

Analysis on Number of Secondary Schools and Enrollees in the Philippines: Ensuring Accessible Education for All

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Abstract

A focus was given to the significant drop in the number of enrollees both in public and private schools in the Philippines. The dominant explanation for the trend has been because of the pressing effects of the pandemic. The researchers utilized the data from the official website of the Department of Education from 2016 to 2022 to uncover the trend and fluctuation in the data. The researchers applied the method of Time Series Analysis showcasing the pattern of decline in the number of enrollees SY 2020-2021 evidently supported by the recent pandemic situation. There was also a drop in the number of schools. In conclusion, the researchers arrived at the thought that not only pandemic but also factors such as transitioning into K-12 curriculum and lack of learning platform have been reasons for students opting out to enroll; however, further study is needed to uncover the underlying reasons.

Keywords—*Education, K-12 curriculum, DEPED, Time Series Analysis, Dropout rate, gender disparity*

I. INTRODUCTION

The education sector is one of the most underdeveloped sectors in the Philippines. Its transition into new curriculum and developments in place has been hampered since the pandemic started. In order to address these challenges, a closer look at the number of schools and the number of students enrolled in them was investigated. These are key indicators for determining the success of the education system.

Supply of quality of education far outweighs the number of opportunities that could be offered for learners in the Philippines. Students who are out-of-school receive inequality from our education sector by lack of intervention and conditions that may have given to them for the betterment of each. If these circumstances cannot be provided, it could aggravate in the long run for more learners especially for children under low income families. [1]. Along with that, the recent K-12 curriculum has been met with wide criticism from teachers, parents, students, and educators alike. Studies have found that the transition has had mixed effects on student learning, with some students experiencing improved academic performance and others struggling with the additional years of schooling. [2]

Monitoring should be in place to mitigate factors such as dropout rate and sustenance of schools. Furthermore, we need to keep track of this trend and consider all the other factors causing the movement of the key indicators in our education system going forward. This will help in understanding whether or not our education system is working effectively; if not, DEPED may need to rethink its education policy and approach.

II. METHODOLOGY

Time series analysis is a statistical methodology appropriate for an important class of longitudinal research designs. Such designs typically involve single subjects or research units that are measured repeatedly at regular intervals over a large number of

observations. A time series analysis can help us to understand the underlying naturalistic process, the pattern of change over time, or evaluate the effects of either a planned or unplanned intervention. [3]

The researchers utilized the data from the official website of the Department of Education from 2016 to 2020. Taking into consideration the number of students enrolled and their gender, and the number of schools per region.

III. RELATED LITERATURE

Education is one of the most significant legacies that Filipino parents want to leave their children. Better education gives them options that help give their children a bright future and help them escape poverty. As a result, everyone needs to have equal access to education. [6]

Education is crucial for human development in the Philippine Development Plan 2011-2016. [1] Those in the lower income distribution can escape poverty with better education. With a more educated and effective workforce, the nation is also propelled on a more consistent road of economic achievement. The Philippines has a significant number of children who are not in school and is one of the countries with declining net enrolment rates from 1999 to 2006. (More than half a million). The lack of resources allocated to the education system, particularly DepEd, and changes in the definition of these statistics are two factors contributing to the regression after 2000.

Other issues surrounding the education sector were also identified in the course of the study. One of the challenges to education continues to be poverty. For some kids, the opportunity costs of continuing their education and earning future benefits are significantly larger than the benefits of earning money now through employment. [1] Additionally, The Implementation of K-12 has been met with challenges and mixed reactions from stakeholders. A few Stakeholders have firmly gone against the execution of the educational program essentially because of different sentiments with respect to the progress of the curricular change. [2] Lastly, The COVID-19 crisis has hampered delivery of education in the Philippines. [10]

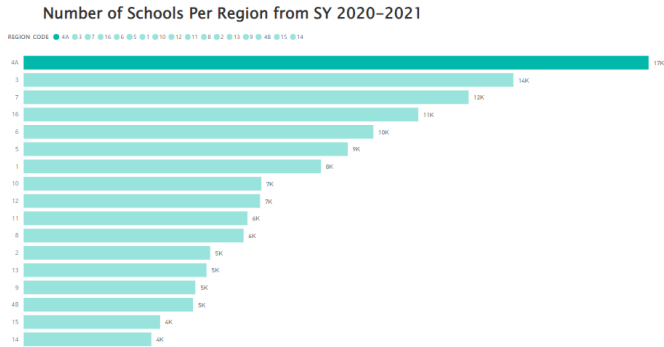
Global health systems have found it extremely challenging to manage the educational disruptions and global health issues brought on by the COVID-19 pandemic. No country or race on earth is currently immune to the coronavirus pandemic, and the rate of spread is overwhelming for everyone on the planet. [4] Three million students in the Philippines chose not to enroll or continue their education beyond the

primary level. This occurred despite the institution’s extensive enrollment and registration drives. These pupils had to take a "gap year" because of the COVID-19 pandemic. [8]

Worldwide educational systems were impacted by the coronavirus pandemic, which resulted in widespread school closures. Over 100 nations conducted widespread closings, affecting more than half of the global student population. The term "school closure" refers to the shutdown of schools due to a pandemic, emergencies, labor disputes, natural disasters, or intentional efforts to relocate a school. Unexpected school closings can seriously affect children, teachers, parents, and society at large. It could harm pupils' academic performance and interest. Institutions can use technology to address some of the effects of school closures, but it cannot take the place of face-to-face interactions, which have a significant positive impact. [4]

III. IV. RESULTS AND DISCUSSION

Table 1. Demographics of Schools Per Region



The majority of schools are found in Region IV-A (CALABARZON). During 2020, There are 17k schools in region 4A.

Table 2. Enrollees per Gender

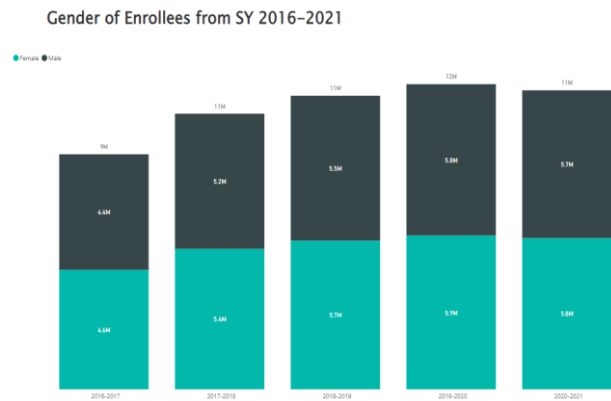


Figure 2 illustrates the number of enrollees per gender year on year. We can notice some variability in the numbers. This can be further studied as to the causes and implications. During 2016 enrollees 48% were male and

52% were female. This is contrasting to 2020 numbers that indicated that 50% were male and 50% were female.

Table 3. Enrollees Figure from SY 2016-2022

School Year	Enrollment
2016-2017	9,000,600
2017-2018	10,554,411
2018-2019	11,247,927
2019-2020	11,695,544
2020-2021	11,458,726
2021-2022	12,575,616

One of the key metrics of an educational institution is its enrollees. This is the lifeblood of the institution, without a continuous flow of enrollees most schools will cease to exist.

We can see an increasing trend over the years. This may be related to the growing population and effective drive of education institutions in driving people to go to school. As already identified, The number of enrollment dipped during SY 2020. School operations were halted and were advised to continue only during October 2020. While it might not speak to the only cause of drop. It can paint us a picture of the difficulty faced by schools and students alike.

Table 3. Enrollees Rate from SY 2016-2022

School Year	Enrollment Rate
2017-2018	117%
2018-2019	107%
2019-2020	104%
2020-2021	98%
2021-2022	110%

Figure 3 shows a material decrease in enrollment rate (2%) during 2020.

Table 5. Total Enrollees and Number of Schools per Year

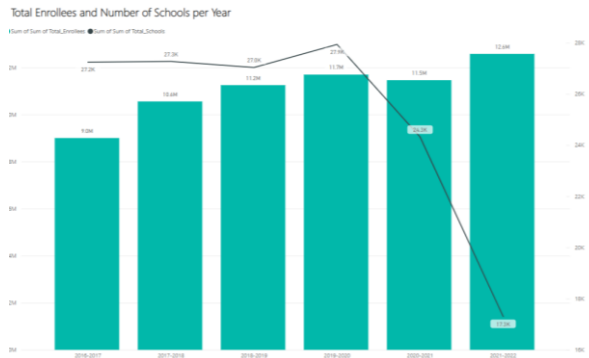


Figure 5 shows the trend in enrollees and number of school present.

Trend analysis of the numbers of enrollees was observed. There is an upward trend in the number of enrollees. The number of schools has been changing year on year. Numerous factors could contribute to this such as policy change and lower enrollees. Additionally, Average growth rate in number of enrollees for the last 5 years is 27.31%. In contrast, Average decline in number schools for the last 5 years is 10.74%. Finally, Average growth rate year to date is 39.72%. (2016-2021). The average decrease of schools to date is 36.47%. (2016-2021)

V. CONCLUSION

While the goal of this study is primarily to examine the number of secondary schools and enrollees in the Philippines to ensure equal access to education for all, the researchers looked into the data to gain insights on their key attributes.

First, The demographic of schools. The majority of schools are found in Region IV-A (CALABARZON).

Second, there is no gender disparity found. There is 1:1 ratio of female to male enrollees in SY 2020-2021.

Third, the enrollment rates for secondary schools have been good. Our key benchmark is to at least maintain the trend seen from last year’s enrolment. There has been a significant drop in the number of secondary enrollees during SY 2020-2021 resulting in

a 2% drop in enrollment rate. Subsequently, it resumed to a 110% enrollment rate, which is a good indicator.

Finally, on the analysis of trend in the data. It was observed that there is a consistent upward trend for the number of enrollees, except for outlier SY 2020. The average growth rate of enrollees for the last five years is 27.31%. This is high since the previous year's average growth rate for growth rates in general amounts to only 8.45% (from 2016-2019) [9]. As for schools, the trend has been erratic as low enrollment may have forced some schools to close during the period covered. The average decrease of schools for the last 5 years is 10.74%.

The average decrease of schools to date is 36.47%. (2016-2021). This is quite alarming since there could be contributory factors that hinder sustenance of schools in the first place.

Overall, the outlook for the education sector generally looks hopeful. While it was abruptly affected by covid restrictions, the education sector displayed agility in coping not only in the implementation of K-12 program but also on the adaptability of using various alternative learning method as those needs arose.

VI. RECOMMENDATIONS

Although the study was able to showcase the movement with the sector of Secondary Education in the Philippines, limitations are hereby present. First and foremost, it did not cover the sentiments or coping mechanisms of students, parents and educators with regards to the problem. Additionally, The study did not include PSO (Philippine School Overseas) as part of secondary schools in the Philippines.

This study can be utilized hereafter for further investigation of underlying factors to determine the most common cause of the decrease in enrollees and the number of schools. Furthermore, empirical data can be gathered using qualitative methods to shed light on the sentiments of teachers and students. These insights can aid the Department of Education (DepED) in their policy implementation programs. Finally, we recommend that the researchers extend the study's time frame (10 years) in order to capture more insights. We can then measure and compare year-on-year growth in this manner.

REFERENCES

- [1] Albert, Jose Ramon G.; Ramos, Andre Philippe; Quimba, Francis Mark A.; Almeda, Jocelyn P. (2012) : Profile of Out-of-School Children in the Philippines, PIDS Discussion Paper Series, No. 2012-01, Philippine Institute for Development Studies (PIDS), Makati City
- [2] P. M. Almerino *et al.*, "Evaluating the Academic Performance of K-12 Students in the Philippines: A Standardized Evaluation Approach," *Educ Res Int*, vol. 2020, 2020, doi: 10.1155/2020/8877712.
- [3] Velicer, W. F., & Fava, J. L. (2003). Time Series Analysis. In J. Schinka & W. F. Velicer (Eds.), *Research Methods in Psychology*(581-606). Volume 2, *Handbook of Psychology* (I. B. Weiner, Editor-in-Chief.). New York: John Wiley & Sons
- [4] Edeh Michael Onyema, Nwafor Chika Eucheria, Faith Ayobamidele Obafemi, Shuvro Sen, Fyneyface Grace Atonye, Aabha Sharma, & Alhuseen Omar Alsayed. (2020). Impact of Coronavirus Pandemic on Education. *Journal of Education and Practice*, 11(13), 108–121.
- [5] Cho, Y. (2021, March 12). The Impact of the COVID-19 Pandemic on Low Income Households in the Philippines : Impending Human Capital Crisis.
- [6] Maligalig, Dalisay S. and Caoli-Rodriguez, Rhona B. and Martinez, Arturo and Cuevas, Sining, *Education Outcomes in the Philippines* (May 1, 2010). *Asian Development Bank Economics Working Paper Series* No. 199
- [7] Joel M. Durban, & Ruby Durban Catalan. (2012). Issues And Concerns Of Philippine Education Through The Years. *Asian Journal of Social Sciences and Humanities*, 1(2), 61–69.
- [8] Uaminal, J. M. (2021, September 28). The students who are left behind: pandemic-induced gap year in the Philippines. *Asian Studies Association of Australia*.
- [9] "DepEd credits parents, learners for exceeding 100% enrollment turnout for SY 2021-2022 | Department of Education," Department of Education, Sep. 23AD. <https://www.deped.gov.ph/2021/09/23/deped-credits-parents-learners-for-exceeding-100-enrollment-turnout-for-sy-2021-2022/>
- [10] Y. Cho, J. Avalos, Y. Kawasoe, D. Johnson, and R. Rodriguez, "The Impact of the COVID-19 Pandemic on Low Income Households in the Philippines: Impending Human Capital Crisis § COVID-19 Low Income HOPE Survey Note No. 3." [Online]. Available: <https://data.humdata.org/dataset/global-school-closures-covid19>,