



## Analyzing Education Quality in Papua Province Using Education Indicators

**Yuni Mariani Manik<sup>1\*</sup>, Novi Eko Prasetyo<sup>2</sup>, Sulistyio<sup>3</sup>**

<sup>1\*,3</sup>Economis Education Department, Faculty of Economics and Business,  
Universitas PGRI Kanjuruhan Malang, <sup>2</sup>IKIP Budi Utomo Malang

\*Corresponding Author. Email: [yuni@unikama.ac.id](mailto:yuni@unikama.ac.id)

**Abstract:** This study aims to analyze the Net Enrollment Rate (NER), the number of school education facilities at various levels of education, and the student-teacher ratio in Papua Province. The analytical method used in this study is quantitative descriptive data analysis, using a quantitative descriptive method with secondary data from the Central Bureau of Statistics for the 2019-2022 period. To measure the level of education participation in Papua, the School Enrollment Rate (APS) indicator is one indicator that can be used. The school enrollment rate (APS) is the ratio between the number of people who increase at a certain level of education and the number of people in the school-age group that corresponds to that level of education. In addition, the APS indicator can also be used as a parameter to determine the level of educational equity in an area. The results of the analysis show that the net enrollment rate for each age group has decreased by 12.65-22.70%. The number of primary schools in Papua Province has fluctuated, while Madrasah Ibtidaiyah has increased. The number of junior high schools increased while the number of Islamic junior high schools remained the same. The number of senior high schools is dominated by high schools, followed by Islamic high schools, then vocational high schools, Christian high schools and Christian theological high schools. The trend of changes in the ratio of elementary school students has decreased while the ratio of junior and senior high school teachers has increased. In general, the student-teacher ratio in Papua is still relatively low because it exceeds the standards set by the government. This is caused by many factors that still require further research.

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## Introduction

Papua is in the easternmost region of Indonesia. It is the second largest island after Greenland Island in Denmark. Its size is estimated to be nearly five times the size of the island of Java with an area of 319 036.05 km<sup>2</sup>. In 2021, Indonesia's population will be 272.68 million people, while the population of Papua Province is 1.59 percent (4.35 million people) of the total population of Indonesia. In the same year, it was recorded that 920.44 thousand residents of Papua Province lived below the poverty line, or 3.34 percent of the total poor population in Indonesia (Central Bureau of Statistics Papua Province, 2021). The high number of people living below the poverty line indicates that Papua still needs improvement in terms of the potential availability of human resources. Papua's large population can be both an opportunity and a threat. But often the large number of human resources becomes a burden of problems that can hinder regional development. Therefore, quality human resources are needed to accelerate regional development in Papua Province. One way to improve the quality of human resources is to improve the quality and quantity of education.



In 2021, Indonesia's Human Development Index (IPM) is 72.29 which is included in the high category. However, this has not been achieved by the Province of Papua which has an HDI of 60.62 and is included in the medium category. The need for education is a right for all Indonesian people. In addition, education is also an obligation regulated in the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System as stated in Article 6 paragraph (1) which states that "Every citizen aged seven to fifteen years is obliged to attend education education is considered important because it is the basis for developing constructive and creative thinking patterns, and plays a role in improving the quality of human life (Gewab et al., 2015). Improving the quality of education is included in the SDGs action plan, namely the fourth indicator as an effort to create human resources quality.

Fundamental problems in the field of education that often occur in Papua Province are mostly related to the level of participation of the school-age population to play an active role by going to school at every level of school, issues of educational facilities (schools), and student-teacher ratios. To measure the level of education participation in Papua, the School Enrollment Rate (APS) indicator is one indicator that can be used. The school enrollment rate (APS) is the ratio between the number of people who attend school at a certain level of education and the number of people in the school-age group that corresponds to that level of education (Figueiredo et al., 2021). Furthermore, Nurhanifa & Pujiastuti (2020) stated that the APS indicator can also be used as a parameter to determine the level of educational equity in an area. Therefore, education can be used as a parameter to measure the human development index in a region. Furthermore, the working population in Papua Province dominates in the agricultural sector (1.29 million people). This may be closely related to the highest level of education in the working population, which is dominated by the elementary school education level or below (1.09 million people).

Educational facilities are a requirement that must be met to support the teaching and learning process in an area (Sachdeva et al., 2008). The distribution of district/city education in Papua Province for all levels of education (Elementary School, Junior High School and Senior High School) is uneven. This is because there are still areas that lack teachers. At the elementary school education level, there is one district that has a shortage of teachers. The uneven distribution of district/city education in Papua is also due to areas still lacking educational infrastructure such as classrooms. Unequal educational facilities have the potential to cause educational problems such as the availability of educational facilities that do not meet community needs (Apple, 2012). Educational facilities that are much needed include schools and teachers (Okolie et al., 2020). The number of schools and teachers in Papua must be able to meet the community's needs according to the ideal standards set by the government. Therefore it is necessary to study the distribution and number of educational facilities in Papua to see whether the community's need for school facilities has been properly met to ensure equal distribution of educational opportunities. R & Yulhendri (2020) stated that the more classrooms and school facilities in junior high schools, the greater the opportunities for people in the area to continue their education to junior high schools.

This research will use a different approach, namely examining the number and distribution of educational facilities in relation to school enrollment rates (APS), because other studies have examined the relationship between school enrollment rates and poverty. This study aims to analyze the School Participation Rate (APS) by district/city, the number of educational facilities at each level of education by district/city, and the ratio of the number of students to teachers at each level of education by region/city in Papua Province.



## **Research Method**

The analytical method used in this research is descriptive quantitative data analysis, using a descriptive quantitative method with secondary data from Central Agency on Statistics for the period 2019-2021. To measure the level of education participation in Papua, the School Enrollment Rate (APS) indicator is one of the indicators that can be used. The school enrollment rate (APS) is the ratio between the number of people who are on the rise at a certain level of education and the number of people in the school-age group that corresponds to that level of education. Furthermore, the APS indicator can also be used as a parameter to determine the level of educational equity in a region.

The school enrollment rate in education is an illustration for assessing the absorption rate of formal education. In the age grouping of school enrollment rates according to the Central Statistics Agency (BPS)(Central Bureau of Statistics, 2020), there are four age ranges, namely the age of 7-12 years for the elementary school level. Age 13-15 years for junior high school level. Age 16-18 years for senior high school level and age 19-24 years for tertiary level. Since 2007, non-formal education (Package A, Package B, Package C) has been taken into account. In this theory Schultz, (1961) suggests that the best education is a big factor that can create someone who is very productive. The level of education is closely aligned with productivity and therefore can increase competitiveness and increase development.

The type of data used in the analysis of the quality of education in Papua is secondary data derived from the publications of the BPS Papua Province. The data used in the form of data on the School Participation Rate (APS), the number of school facilities, and the Student-Teacher Ratio. The data were analyzed in a time series. The data collection technique was carried out using a literature study approach, namely data collection techniques by studying various reference books and similar previous research results that were useful for obtaining a theoretical basis on the problem to be studied. Information on the results of data analysis is visualized in the form of descriptions, tables, and diagrams. The analytical method used in this research is descriptive quantitative data analysis. Descriptive quantitative is one type of method to describe and describe data in the form of numbers processing results and data analysis using statistical methods (Dey, 2003).

## **Results and Discussion**

### **School Participation Rate (APS)**

The proportion of children in the age group 7 to 12 years who are still attending primary school is indicated by the school enrollment rate. As can be seen in Table 1, the number of APS in Papua Province between the ages of 7 to 12 years did not experience a significant change between 2019 and 2020 but has increased in 2021. APS aged seven to twelve years was 82.62 percent in 2019 , rising to 82.99 percent in 2020, and rising to 83.43 percent in 2021. Two out of twenty nine regions have APS scores below 60 percent for the age group equivalent to elementary school or equivalent. There are 14 regions that have APS above 90 percent, seven regions above 80 percent and seven regions with APS between 60 and 70 percent. This shows that Papua Province has an unequal distribution of basic and equal education. Increased public awareness of the importance of education can be a source of high APS scores for people aged 7 to 12 years. Community perceptions of the urgency of education and its positive impact on family economic life in the future are influenced by the increasing level of education of the population in Papua. Increasing and equalizing



educational facilities, especially schools and education staff, is another factor that supports this.

Regions with the lowest APS in Papua Province include Nduga Regency and Puncak Regency. Nduga is one of the regencies on the coast of Papua Province which connects to 11 other regencies in the central mountains of Papua so that it is an isolated district. In 2020, the Human Development Index (IPM) in Nduga Regency is the lowest HDI in Indonesia, which is 31.55 and is even far below Indonesia's average HDI which is at the High HDI level, which is 71.94. Then based on data from the BKKBN for Papua province, most of the families in Nduga district are poor families, namely 1,021 families (63.61 percent). Less than one percent of families in Nduga Regency are included in the stages of prosperous families II and III, namely 5 families and 1 family respectively. There are quite a lot of families included in the first prosperous family stage, namely 578 families (36.01 percent). None of the families are included in pre-prosperous III+. The poverty line for Nduga Regency in 2011 was 211,691 rupiah/capita/month. The percentage of poor people is 42.54 percent in 2011. Road and bridge infrastructure and other facilities are completely inadequate. Many of the government buildings that are being built are still not ready for occupancy.

Puncak Regency is located in the highest area in Indonesia. This district is located between an altitude of 1,500-4,000 meters above sea level. The city of Ilaga is one of the entrances to Carstensz Peak. This district can be accessed by air from the City of Timika or Nabire for 25 minutes with a small body aircraft. In addition to demographic factors that make this area difficult to access, the impact of security disturbances in this area also causes learning activities to not run normally. The Puncak Regency Government makes education a special concern because it determines the future. From data collection from the Central Statistics Agency, until 2022, there are 33 elementary schools, 7 junior high schools, 4 senior high schools, and 1 vocational high school in Puncak Regency. There are 4,669 students spread over the three school levels. This factor is one of the causes of Puncak Regency having the lowest APS in Papua province.

From 2019 to 2021, the APS for the 13 to 15 year old group in Papua Province has experienced ups and downs, starting with a value of 80.11 percent, increasing to 80.48 but decreasing to 80.02 percent in 2021. Improved educational facilities such as schools and teachers have a direct impact on the increase in APS for the population aged 13 to 15 years in Papua. The Central Government through the Ministry of Education and Culture (Directorate General of Early Childhood Education, Basic Education and Secondary Education Ministry of Education, Culture, n.d.) accelerates the improvement and equity of education in Papua and West Papua. Some of the programs that will be focused on include providing one-roof schools with a dormitory pattern, to increase school enrollment rates. From 2019 to 2021, the Ministry of Education and Culture sees an additional 55 schools. Then the implementation of the contextual curriculum for Papua and West Papua is prepared based on local content and also regional languages that can assist teaching and learning activities. There is a curriculum for hunter-gatherers, a rural community curriculum, and an urban community curriculum. Strengthening in the form of implementation technical guidance and assistance will continue to be carried out.

Intan Jaya Regency is the region of Papua with the lowest APS for residents aged 13 to 15 years. The trend continues to decline from 2019 to 2021, the APS in Intan Jaya Regency is only 53.27 percent in 2019. This means that out of every 100 children aged 13 to



15 years in the district, 46 children do not attend junior high school or its equivalent. This may be due to the low efficiency of the Intan Jaya education system and governance in accepting and graduating students (Directorate General of Early Childhood Education, Basic Education and Secondary Education Ministry of Education, Culture, n.d.). Intan Jaya Regency is said to be the poorest area in Papua Province. In terms of percentage, the poverty rate is in 29 regencies and cities in Papua, the highest is in Intan Jaya Regency reaching 41.66 percent and the lowest is Merauke Regency with a rate of 10.16 percent in 2021. The school enrollment rate (APS) of the population the 16-18 year old group in Papua in general always shows a much smaller value than the other two age groups in 2019-2021. This shows that the school enrollment rate of the population will decrease with age. The percentage of APS for the Papuan population aged 16-18 years in 2019, 2020 and 2021 is 62.11%, 64.83% and 63.98%, respectively. This figure means that only around 60-65% of the population aged 16-18 years attend Senior High School and its equivalent, while the other 35-40% do not attend school.

Furthermore, by looking at the conditions of each district/city, the percentage of School Enrollment Rate (APS) for the 16-18 year age group shows different values and tendencies to change. With values of 62.11%, 64.83% and 63.98% in 2019-2021, Mappi Regency is one of the districts with the lowest average percentage of APS compared to other districts and cities, as shown in table 1. The majority of the population in Mappi District, the 3T (Outermost, Disadvantaged, and Frontier) areas, live below the poverty line. According to BPS data, Papua has the highest proportion of poor people in the district between 2019 and 2021. The low percentage of APS residents in Mappi District who are between 16 and 18 years old is due to the high poverty rate in the region. According to Lobo & Burke-Smalley (2018), people with low income will find it difficult to send their children to school because of high costs (Lobo & Burke-Smalley, 2018). The Poverty Line in March 2022 was recorded at IDR 629,175/capita/month with a composition of the Food Poverty Line of IDR 471,880 (75.00 percent) and the Non-Food Poverty Line of IDR 157,295 (25.00 percent). As a result, many poor people in Mappi District prefer to work rather than continue their higher education. Despite this, local governments continue to improve education standards. One of them is by providing Secondary Education Affirmation Scholarships (ADEM) and Smart Indonesia Cards to sons of Papua and West Papua. Apart from the regional government, the Ministry of Education and Culture is also open to facilitating public support to advance education in Papua and West Papua. As done by Non-Governmental Organizations, Foundations, and various partnership programs.

In contrast, Jayapura City is the district or city with the highest percentage of APS, as shown in Table 1. Between 2019 and 2021, the percentage of APS in Jayapura City aged 16 to 18 years of population is 92.78%, 92.21%, respectively, and 97.12%. The number of schools in Jayapura City is one of the factors causing the high percentage of APS in the 16-18 year age range. When compared to 28 other regencies and cities, Jayapura City has the largest number of schools. Based on data from the Central Statistics Agency (BPS), Jayapura City will have 25 SMA, 15 SMK, and 15 MA in 2021. Offiong et al (2021) supports this view that the percentage of APS is positively correlated with the number of schools. According to (Filmer, 2007), the percentage of the school-age population attending school can increase if the number of schools increases. Nonetheless, the government of Jayapura City continues to strive to improve education standards in the region. Intervention to provide schools in remote areas is a priority. Especially also connectivity for schools that do not have electricity and internet networks (Inpres 9 Tahun 2020: Harapan Baru Percepatan Pembangunan Kesejahteraan Provinsi Papua, 2020).

**Table 1. School Participation Rate for Population Aged 7-18 Years By Regency/City and Age Group of Papua Province Year 2019-2021**

Regency	School Enrollment Rate (APS) (Percent)								
	7-12			13-15			16-18		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Merauke	95.83	97.38	95.76	97.35	97.23	97.23	77.42	78.70	81.75
Jayawijaya	90.78	90.74	89.71	89.20	89.12	88.97	72.78	72.91	80.13
Jayapura	96.36	95.92	95.95	94.70	94.63	95.23	83.75	82.25	84.32
Nabire	94.63	94.61	94.37	94.41	94.38	95.51	80.04	77.22	83.36
Yapen Islands	94.69	94.67	93.78	95.90	95.03	95.12	78.06	78.73	78.86
Biak Numfor	94.77	97.62	97.50	97.49	97.96	97.47	82.48	84.96	89.11
Paniai	84.02	84.07	83.12	79.82	80.88	80.17	46.62	47.56	46.56
Puncak Jaya	77.59	77.26	75.67	65.77	65.57	65.97	39.53	32.94	37.65
Mimika	94.16	95.58	95.56	95.28	95.17	94.75	81.79	72.20	84.63
Boven Digoel	91.13	92.21	90.96	91.00	90.83	91.00	62.37	61.26	62.02
Mappi	86.10	86.91	86.49	81.01	82.06	81.69	49.70	40.93	54.32
Asmat	82.48	82.09	79.97	80.46	80.08	80.40	53.06	29.08	55.54
Yahukimo	62.57	66.18	66.19	66.15	66.04	65.52	32.92	24.08	34.16
Pegunungan Bintang	71.44	74.07	73.83	70.94	71.25	71.70	37.41	37.22	36.66
Tolikara	66.63	66.08	64.61	61.45	61.99	61.45	45.87	39.37	45.58
Sarmi	92.97	92.95	91.02	91.33	91.00	91.38	72.08	71.99	71.75
Keerom	90.83	90.74	89.40	89.09	88.82	88.74	74.93	70.33	77.88
Waropen	93.21	96.87	96.52	94.10	93.71	93.45	79.00	77.72	78.60
Supiori	94.54	96.57	96.20	91.93	92.19	92.11	77.03	76.55	76.46
Mamberamo Raya	97.41	97.41	96.44	96.11	96.27	96.57	64.91	68.94	68.88
Nduga	57.98	60.83	59.99	55.92	57.01	57.25	36.90	37.92	37.09
Lanny Jaya	77.07	77.06	77.49	74.22	75.37	75.26	60.36	60.29	60.18
Central of Mamberamo	85.95	85.70	84.93	81.11	81.89	81.47	56.41	56.79	56.56
Yalimo	89.29	89.34	88.81	61.57	62.19	62.62	58.75	56.64	60.80
Puncak	52.21	52.22	51.61	30.44	32.43	31.98	28.20	22.55	27.71
Dogiyai	85.90	85.88	85.59	84.60	83.44	83.84	57.17	65.16	65.82
Intan Jaya	61.92	61.45	60.96	53.27	52.79	52.34	45.91	38.80	45.10
Deiyai	63.78	65.82	65.35	58.85	60.05	59.52	56.00	53.25	46.26
Jayapura city	97.76	97.75	98.03	97.94	98.07	97.69	92.78	92.21	97.12
Papua Province	82.62	82.99	83.43	80.11	80.48	80.02	62.11	64.83	63.98

### Number of Schools

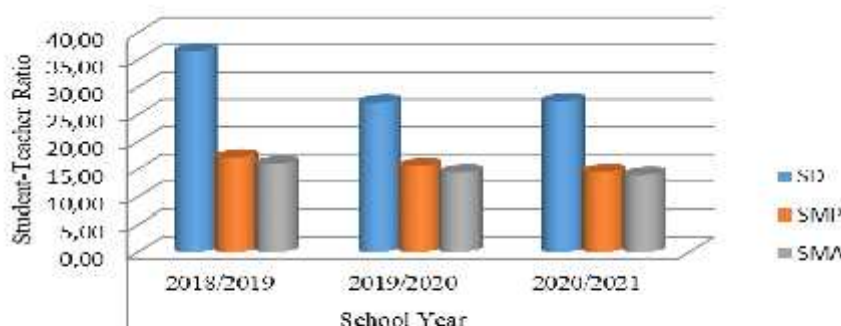
Facilities and infrastructure for teaching and learning activities are the obligation of local governments to support the smooth running of the education system according to national education standards (Adiwijaya, 2022; Ediyanto et al., 2017). The provision of educational facilities and infrastructure is regulated in Law no. 20 of 2003 concerning the national education system (Inkiriwang et al., 2020). One assessment of the availability of

educational facilities and infrastructure in Papua can be seen based on the number of schools. The number of schools in Papua is divided based on educational level, namely Elementary School (SD)/Madrasah Ibtidaiyah (MI), Junior High School (SMP)/Madrasah Tsanawiyah (MTs), and Senior High School (SMA)/Vocational High School (SMK) / Madrasah Aliyah (MA)/ Christian High School (SMAK)/ Christian Theology Middle School (SMTK).

### Student-Teacher Ratio

The ratio of the number of students to elementary school teachers is calculated with the aim of knowing the number of teaching staff available who can serve a number of students at each level of education. Each district/city in Papua Province generally has a different ratio of students to elementary school teachers. Even so, all regencies/cities in this province show a trend of changes in the ratio of elementary school students which always declines in the 2018/2019 to 2020/2021 school year. If seen in more detail, the ratio of students to teachers in each district/city in 2019 was the highest, namely 36. The following two years only had a ratio of 27. This means that in 2019 one teacher will be responsible for a maximum of 36 elementary school students and in both years others are only responsible for 27 students. This condition is of course considered less than ideal because it does not meet national education standards. PP No. 74 of 2008 states that a ratio of 1:20 is the ideal ratio for a teacher who has an educator certificate (Adeyemi, 2008). This illustrates that Papua Province still needs a lot of educators or teachers to achieve this ideal ratio.

There are differences in the value of the student-teacher ratio between districts/cities. Kota Jayapura, Merauke and Nabire Regencies were identified as having a sufficient average teacher-student ratio compared to other districts/cities. In the 2018/2019 school year, the ratio of elementary school teachers in Jayapura City is 21 people or one teacher is responsible for 21 students. This number continues to decline until in the 2020/2021 school year only 19 elementary school students have to be taught by one teacher. The low student-to-teacher ratio in several districts is due to the concentration of teachers in urban areas. Teacher teaching staff are usually only scattered in urban areas because of their easier accessibility. This statement is in line with Suryana's opinion (2020) that the accumulation of teachers in urban areas is one of the reasons for the inefficiency of the teacher-student ratio in an area.



**Figure 1 Graph of Student Teacher Ratio for Elementary, Middle, and High Schools in Papua Province for the 2018/2019, 2019/2020, and 2020/2021 Academic Years**

Source: (Central Agency on Statistics (BPS), 2022)(processed, 2022)

A large student-teacher ratio indicates that one teacher must be responsible for many students, meaning that the greater the student-teacher ratio, the smaller the student's access to teachers (Central Bureau of Statistics Papua Province, 2021). Referring to Figure 1 the ratio of students to junior high school teachers (SMP) in Papua Province by Regency/City shows different figures. Intan Jaya District, Nduga Regency shows an upward trend in the student-



teacher ratio in the 2018/2019 to 2020/2021 academic years. The highest student-teacher ratio was recorded in the 2019/2020 academic year in Yahukimo Regency, reaching 30:1 or one teacher teaching 30 students. The increase in this ratio compared to the previous year was caused by a significant increase in the number of junior high school students. According to the 2021 Central Statistics Agency (BPS), the number of students in Yahukimo Regency in 2019 reached 5,120 people with 174 teachers. This number of students has increased compared to 2018 which was only 4,796 people. The lowest student-teacher ratio is in Central of Mamberamo District in the 2020/2021 school year, which is only 9:1 or one teacher teaches 9 students. This is because the number of teachers in the district is quite a lot, reaching 102 people, not comparable to the number of students which is only 906 people.

When compared with government regulations, the ratio of students to teachers in Papua is not ideal. The education problem currently being faced by the Province of Papua is that the number and quality of teaching staff is still very uneven. This causes only a few districts/cities to stand out while others do not. Therefore, the government needs to create a program that balances the quality of human resources and the number of teachers. The trick is to make teacher training and certification so that the quality of educators is evenly distributed in all regions. The government has also created an undergraduate program to build villages through the SM-3T program.

The more the number of students, the better the quality of education should be, because the teacher's attention is increasingly divided. However, the student-teacher ratio is not an absolute determinant of the success of teaching and learning activities (Carneiro, 2008). The lowest student-teacher ratio is found in Kabupaten Intan Jaya, which is 1:4, while the highest ratio is found in Kabupaten Gunung Bintang and Kabupaten Lanny Jaya. Areas that experience a shortage of teachers are caused by teacher retirement, the uneven distribution of subject teachers, and the lack of interest of teachers to be placed in underdeveloped areas, many teachers requesting transfers. What needs to be done is equal distribution of teachers, implementation of training, and distribution of teacher certification in underdeveloped areas. Teacher welfare needs to be guaranteed, especially for teachers assigned to remote areas (Chang et al., 2013).

The implications of this research for school quality if quality improvement is not carried out then school components will experience setbacks such as student quality which will have an impact on exam results, graduation rates, and other qualities which will ultimately have an impact on stakeholders' confidence in sending their children to schools in Papua Province. Another implication is a number of educational facilities. The implications of this research for the management of education financing related to the number of educational facilities in the form of schools at each level of education is that if the local government is unable to manage education financing then the goals of the school will not be achieved, because the planning, implementation, monitoring and accountability of funding in schools cannot be realized. maximally and will have an impact on educational goals related to equitable allocation for improving the quality of schools, students, improving teacher quality in increasing teacher professionalism such as financing training, providing learning resources, and allocating other costs.

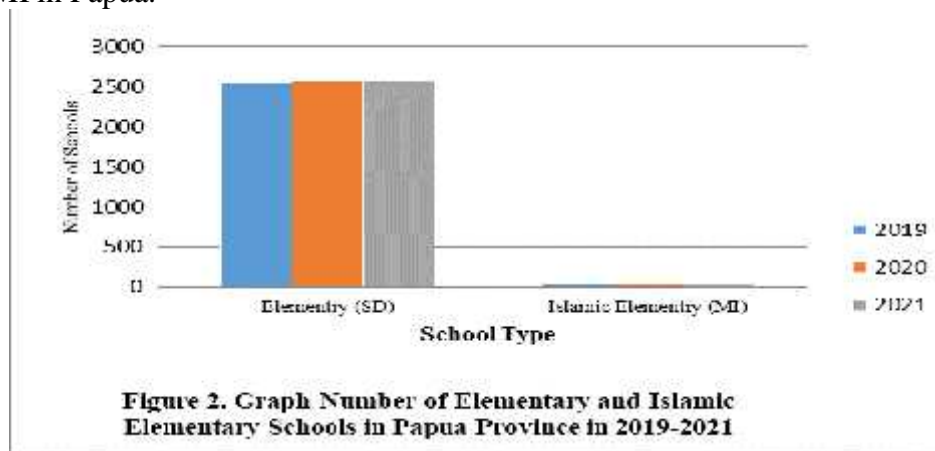
### **Elementary School (SD) and Islamic Elementry School (MI)**

The level of basic education in the compulsory education program in PP no. 47 of 2008 are Elementary Schools (SD) and Madrasah Ibtidaiyah (MI). Elementary School is a formal education unit that organizes general education at the basic education level, while Islamic Elementry School is general education with a specificity of Islam at the basic



education level and is under the guidance of the Minister of Religion (PP No. 47 of 2008) (Delly, 2010). The trend in the number of Elementary School and Islamic Elementary School in Papua from 2019-2021 can be seen in Figure 1. Overall, Elementary School has a much larger number than Islamic Elementary School. The trend in the number of Elementary School in Papua tends to fluctuate, while Islamic Elementary School tends to increase. The decline in the number of elementary school buildings occurred in 2021 by 23 school buildings. This decrease was influenced by a decrease in the percentage growth in the number of students at the basic education level of 3,500 students (Papua Central Statistics Agency (BPS), 2021). This could be caused by the Covid-19 pandemic because many face-to-face learning activities were abolished and shifted to distance learning (Batubara, 2021). The implementation of distance learning cannot run well because not all students have technology that supports distance learning (Simamora et al., 2020). Therefore, the growth in the number of students has decreased and resulted in the closure of several schools due to a shortage of students. In 2022 the number of primary schools will increase again due to several policies that regulate activities that can be carried out by the community during the Covid-19 pandemic, so that the government and society have started to adapt to these conditions.

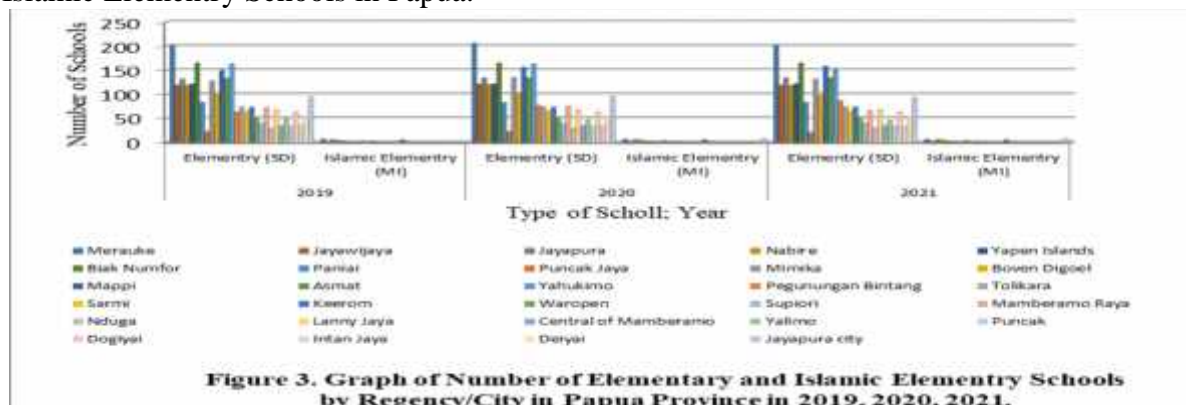
In contrast to Elementary School, the number of Islamic Elementary School schools has an increasing trend from 2019-2021. Some MI education implements learning in the form of Islamic boarding schools. The implementation of learning in Islamic boarding schools is not too affected by Covid-19 because the activity in and out of students and teaching staff is not too massive so that each school can still control it. This makes it possible to increase the number of MI in Papua.



Source: Papua in Numbers 2020, 2021, and 2022 (processed, 2022)

The distribution of the number of Elementary Schools and Islamic Elementary Schools in Papua can be seen in Figure 2. This graph shows that Merauke City has the highest number of elementary schools, while Puncak Jaya Regency has the least number of elementary schools. This amount is influenced by the area and topography of each region. The area of Merauke City is as large as the Area of Merauke City is 46,791.63 Km<sup>2</sup> or 4,679,163 Ha or around 6.73% of the area of Papua Province which is 315,092 km<sup>2</sup>. Administratively, it consists of 20 Districts, 11 Villages and 179 Villages and 50% of the total area of Merauke City is an area with a flat topography. In addition to the physical condition of the area, Merauke City also has the second largest population after Jayapura City. Therefore, the number of primary schools in this region is relatively large. This is inversely proportional to Puncak Jaya Regency which has the least number of Elementary Schools. The small number of Elementary Schools in Puncak Jaya Regency is accompanied by a relatively small population. The number of Islamic Elementary Schools in Papua Province in Figure 2 shows

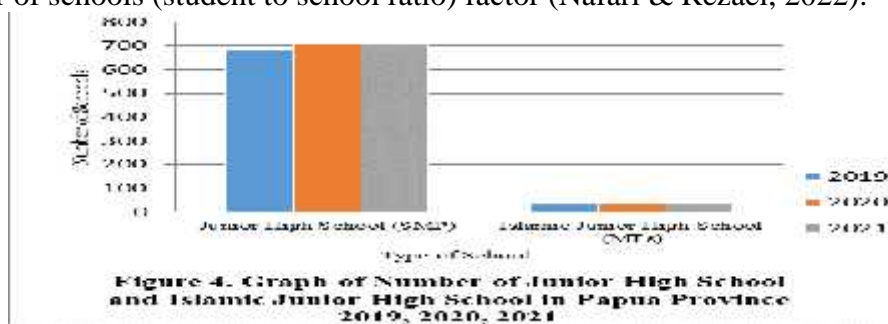
that Jayapura City has the largest number of Islamic Elementary Schools compared to other districts/cities in Papua. Jayapura City is one of the areas in Papua which has the largest Muslim population. The location of the area which is in the provincial capital makes this area a strategic area to be visited by people from outside the island who are more heterogeneous. This incident affected the current condition of education in Jayapura City which has the most Islamic Elementary Schools in Papua.



Source: Papua in Numbers 2020, 2021, and 2022 (processed, 2022)

### Junior High School (SMP) and Islamic Junior High School (MTs)

To support the 12-year compulsory education program that is of maximum quality and quality in Papua, efforts are needed to make the 12-year compulsory education program a success. The success of this program can be seen from the Gross Enrollment Rate (APK) and School Enrollment Rate (APS) in Papua Province. Based on data from the Central Bureau of Statistics for Papua, the APS value of the population aged 13-15 years in 2019 reached 80.11%, in 2020 it was 80.48%, and in 2021 it was 80.02%. This shows that not 100% of the population aged 13-15 years in Papua can access SMP/MTs education. Several factors influence educational participation including the teacher factor (student to teacher ratio) and the number of schools (student to school ratio) factor (Nafari & Rezaei, 2022).



Source: Papua in Numbers 2020, 2021, and 2022 (processed, 2022)

Based on Figure 4, the number of junior high schools (SMP) in Papua Province has increased significantly, namely 27 schools in 2020 and decreased by 3 schools in 2021. Meanwhile, the number of Madrasah Tsanawiyah (MTs) has increased in 2019 by 6 schools and remained at in 2020 and 2021. The number of SMP is more than the number of MTs with a difference of more than 600 schools. Increasing the number of junior high schools is one of the government's efforts to improve the quality of education in Papua. Figure 5 shows that the district/city with the highest number of junior high schools in Papua is Mimika Regency, while the lowest is Puncak Jaya Regency which only has 7 junior high schools and no MTs. Mimika Regency has the highest number of junior high schools because this city is a fairly advanced district where there is a gold mine and one of the largest gold mines in the world,

namely PT Freeport Indonesia, which is located in the Copperpura District and has a large population, so many educational facilities are needed. Puncak Jaya Regency has the least number of SMP and MTS because this Regency is a relatively young district as a result of the division of Puncak Jaya Regency. This district is also one of the sites of armed conflict between the Indonesian National Armed Forces/Indonesian Police and the West Papua National Liberation Army. Difficult access to this district has also hampered the construction of school facilities. The highest number of MTs is in Jayapura City. This can be influenced by the heterogeneous social conditions of the people in the region because Jayapura is the capital of the Papua Province.

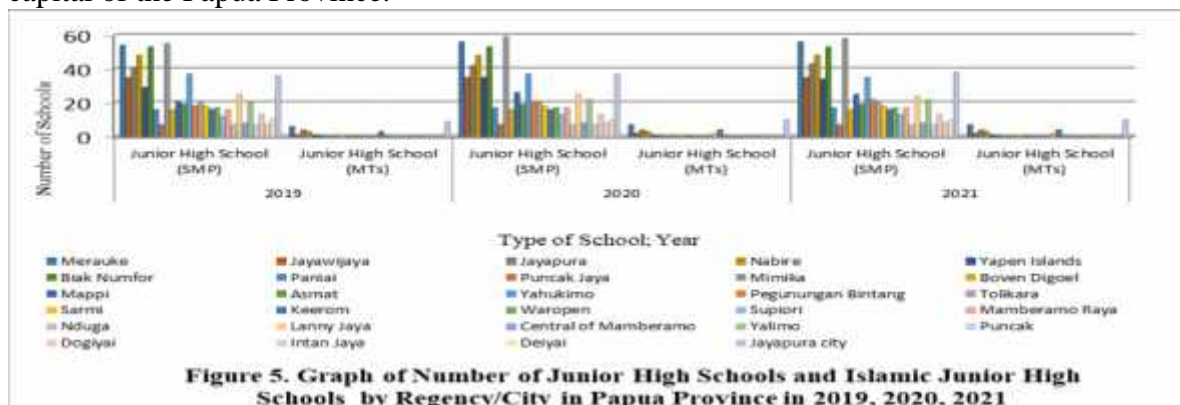


Figure 5. Graph of Number of Junior High Schools and Islamic Junior High Schools by Regency/City in Papua Province in 2019, 2020, 2021

Source: Papua in Numbers 2020, 2021, and 2022 (processed, 2022)

### High School (SMA), Vocational High School (SMK), and Islamic High School (MA), Christian High School (SMAK) and Christian Theology High School (SMTK)

The need for higher education is increasing along with the development of globalization. One of the government's efforts to increase the School Participation Rate (APS) is to add educational facilities in the form of schools (Rahmatin & Soejoto, 2017). Based on Figure 6, Papua has various high schools, in 2019 there are Christian High Schools and Christian Theological Middle Schools. The highest number of schools is SMA. The number of schools, both SMA, SMK, SMAK, and MA during 2019-2021 has increased. This increase can be caused by several things, namely the increasing interest of children in school, the amount of affirmation assistance from the government, as well as the addition of local (classes) and teachers in several schools (R & Yulhendri, 2020).

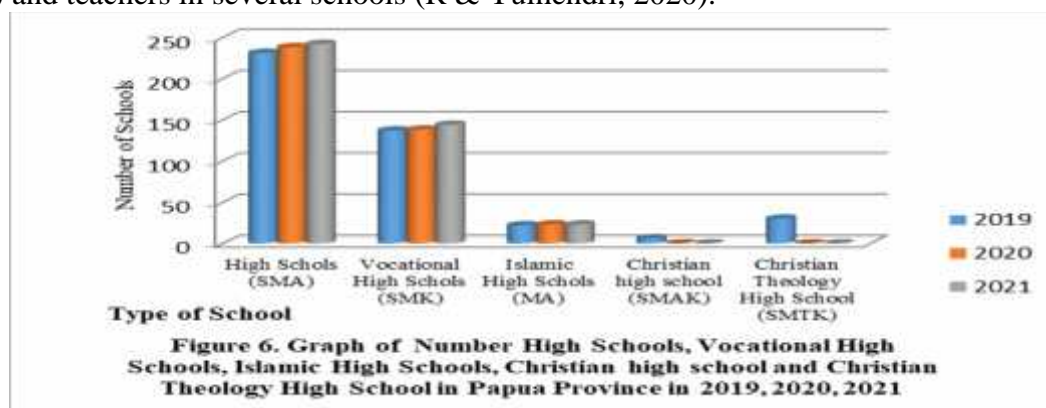
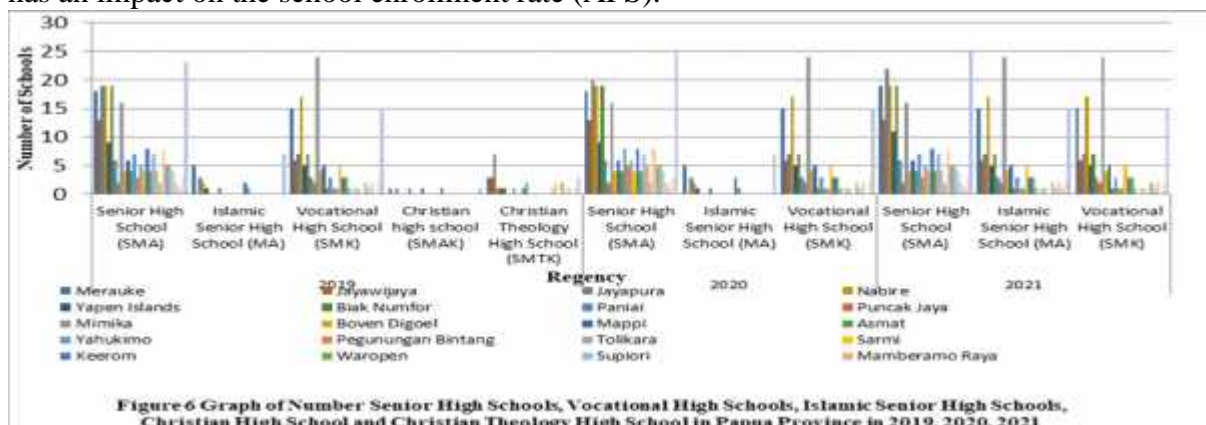


Figure 6. Graph of Number High Schools, Vocational High Schools, Islamic High Schools, Christian high school and Christian Theology High School in Papua Province in 2019, 2020, 2021

Source: Papua in Numbers 2020, 2021, and 2022 (processed, 2022)

In addition to the distribution of educational facilities in each region, the increase in the number of schools affects the psychological condition of children (Rones & Hoagwood, 2000). According to psychologist Alzheta Masyikouri, the ideal distance from home to school

is 5 km. The number of schools that are evenly distributed affects the level of children's participation in education. The problem with education in Papua lies in the lack of educators, lack of school buildings, lack of facilities and infrastructure and the unequal distribution of schools and teachers between cities and districts (Papua Education Office, 2015). Based on Figure 6, the number of Senior High Schools, Vocational High Schools, Islamic Senior High Schools, Christian High Schools and Christian Theology High Schools in Jayapura City is far more than the other twenty eight districts/cities. This correlates with the city of Jayapura as the capital city of Papua with a high population density and a better economic level compared to other districts. While the least number of Senior High Schools, Vocational High Schools, Islamic Senior High Schools, Christian High Schools and Christian Theology High Schools is Intan Jaya Regency which only has 1 Senior High School. Intan Jaya Regency is located in the Central Mountains region of Papua, its territory is dominated by highlands. This district is included in the underdeveloped areas listed in the National Strategy (Stranas) for the Acceleration of Development of Disadvantaged Regions (PPDT) for 2020-2024. Inadequate road infrastructure in Intan Jaya Regency is a factor in the low number of schools in this district (Sujarwo et al., 2018). This is because there is no road access that connects isolated settlement areas with the regency capital. The implementation of the 12 year compulsory education program has not been maximized, this is evidenced by the school enrollment rate for children aged 16-18 years which is only 63.98% compared to the school enrollment rate for children aged 7-12 years and 13-15 years respectively of 83.43% and 80.02% year. Children aged 16-18 years have not been able to attend high school or equivalent because the capacity of school facilities and infrastructure has not been able to accommodate the expected number of students, such as the lack of local learning, teachers and schools. This inequality has an impact on the school enrollment rate (APS).



Source: Papua in Numbers 2020, 2021, and 2022 (processed, 2022)

## Conclusion

The conclusion from the results of this study is that the School Enrollment Rate (APS) aged 7-12 Papua in 2019 was 82.62%, increased to 82.99% in 2020 and increased in 2021 to 83.43%. The APS value at the district/city level is only 50% which is above 99%. So it can be said that many children aged 7-12 years in Papua do not attend school with an elementary/equivalent education level. The APS for the 13-15 year old group in Papua in 2019-2021 has remained relatively unchanged, only increasing by around 0.37% in 2020. This shows that out of every 100 children aged 13-15 years there are 8 children who are not attending junior high school /equal. The percentage of APS for the Papuan population aged 16-18 years in 2019, 2020 and 2021 is 62.11%, 64.83% and 63.98%, respectively. Only about





60-65% of the population aged 16-18 years attend Senior High Schools, Vocational High Schools, Islamic Senior High Schools, Christian High School and Christian Theology High School, while the other 35-40% do not attend school. APS decreases with age.

Figures Overall Elementary Schools have much higher numbers than Islamic Elementary Schools. The trend in the number of elementary schools in Papua tends to fluctuate, while Islamic elementary schools tend to increase. A decrease in the number of elementary school buildings occurred in 2020 which was influenced by a decrease in the percentage growth in the number of students due to the Covid-19 pandemic. The decline in APM was quite severe in 2020, the COVID19 pandemic forced students to attend school online even though the telecommunication infrastructure was not sufficient. This has caused the APM for Papua, West Papua and National to fall by almost 50% from 2019. In 2020, the APM for Papua is only 44.73% and the APM for West Papua is only 63.62%. The NER of the population in coastal areas is higher than that of the mountainous areas, and so is the GER. This shows that the participation of the population attending primary school for school-age children 7-12 years is higher in coastal areas than in mountainous areas. In Papua Province, Mimika and Puncak Jaya Regencies, for example, Mimika District which is in the coastal area has an APK of 87.91% and APM of 71.22%. Meanwhile, the APK for Puncak Jaya Regency is 68.25% with an APM of 60.19%. The same thing also happened in West Papua Province, Fakfak Regency which is in the coastal area has an APK of 113.88% and an APM of 96.23%, where the APK and APM are above the APK and APM values in the districts/cities of Papua Province located in the highlands. Expansion of cities/districts also has an influence on student participation who attend elementary school.

The number of Junior High Schools (SMP) in Papua Province has increased significantly, namely 27 schools in 2020 and 3 schools in 2021. Meanwhile the number of Madrasah Tsanawiyah (MTs) has increased by 6 from 2019 to 2021. The number of Junior High Schools is more than the number of Madrasah Tsanawiyah with a difference of more than 600 schools. Increasing the number of junior high schools is one of the government's efforts to improve the quality of education in Papua. The number of SMA in Papua is dominated by SMA, followed by MA, then SMK. The difference in these numbers is due to the interests and views of the Papuan people who view SMA as better than SMK or MA. The number of schools, both SMA, SMK and MA, during 2019 – 2020 has decreased. This decrease can be caused by a decrease in children's interest in school, economic limitations, as well as the addition of local (classes) and teachers in several schools.

From the existing data in Tanah Papua, the highest level of education completed by residents aged 15 years and over has a negative correlation with open unemployment (the higher the level of education completed, unemployment actually increases), especially in West Papua Province. This shows that there is no link and match between the world of education and the labor market, especially in West Papua Province. This low productivity problem is related to the low quality of human resources, because the workforce is still dominated by more than 50 percent of elementary school graduates, while not all workers with higher education graduates have the readiness and capacity to meet the needs of the world of work. Skills mismatch, gaps in the quality of education between regions, limited talent to be ready to be trained and work are issues that need to be addressed in increasing labor productivity in the Provinces of Papua and West Papua.

The trend of changes in the ratio of elementary school students in Papua has decreased in the 2018/2019 school year to 2020/2021. Overall, the primary teacher-student ratio is below 20, which is considered ideal. The ratio of junior high school student-teachers in Papua varies for each district/city. The highest student-teacher ratio was recorded in the



2019/2020 academic year in Gunung Bintang District reaching 30:1 or one teacher teaching 30 students. The ratio of students to secondary school teachers in Papua is good, but the number and quality of teaching staff is still uneven. The ratio of high school students by district/city in Papua Province is very good. This is because the overall teacher-student ratio does not exceed 20 students, which is only 1:14 students. If we look at it regionally in Papua Province, the average teacher to student ratio in districts/cities varies widely. This teacher-student ratio data shows that the teacher's real problem lies in the distribution and control of discipline in carrying out teacher duties.

### **Recommendation**

According to Government Regulation no. 74 of 2008, the ideal ratio of teachers holding educator certificates for SMP guidelines is 1:20 or one teacher will teach 20 students. When compared with the Government Regulation, the ratio of students to teachers in Papua is quite good. However, the education problem currently faced by Papua Province is the uneven number and quality of teaching staff. This causes only a few districts/cities to stand out while others do not. Therefore, the government needs to create a program that can even out the quality of human resources and the number of available teachers, by holding teacher training and certification so that the quality of teaching staff is evenly distributed throughout the region. What needs to be done is equal distribution of teachers, implementation of training, and distribution of teacher certification in underdeveloped areas. Guarantees for teacher welfare need to be carried out, especially for teachers who work in remote areas.

In addition to the shortage of teachers, the distribution of teachers between districts and between cities in the provinces of Papua and West Papua is also uneven/proportionate, with remote areas experiencing quite a difficult situation. Another thing that complicates the limited number of teachers is the phenomenon of teacher absenteeism. The results of the 2014 Analytical Capacity Development Program (ACDP) study showed that the teacher absenteeism rate in Papua Province was 37 percent and in West Papua Province it was 26 percent. For mountainous areas, the teacher absenteeism rate is even worse, at 48 percent and the principal absenteeism rate is 70 percent. This of course needs to be addressed seriously for the advancement of education in the Land of Papua in the future.

Recruitment of prospective teachers has so far been left open to anyone through LPTKs with the same entry criteria as other general education schools. The profession of a primary and secondary education teacher is a profession that does not promise sufficient material, and is not attractive to most prospective students and prospective job seekers. This is due to the scope of work that focuses on developing children's abilities. The government must carry out affirmative interventions for this profession, especially in Papua, to obtain fundamental improvements in human quality by providing subsidies at the initial selection stage to the education process for Elementary and Basic Education teachers. Otherwise, education in Tanah Papua will receive low quality teachers. The results of their education will also be of low quality, because the prospective teacher students who are accepted are "the rest of those who were not selected". This condition has been going on so far that prospective teachers after completing their education cannot pass the selection to become teachers mostly due to their abilities which do not meet the teacher competency selection requirements.

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