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# Analysis of Student Teacher Ratios in Indonesian Public and Private Elementary Schools (2021 2024)

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**ABSTRACT**

Unequal teacher distribution remains a persistent challenge in Indonesia despite the implementation of national standards for student-teacher ratios. This study aims to analyze the trends and proportions of student-teacher ratios in public and private elementary schools across Indonesia and to examine teacher distribution patterns in Sanggau Regency as a regional context. Employing a quantitative descriptive comparative approach, the study utilizes secondary data from Statistics Indonesia (BPS) and the Basic Education Data System (Dapodik) from 2021 to 2024. The unit of analysis comprises 38 provinces in Indonesia and Sanggau Regency. Student teacher ratios were calculated and analyzed using trend and comparative analyses. The findings reveal that the ratio in public elementary schools steadily declined from 15.35 in 2021/2022 to 14.29 in 2024/2025, indicating improved teacher availability, whereas private schools exhibited fluctuating patterns, ranging from 15.87 to 16.07. Three provinces, DKI Jakarta, West Java, and Banten, consistently exceeded the national ideal standard, suggesting the need for targeted teacher redistribution policies in high-density regions. In Sanggau Regency, overall ratios improved, yet substantial disparities among sub-districts persisted. The novelty of this study lies in integrating national trend analysis with regional contextual analysis to provide a more comprehensive understanding of teacher distribution dynamics. These findings emphasize the importance of data-driven and region-specific policies to achieve equitable teacher allocation and improve the quality of basic education in Indonesia.



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## 1. INTRODUCTION

Basic education plays a fundamental role in developing human resources and improving national competitiveness. The quality of elementary education is influenced by various factors, including educational management, teacher professionalism, and the availability of adequate educational resources [1]. Among these factors, the student-teacher ratio is widely recognized as an important indicator of educational quality because it reflects the availability and distribution of teachers in supporting effective learning processes [2]. In Indonesia, Government Regulation No. 74 of 2008 establishes an ideal student-teacher ratio of 1:20 at the elementary school level. However, substantial disparities in teacher distribution continue to occur across regions and school types [3]. Some areas experience teacher shortages, while others have relatively high concentrations of teachers, creating imbalances that affect teacher workload and instructional effectiveness [4]. These disparities are further influenced by differences in recruitment systems and resource allocation between public and private schools [5].

The issue has become increasingly significant due to the growing national demand for teachers, the rising number of teacher retirements, and changes in educational conditions following the COVID-19 pandemic [6]. Previous studies have demonstrated that non-ideal student-teacher ratios may reduce instructional interaction, limit individualized support, and negatively affect student engagement and learning outcomes [7]. Moreover, teacher welfare and motivation have also been identified as factors influencing educational quality, particularly in the context of public and private school differences [8]. Although numerous studies have examined teacher shortages, educational quality, and teacher distribution, their findings remain fragmented. Purwono and Supriyoko [9] primarily focused on teacher distribution disparities, whereas Pranata and Erwandi [10] emphasized challenges in educational planning and human resource management. Other studies explored institutional differences between public and private schools [11] or pedagogical implications of teacher shortages [12]. However, these studies generally investigated these issues separately and did not provide an integrated analysis of student-teacher ratios across different educational contexts.

A critical gap, therefore, remains in the literature. Existing studies rarely combine longitudinal national trend analysis, inter-provincial comparison, and regional contextual analysis within a single framework [13]. Consequently, there is limited empirical evidence regarding how student teacher ratios evolve across provinces and how national patterns are reflected at the local level. This limitation constrains the development of evidence-based policies aimed at improving teacher allocation and educational equity. To address this gap, the present study analyzes student-teacher ratios in public and private elementary schools across Indonesia during the 2021 2024 period and examines teacher distribution patterns in Sanggau Regency as a regional case. The study employs a comparative and trend-based approach using national and regional educational datasets. The novelty of this research lies in integrating three analytical dimensions simultaneously: national trend analysis, provincial comparison, and regional contextualization. By combining these perspectives, the study

provides a more comprehensive understanding of teacher distribution dynamics and their implications for educational management.

The findings are expected to contribute both theoretically and practically. Theoretically, the study extends the literature on educational human resource management by providing a multidimensional analysis of student-teacher ratios. Practically, the results may serve as evidence for policymakers in designing more adaptive, equitable, and data-driven teacher distribution strategies to improve the quality of basic education in Indonesia.

## 2. METHOD

### Type and Design

This study employs a quantitative approach with a descriptive comparative design to analyze differences and trends in the proportion of teachers and students in public and private elementary schools. The data used are secondary data obtained from official publications of the Ministry of Education, Culture, Research, and Technology and Statistics Indonesia (BPS), covering the period from 2021 to 2024. The unit of analysis includes all provinces in Indonesia, which is then further examined at the regional level, particularly in Sanggau Regency, as a contextual study. Data analysis techniques involve calculating the student-teacher ratio and conducting time series trend analysis to identify differences between the two types of educational institutions. In addition, descriptive analysis is applied to interpret patterns of teacher distribution and their implications for the effectiveness of learning. This approach is chosen to provide a comprehensive, systematic, and data-driven explanation of the dynamics of student teacher proportions in Indonesia.

### Data and Data Sources

This section presents the results of data analysis on the proportion of teachers and students in public and private elementary schools in Indonesia over the period 2021 2024. The analysis is conducted to identify patterns, trends, and differences across types of educational institutions and regions. The results include an overview of the national student teacher ratio, provincial distribution, and a comparative analysis between public and private schools. The presentation of these findings aims to provide an empirical basis for understanding the actual condition of teacher distribution and its implications for the effectiveness of learning in elementary schools.

### Data Collection Technique

Data collection was carried out through a documentation study of relevant official publications. The data were then analyzed using IBM SPSS Statistics version 27. To address the first research question, the total number of teachers and students was calculated and subsequently converted into ratios and percentages. To address the second and third research questions, trend and comparative analyses were conducted using graphical plots in SPSS to visualize the direction and patterns of changes in the number of teachers and students over time, as well as to compare patterns between public and private schools.

**Data Analysis**

The data used in this study are secondary data obtained from Badan Pusat Statistik (BPS) and Data Pokok Pendidikan (Dapodik) of the Ministry of Primary and Secondary Education for the period 2021 2024. The unit of analysis covers 38 provinces in Indonesia, which are then further examined at the regional level as a contextual study. The variables analyzed include the number of teachers and the number of students in public and private elementary schools.

## 3. RESULTS AND DISCUSSION

Based on data from Badan Pusat Statistik (BPS), the national proportion of teachers and students in elementary schools in Indonesia during the period 2021/2022 to 2024/2025 shows differing patterns between public and private schools. In public elementary schools, the student-teacher ratio consistently declined from 15.35 to 14.29, indicating a gradual improvement in teacher distribution. In contrast, private elementary schools exhibited a more fluctuating pattern, with the ratio decreasing at one point but rising again in the final year. Overall, most of the 34 provinces fall within the “adequate” category, suggesting that the student-teacher ratio remains within a reasonable range. However, exceptions are found in densely populated provinces such as DKI Jakarta, West Java, and Banten, where the ratio in public schools is relatively high (22 23 students per teacher), indicating a heavier teacher workload.

In terms of trends, public elementary schools demonstrate a consistent and systematic decline in the student-teacher ratio across almost all provinces, reflecting the influence of government policies in managing teacher distribution. In contrast, trends in private schools tend to be less uniform, with some provinces experiencing declines while others remain stagnant or even increase. This difference suggests that changes in public schools are more structured and policy-driven at the national level, whereas private schools are more influenced by local dynamics and the capacity of individual institutions (foundations). This finding underscores that a one-size-fits-all policy approach is not entirely effective for both types of educational institutions.

At the regional level, particularly in Sanggau Regency, the proportion of teachers and students in public elementary schools shows a significant aggregate improvement, with the ratio decreasing from 16.58 to 13.21. Nevertheless, disparities between sub-districts remain evident. Toba District consistently records the highest ratio, indicating a shortage of teachers, while Jangkang, Balai, and Noyan Districts show more ideal conditions. In addition, areas such as Entikong and Mukok exhibit considerable fluctuations in their ratios. This pattern indicates that although overall improvements have occurred, teacher distribution at the local level is still uneven and requires more specific, region-based policy interventions.

**Discussions**

This discussion addresses three main themes. First, it examines the proportion of teachers and students in public and private elementary schools under the Ministry of Primary and Secondary Education (Kemendikdasmen). Second, it analyzes trends in the student-teacher ratio in public and private elementary schools. Third, it explores the proportion and

trends of student-teacher ratios in Sanggau Regency from 2021 to 2024. This section not only explains the findings but also examines them through relevant learning theories and comparisons with previous studies, thereby clarifying the mechanisms underlying the observed changes and positioning the results within the broader international debate on literacy pedagogy.

**Proportion of Student Teacher Ratios in Public and Private Elementary Schools**

Table 1. Proportion of Student Teacher Ratios in Public and Private Elementary Schools (2021 2025)

| Years | SDN | SDS | Catagory | |
|---|---|---|---|---|
| | | | SDN | SDS |
| 2021 2022 | 14.45 | 15.58 | Appropriate | Appropriate |
| 2022 2023 | 13.91 | 15.48 | Appropriate | Appropriate |
| 2023 2024 | 13.27 | 15.37 | Appropriate | Appropriate |
| 2024 2025 | 12.91 | 15.76 | Appropriate | Appropriate |

Overall, the condition of student teacher proportions in Indonesia remains relatively within normal limits; however, disparities across regions and between types of schools continue to be an issue requiring serious attention. Efforts toward equity are not only related to increasing the number of teachers but also involve proportional distribution, region-based policy arrangements, and strengthening the role of private schools in supporting educational services. Therefore, more adaptive and data-driven strategies are needed to ensure equitable access and quality of basic education across Indonesia.

Of the 34 provinces analyzed, three fall into the “not appropriate” category specifically for public elementary schools: DKI Jakarta with an average ratio of 22.59, West Java 22.05, and Banten 22.03. These provinces consistently recorded ratios above 20 throughout the observation period, far exceeding the ideal standard. This condition is closely linked to high population density and the large number of school-age children in western Java. Interestingly, these same provinces fall into the “appropriate” category for private schools, with average ratios of 14.03 in DKI Jakarta, 16.09 in West Java, and 16.22 in Banten. This indicates that private schools in these areas are able to manage teacher allocation more proportionally than public schools.

An interesting phenomenon is observed in the Kalimantan region, where the ratio pattern between public and private schools is reversed. Central Kalimantan records a very low public school ratio, averaging 9.97, while its private school ratio is relatively high at 16.99, even reaching 17.21 in 2024/2025. A similar pattern occurs in West Kalimantan, with public schools at 13.85 compared to private schools at 18.24, and in East Kalimantan, with 15.46 versus 17.81. This reflects that in Kalimantan, public schools tend to have better teacher availability, while private schools bear a heavier student load with relatively fewer teachers.

Provinces in eastern Indonesia, such as Maluku, North Maluku, West Papua, and Papua, generally fall within the “appropriate” category for public schools with relatively low ratios. However, in private schools, some of these provinces show concerning ratios. Papua, for example, recorded a private school ratio of 24.10 in 2021/2022 and 24.19 in 2022/2023

before declining significantly to 17.68 in 2024/2025, indicating major changes in the structure of private education in the region. North Maluku also recorded an increase in private school ratios from 14.85 in 2021/2022 to 19.12 in 2024/2025, suggesting growing pressure on private school teachers.

In educational theory, a lower student-teacher ratio theoretically provides greater opportunities for teachers to implement student-centered learning approaches, offer individualized feedback, and identify diverse learning needs. This is supported by Antoniou et al. (2024) in *Frontiers in Psychology*, who analyzed data from 21,903 schools across 80 countries and found that class size significantly correlates with school readiness. The study highlights that smaller class sizes enable higher quality interactions, ultimately supporting both cognitive and non-cognitive development. In overcrowded classrooms, some students may feel less confident or pressured, reducing participation. Conversely, observing peers' success can motivate students to emulate positive learning behaviors [14]. Thus, managing ideal class sizes helps enhance confidence and motivation through social interaction.

Similar findings were reported by Nasrawati and Putrini [15], who analyzed U.S. national data using fixed effects models and found that reducing class size significantly improves interpersonal skills and learning approaches in early grades (K-3). In this study, the consistent improvement in public school ratios over four years can be interpreted as a more conducive structural condition for meaningful pedagogical interaction, although the quality of such interaction still depends on teacher competence and professionalism [16].

In densely populated provinces such as DKI Jakarta, West Java, and Banten, public schools consistently record ratios above 20, far exceeding the ideal standard. This aligns with Bandura's perspective that overcrowded classrooms can reduce students' self-efficacy and learning motivation. Under such conditions, students tend to participate less actively due to limited attention and feedback from teachers [17]. In contrast, private schools in the same provinces maintain ratios below 16. Conversely, in Kalimantan, the pattern is reversed, with higher ratios in private schools than in public ones. For instance, Central Kalimantan recorded a ratio of 9.45 in public schools compared to 17.21 in private schools in 2024/2025. More balanced conditions support positive social interaction among students and between teachers and students, as emphasized by Frarera et al. [18], where more intensive communication leads to more effective learning.

This dual pattern reflects the complexity of teacher distribution within a decentralized education system. Fitriyah et al. [19] concluded that regional autonomy in education has led to diverse strategies across regions, from mandatory local content to curriculum-based autonomy, but has not consistently resulted in equitable resource distribution between public and private schools. The findings of this study reinforce this conclusion, showing that nationally designed teacher distribution policies produce varied impacts at the provincial level, depending on demographic structure, institutional capacity, and local preferences.

From an educational management perspective, both high ratios in public schools in densely populated areas and high ratios in private schools in certain regions negatively affect learning effectiveness. Elizar et al. [20] found that institutional financial conditions and student load often influence teacher welfare and performance in private schools. This also

affects students' emotional well-being, as Dhani et al. [21] noted that overcrowded classrooms increase stress and reduce learning focus. Similarly, high private school ratios in North Maluku (19.12) and Papua (17.68) in 2024/2025 indicate that excessive teacher workload may reduce classroom management effectiveness, aligning with Antoniou et al. [22], who emphasized that exceeding ideal class capacity lowers overall learning quality.

The national decline in public school student-teacher ratios from 15.35 in 2021/2022 to 14.29 in 2024/2025 can be viewed positively within the framework of constructivist theory. Smaller ratios provide more opportunities for discussion, group work, and reflective activities that support independent knowledge construction [23]. Conversely, high ratios in densely populated areas hinder the implementation of active learning models such as Problem-Based Learning (PBL), as teachers struggle to provide timely and in-depth feedback [24]. This is consistent with Ahmad [25], who noted that experiments and group discussions are more effective in smaller classes, where students have greater opportunities to participate.

An imbalanced ratio leads to a higher teacher workload and reduced student attention, whereas a balanced ratio improves learning outcomes [26]. When the ratio is balanced, such as one teacher for every 20 students, students tend to receive more personalized attention, enhancing engagement in learning [27]. From a motivational perspective, smaller class sizes allow teachers to provide individualized support, thereby increasing students' confidence, participation, and motivation in a positive emotional environment [28].

Conversely, the negative impacts of non-ideal ratios have been widely documented. Overcrowded classrooms not only affect teacher-student interaction but also student academic performance. In such conditions, teachers lack sufficient time and resources to manage learning effectively, resulting in lower student engagement [6]. Additionally, Safitri et al. [6] found that overcrowding increases stress and reduces students' concentration, affecting their emotional condition. Pranata and R. Erwandi [10] also emphasized that exceeding ideal class capacity reduces overall learning effectiveness.

The issue of student-teacher proportions is closely related to uneven distribution across regions. Factors influencing teacher proportions include education policies, school financial conditions, teacher qualifications, and regional demographics [1]. Effective human resource management in education is crucial for achieving quality outcomes, including proper planning of student-teacher ratios [2]. Therefore, sound governance is needed to sustain education and maximize teacher potential through training and professional development, aligned with established ratio standards [3].

Overall, the student-teacher proportion is not merely a quantitative issue but also encompasses professional, motivational, and managerial dimensions that collectively determine the success of the educational process. Ideal class size and balanced ratios directly contribute to improved learning quality, student motivation, and academic outcomes. Effective education must consider these factors to create an optimal learning environment for all students [14].

# Trend of Student Teacher Ratios in Public and Private Elementary Schools

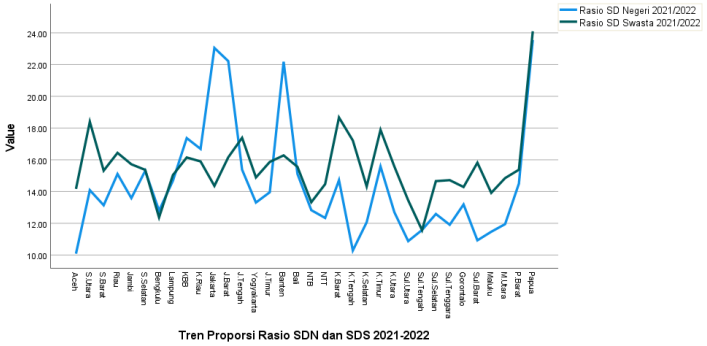


Figure 1. Grafik Trend SDN dan SDS Tahun 2021 2022

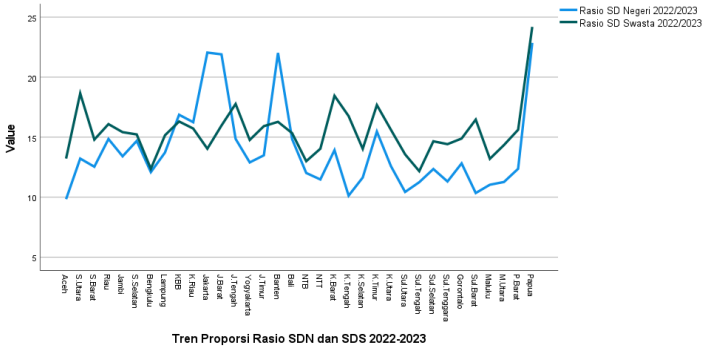


Figure 2. Grafik Trend SDN dan SDS Tahun 2022 2023

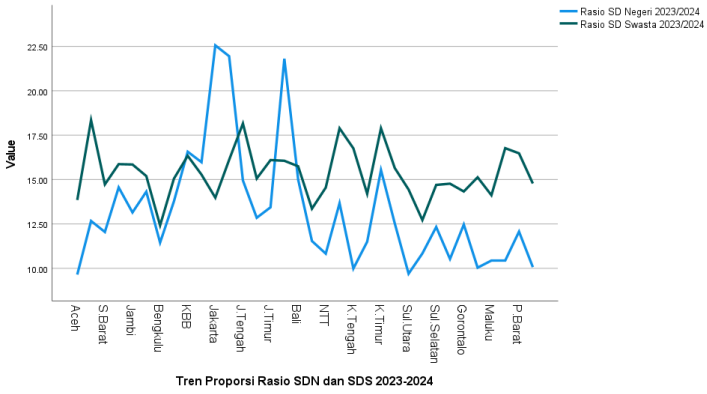


Figure 3. Grafik Trend SDN dan SDS Tahun 2023 2024

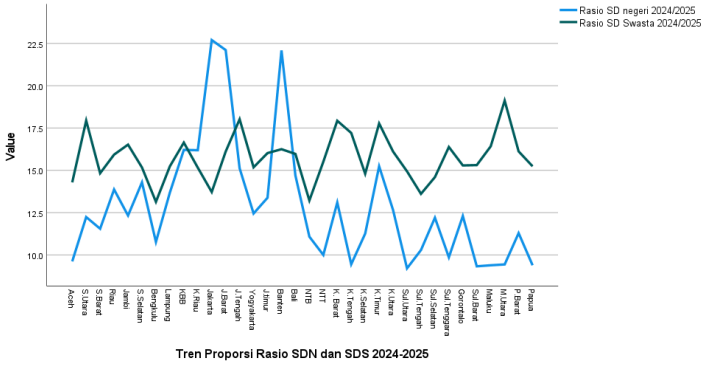


Figure 4. Grafik Trend SDN dan SDS Tahun 2024 2025

The trend of student-teacher proportions across all provinces in Indonesia shows a generally declining pattern in public elementary schools over time. The trend lines for most provinces gradually move downward, indicating a decrease in the number of students per teacher. Although there are slight variations in the slope across provinces, the majority of graphs display a relatively consistent direction. Visually, this suggests that the changes are systematic rather than sporadic.

In addition, the distribution of data points across provinces shows a clustering pattern within certain value ranges. At the beginning of the period, the data points appear more dispersed, but over time, they become increasingly concentrated. This indicates that inter-provincial variation is narrowing. In other words, the graphs not only demonstrate a downward trend but also reflect a tendency toward greater uniformity in student-teacher proportions across regions.

In contrast, the graphical pattern for private elementary schools differs quite significantly. The trend lines across provinces do not show a uniform direction but instead fluctuate more sharply. Some provinces exhibit notable increases during certain periods, while others decline or remain relatively stable. Visually, the graph appears more dynamic, with uneven data distribution. This confirms that changes in proportions within private schools are more influenced by local dynamics, resulting in less consistent patterns across provinces and time periods.

The consistent decline in public school ratios from 2021 to 2024 represents one of the most significant findings of this study. The increase in the number of teachers from 1,347,901 to 1,389,915, alongside a decrease in the number of students from 20,690,002 to 19,855,960, has led to a systematic improvement in the ratio. This is also reflected in provincial trend graphs, where the spread of data points becomes increasingly narrow over time, indicating gradual convergence toward a more equitable distribution of teachers.

This improvement is closely linked to the implementation of various strategic policies, including the Government Employee with Work Agreement (PPPK) program, which has expanded the recruitment of civil servant teachers, as well as Ministerial Regulation Number 47 of 2023, which sets a maximum of 28 students per elementary school class. Hasanah and A. Zainuddin [17] argue that consistent, data-driven redistribution policies are key to addressing structural inequalities in teacher distribution, an argument that helps explain the sustained decline in public school ratios.

However, significant disparities between provinces indicate that aggregate improvements do not yet reflect true equity in distribution. DKI Jakarta, for instance, maintained a public school ratio above 22 throughout the study period, even increasing from 22.56 to 22.70 between 2023/2024 and 2024/2025. The OECD (2024), in *Education at a Glance*, highlights that seemingly ideal national averages often conceal substantial subnational disparities, emphasizing the importance of interpreting averages alongside distribution data for a more accurate assessment of equity in education services.

Unlike the consistent downward trend in public schools, private school ratios display more dynamic and uneven patterns across provinces. While some provinces show gradual declines, others record significant increases. For example, North Maluku's private school ratio rose from 14.85 (2021/2022) to 19.12 (2024/2025), an increase of nearly 4.3 within

four years. This fluctuation reflects the inherent characteristics of the private education sector, which is more responsive to external dynamics but also more vulnerable to policy changes and local conditions.

One contributing factor to this dynamic is the PPPK policy. The large-scale recruitment of honorary teachers into civil servant positions, often placed in public schools, may reduce the availability of teachers in private schools, as many transition from the private to the public sector. Fitriyah et al. [19] warn that redistribution policies focused primarily on public schools may create negative externalities, particularly by exacerbating inequalities in the private sector, especially in regions heavily reliant on honorary teachers.

From a theoretical perspective, these fluctuations in private school ratios can be explained through the lens of educational human resource management. Carro and Gallardo (2024), in their study on class size reduction in post-pandemic Spain, found that the effectiveness of ratio changes depends heavily on institutional readiness, including the capacity for rapid recruitment, budget adjustments, and infrastructure availability. Private schools with limited managerial capacity are therefore more vulnerable to external shocks that can abruptly alter their student-teacher ratios.

**Proportion and Trends of Student Teacher Ratios in Sanggau Regency**

Table 2. Proportion of Student Teacher Ratios in Public and Private Elementary Schools (2021 2024) in Sanggau Regency

| Teacher and Student Data | 2021 2022 | | 2022 2023 | | 2023 2024 | | 2024 2025 | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | |
| Tacher | 3116 | 3227 | 3263 | 3398 | 3460 | 3650 | 3825 | 3748 | 27687 |
| Student | 51661 | 51389 | 51004 | 50831 | 50452 | 50245 | 49639 | 49519 | 404740 |
| Ratio | 16,58 | 15,92 | 15,63 | 14,96 | 14,58 | 13,77 | 12,98 | 13,21 | |

The pattern of declining ratios generally occurs more significantly between Semester 1 and Semester 2 within the same academic year, which can be associated with the recruitment or assignment of new teachers, typically realized in the year. However, several exceptions require attention. Tayan Hilir Sub-district experienced an increase in the ratio from 17.11 in Semester 1 to 18.35 in Semester 2 of the 2021/2022 academic year, followed by another increase in Semester 1 of 2023/2024 after a prior decline. Similarly, Mukok Sub-district showed a notable spike in Semester 1 of 2023/2024, reaching 16.77 after previously being at 13.53. This unusual pattern warrants further investigation, whether due to a reduction in the number of teachers or a sudden increase in student enrollment.

Overall, the data indicate that Sanggau Regency has made progress in the equitable distribution of teachers during the 2021 2025 period, as reflected in the continuous decline of the average district ratio. Nevertheless, disparities between sub-districts remain significant. Toba Sub-district requires special attention due to its persistently high ratio, which indicates an unresolved shortage of teachers. Meanwhile, fluctuations observed in Mukok and Entikong suggest the need for more intensive monitoring of teacher distribution stability in areas with dynamic geographical and social conditions. Therefore, data-driven teacher redistribution policies at the sub-district and semester levels need to be continuously

optimized to ensure more equitable and just access to basic education services across Sanggau Regency.

Imbalanced proportions have tangible consequences for the learning process. Low proportions (i.e., high student loads per teacher) increase teacher workload, reducing the level of attention students receive, whereas balanced proportions contribute to improved learning outcomes [15]. In overcrowded classrooms, as found in densely populated public school areas, teachers often lack sufficient time and resources to manage instruction effectively, leading to lower student engagement [11]. Furthermore, Putrawan [8] found that overcrowded classes can increase stress and reduce students' concentration, negatively affecting their emotional well-being.

The issue of student-teacher proportions is also closely linked to uneven distribution across regions. Factors influencing these proportions include education policies, school financial conditions, teacher qualifications, as well as regional characteristics and population size [3]. Effective human resource management in education is essential to achieving quality educational outcomes, including proper planning of student-teacher ratios [7]. Therefore, sound governance is required to maintain the sustainability of education and maximize teacher potential through training and professional development in alignment with established ratio standards [15].

Overall, trends in student-teacher proportions in both public and private elementary schools indicate that although conditions at the district level remain within acceptable limits, disparities across regions and between types of schools continue to represent a serious structural issue. Student teacher proportions are not merely a quantitative matter but also encompass professional, motivational, and managerial dimensions that collectively determine the success of the educational process. Thus, more adaptive and data-driven strategies are needed to ensure equitable distribution of student-teacher ratios across all regions of Indonesia, in both public and private schools [18].

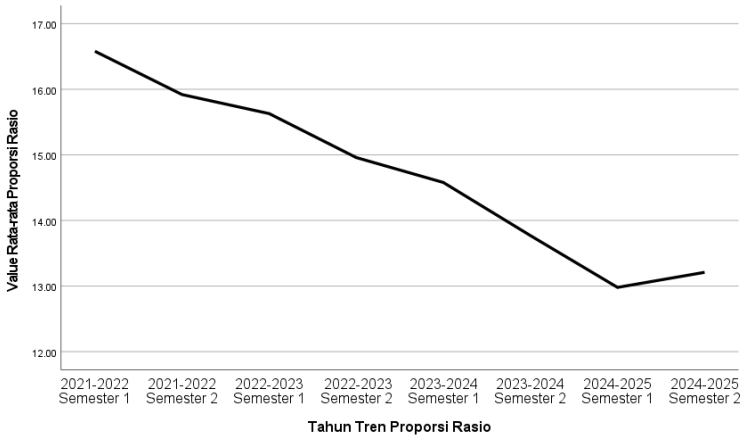


Figure 5. Rend of Student Teacher Ratios in Elementary Schools in Sanggau Regency.

The consistent decline in the number of students across all sub-districts in Sanggau from more than 51,661 students in Semester 1 of 2021/2022 to 49,519 in Semester 2 of 2024/2025 represents an important demographic signal. Safitri et al. (2022) emphasize that achieving equitable and quality education in line with SDG 4 is not only about expanding

access, but also about ensuring the accurate distribution of resources based on reliable demographic projections. The downward trend in student numbers identified in this study should be integrated into medium-term teacher demand projections to prevent a surplus of teachers in areas with declining populations, while shortages persist in sub-districts with high ratios, such as Toba.

## 4. CONCLUSION

This study demonstrates that student-teacher ratios remain a strategic indicator for evaluating the equity and effectiveness of educational resource allocation in Indonesia. The findings suggest that improvements in educational quality cannot be achieved solely through increasing the number of teachers, but also require more balanced distribution mechanisms that consider regional characteristics, demographic conditions, and institutional differences between public and private schools. The study has important implications for educational policy and management. Evidence from both national and regional contexts highlights the need for data-driven teacher deployment strategies, continuous monitoring of teacher distribution, and differentiated policy interventions tailored to local needs. Such approaches may contribute to reducing educational disparities and supporting more equitable access to quality basic education.

This research is limited by its reliance on secondary data and its focus on student-teacher ratios as the primary indicator of teacher distribution. Other factors that may influence educational quality, such as teacher qualifications, professional competence, school infrastructure, funding capacity, and student learning achievement, were not included in the analysis. In addition, the regional analysis was restricted to Sanggau Regency, which may limit the generalizability of local findings to other regions with different demographic and geographical characteristics. Future studies are encouraged to integrate quantitative and qualitative approaches to examine the underlying factors shaping teacher distribution patterns and their direct effects on learning outcomes. Comparative studies involving multiple districts or provinces, as well as analyses incorporating teacher quality and educational performance indicators, would provide a more comprehensive understanding of educational equity in Indonesia. Overall, this study contributes to the growing literature on educational human resource management by offering an integrated perspective that combines national trends, provincial comparisons, and regional contextual analysis. For policymakers and educational stakeholders, the findings provide empirical evidence that can support the formulation of more adaptive, equitable, and sustainable teacher distribution policies to improve the quality of basic education.

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