



“ never stop learning because life never stops teaching ”

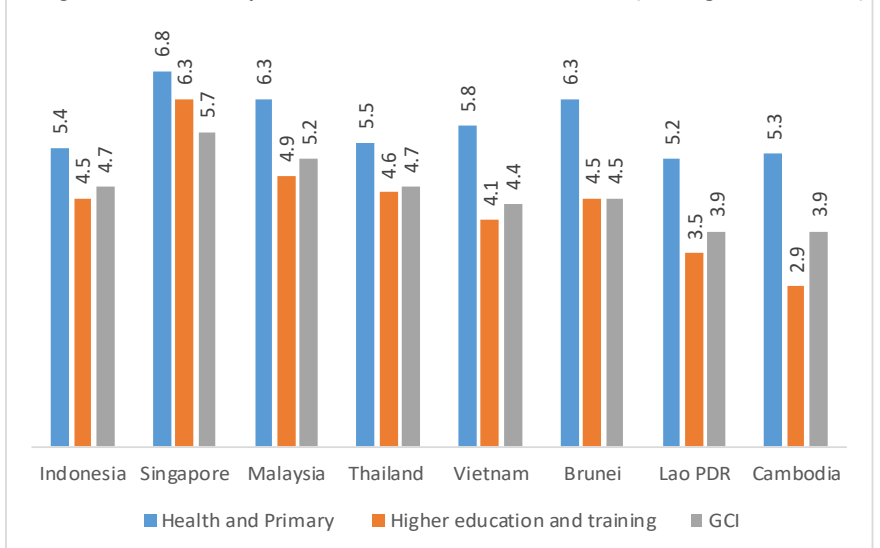


Education as an Important Component of Nation Competitiveness

We may generally get the indicators of a country's competitiveness from the Global Competitiveness Index (GCI) reports published by the World Economic Forum (WEF). In GCI, there are 12 pillars serving as the indicators of a country's competitiveness and they are categorized into three major groups, namely: basic requirements, efficiency enhancers as well as innovation and sophistication. Basic education is the fourth pillar (along with health) while higher education and training are the fifth pillar in GCI. Thus, education quality is an important variable in supporting a country's competitiveness. The better education quality will affect the country's competitiveness in innovating and creating added values to the economy. Referring to GCI, in the Southeast Asia Region, Indonesia's ranking in the pillars of basic education (and health) is only superior to Cambodia and Laos. While for the pillars of higher education and training, Indonesia is superior to Vietnam, Laos and Cambodia.

When referring to the Human Development Index (HDI) in 2107, Indonesia was ranked 116th and under the category of Medium Human Development country groups. In this group, other ASEAN countries, namely the Philippines was ranked 113, Vietnam was ranked 117, Cambodia was ranked 146 and Myanmar was ranked 148. While other ASEAN countries included in the Very High Human Development category are Singapore at the 9th, Brunei Darussalam at the 39th and Malaysia at the 57th ranks .

Figure 1. Global Competitiveness Index in ASEAN Countries (The Higher The Better)



Source: Global Competitiveness Report 2017-2018

Agenda for Improving National Education Quality

By reflecting on GCI and HDI indicators, we know that Indonesia still has to improve its education quality to be highly competitive in global economic stage. Given this fact, the Government continues to strive to improve the education quality, among others, is through the Smart Indonesia Program (PIP) by the implementation of 12-Year Compulsory Education in National Medium-Term Development Plan (RPJMN) 2015-2019. In general, the enrollment rate at each education level is a target that must be improved in the period of 2015-2019 .

The strategy undertaken by the government in order to execute PIP in general can be illustrated as an improvement in the "hardware" and "software" qualities in education sector. The "hardware" quality improvement, among others, is through the provision of school facilities, especially in areas having the least education facilities. In addition to the physical facilities, providing access to education services is also a government strategy agenda, one of which is through Indonesia Smart Card (KIP). While in strengthening the "software" quality, the government also implements a few strategies, among others, are by intensifying education curriculum so that it will be compatible with global competition in the 21st century. In line with the curriculum strengthening, improving the teacher competency is also a target in supporting PIP.

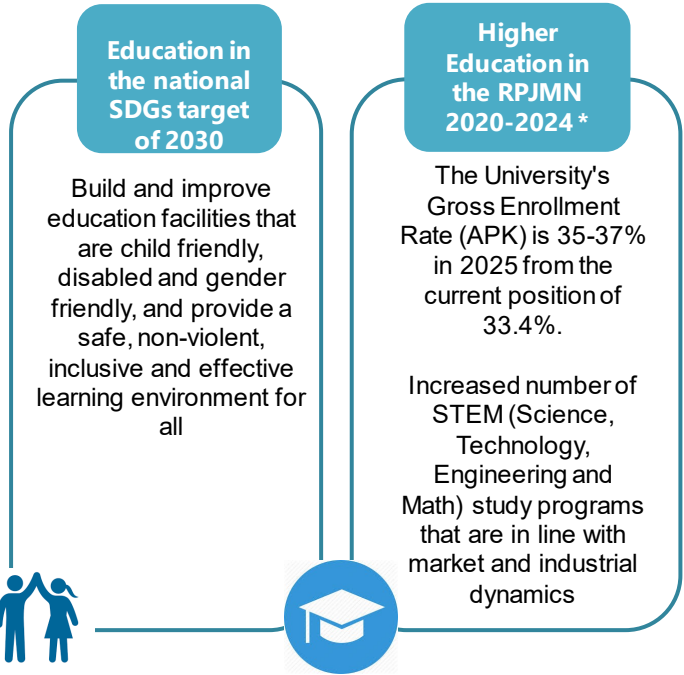
Beyond 2019, education is an important sector in the long-term development plan and has become one of the agenda for achieving Indonesia's SDGs/TPB in 2030. In the Sustainable Development Goals (TPB), the government has targets to build and improve child-friendly as well as disabled-friendly and gender-friendly education facilities and provide an environment learning which are safe, non-violent, inclusive and effective for all. As indicators of the expected education facilities are schools with access to adequate electricity, internet, computers, infrastructure and materials for disabled students, decent drinking water, basic sanitation facilities per gender, hand washing and hygiene facilities for all.

In temporary 2020-2024 RPJMN draft, the government targets an university's gross enrollment rate (APK) of 35-37% in 2025 from the current position of 33.4%. Furthermore, the government also plans to increase the number of STEM (Science, Technology, Engineering and Mathematics) study programs that are in line with market and industry dynamics.

Figure 2. National Agenda in Accelerating Education Sector

Challenges that Must be Dealt With

Some challenges that need to be overcome in supporting National Education's quality improvement agenda in accordance with 2020-2024 RPJMN interim plan are (1) Higher education infrastructure, especially in 3T (Least developed, Frontier and Outermost) regions is still inadequate (2) The quality of digital learning process has not yet supported by the availability of adequate learning and technology infrastructures (3) Improper condition of school classrooms ranging from elementary to high school/vocational school in general. The classroom conditions, especially public schools, on average is still poor (Elementary school/SD 24%, Junior High School/SMP 27%, High School/SMA 46%, Vocational High School/SMK 50%) and (4) The percentage of school libraries in all provinces has not reached 100%. Furthermore, regions outside Java have a much lower percentage of libraries compared to the percentage of libraries in Java.



Source: Ministry of National Development Planning

Figure 3. Number and Percentage of Libraries According to Educational Level and School Status, year 2016/2017

Educational Level	State		Private		State+Private	
	amount	%	amount	%	amount	%
SD (elementary)	81714	61.9	8928	57.7	90642	61.45
SMP (junior)	18510	81.2	10286	68.8	28796	76.25
SMA (senior)	5626	85.7	4416	67.1	10042	76.4
SMK (vocational)	2665	77.6	5322	54.3	7987	60.34

Source: ministry of education and culture

Meanwhile, the percentage of school libraries in all provinces has not reached one hundred percent (see Table of Appendix 2.7). This happens at all education levels. However, at the elementary school level, inequality among provinces is more obvious. Papua and West Papua provinces have a percentage of less than 40 percent, while other provinces are above 50 percent. In fact, Bangka Belitung island itself reaches 98 percent.

The library unavailability in each school occurs in both public and private schools. The percentage of libraries in public schools is greater than private schools. This is in line with the number of schools as seen in previous Table 2.2, where there are more public schools than private schools, except at vocational education level. There are more private vocational schools, but the percentage of libraries is smaller .

Figure 4. Number and Student Ratio, Study Group, and Classroom Based on Educational Level and Status, year 2016/2017

Educational Level	Number of Student	Number of Study Group	Number of Classroom	Ratio of Student per Studygroup	Ratio of Studygroup per Classroom
SD (elementary)	25618078	1103232	1049116	23	1.05
SMP (junior)	10145416	348174	347592	29	1
SMA (senior)	4659542	155162	151441	30	1.02
SMK (vocational)	4682913	165386	143175	28	1.16

Source: ministry of education and culture

Furthermore, the ratio of study groups per class can serve as an indicator of class adequacy available for student learning activities. The data at Ministry of Education and Culture shows that the class adequacy at the vocational school level is the lowest compared to other education levels.

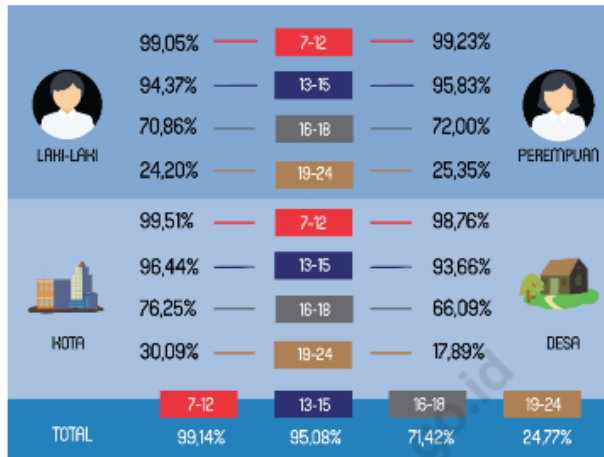
In school-year period 2016/2017, the ratio of study groups per class for vocational level is 1.16. That means that there are 16 study groups that do not have classes.

Enrollment Rates in National Education

All education enrollment rates, namely School Enrollment Rate (APS), Gross Enrollment Rate (APK) and Net Enrollment Rate (APM) can be used to see the number of people who are able to access Education facilities. From the Enrollment Rate formula, we can actually see two sides of community enrollment in education, namely the supply side and demand side. A low participation rate can be triggered by factors of school unavailability in the area (supply side) or the school is available but the community's access to the school is inappropriate (demand side). It can be caused by low income of the community so that they cannot afford school fees.

In the table containing information about demographic characteristics and school enrollment, it can be concluded that the lowest level of school enrollment is in the age group of 19-24 years which is only 24.77%. The mentioned age group is the age of higher education (university or equivalent). This shows that Indonesian people having higher education are still low.

Figure 5. School Participation Rate (APS) Based on Demography and Age, 2017



Source: Statistics Indonesia, Susenas March 2017

Figure 6. Gross Participation Rate Based on Demography and Educational Level



Source: Statistics Indonesia, Susenas March 2017

The low condition of APK at the tertiary level should be an important note that must be followed up with a concrete program. The reason is that currently Indonesia has a demographic structure where working age (age 15-64 years) dominates the population in the 2010-2035 period. According to National Development Planning Agency (Bappenas) projection, in 2030-2040, the population of the productive age is estimated to reach 64% of the total population.

In this productive age, there is a tertiary-level group that currently has a low APK. In other words, if there is no increase in APK at the higher education level, the demographic bonus that come from productive age will not occur. The pre-condition of getting a demographic bonus to encourage higher economic productivity, namely by increasing quality in the higher education- age group.

Gross Enrollment Rate (APK) is an indicator often used in determining targets for improving the national education quality. Gross Enrollment Rate (APK) is the proportion of population attending school at an education level to the total population of school age in accordance with that education level. For example, Elementary School APK is the percentage of population currently attending elementary school with a population of 7-12 years .

In view of APS, the tertiary level (higher education) is the lowest APK level. Thus, it can be concluded that the access of Indonesian people in general to higher education is still low.

The low tertiary level APK condition is also confirmed by data on the drop-out children percentage. Data in 2017 shows that children aged 16-18 years are a group of children with the largest percentage experiencing dropouts (28.58%).

Figure 7. Percentage of children not attending the school, 2017

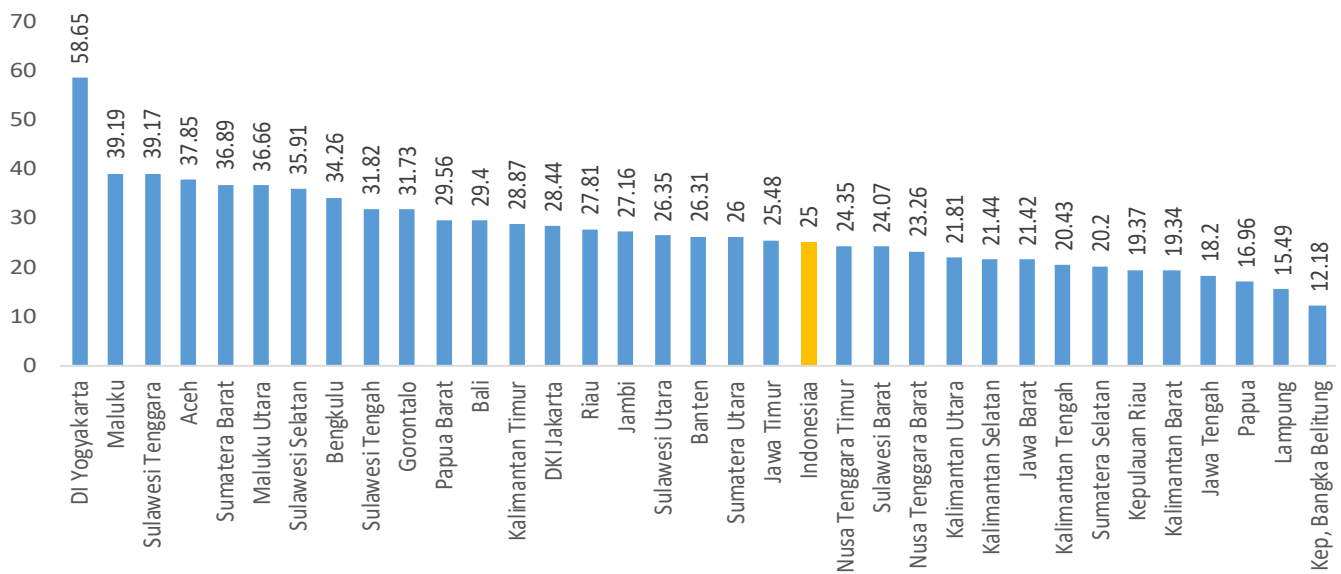


Source: Statistics Indonesia, Susenas March 2017

Higher Education's Gross Enrollment Rate (APK) by Province

There are 14 provinces having higher education APK under the national rate (25%), while 20 other provinces have APK > 25%. Special Region of Yogyakarta has the highest APK for higher education (58.65%), this is in line with HLS rate of Special Region of Yogyakarta which also occupies the highest position. We also see that the eastern part of Indonesia is not always left behind in university APK rate. Maluku, North Maluku, and West Papua are the three eastern provinces having the higher education APK above the national higher education APK. Conversely, several provinces in the western part of Indonesia such as West Java, Central Java, Lampung and Riau Islands have higher education APK below the national higher education APK.

Figure 8. Higher Education APK per Province, 2017



Source: Statistics Indonesia

The Central Bureau of Statistics (BPS) explained that the high APK indicates a high school enrollment rate, regardless of the accuracy of school age at the education level. If APK rate is close to or more than 100 percent, it indicates that there are population whose schools are not sufficiently old and/or exceed the age they should be. This can also show that the region is able to accommodate the school-aged residents more than the actual target .

The low higher education APK rate in a province means that the residents aged 19-24 years who go to college is in a small number. Several factors can be reasons: (1) The number of higher/equal education is not sufficient to accommodate the number of residents aged 19-24 years (2) Limited access to enjoy the higher/equal education, for example due to high tuition fees (3) Some residents aged 19-24 years in the region choose not to study for other reasons, such as preferring to work .

Figure 9. Formula of APK

$$APK\ SD = \frac{\text{Jumlah murid SD/ sederajat}}{\text{Jumlah penduduk usia 7 - 12 tahun}} \times 100\%$$

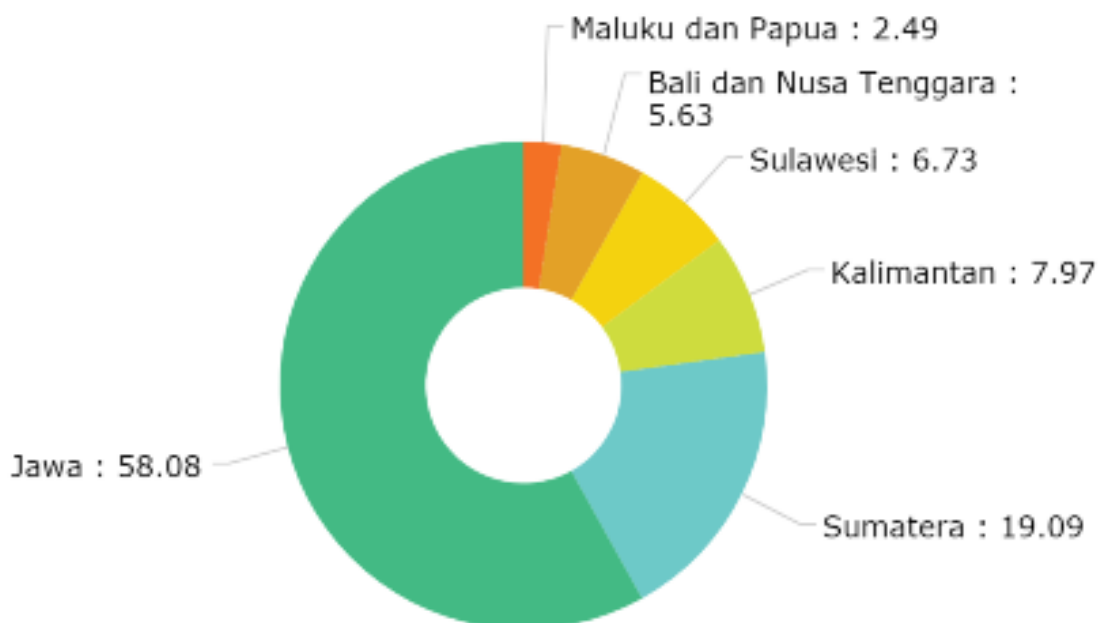
$$APK\ SMP = \frac{\text{Jumlah murid SMP/ sederajat}}{\text{Jumlah penduduk usia 13 - 15 tahun}} \times 100\%$$

$$APK\ SM = \frac{\text{Jumlah murid SM/ sederajat}}{\text{Jumlah penduduk usia 16 - 18 tahun}} \times 100\%$$

$$APK\ PT = \frac{\text{Jumlah murid PT/ sederajat}}{\text{Jumlah penduduk usia 19 - 24 tahun}} \times 100\%$$

Source: Statistics Indonesia

Figure 10. Internet Penetration in Indonesia by Province (%)



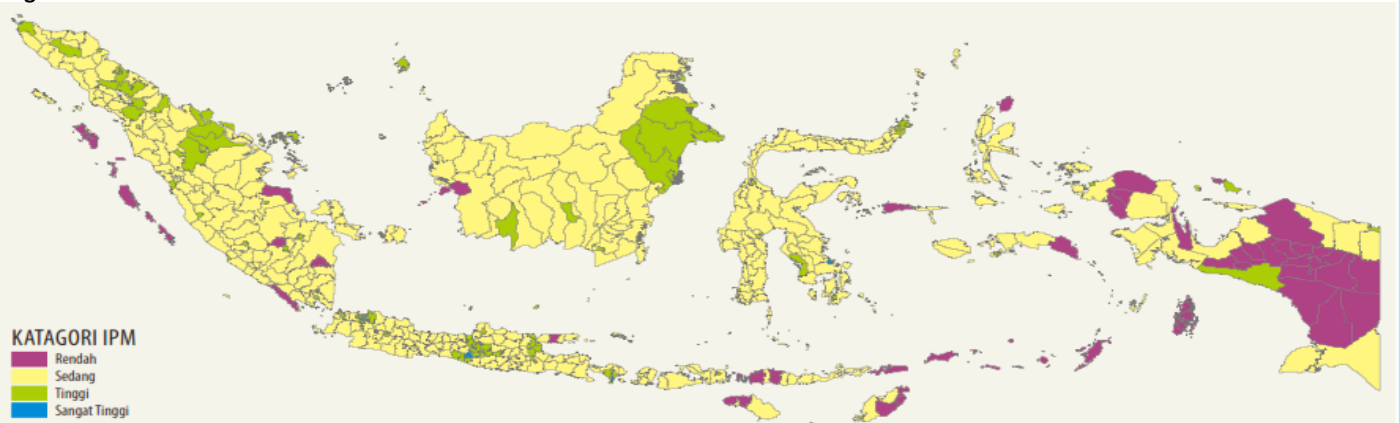
Source: katadata

In conclusion, there are several possibilities for the low higher education APK in several provinces based on the explanation of the formula for calculating the higher education APK. The West Java Development Planning Agency (Bappeda) web site (<http://bappeda.jabarprov.go.id/menristekdikti-dorong-jabar-tingkatkan-apk-perguruan-tinggi/>), shows that the West Java Provincial Government has shared the information that the cause of low higher education APK in West Java because the total tertiary institutions (universities and colleges) are insufficient compared to the relatively large West Java population. One of the efforts made by the West Java Provincial Government to increase the higher education APK is to appealing several State Universities (PTN) to open new campuses. In addition, the West Java Provincial Government also hopes that the contribution of Private Universities in absorbing prospective students will increase the higher education APK of West Java province .

The government through the Ministry of Research, Technology and Higher Education (Kemenristekdikti) makes a distance education system (PJJ) or online based education as one of the solutions in increasing the higher education APK in Indonesia. By definition, in accordance with Regulation of the Minister of Education and Cultural No.109/2013, PJJ is a teaching and learning process carried out remotely through the use of various communication media. A more concrete concept regarding PJJ is e-learning, namely individual/independent or group learning using ICT and networking. The PJJ advantage is to provide flexibility for students to study anytime, anywhere and with anyone. In addition, PJJ can be combined with face-to-face session. The challenge of infrastructure aspect for the government in implementing PJJ is how to access an adequate internet network, especially in Indonesia's eastern region. As shown by the chart above, internet penetration is highest in Java, which is 58.08% and in Sumatra Island is 19.09%. While internet penetration on other islands is only less than 10%.

Comparison of Human Development Index (HDI) among Provinces in Indonesia

Figure 11. HDI in Indonesia Based On Provinces



Source: Statistics Indonesia

BPS calculates HDI among provinces with the purpose of comparing human development progress among provinces in Indonesia. Below are the indicators in HDI calculations:

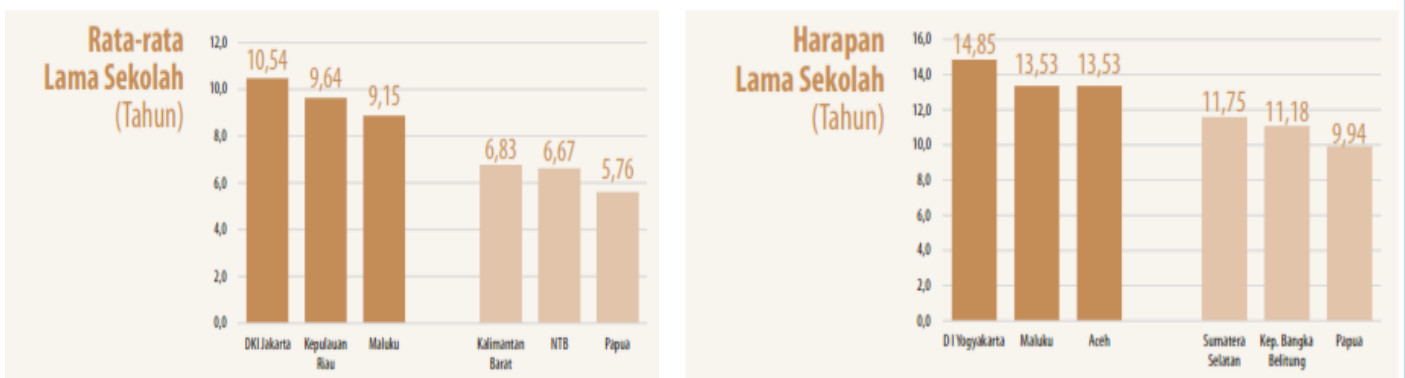
- 1) Health through Life Expectancy at birth (AHH)
- 2) Education through Expected Years of Schooling (HLS) and Means Years of Schooling (RLS)
- 3) Living Standards: PNB (Gross National Income) per Capita

HDI Grouping is divided into below several categories :

- IPM < 60 : low
- 60 ≤ IPM < 70 : medium
- 70 ≤ IPM < 80 : high
- IPM ≥ 80 : very high

BPS' calculating results released the information that HDI in eastern Indonesia (especially in Papua) is still generally low. Overall, Indonesia's HDI is still in the moderate category. The details are: 6.1% of cities and 0.2% of regencies are included in very high HDI, 10.2% of cities and 77.2% of regencies are included in medium HDI, 83.7% of cities and 10.1% of regencies are included in high HDI and 12.5% of regencies are included in low HDI. If we are specifically looking at the education indicators, the last position of Indonesian HLS rate (in 2014) is 12.39 years and RLS is 7.73 years. HLS and RLS rates have continued to increase since 2010. In 2014, the three highest provinces in RLS were DKI Jakarta (10.54), then Riau Islands (9.64) and Maluku (9,15). Meanwhile, the three lowest provinces in RLS were West Kalimantan (6.83) then NTB (6.67) and Papua (5.76). The highest HLS was belonged by Special Region of Yogyakarta province (14.85), then Maluku (13.53%) and Aceh (13.53%). The lowest HLS ranking is South Sumatra (11.75), Bangka Belitung Islands (11.18) and Papua (9.94%) provinces).

Figure 12. The lowest and highest provinces in RLS and HLS



Source: Statistics Indonesia

PPP in Education

Public Private Partnership (PPP) scheme is an effort to overcome the government's budget constraints in building strategic projects, such as infrastructure by involving the private sector. School facilities and infrastructure are included in social infrastructure whose development can be sought through partnership between the government and private sector under the PPP scheme.

Below are some reasons for supporting PPP scheme or private involvement in the public service provisions, especially in education sector (World Bank, 2009):

- PPP can create competition in education industry. As a result, schools will compete to improve their education quality.
- Schools under PPP have flexibility in teacher recruitment schemes compared to government-owned schools. Such flexibility is often more appropriate for teacher quality deliverables.
- The government has a great opportunity to get the most efficient (and the best quality) education providers through an open bidding process.
- Risk sharing between the government and private sector so as to increase efficiency in the education service provision .

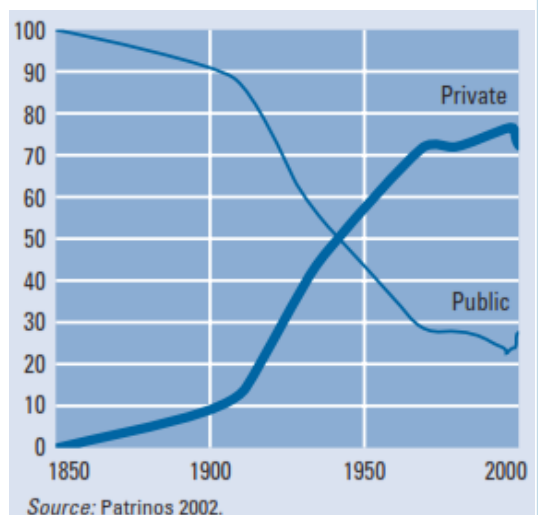
Based on findings in studies by the World Bank, several sample cases showed that one of the partnership forms between the government and private sector in education is where the government acts as a financier while the private sector acts as an operator with the potential to improve the enrollment quality with an efficient budget.

Some facts about the public-private partnership scheme in education sector in several countries. The education deregulation applied by Senegal and Tanzania (through partnership with the private sector) has implications of low costs and positive correlations with enrollment. The PPP scheme has contributed to the increasing school provisions for low-income people in both urban and rural areas in several countries such as Bangladesh and Pakistan. Furthermore, here are several education PPP sample cases in other countries:

Education PPP in the Netherlands

All schools in the Netherlands are funded by the government budget, but most of these schools are managed by the private parties. Accordingly, most students in the Netherlands enroll in private schools instead of public schools. The government, in this matter, encourages the promotion of these schools to increase competition among schools. As its implication, the competition encourages efficiency in education cost because every school seeks to improve quality and attract more students.

Figure 13. Public and private school enrollment in the Netherlands



Education PPP in Bangladesh

The Bangladesh government uses PPP scheme to meet needs in education sector at all levels, namely basic education, vocational education and higher education. In general, there are three focus areas faced by the Bangladesh government in their education implementation, namely (1) access and equality (2) education quality (3) operational (4) financing and efficiency. For example, the PPP for Higher Education in Bangladesh is carried out in the following ways:

- Carrying out a pilot project by inviting several private secondary schools in building schools in peri-urban and rural regions with grant aid.
- Providing incentives for government and private tertiary institutions that is able to develop study programs that support experts in hydropower, agro - forestry and ecotourism fields.
- Establishing a matching-fund for research purposes sponsored by industry, government institutions and NGOs and non-governmental organizations.

Education PPP in Egypt

The program initiative carried out under PPP scheme is the land provision by the government for school construction, while the private sector provides design, construction and financing of public school furnishings as well as presents non-educational services in a long-term partnership agreement.

Education PPP in Nova Scotia (Canada)

The Nova Scotia provincial government used PPP scheme to build 39 school units at the end of 1990. Under the scheme, the private sectors designed, built and financed as well as maintained school buildings. Contracts with the private sectors are carried out through a competitive and open bidding process. After being built, the school units are rented by the government for a period of 20 years. The government also provides incentives that are included in the contract to ensure construction and maintenance are still carried out by the private sectors .

Education PPP in Ypenburg (Netherlands)

The private sector and government agree on DBFM (Design-Building-Financing-Maintenance) model listed in the contract and are valid for 30 years (1.5 years for construction period and 28.5 years for maintenance period). The maintenance includes hygiene, furniture, information as well as Information and Communication Technology (ICT).

Education PPP in Pakistan

Since 2001, Pakistan has used PPP as a strategy in reforming the education sector. As its implementation, PPP is formalized to national and provincial level regulations to address the fact of having school-age population fallen behind, especially at the elementary and secondary school levels.

Several types of PPP implementations in Pakistan:

1. PPP initiative is carried out by the government (the Pakistani Ministry of Education) by selecting the school location. Afterwards, the government receives unsolicited proposals from the private sectors. In this scheme, there is none open announcements. The partnership form is a funding aid from the central government to the provincial government (grant-in aid) for repairs or development of government-owned schools combined with the private funds.
2. Initiative comes from private parties (such as civil society or private groups) with the desire to cooperate with government-owned schools of which conditions require funding aid. In the process, there are negotiations and unsolicited proposals between the government and the private sector. Funding support for schools usually follows the following pattern: core costs such as teacher salaries and basic maintenance of school facilities will be borne by the government, while the funding for other school facilities comes from philanthropic, CSR (Corporate Social Responsibility) and NGO (Non Governmental Organization) support.
3. PPP initiative is carried out through the establishment of semi-autonomous institutions. For example, Educational Foundations will carry out various development and improvement programs for government-owned schools in need. In addition, the Foundations can also establish new schools in collaboration with the government.
4. PPP scheme is announced openly for a competitive and open procurement process to be held for private parties acting as school operators. After a series of processes, the winner will be announced. In this PPP type, the government acts as a financier, enabler and regulator, whereas the private sector acts as the school operator.

Figure 14. PPP types in Pakistan

<p>Type I:</p> <p>On public sector government-owned sites and schools initiated by the education departments in provinces</p> <p>Financing: mixed; some government or user charges and fees. Governing body examples are cadet schools and public schools</p>	<p>Type III:</p> <p>Schemes under semi-autonomous bodies, Education Foundation programmes on private owners' sites and schools, and sometimes failed or underperforming public sector school sites managed by non-state partners.</p> <p>Financing: vouchers; subsidies per child for targeted schools and agreed outcomes or key performance indicators (KPIs)</p>
<p>Type II:</p> <p>On public sector government-owned sites initiated by private sector philanthropy-CSR-CSOs through MoUs.</p> <p>Financing: public sector resources, supplemented by CSR, philanthropy and donors' funds through CSOs (Type II may well switch to Types I and IV)</p>	<p>Type IV:</p> <p>Procured through PPPs or advertised under PPP Acts 2010 (Punjab and Sindh)</p> <p>Financing: majority public sector finance that may be topped up by private sector resources.</p>

Source: World Bank

PPP Scheme for Developing Education Infrastructure in Indonesia

Looking at the case studies in above several countries, PPP scheme is used as an effort to provide educational facilities that could reach the broader community with good quality and cost efficient from the government budget side. Therefore, the Indonesian government should be able to consider PPP scheme to be used in building educational infrastructure given the facts that there are still some challenges in meeting the national agenda for improving the education quality.

The challenge in implementing the government's plan to improve the quality of national education is the need to improve the poor quality of national education's facilities and infrastructure. Such facilities and infrastructure include: damaged classrooms, inadequate total library, lack of higher education institutions in several provinces, especially in the 3T regions and internet facilities for education. On the other hand, education funds to be allocated to the physical infrastructure construction are still in the minimal portion.

According to the government's findings, the education budget allocated to the regions was mostly used for teacher salaries and allowances so that the fund allocation to the construction of new schools and damaged school rehabilitation became very small. For example, in 2017 the government stated that the number of damaged Elementary School rooms reached 178,194 classes, so the estimated funding for rehabilitation was Rp 20 trillion. Then, the government also mentioned if the Local Government Budget (APBD)'s ability to fund the Elementary School Building rehabilitation was only Rp 2.1 trillion. There was still a very large gap in the funding needs of the Elementary School building rehabilitation. In this case, PPP scheme can be applied to assist local government's fund in rehabilitating damaged Elementary School buildings.

Some provinces still need infrastructure in the form of universities to improve the Higher Education APK. In this section of the article, West Java is an example of a province where the Higher Education APK is low because (based on information from the provincial government) there are not enough universities to absorb many prospective students in West Java. Therefore, PPP should work out in building new universities or opening new campus branches in the regions.

The private sectors that can be involved in education PPP scheme in Indonesia is the philanthropic groups. They usually pay great attention to social and environmental issues including education. The government can invite philanthropists in Indonesia to partner in PPP schemes in overcoming various obstacles ranging from funding the school facility and infrastructure construction to providing internet facilities at schools. The government can also invite global philanthropists to participate in facilitating education infrastructure development in Indonesia. An example is Bill & Melinda Gates Foundation as a well-known global philanthropist familiar with having a high interest in developing the global education sector, especially in developing countries .

Concluding Remarks

In facing global competition, especially in the Asian region, Indonesia still has to improve the quality of national education, including the physical infrastructure of education and the quality of human resources.

Some challenges in improving the quality of national education are:

- The quality of education infrastructure that has not been evenly distributed throughout Indonesia, especially in the 3T area
- The internet network infrastructure and communication technology still need to be improved, especially in the regions
- Good quality classrooms and the construction of libraries in schools need to be improved
- The participation of the Indonesian population aged 19-24 years in accessing higher education is still low. This condition is a warning that must be followed up. Productive population (15-64 years) who will dominate Indonesia's demographics in 2030-2040. Some of the productive age population in 2030 will come from residents of the current higher education level. Thus the quality of higher education graduates will have a key role in Indonesia's economic productivity in the future.

The government makes the online based education system or e-learning as one of the solutions in increasing the university's Gross Enrollment Rate (APK). The next challenge is to increase the accessibility of internet networks more widely in the territory of Indonesia, especially outside Java.

The Public Private Partnership (PPP) mechanism can be considered as an effort to help build and improve the quality of physical education facilities, especially in the regions. The government can invite private parties including philanthropy to cooperate in providing the best educational facilities for the wider community.



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