average Years of Schooling	2013	3.7
Primary Completion Rate (Total)	2012	64.1
Repetition Rates in Primary (all grades)	2012	3.4
Repetition Rates in Secondary (all grades)	2013	9.7
Survival Rate to Last Grade of Primary	2012	64.1
Transition Rate from Primary to Secondary	2013	58.2

### LITERACY RATES (%)

Youth	
Male	70.0
Female	55.0
Total	62.6
Adult	
Male	62.6
Female	41.6
Total	52.1

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	34.4
Public Education Spending (% of GDP)	2013	3.28
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	11.58

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	4,308
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	23
Articles (per million people)	2015	5.79

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.506	Low	156
Global Competitiveness Index (2015-2016)	3.03	n/a	138

## MOROCCO

### GENERAL INFORMATION

Population (mln)	2015	34.38
Population Growth (%)	2015	1.34
Urban Population (% of total population)	2015	60.20
Labour Force Participation Rate (%)	2015	49.2
Unemployment Rate (% of labor force)	2015	9.6
GDP per capita (PPP, cur. \$)	2015	8,164
Infant Mortality (per 1,000)	2015	23.70
Life Expectancy at birth (years)	2015	65.10

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	59.6	2014	53.8	2014	0.82
Primary Schools	2014	116.1	2014	98.4	2014	0.95
Secondary Schools	2012	69.1	2012	56.1	2012	0.85
Tertiary Schools	2014	24.6	n/a	n/a	2014	0.96

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	4.4
Primary Completion Rate (Total)	2013	89.3
Repetition Rates in Primary (all grades)	2013	9.6
Repetition Rates in Secondary (all grades)	2013	15.5
Survival Rate to Last Grade of Primary	2013	89.3
Transition Rate from Primary to Secondary	2013	88.7

### LITERACY RATES (%)

Youth	
Male	96.60
Female	93.48
Total	95.07
Adult	
Male	81.9
Female	62.0
Total	71.7

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	25.7
Public Education Spending (% of GDP)	2009	5.3
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2009	20.2

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2012	943
Number of Students Studying Abroad for Tertiary Educ.	2013	38,599
GERD (% of GDP)	2010	0.71
GERD per capita (cur. PPP \$)	2010	46.21
Patent Applications (total)	2014	1,097
Scientific Published Articles	2015	2,052
Articles (per million people)	2015	60.49

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.628	Medium	126
Global Competitiveness Index (2015-2016)	4.16	n/a	72

## MOZAMBIQUE

### GENERAL INFORMATION

Population (mln)	2015	27.98
Population Growth (%)	2015	2.76
Urban Population (% of total population)	2015	32.21
Labour Force Participation Rate (%)	2015	79.1
Unemployment Rate (% of labor force)	2015	22.3
GDP per capita (PPP, cur. \$)	2015	1,186
Infant Mortality (per 1,000)	2015	56.70
Life Expectancy at birth (years)	2015	49.60

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	...	...	...	...	...	...
Primary Schools	2014	104.1	2014	87.56	2014	0.92
Secondary Schools	2014	24.5	2014	17.89	2014	0.92
Tertiary Schools	2014	6.0	n/a	n/a	2014	0.71

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	...	...
Average Years of Schooling	2013	3.2
Primary Completion Rate (Total)	2013	30.7
Repetition Rates in Primary (all grades)	2013	6.6
Repetition Rates in Secondary (all grades)	2013	14.4
Survival Rate to Last Grade of Primary	2013	30.7
Transition Rate from Primary to Secondary	2013	61.5

### LITERACY RATES (%)

Youth	
Male	83.8
Female	69.8
Total	76.8

Adult	
Male	73.4
Female	45.5
Total	58.8

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	54.5
Public Education Spending (% of GDP)	2013	6.48
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	13.69

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2010	89
Number of Students Studying Abroad for Tertiary Educ.	2013	1,783
GERD (% of GDP)	2010	0.42
GERD per capita (cur. PPP \$)	2010	3.78
Patent Applications (total)	...	...
Scientific Published Articles	2015	249
Articles (per million people)	2015	9.15

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.416	Low	180
Global Competitiveness Index (2015-2016)	3.20	n/a	133

## NIGER

### GENERAL INFORMATION

Population (mln)	2015	19.90
Population Growth (%)	2015	4.03
Urban Population (% of total population)	2015	18.73
Labour Force Participation Rate (%)	2015	64.7
Unemployment Rate (% of labor force)	2015	2.8
GDP per capita (PPP, cur. \$)	2015	1,080
Infant Mortality (per 1,000)	2015	57.10
Life Expectancy at birth (years)	2015	54.20

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	7.1	2013	4.7	2014	1.06
Primary Schools	2014	70.6	2014	61.0	2014	0.86
Secondary Schools	2014	18.8	2014	15.7	2014	0.70
Tertiary Schools	2012	1.7	n/a	n/a	2012	0.34

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	...	...
Average Years of Schooling	2013	1.4
Primary Completion Rate (Total)	2013	64.4
Repetition Rates in Primary (all grades)	2013	4.0
Repetition Rates in Secondary (all grades)	2013	23.8
Survival Rate to Last Grade of Primary	2013	64.4
Transition Rate from Primary to Secondary	2013	64.8

### LITERACY RATES (%)

Youth	
Male	36.43
Female	17.15
Total	26.56

Adult	
Male	27.3
Female	11.0
Total	19.1

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	35.8
Public Education Spending (% of GDP)	2014	6.8
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	13.9

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2005	44
Number of Students Studying Abroad for Tertiary Educ.	2013	2,416
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	195
Articles (per million people)	2015	10.20

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.348	Low	188
Global Competitiveness Index (2015-2016)	..	...	..

## NIGERIA

### GENERAL INFORMATION

Population (mln)	2015	182.20
Population Growth (%)	2015	2.63
Urban Population (% of total population)	2015	47.78
Labour Force Participation Rate (%)	2015	56.3
Unemployment Rate (% of labor force)	2015	5.8
GDP per capita (PPP, cur. \$)	2015	6,108
Infant Mortality (per 1,000)	2015	69.40
Life Expectancy at birth (years)	2015	47.70

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2010	13.4	...	...	2010	0.99
Primary Schools	2010	84.7	2010	63.84	2010	0.92
Secondary Schools	2010	43.8	...	...	2010	0.89
Tertiary Schools	2005	10.4	n/a	n/a	2005	0.72

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	5.2
Primary Completion Rate (Total)	2009	79.3
Repetition Rates in Primary (all grades)	...	...
Repetition Rates in Secondary (all grades)	...	...
Survival Rate to Last Grade of Primary	2009	79.3
Transition Rate from Primary to Secondary	...	...

### LITERACY RATES (%)

Youth	
Male	79.9
Female	65.3
Total	72.8
Adult	
Male	69.2
Female	49.7
Total	59.6

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2010	37.6
Public Education Spending (% of GDP)	...	...
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2007	77
Number of Students Studying Abroad for Tertiary Educ.	2013	52,066
GERD (% of GDP)	2007	0.22
GERD per capita (cur. PPP \$)	2008	9.34
Patent Applications (total)	...	...
Scientific Published Articles	2015	2,878
Articles (per million people)	2015	16.22

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.514	Low	152
Global Competitiveness Index (2015-2016)	3.46	n/a	124

## OMAN

### GENERAL INFORMATION

Population (mln)	2015	4.49
Population Growth (%)	2015	5.83
Urban Population (% of total population)	2015	77.64
Labour Force Participation Rate (%)	2015	69.1
Unemployment Rate (% of labor force)	2015	6.3
GDP per capita (PPP, cur. \$)	2015	44,628
Infant Mortality (per 1,000)	2015	9.90
Life Expectancy at birth (years)	2015	66.60

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	54.4	2014	40.9	2014	1.04
Primary Schools	2014	110.3	2014	91.1	2014	1.09
Secondary Schools	2011	101.9	2011	91.7	2012	0.93
Tertiary Schools	2011	28.6	n/a	n/a	2011	1.37

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	0	...
Average Years of Schooling	2013	6.8
Primary Completion Rate (Total)	2012	98.7
Repetition Rates in Primary (all grades)	2012	2.9
Repetition Rates in Secondary (all grades)	2013	10.5
Survival Rate to Last Grade of Primary	2012	98.7
Transition Rate from Primary to Secondary	2013	99.8

### LITERACY RATES (%)

Youth	
Male	99.13
Female	99.10
Total	99.12
Adult	
Male	95.8
Female	89.7
Total	94.0

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2003	19.9
Public Education Spending (% of GDP)	2013	5.0
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2009	26.9

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2013	274
Number of Students Studying Abroad for Tertiary Educ.	2013	11,284
GERD (% of GDP)	2012	0.17
GERD per capita (cur. PPP \$)	2013	68.55
Patent Applications (total)	...	...
Scientific Published Articles	2015	828
Articles (per million people)	2015	195.46

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.793	High	52
Global Competitiveness Index (2015-2016)	4.25	n/a	62

## PAKISTAN

### GENERAL INFORMATION

Population (mln)	2015	188.92
Population Growth (%)	2015	2.08
Urban Population (% of total population)	2015	38.76
Labour Force Participation Rate (%)	2015	53.9
Unemployment Rate (% of labor force)	2015	5.4
GDP per capita (PPP, cur. \$)	2015	5,000
Infant Mortality (per 1,000)	2015	65.80
Life Expectancy at birth (years)	2015	57.80

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	70.2	2014	56.2	2014	0.88
Primary Schools	2014	93.6	2014	72.98	2014	0.85
Secondary Schools	2014	41.6	2014	41.18	2014	0.79
Tertiary Schools	2014	10.4	n/a	n/a	2014	1.06

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	12
Average Years of Schooling	2013	4.7
Primary Completion Rate (Total)	2013	79.6
Repetition Rates in Primary (all grades)	2013	2.4
Repetition Rates in Secondary (all grades)	2013	2.3
Survival Rate to Last Grade of Primary	2013	79.6
Transition Rate from Primary to Secondary	2013	81.3

### LITERACY RATES (%)

Youth	
Male	80.2
Female	66.8
Total	73.7

Adult	
Male	69.6
Female	42.7
Total	56.4

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	46.5
Public Education Spending (% of GDP)	2014	2.47
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	22.32

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2013	418
Number of Students Studying Abroad for Tertiary Educ.	2013	37,579
GERD (% of GDP)	2012	0.29
GERD per capita (cur. PPP \$)	2013	13.55
Patent Applications (total)	2014	922
Scientific Published Articles	2015	8,059
Articles (per million people)	2015	43.55

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.538	Low	147
Global Competitiveness Index (2015-2016)	3.45	n/a	126

## PALESTINE

### GENERAL INFORMATION

Population (mln)	2015	4.42
Population Growth (%)	2015	2.92
Urban Population (% of total population)	2015	75.25
Labour Force Participation Rate (%)	2015	43.7
Unemployment Rate (% of labor force)	2015	25.9
GDP per capita (PPP, cur. \$)	2015	...
Infant Mortality (per 1,000)	2015	18.00
Life Expectancy at birth (years)	2015	...

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	50.7	2014	45.4	2014	1.02
Primary Schools	2014	94.9	2014	90.8	2014	0.99
Secondary Schools	2014	82.2	2014	80.1	2014	1.10
Tertiary Schools	2014	44.0	n/a	n/a	2014	1.55

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	...	0
Average Years of Schooling	2013	8.9
Primary Completion Rate (Total)	2013	97.5
Repetition Rates in Primary (all grades)	2013	0.2
Repetition Rates in Secondary (all grades)	2013	1.9
Survival Rate to Last Grade of Primary	2013	97.5
Transition Rate from Primary to Secondary	2013	99.4

### LITERACY RATES (%)

Youth	
Male	99.42
Female	99.33
Total	99.37

Adult	
Male	98.5
Female	94.8
Total	96.7

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	23.8
Public Education Spending (% of GDP)	...	...
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2013	1,168
Number of Students Studying Abroad for Tertiary Educ.	2013	20,918
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	149
Articles (per million people)	2015	34.69

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.677	Medium	113
Global Competitiveness Index (2015-2016)	..	...	..

## QATAR

### GENERAL INFORMATION

Population (mln)	2015	2.24
Population Growth (%)	2015	2.87
Urban Population (% of total population)	2015	99.24
Labour Force Participation Rate (%)	2015	84.6
Unemployment Rate (% of labor force)	2015	0.2
GDP per capita (PPP, cur. \$)	2015	132,099
Infant Mortality (per 1,000)	2015	6.80
Life Expectancy at birth (years)	2015	67.80

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	58.5	2014	57.1	2014	1.00
Primary Schools	2011	101.4	2011	92.09	2011	0.95
Secondary Schools	2011	109.4	2011	94.53	2012	0.89
Tertiary Schools	2014	15.8	n/a	n/a	2014	6.32

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	9.1
Primary Completion Rate (Total)	2012	97.7
Repetition Rates in Primary (all grades)	2012	0.8
Repetition Rates in Secondary (all grades)	2013	7.7
Survival Rate to Last Grade of Primary	2012	97.7
Transition Rate from Primary to Secondary	2013	99.8

### LITERACY RATES (%)

Youth	
Male	98.2
Female	99.7
Total	98.6

Adult	
Male	97.8
Female	97.5
Total	97.8

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	11.2
Public Education Spending (% of GDP)	2014	3.55
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2012	969
Number of Students Studying Abroad for Tertiary Educ.	2013	5,039
GERD (% of GDP)	2012	0.47
GERD per capita (cur. PPP \$)	2011	636.06
Patent Applications (total)	2014	482
Scientific Published Articles	2015	1,827
Articles (per million people)	2015	841.14

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.850	Very High	32
Global Competitiveness Index (2015-2016)	5.30	n/a	14

## SAUDI ARABIA

### GENERAL INFORMATION

Population (mln)	2015	31.54
Population Growth (%)	2015	2.09
Urban Population (% of total population)	2015	83.13
Labour Force Participation Rate (%)	2015	54.8
Unemployment Rate (% of labor force)	2015	5.8
GDP per capita (PPP, cur. \$)	2015	53,624
Infant Mortality (per 1,000)	2015	12.50
Life Expectancy at birth (years)	2015	64.40

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	16.3	2014	16.3	2014	1.29
Primary Schools	2014	108.7	2014	96.4	2014	0.99
Secondary Schools	2014	108.3	2014	87.8	2014	0.76
Tertiary Schools	2014	61.1	n/a	n/a	2014	0.96

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	8.7
Primary Completion Rate (Total)	2011	98.7
Repetition Rates in Primary (all grades)	2011	1.5
Repetition Rates in Secondary (all grades)	2013	0.8
Survival Rate to Last Grade of Primary	2011	98.7
Transition Rate from Primary to Secondary	2013	96.3

### LITERACY RATES (%)

Youth	
Male	99.39
Female	99.31
Total	99.35

Adult	
Male	96.9
Female	91.8
Total	94.8

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	10.8
Public Education Spending (% of GDP)	2008	5.1
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	73,548
GERD (% of GDP)	2009	0.07
GERD per capita (cur. PPP \$)	2009	30.74
Patent Applications (total)	2014	787
Scientific Published Articles	2015	13,598
Articles (per million people)	2015	440.26

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.837	Very High	39
Global Competitiveness Index (2015-2016)	5.07	n/a	25

## SENEGAL

### GENERAL INFORMATION

Population (mln)	2015	15.13
Population Growth (%)	2015	3.07
Urban Population (% of total population)	2015	43.72
Labour Force Participation Rate (%)	2015	57.1
Unemployment Rate (% of labor force)	2015	9.3
GDP per capita (PPP, cur. \$)	2015	2,451
Infant Mortality (per 1,000)	2015	41.70
Life Expectancy at birth (years)	2015	58.30

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	14.7	2014	12.6	2014	1.13
Primary Schools	2014	80.9	2014	71.12	2014	1.09
Secondary Schools	2011	40.1	2006	20.43	2012	0.91
Tertiary Schools	2010	7.4	n/a	n/a	2010	0.59

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	11
Average Years of Schooling	2013	4.5
Primary Completion Rate (Total)	2011	61.4
Repetition Rates in Primary (all grades)	2011	3.5
Repetition Rates in Secondary (all grades)	2011	17.8
Survival Rate to Last Grade of Primary	2011	61.4
Transition Rate from Primary to Secondary	2011	92.9

### LITERACY RATES (%)

Youth	
Male	75.9
Female	63.6
Total	69.8
Adult	
Male	68.5
Female	43.8
Total	55.6

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	31.6
Public Education Spending (% of GDP)	2010	5.60
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2010	24.57

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2010	435
Number of Students Studying Abroad for Tertiary Educ.	2013	11,280
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	2010	11.59
Patent Applications (total)	...	...
Scientific Published Articles	2015	452
Articles (per million people)	2015	30.81

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.466	Low	170
Global Competitiveness Index (2015-2016)	3.73	n/a	110

## SIERRA LEONE

### GENERAL INFORMATION

Population (mln)	2015	6.45
Population Growth (%)	2015	2.15
Urban Population (% of total population)	2015	39.94
Labour Force Participation Rate (%)	2015	66.8
Unemployment Rate (% of labor force)	2015	3.4
GDP per capita (PPP, cur. \$)	2015	1,577
Infant Mortality (per 1,000)	2015	87.10
Life Expectancy at birth (years)	2015	44.40

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2013	9.5	2013	6.5	2013	1.10
Primary Schools	2013	130.0	2012	97.9	2013	1.00
Secondary Schools	2013	43.4	2012	36.9	2013	0.85
Tertiary Schools	2002	2.2	n/a	n/a	2002	0.40

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	2.9
Primary Completion Rate (Total)	2012	47.8
Repetition Rates in Primary (all grades)	2012	14.3
Repetition Rates in Secondary (all grades)	2012	8.3
Survival Rate to Last Grade of Primary	2012	47.8
Transition Rate from Primary to Secondary	2012	88.0

### LITERACY RATES (%)

Youth	
Male	75.79
Female	59.17
Total	67.37
Adult	
Male	59.0
Female	38.2
Total	48.4

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2013	34.8
Public Education Spending (% of GDP)	2014	2.8
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	30.7

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	887
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	95
Articles (per million people)	2015	15.04

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.413	Low	181
Global Competitiveness Index (2015-2016)	3.06	n/a	137

## SOMALIA

### GENERAL INFORMATION

Population (mln)	2015	10.79
Population Growth (%)	2015	2.53
Urban Population (% of total population)	2015	39.55
Labour Force Participation Rate (%)	2015	54.3
Unemployment Rate (% of labor force)	2015	7.5
GDP per capita (PPP, cur. \$)	2015	...
Infant Mortality (per 1,000)	2015	85.00
Life Expectancy at birth (years)	2015	47.80

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	...	...	...	...	...	...
Primary Schools	2007	29.2	...	...	2007	0.55
Secondary Schools	2007	7.4	...	...	2007	0.46
Tertiary Schools	...	...	n/a	n/a	...	...

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	...	...
Average Years of Schooling	2013	...
Primary Completion Rate (Total)	...	...
Repetition Rates in Primary (all grades)	...	...
Repetition Rates in Secondary (all grades)	...	...
Survival Rate to Last Grade of Primary	...	...
Transition Rate from Primary to Secondary	...	...

### LITERACY RATES (%)

Youth	
Male	n/a
Female	n/a
Total	n/a

Adult	
Male	n/a
Female	n/a
Total	n/a

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2007	35.5
Public Education Spending (% of GDP)	...	...
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	4,102
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	13
Articles (per million people)	2015	1.24

### INDICES

	Value	Level	Rank
Human Development Index (2015)	..	..	..
Global Competitiveness Index (2015-2016)	..	...	..

## SUDAN

### GENERAL INFORMATION

Population (mln)	2015	40.23
Population Growth (%)	2015	2.22
Urban Population (% of total population)	2015	33.81
Labour Force Participation Rate (%)	2015	48.1
Unemployment Rate (% of labor force)	2015	13.6
GDP per capita (PPP, cur. \$)	2015	4,344
Infant Mortality (per 1,000)	2015	47.60
Life Expectancy at birth (years)	2015	55.90

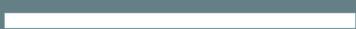
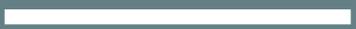
### PARTICIPATION in EDUCATION

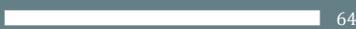
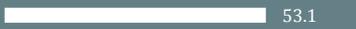
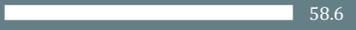
	GER		NER		GPI	
Pre-primary Schools	2013	34.3	...	...	2013	1.07
Primary Schools	2013	70.4	2012	53.8	2013	0.90
Secondary Schools	2013	42.7	...	...	2013	0.95
Tertiary Schools	2013	16.9	n/a	n/a	2013	1.12

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	8
Average Years of Schooling	2013	3.1
Primary Completion Rate (Total)	2012	79.4
Repetition Rates in Primary (all grades)	2012	3.4
Repetition Rates in Secondary (all grades)	2012	2.8
Survival Rate to Last Grade of Primary	2012	79.4
Transition Rate from Primary to Secondary	2012	95.9

### LITERACY RATES (%)

Youth	
Male	 71.32
Female	 70.41
Total	 70.87

Adult	
Male	 64.1
Female	 53.1
Total	 58.6

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2013	25.3
Public Education Spending (% of GDP)	2009	2.2
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	...	...
GERD (% of GDP)	2005	0.30
GERD per capita (cur. PPP \$)	2005	8.79
Patent Applications (total)	2014	8
Scientific Published Articles	2015	384
Articles (per million people)	2015	9.76

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.479	Low	167
Global Competitiveness Index (2015-2016)	..	...	..

## SURINAME

### GENERAL INFORMATION

Population (mln)	2015	0.54
Population Growth (%)	2015	0.87
Urban Population (% of total population)	2015	66.04
Labour Force Participation Rate (%)	2015	54.5
Unemployment Rate (% of labor force)	2015	7.8
GDP per capita (PPP, cur. \$)	2015	16,292
Infant Mortality (per 1,000)	2015	19.00
Life Expectancy at birth (years)	2015	63.10

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	93.7	...	...	2014	1.04
Primary Schools	2014	120.0	...	...	2014	0.97
Secondary Schools	2013	78.5	2013	54.23	2013	1.31
Tertiary Schools	2002	12.7	n/a	n/a	2002	1.72

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2016	6
Average Years of Schooling	2013	7.7
Primary Completion Rate (Total)	2013	85.9
Repetition Rates in Primary (all grades)	2013	15.7
Repetition Rates in Secondary (all grades)	2013	17.5
Survival Rate to Last Grade of Primary	2013	85.9
Transition Rate from Primary to Secondary	2013	69.6

### LITERACY RATES (%)

Youth	
Male	98.4
Female	99.7
Total	99.0
Adult	
Male	96.1
Female	95.0
Total	95.5

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	13.8
Public Education Spending (% of GDP)	...	...
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	805
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	26
Articles (per million people)	2015	48.30

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.714	High	103
Global Competitiveness Index (2015-2016)	..	...	..

## TAJIKISTAN

### GENERAL INFORMATION

Population (mln)	2015	8.48
Population Growth (%)	2015	2.22
Urban Population (% of total population)	2015	26.78
Labour Force Participation Rate (%)	2015	68.5
Unemployment Rate (% of labor force)	2015	10.9
GDP per capita (PPP, cur. \$)	2015	2,749
Infant Mortality (per 1,000)	2015	38.50
Life Expectancy at birth (years)	2015	62.10

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2013	9.9	2013	5.7	2015	0.91
Primary Schools	2015	98.2	2014	92.4	2015	1.00
Secondary Schools	2013	87.9	2011	83.2	2013	0.90
Tertiary Schools	2015	26.4	n/a	n/a	2015	0.67

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	9.9
Primary Completion Rate (Total)	2014	98.6
Repetition Rates in Primary (all grades)	2014	0.0
Repetition Rates in Secondary (all grades)	2014	0.1
Survival Rate to Last Grade of Primary	2014	98.6
Transition Rate from Primary to Secondary	2014	99.3

### LITERACY RATES (%)

Youth	
Male	99.86
Female	99.89
Total	99.88
Adult	
Male	99.8
Female	99.7
Total	99.8

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2015	22.3
Public Education Spending (% of GDP)	2012	4.0
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2015	9.9

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	9,749
GERD (% of GDP)	2012	0.12
GERD per capita (cur. PPP \$)	2013	2.99
Patent Applications (total)	...	...
Scientific Published Articles	2015	80
Articles (per million people)	2015	9.64

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.624	Medium	129
Global Competitiveness Index (2015-2016)	4.03	n/a	80

## TOGO

### GENERAL INFORMATION

Population (mln)	2015	7.30
Population Growth (%)	2015	2.63
Urban Population (% of total population)	2015	39.96
Labour Force Participation Rate (%)	2015	80.9
Unemployment Rate (% of labor force)	2015	7.7
GDP per capita (PPP, cur. \$)	2015	1,483
Infant Mortality (per 1,000)	2015	52.30
Life Expectancy at birth (years)	2015	52.80

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	15.0	2014	14.9	2014	1.03
Primary Schools	2014	125.1	...	...	2014	0.94
Secondary Schools	2011	54.7	2000	23.53	2007	0.53
Tertiary Schools	2014	10.1	n/a	n/a	2014	0.42

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	10
Average Years of Schooling	2013	5.3
Primary Completion Rate (Total)	2013	52.8
Repetition Rates in Primary (all grades)	2013	11.2
Repetition Rates in Secondary (all grades)	2013	22.5
Survival Rate to Last Grade of Primary	2013	52.8
Transition Rate from Primary to Secondary	2013	80.0

### LITERACY RATES (%)

Youth	
Male	88.9
Female	81.4
Total	85.2
Adult	
Male	78.3
Female	55.3
Total	66.5

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	41.1
Public Education Spending (% of GDP)	2014	4.84
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2014	21.69

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2014	76
Number of Students Studying Abroad for Tertiary Educ.	2013	3,345
GERD (% of GDP)	2014	0.27
GERD per capita (cur. PPP \$)	2014	3.85
Patent Applications (total)	...	...
Scientific Published Articles	2015	107
Articles (per million people)	2015	15.04

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.484	Low	162
Global Competitiveness Index (2015-2016)	..	...	..

## TUNISIA

### GENERAL INFORMATION

Population (mln)	2015	11.11
Population Growth (%)	2015	1.01
Urban Population (% of total population)	2015	66.84
Labour Force Participation Rate (%)	2015	47.7
Unemployment Rate (% of labor force)	2015	14.8
GDP per capita (PPP, cur. \$)	2015	11,428
Infant Mortality (per 1,000)	2015	12.10
Life Expectancy at birth (years)	2015	66.70

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	42.8	2007	66.9	2014	1.02
Primary Schools	2014	113.1	2013	92.9	2014	0.97
Secondary Schools	2014	87.6	...	...	2012	1.05
Tertiary Schools	2014	34.6	n/a	n/a	2014	1.64

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	6.5
Primary Completion Rate (Total)	2013	94.0
Repetition Rates in Primary (all grades)	2013	7.0
Repetition Rates in Secondary (all grades)	2013	20.5
Survival Rate to Last Grade of Primary	2013	94.0
Transition Rate from Primary to Secondary	2013	90.9

### LITERACY RATES (%)

Youth	
Male	98.10
Female	96.66
Total	97.39
Adult	
Male	89.7
Female	72.8
Total	81.1

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	16.5
Public Education Spending (% of GDP)	2012	6.2
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2012	28.1

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2014	1,903
Number of Students Studying Abroad for Tertiary Educ.	2013	16,889
GERD (% of GDP)	2014	0.64
GERD per capita (cur. PPP \$)	2014	72.43
Patent Applications (total)	2014	542
Scientific Published Articles	2015	3,972
Articles (per million people)	2015	361.20

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.721	High	96
Global Competitiveness Index (2015-2016)	3.93	n/a	92

## TURKEY

### GENERAL INFORMATION

Population (mln)	2015	78.67
Population Growth (%)	2015	1.46
Urban Population (% of total population)	2015	73.40
Labour Force Participation Rate (%)	2015	50.3
Unemployment Rate (% of labor force)	2015	10.3
GDP per capita (PPP, cur. \$)	2015	20,438
Infant Mortality (per 1,000)	2015	11.60
Life Expectancy at birth (years)	2015	66.20

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2013	27.6	2002	20.3	2013	0.96
Primary Schools	2013	106.9	...	...	2013	0.99
Secondary Schools	2013	100.3	2013	86.69	2013	0.97
Tertiary Schools	2013	79.0	n/a	n/a	2013	0.86

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	12
Average Years of Schooling	2013	7.6
Primary Completion Rate (Total)	2011	90.0
Repetition Rates in Primary (all grades)	2012	1.8
Repetition Rates in Secondary (all grades)	2012	2.5
Survival Rate to Last Grade of Primary	2011	90.0
Transition Rate from Primary to Secondary	2011	99.0

### LITERACY RATES (%)

Youth	
Male	99.8
Female	99.2
Total	99.5
Adult	
Male	98.6
Female	92.9
Total	95.7

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2013	19.8
Public Education Spending (% of GDP)	2006	2.86
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2006	31.90

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2014	1,489
Number of Students Studying Abroad for Tertiary Educ.	2013	44,964
GERD (% of GDP)	2014	1.01
GERD per capita (cur. PPP \$)	2014	189.39
Patent Applications (total)	2014	5,097
Scientific Published Articles	2015	30,158
Articles (per million people)	2015	397.17

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.761	High	72
Global Competitiveness Index (2015-2016)	4.37	n/a	51

## TURKMENISTAN

### GENERAL INFORMATION

Population (mln)	2015	5.37
Population Growth (%)	2015	1.24
Urban Population (% of total population)	2015	50.04
Labour Force Participation Rate (%)	2015	62.0
Unemployment Rate (% of labor force)	2015	10.0
GDP per capita (PPP, cur. \$)	2015	16,445
Infant Mortality (per 1,000)	2015	43.70
Life Expectancy at birth (years)	2015	59.80

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	62.9	2013	27.6	2014	0.97
Primary Schools	2014	89.4	...	...	2014	0.98
Secondary Schools	2014	85.3	...	...	2014	0.96
Tertiary Schools	2014	8.0	n/a	n/a	2014	0.64

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	12
Average Years of Schooling	2013	9.9
Primary Completion Rate (Total)	...	...
Repetition Rates in Primary (all grades)	...	...
Repetition Rates in Secondary (all grades)	...	...
Survival Rate to Last Grade of Primary	...	...
Transition Rate from Primary to Secondary	...	...

### LITERACY RATES (%)

Youth	
Male	99.76
Female	99.91
Total	99.84
Adult	
Male	99.8
Female	99.6
Total	99.7

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	...	...
Public Education Spending (% of GDP)	2012	3.0
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2012	9.2

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	35,854
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	...	...
Scientific Published Articles	2015	10
Articles (per million people)	2015	1.88

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.688	Medium	109
Global Competitiveness Index (2015-2016)	..	...	..

## UGANDA

### GENERAL INFORMATION

Population (mln)	2015	39.03
Population Growth (%)	2015	3.25
Urban Population (% of total population)	2015	16.10
Labour Force Participation Rate (%)	2015	85.0
Unemployment Rate (% of labor force)	2015	3.6
GDP per capita (PPP, cur. \$)	2015	2,003
Infant Mortality (per 1,000)	2015	37.70
Life Expectancy at birth (years)	2015	54.00

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2013	11.0	2006	89.1	2013	1.04
Primary Schools	2013	109.9	2014	96.18	2013	1.02
Secondary Schools	2013	27.6	2010	22.87	2013	0.87
Tertiary Schools	2011	4.5	n/a	n/a	2011	0.78

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	7
Average Years of Schooling	2013	5.4
Primary Completion Rate (Total)	2010	24.8
Repetition Rates in Primary (all grades)	2010	9.9
Repetition Rates in Secondary (all grades)	2010	2.0
Survival Rate to Last Grade of Primary	2010	24.8
Transition Rate from Primary to Secondary	2010	62.3

### LITERACY RATES (%)

Youth	
Male	87.4
Female	86.6
Total	87.0
Adult	
Male	81.0
Female	66.8
Total	73.8

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2013	45.6
Public Education Spending (% of GDP)	2014	2.20
Expenditure on Tertiary as % of Gov't Exp. on Educ.	2013	13.76

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2010	61
Number of Students Studying Abroad for Tertiary Educ.	2013	4,696
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	2010	7.24
Patent Applications (total)	2014	8
Scientific Published Articles	2015	1,027
Articles (per million people)	2015	27.18

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.483	Low	163
Global Competitiveness Index (2015-2016)	3.66	n/a	115

## UNITED ARAB EMIRATES

### GENERAL INFORMATION

Population (mln)	2015	9.16
Population Growth (%)	2015	0.78
Urban Population (% of total population)	2015	85.54
Labour Force Participation Rate (%)	2015	80.1
Unemployment Rate (% of labor force)	2015	3.7
GDP per capita (PPP, cur. \$)	2015	67,617
Infant Mortality (per 1,000)	2015	5.90
Life Expectancy at birth (years)	2015	68.30

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2014	92.0	...	...	2014	1.01
Primary Schools	2014	106.7	2014	99.9	2014	1.01
Secondary Schools	1999	83.4	1999	75.5	1999	1.11
Tertiary Schools	2014	22.0	n/a	n/a	2014	2.26

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	6
Average Years of Schooling	2013	9.1
Primary Completion Rate (Total)	2012	92.0
Repetition Rates in Primary (all grades)	2013	0.2
Repetition Rates in Secondary (all grades)	2013	1.3
Survival Rate to Last Grade of Primary	2012	92.0
Transition Rate from Primary to Secondary	2013	99.9

### LITERACY RATES (%)

Youth	
Male	99.64
Female	99.12
Total	99.46
Adult	
Male	92.4
Female	95.1
Total	93.0

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2014	18.9
Public Education Spending (% of GDP)	...	...
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2011	1,305
Number of Students Studying Abroad for Tertiary Educ.	2013	8,530
GERD (% of GDP)	2014	0.70
GERD per capita (cur. PPP \$)	2014	473.72
Patent Applications (total)	2014	1,472
Scientific Published Articles	2015	2,325
Articles (per million people)	2015	255.88

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.835	Very High	41
Global Competitiveness Index (2015-2016)	5.24	n/a	17

## UZBEKISTAN

### GENERAL INFORMATION

Population (mln)	2015	31.30
Population Growth (%)	2015	1.75
Urban Population (% of total population)	2015	36.37
Labour Force Participation Rate (%)	2015	61.8
Unemployment Rate (% of labor force)	2015	10.1
GDP per capita (PPP, cur. \$)	2015	6,068
Infant Mortality (per 1,000)	2015	33.90
Life Expectancy at birth (years)	2015	62.40

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2011	25.3	2013	87.6	2011	1.00
Primary Schools	2011	96.9	2005	98.91	2011	0.98
Secondary Schools	2011	95.4	...	...	2011	0.99
Tertiary Schools	2011	8.9	n/a	n/a	2011	0.64

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	12
Average Years of Schooling	2013	10.0
Primary Completion Rate (Total)	2010	98.1
Repetition Rates in Primary (all grades)	2009	0.0
Repetition Rates in Secondary (all grades)	2010	0.0
Survival Rate to Last Grade of Primary	2010	98.1
Transition Rate from Primary to Secondary	2010	99.0

### LITERACY RATES (%)

Youth	
Male	100.0
Female	100.0
Total	100.0
Adult	
Male	100.0
Female	100.0
Total	100.0

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2011	15.6
Public Education Spending (% of GDP)	...	...
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	2011	721
Number of Students Studying Abroad for Tertiary Educ.	2013	18,783
GERD (% of GDP)	2014	0.20
GERD per capita (cur. PPP \$)	2014	11.50
Patent Applications (total)	2014	568
Scientific Published Articles	2015	309
Articles (per million people)	2015	10.05

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.675	Medium	114
Global Competitiveness Index (2015-2016)	..	...	..

## YEMEN

### GENERAL INFORMATION

Population (mln)	2015	26.83
Population Growth (%)	2015	2.45
Urban Population (% of total population)	2015	34.61
Labour Force Participation Rate (%)	2015	49.6
Unemployment Rate (% of labor force)	2015	15.9
GDP per capita (PPP, cur. \$)	2015	2,671
Infant Mortality (per 1,000)	2015	...
Life Expectancy at birth (years)	2015	57.70

### PARTICIPATION in EDUCATION

	GER		NER		GPI	
Pre-primary Schools	2013	1.3	...	...	2013	0.88
Primary Schools	2013	97.5	2013	87.4	2013	0.84
Secondary Schools	2013	48.6	2012	41.7	2013	0.69
Tertiary Schools	2011	10.0	n/a	n/a	2011	0.44

### PROGRESSION and COMPLETION

Duration of compulsory education (year)	2014	9
Average Years of Schooling	2013	2.5
Primary Completion Rate (Total)	2012	69.5
Repetition Rates in Primary (all grades)	2012	8.9
Repetition Rates in Secondary (all grades)	2012	7.8
Survival Rate to Last Grade of Primary	2012	69.5
Transition Rate from Primary to Secondary	2012	90.5

### LITERACY RATES (%)

Youth	
Male	97.55
Female	82.66
Total	90.24
Adult	
Male	85.0
Female	54.9
Total	70.0

### RESOURCES for EDUCATION

Pupil / Teacher Ratio (primary)	2012	30.3
Public Education Spending (% of GDP)	2008	4.6
Expenditure on Tertiary as % of Gov't Exp. on Educ.	...	...

### RESEARCH and DEVELOPMENT

Reserchers (per million people)	...	...
Number of Students Studying Abroad for Tertiary Educ.	2013	16,881
GERD (% of GDP)	...	...
GERD per capita (cur. PPP \$)	...	...
Patent Applications (total)	2014	53
Scientific Published Articles	2015	219
Articles (per million people)	2015	8.36

### INDICES

	Value	Level	Rank
Human Development Index (2015)	0.498	Low	160
Global Competitiveness Index (2015-2016)	..	...	..

