Reaching the Marginalized: Do Education Expenditure and Other Indicators AlleviatePoverty in the Philippines

Sofia Mae O. Nuñez

Polytechnic University of the Philippines sofiamaeonunez@iskolarngbayan.pup.edu.ph

Reign Christine M. Aguado

Polytechnic University of the Philippines reignchristinemaguado@iskolarngbayan.pup.edu.ph

Jaira Mei B. Barua Polytechnic University of the Philippines jairameibbarua@iskolarngbayan.pup.edu.ph

Charisse Mae O. Capariño

Polytechnic University of the Philippines cmocaparino@iskolarngbayan.pup.edu.ph

ABSTRACT

This study examines if government expenditure and other indicators alleviate poverty in the Philippines. This study employs time series data of unemployment rate, business confidence, and education expenditures from 2001-2022, making it to 21 observations. In this paper, several tests are used, namely Augmented Dickey-Fuller (ADF) for stationarity, Breusch-Godfrey Serial Correlation LM Test, Variance Inflation Factor (VIF) for autocorrelation and multicollinearity. The Johansen Cointegration and the Pairwise Granger Causality Test were also performed to find out if there is a long-run relationship and causality between the variables. The results reveal that there is a long-run relationship and bidirectional causality between unemployment and poverty, also there is a longrun relationship but unidirectional causality between business confidence and poverty, while the education expenditures and poverty show no long-run relationship under the Johansen cointegration test and no causality under the Granger causality test. The findings suggest that policymakers should provide more job opportunities, enhance support for entrepreneurship, and allocate budgets for education properly to enhance the quality of education and ensure access for all.

Keywords: Business Confidence, Education Expenditure, Government Expenditure, Unemployment, Poverty

INTRODUCTION

The Philippines, like many other developing countries, faces persistent poverty as a major economic burden. Goal 1 of the Sustainable Development Goal is to end all forms of poverty around the world and the government partnered it with the *Ambisyon* 2040 to align development plans for a better future for Filipinos. Despite the country's impressive economic growth in recent years, 18.1% of its citizens were poor in 2021 (Asian Development Bank, 2021). With the data from Bangko Sentral ng Pilipinas (BSP) and Social Weather Stations (SWS), economic growth and poverty changed as illustrated in Figure 1. It was observed that there is a 384.99% increase in Gross Domestic Product (GDP) from 2001 to 2019, while the self-rated poverty data experienced 0.61% increase within the same period. As the Philippine economy remains strong, a considerable population of 10,727 on average for a family of five in 2018 is living in great poverty. It translates to 5.2% of the total population whose monthly income is not sufficient to meet even basic food needs. The recorded monthly food threshold for a family of 5 was calculated at PHP 7,528.00 (Mapa, 2019). Approximately, 51% of Filipino families assessed their economic status as "mahirap" or poor (SWS, 2023).

Figure 1



GDP and Poverty Self-rated Data, 2001-2019

The income disparity among Philippine regions widened (Albert, 2015). The ADB found that income inequality is increasing, and the Philippines is not seeing equality rise with GDP growth. However, the Philippine Statistics Authority (PSA) found an increase in five of the nine core indices of poverty, with the poverty rate assessed at 21.6% in 2015. Farmers, fisherfolk, and children of low-income families posted the highest poverty rates of 34.3%, 34%, and 31.4%, respectively.

There are key factors constraining poverty through different reduction efforts made by different government institutions. But the main causes of poverty in the country include high inflation during crisis periods, high levels of population growth, and high and persistent levels of inequality in income and assets which is made stronger by the weakness in employment generation and the quality of jobs generated and the low to moderate economic growth for the past 40 years, which doesn't affect much in poverty rate. (Asian Development Bank, 2019).

Objective of the Study

Given this backdrop, we, the researchers, would like to estimate and know the correlation of the poverty dynamics and factors with indicators that alleviate poverty. This study recognizes that poverty is a multifaceted issue that cannot be solely attributed to government expenditures (i) education expenditure (Department of Education's annual budget) but also various socioeconomic indicators such as (ii) unemployment rate, and (iii) business confidence.

This paper endeavors to shed light on which relationship between government expenditure and various socioeconomic indicators, contributes to high poverty alleviation in the Philippines and indicators barely affecting the poverty rate. It seeks to aid researchers and policymakers in their pursuit of inclusive and long-term development plans and policies by analyzing the efficiency with which public funds reach the most vulnerable and hope to eventually aid ongoing initiatives to alleviate poverty.

Statement of Problem

The study was conducted to determine the indicators that are affecting poverty in the Philippines. The study aims to answer the following:

- 1. Do education expenditure, unemployment rate, and business confidence affect poverty?
- 2. Do education expenditure, unemployment rate, and business confidence have a long-term relationship with poverty?
- 3. Do education expenditure, unemployment rate, and business confidence have a causal relationship with poverty?

Theoretical Framework

Various factors influence poverty, and addressing this complex issue requires a multifaceted approach. The Keynesian Theory emphasizes the pivotal role of government

policies in alleviating poverty through strategic interventions (Jung and Smith, 2006). Marshall and Keynes attribute poverty to economic underdevelopment and insufficient human capital, suggesting that boosting public spending can foster economic growth and tackle issues such as unemployment, inequality, and inflation. Effective utilization of public spending as a macroeconomic policy instrument proves instrumental in enhancing national income and creating employment opportunities.

The Human Capital Theory underscores the transformative power of education in eradicating poverty and fostering economic development (Jeff & Laura, 2014). Proponents argue that investing in human capital formation through education is directly linked to future growth and has a substantial impact on the overall income of a nation.

The business landscape has witnessed exponential growth in activities aimed at serving the needs of disenfranchised individuals in low-income communities. Prahalad and Hart's concept of the Bottom of the Pyramid (BoP) introduced an enterprisebased approach to poverty alleviation, gaining momentum since the late 1990s (Hart et al., 2016). This approach extends to social entrepreneurship, impact venturing, and development finance, reflecting a broader understanding of addressing poverty through entrepreneurial means. Research on business and poverty has surged, aligning with the principles of Market Orchestration and Management Theory. The orchestration of markets facilitates the creation of strategic plans, boosting business confidence and generating employment in impoverished communities. This approach involves interventions aimed at aligning business arrangements to enhance the profitability of goods and services for those in poverty, whether within local or international markets (Ashulist et al., 2021).

Literature Review

Alleviating Poverty

Poverty has remained a challenge in the Philippines and other neighboring countries. Its eradication was, in fact, the first goal of the United Nations' Sustainable Development Goal. In the Sustainable Development Goal Index, the Philippines continues to have problems in achieving the goal of no poverty by the year 2030. The country's poverty headcount ratio is at \$3.65/day, indicating the index score of the country's performance in combating poverty is improving but still insufficient to achieve the goal.

World Bank (2022) highlights that the Philippines has achieved remarkable development during the last three decades. This is due to the reason that the poverty rate, which was 49.2 percent in 1985, has dropped by two-thirds to 16.7 percent in 2018. Moreover, they also highlighted in their report that by 2018, the middle class had grown by nearly 12 million, and the economically secure population had grown to 44 million.

However, in the survey of the Social Weathers Stations (SWS), half of Filipino families, or approximately 14 million households, still considered themselves poor during the first quarter of 2023. Reports also indicate that the country has fallen behind neighboring countries, particularly Malaysia, Thailand, Indonesia, Vietnam, and Myanmar, in terms of poverty alleviation (PIDS, 2022).

Unemployment and Poverty

Unemployment has been identified as one of the key economic factors contributing to poverty. According to the PSA, the country's unemployment rate fell to 4.3 percent in May 2023, which is significantly lower than the 6.0 percent unemployment rate in May 2022. However, according to the IBON Foundation (2023), the jobs created are often of poor quality. This suggests that the government must search for further policies, planning, and initiatives to solve the problem.

Several studies have long proved the connection between unemployment and poverty. Feriyanto, El Aiyubbi, and Nurdany (2020) investigated the influence of several economic factors, including unemployment, on poverty in the provinces in Indonesia. Using panel data regression across 33 Indonesian provinces from 2010 to 2019, the result of their study shows that unemployment has a significant positive effect on poverty. With this, they highlighted the importance of reducing unemployment to reduce poverty in Indonesia.

In Nigeria, it has been examined that unemployment causes poverty under the Granger causality test (Anowor & Okorie, 2017). An increase in population growth is seen as an implication of unemployment since the growth in population increases the labor force, and an increase in the labor force without many job opportunities would lead to unemployment. It suggests that unemployment is both a necessary and sufficient condition for the occurrence of poverty in Nigeria.

Similarly, Saunders (2002) highlighted significant evidence that unemployment raises the risk of poverty and contributes to inequality in his analysis of the direct and indirect effects of unemployment on selected economic factors, including poverty. The result gives rise to the crippling social impact of this on unemployed people, their families, and the community they live in. With this, he suggested a welfare reform giving emphasis on employment generation.

Education and Poverty

Poverty and education have demonstrated their relevance to each other over time. This connection is evident even in the dominant narrative, which portrays education as the 'key to education, believing it to be instrumental in alleviating poverty. According to research in Pakistan conducted by Masood Sarwar Awan et al. (2011), education and poverty rates are inversely related. Their study measured the determinative effect of education attainment, experience, and gender on poverty and concluded that education has a negative impact on poverty. Therefore, an increase in education leads to a lower poverty incidence in Pakistan. This relationship manifests through opportunities with higher wages, thereby reducing poverty incidence. This means that people are more likely to escape poverty if they obtain a higher level of education.

Similar results were observed in East Asia during the mid-1990s, as reported by the World Bank (1993). The paper aimed to discern the reasons behind the rapid economic progression observed in Singapore, Hong Kong, The Republic of Korea, and Taiwan during the 1970s to 1980s.

According to the paper, investing in human capital, especially education, has led to economic growth, consequently reducing poverty within these countries. The implication that education has a direct effect on economic growth suggests that when a country invests in education, it is likely to experience economic growth which negatively affects poverty.

Business Confidence and Poverty

The BSP regularly publishes its Business Expectations Survey (BES) which encompasses the business confidence indices on relevant indicators. BES is a quarterly survey that serves to obtain entrepreneurs' outlook on their businesses and the national economy, and it measures their 'confidence' in the future business situations. The findings from the BES offer early insights into the expected changes in overall business activity in the economy, various aspects of companies' operations, and specific economic indicators (Bangko Sentral ng Pilipinas, 2023). A positive confidence index means that businesses are optimistic about the indicators, except for the exchange rate and peso-borrowing rate which implies otherwise.

According to Heye (1995), there is a clear connection between business expectations and subsequent behaviors. Managers significantly consider the business outlook when making decisions related to their operations. It has been concluded that fluctuations in business confidence impact companies' investment decisions and resource utilization, which, in turn, affect job creation. These are consistent with those of Yuri et al. (2021) as they observed the effect of the business confidence index on Unemployment in ASEAN-5. Using short-term Vector Error Correction Model, they concluded that business confidence has an inverse relationship with unemployment. The more businesses are optimistic, the more they invest in operations. They highlighted the necessity of creating a good business climate to encourage investment and business formation.

However, when De Jongh and Mncayi (2018) investigated the short-term and longterm impact of business confidence and investment on the South African economy, they found that investments should not be the only motivation. Based on the autoregressive distributed lag (ARDL) model, the study found a significant and lasting relationship between economic growth and the independent variables. Maintaining a good overall outlook of the economy matters as much as stimulating investments, thus policies should be multi-dimensional.

RESEARCH METHODOLOGY

In order to investigate the impact of government expenditure and indicators on poverty alleviation in the Philippines, the researchers will analyze correlational data obtained from various government agencies that are involved in poverty reduction efforts. This study aims to examine the relationship between the poverty rate of the Philippines and several key factors, including the unemployment rate, education budget, and business confidence. The data for this investigation is obtained from secondary sources, ensuring a comprehensive analysis of the subject matter. By exploring these variables, we can gain valuable insights into the dynamics between poverty and various socio-economic indicators in the Philippines.

This paper will use a model with a 4-time series. The poverty rate is obtained through data collection from the Social Weather Stations (SWS), an organization known for conducting surveys and gathering information on various socio-economic issues. In this particular case, the researchers will utilize the total number of SWS self-rated poor families' data as a key component in the calculation of the poverty rate. Unemployment rate was collected through the PSA. The Business Confidence index is obtained from the official website of the BSP. On the other hand, the Department of Education (DEPED) and State Universities and Colleges' (SUCs) annual budget will be used to gauge the progress and effectiveness of educational initiatives in terms of Education Expenditure. The data was obtained by the researchers through a formal request made on the Freedom of Information's (FOI) website and researchers was forwarded to the Department of Budget and Management's database to retrieve the data from the General Appropriations Act.

The present study will employ a time series dataset spanning from 2001 to 2022, encompassing a total of 21 observations. The paper will focus on examining the relationship between the dependent variable, which is the self-rated poverty among families (P), and several independent variables including the unemployment rate (UR), education expenditure (EDUC) of the Department of Education (DEPED) and State Universities and Colleges (SUCs), as well as business confidence (BUSSCON).

Model Specifications

One model is used in this study. It is integrated as the origin model as below:

$$P_{t} = \alpha_{0} + \beta_{1}U_{t} + \beta_{2}EDUC_{t} + \beta_{3}IOgBUSSCON_{t} + \varepsilon$$

Where:

- **P**₊: Self-rated poor families
- $\label{eq:alpha_0} \begin{array}{ll} \alpha_{_0} & \\ & \text{Constant. } \beta_{_1}, \, \beta_{_2} \text{, and } \beta_{_3} \text{: Regression coefficients of the independent} \\ & \text{variable.} \end{array}$
- **U**₊: Unemployment rate of Philippines in year t.
- **EDUC**: Education Expenditure of the Philippines in year t.

BUSSCON: Business Confidence of the Philippines in year t.

ε: Error of the equation.

To study and run the dataset, the researchers use EViews 12. It is a statistical software that is mostly used for general and econometric analyses. This tool assisted with conducting in-depth analysis, ensuring the reliability and robustness of the study's datasets. The following statistical treatments were utilized in the study:

a. Jacque Bera Test

Since many fields of study depend on the assumption of normality, there are several normality tests in statistics. A possible technique to assess the normality of the data is the Jarque-Bera test.

It is based on the sample skewness and sample kurtosis The Jarque-Bera test statistic is defined as:

$$JB = n \underline{S}62 + (\underline{K}24\underline{-3})2]]] statistic []]$$

with S, K, and N denoting the sample skewness, the sample kurtosis, and the sample size, respectively.

b. Multicollinearity

In this study, the Variance Inflation Factor (VIF) can be used to solve multicollinearity, if multicollinearity is found among predictor variables. The greater the parameter's VIF value, the more significantly it influences multicollinearity. Removing variables with high VIF values can assist in minimizing multicollinearity while also improving regression model precision and reliability. The standard errors of VIF values may be computed and used to estimate the importance of collinearity. A value of 1.0 implies

that there is no relationship between this independent variable and any other variables. While, between 1 to 5 indicates a significant relationship, it is not significant enough. VIFs larger than 5 indicate significant levels of multicollinearity in which the coefficients are poorly approximated.

It is denoted by the formula:

 $VIF = 1 - {}^{1}R^{2}$

c. Augmented Dickey-Fuller (ADF) test

To test the stationarity of the variables the researchers used the Augmented Dickey-Fuller (ADF) unit root test, with the regression model of:

$$y_t = c + \beta t + \alpha y_{t-1} + \phi_1 \Delta Y_{t-1} + \phi_2 \Delta Y_{t-2} \dots + \phi_p \Delta Y_{t-p} + e_t$$

The test statistic is compared to the critical values. If the test statistic is greater than the crucial value, the null hypothesis is rejected, and the time series is considered stationary.

d. The Breusch-Godfrey Serial Correlation LM

It is a test that detects the existence of autocorrelation in regression model residuals. When the residuals of a regression model are associated with each other over time or across data, this is referred to as serial correlation. In a normal linear regression model, the error terms (residuals) are uncorrelated and have constant variance. However, due to the presence of autocorrelation, this assumption may not be held accurate in many time series or panel data models. In regression analysis, autocorrelation can lead to inadequate coefficient estimates and inaccurate hypothesis testing.

e. Cointegration and Causality

Johansen's test is a method for determining if three or more time series are integrated. It examines the validity of a cointegrating connection utilizing a maximum likelihood estimates (MLE) technique. It is also used to estimate the number of relationships and to discover the number of relationships (Wee & Tan, 1997). The Johansen Cointegration test is used to examine the long run relationship between unemployment, education expenditure, business confidence and poverty. The Johansen and Juselius (1990) cointegration test yields two likelihood ratio test statistics, including the trace test and the maximum eigenvalue test. The Granger causality test is a statistical causality concept based on prediction. If a signal X1 "Granger-causes" (or "G-causes") a signal X2, then previous values of X1 should include information that helps forecast X2 above and above the information contained in past values of X2 alone, according to Granger causality. Its mathematical approach is based on stochastic regression modeling (Granger 1969).

f. Vector autoregression

The vector autoregression (VAR) model extends the idea of univariate autoregression to *k* time series regressions, where the lagged values of all *k* series appear as regressors. The vector of time series variables on lagged vectors was regressed in a VAR model. As for AR(*p*) models, the lag order is denoted by *p* so the VAR(*p*) model of two variables X, and Y, (*k* = 2) is given by the equations:

 $\begin{aligned} & \text{Yt} = \beta 10 + \beta 11 \text{ Yt-1} + + \beta 1p \text{ Yt-p} + \gamma 11 \text{ Xt-1} + + \gamma 1p \text{ Xt-p} + u1t, \text{ Xt} \\ & \dots \\ & = \beta 20 + \beta 21 \text{ Yt-1} + + \beta 2p \text{ Yt-p} + \gamma 21 \text{ Xt-1} + + \gamma 2p \text{ Xt-p} + u2t. \end{aligned}$

RESULTS

The results of the study are provided and analyzed in this section with the use of different tests, in connection to the objective of the study, wherein the researchers aim to determine if there is a relationship between the dependent variable—self-rated poor families and the independent variables—unemployment rate, education expenditure and the business confidence of the firms.

During 2010-2012, few individuals rated themselves as being "poor". From 2016 to 2021, self-reported poverty ranged between 44% and 48%. These two lowestrate years were presided over by Presidents Aquino and Duterte, in that order. 2004-2008, when President Macapagal Arroyo was in office, were the years with the highest self-reported destitution. The unemployment rate has also decreased over the past two decades, from 11.2% in 2001 to 5.45% in 2022, a decrease of nearly 100%. At the height of the pandemic, the unemployment rate skyrocketed from 5.07 percent in 2019 to 10.41 percent in 2020. Additionally, education expenditures have increased in recent years. However, in 2018, the education budget decreased from PHP 613 million to PHP 528 million and increased in 2022 for all education-related initiatives to PHP 696 million. Lastly, business confidence does not increase in a linear fashion. During the pandemic, the confidence of business owners dropped from 38.3% to 9.2%, and many micro and small enterprises, large businesses, and companies closed. Today, business confidence has steadily begun to recover to 29.6%. The worldwide COVID-19 epidemic spanned the years 2020–2022. During this time, several factors, including economic indicators, health statistics, and social behaviors, went through significant and extraordinary fluctuations. To account for these irregularities, the researchers opted to exclude the years that were affected by the epidemic from the study. The data from 2020-2022 has been excluded from the analysis to prevent the distortions produced by the impacts of the pandemic. To ensure the accuracy and consistency of the analysis, the researcher emphasizes which

years are considered to have normal circumstances. After this adjustment, the time series data set now includes 19 observations spanning the years 2001 to 2019, ensuring that the data remains consistent and comparable throughout time.

Based on the study, the mean value of self-rated families is 48,635,793. The minimum value is 43,149,826 with a maximum value of 54,715,609. The unemployment rate has a mean value of 7.73. With a minimum value of 5.07 and a maximum value of 11.8. On the other hand, education expenditure has a mean value of 2.43. With a minimum value of 9.92 and a maximum value of 6.13. Lastly, the business confidence has a mean value of 29.03, showing a minimum value of -15.2 and a maximum value of 47.87.

Jacque-Bera Test:

JB(PValue>0.05) = Accept H_0 (Normal Distribution) JB(PValue<0.05) = Reject H_0 (Non-Normal Distribution)

All probability values have a result greater than 0.05; we accept the null hypothesis, concluding all data are in normal distribution.

Variance Inflation Factor

We used Variance Inflation Factor (VIF) to measure the relationship and correlation between the independent variables. As seen in the study, centered VIF values for the education budget, business confidence, and unemployment rate are 2.24, 1.58, and 2.71, respectively. All these values are greater than 1 (>1), indicating that the variables are moderately correlated.

Additionally, they are less than 10.0 (<10.0), which means that there is no severe multicollinearity present in the model.

Augmented Dickey-Fuller (ADF) test

To test for stationarity, the Augmented Dickey-Fuller (ADF) test was employed. The study presents the unit root test at the first difference level, conducted with two different models: one with an intercept and the other with both trend and intercept. The test was performed at significance levels of 1%, 5%, and 10%. The P-value for the variables is less than 0.05, which means that we can reject the null hypothesis. The results of the ADF test indicated that the variables are stationary at the level at first difference.

The provided graphs depict a comparative analysis of the raw data following the integration of all series at the II stage. In the right portion of the analysis, it is evident that the graphs exhibit a stationary pattern, indicating that all the data points have no unit roots.

Test of Autocorrelation

The Breusch-Godfrey Serial Correlation LM Test shows that F-statistic is 1.457219, with a p-value of 0.2685. The Obs*R-squared is 3.479502, with a p-value of 0.8340. The result shows that the p-value is greater than 0.05 (p-value>0.05), indicating that there is not enough evidence to reject the null hypothesis. The findings indicate that there is no autocorrelation in the residuals of the model at the 0.05 significance level.

Vector Auto-Regression Results

The results in the study show that only the business confidence (-1) strongly influences poverty with t-statistics of 2.09722. This means that the business confidence is strongly exogenous to the poverty rates. Other variables such as education budget and unemployment rate, do not have a significant effect on the poverty rates.

Johansen Cointegration Results

The Trace Test reveals the presence of one cointegrating equation at the 5% significance level. This cointegrating equation indicates that there is a single linear combination of factors that drives each index to be related throughout the full 19-year time frame.

In addition to the findings of the Johansen's Trace test, the researchers also provide the results of the maximum EigenValue test. The Maximum EigenValue Test also identifies one cointegrating equation at the 5% level, proving the Trace Test. As a result of the analysis, it may be possible to conclude that the variables have a significant correlation, indicating the presence of a long-term link.

Pairwise Granger Causality Test

There is no direct correlation between poverty and the unemployment rate. It implies that changes to one variable cannot impact variations in the other, and vice versa. There is also no granger causality between levels of unemployment, and expenditures on education, or vice versa.

The study's findings suggest a unidirectional causality, implying that business confidence has a strong causal relationship with poverty. Using the p-value < 5% criteria for decision-making, the paired granger causality test indicates that business confidence is the most significant indicator for alleviating poverty, with a p-value of 0.0352. However, the study revealed that there is no evidence of a Granger causation link between the other two parameters and poverty.

DISCUSSION

Different from expectations, the results show that education expenditure has neither a long term nor causality relationship with poverty. A study by Omari and Muturi (2016) showed the same results as they concluded that education expenditure is insignificant to poverty. This is similar to Ahmad and Batul's (2011) findings where they do not find a long-run relationship between poverty and education variables in Pakistan. While education receives the highest allocation of budget in 2023 (Department of Budget and Management, 2023) and is generally viewed to alleviate poverty, the result indicates that it is still not enough to influence poverty. It can be suggested that simply increasing the budget is insufficient to address poverty in the long run. Instead, there should be a focus on identifying factors that explain why this is the case.

One explanation for this is the existence of another factor, corruption (Dankumo et al., 2019). They drew the same results that government spending on education is insignificant, while investment on economic indicators is significant. Additionally, they also concluded that corruption is a factor that hinders the effect of social sector (education and health) expenditure on poverty alleviation. It was suggested to put attention to the manner and quality of policies and their implications. The education budget is important however it will not be realized if policies in place are not effective.

The same with education expenditure, unemployment showed an insignificant causal relationship with poverty. Dahliah and Nirwana Nur (2021) came up with similar results, they reasoned that the type of unemployment that exists may be a factor in the relationship. They concluded that unemployment is insignificant since it is frictional. This means these people are actively looking for another job and may not stay as unemployed for long. Another factor is the existence of vast natural resources in a country. The unemployment rate may not account to agricultural, mining, or other similar industries.

Lastly, there seems to be a causal relationship between business confidence and poverty. The same results were concluded by Aziz, Grant, and Arshed (2020) when they tested for the relationship between business activity and poverty alleviation. They observed that there is a positive and significant relationship between the two. Since business confidence influences business activity, a positive confidence can lead to increase in business activity therefore leading to poverty alleviation. This result highlights the importance of business-related policies in solving the problem of poverty. Therefore, it suggests creating policies that ease the business climate in the country.

CONCLUSION

In this study, the researchers examined whether education spending, business confidence, and the unemployment rate contribute to alleviating poverty in the country. The researchers employed Johansen Cointegration and the Pairwise Granger Causality Test to test the long-run relationship and causality using annual data of business confidence, self-rated poverty, unemployment rate, and education expenditure from 2001 to 2022.

The study's findings found that neither education expenditure nor the unemployment rate demonstrates a significant and long-term relationship with poverty. These findings were backed up by previous studies, accounting for other contextual factors that could influence poverty in the long run, such as the prevalence of corruption, the substandard quality of education, and the poor quality of available jobs. On the other hand, business confidence and poverty have a significant and causal relationship, highlighting the importance of business confidence as a determinant in addressing poverty in the country.

However, while the Keynesian Theory does not fully prove the anticipated relationship between unemployment and poverty in the research findings, the study reveals a significant and causal relationship between business confidence and poverty. This aligns with the entrepreneurial approach advocated by the Bottom of the Pyramid (BoP) concept and Market Orchestration and Management Theory within the theoretical framework. The positive correlation between business confidence and poverty implies that as business confidence grows, there is a potential for positive changes in poverty levels. This suggests that exploring and enhancing business confidence through targeted policies and strategies could be a more effective avenue for poverty alleviation in the studied context, thus highlighting the relevance of entrepreneurial perspectives in shaping economic outcomes.

The result also emphasized the need for policymakers to focus the budget on other essential educational programs aiming to improve the quality of education, especially in viewing education as human capital, recognizing that providing a good quality venue for the students to hone their skills and knowledge of students is essential in contributing to the economy in the future. Moreover, anti-corruption policies and measures should be realized, ensuring transparency on where and how budget allocations for education are utilized. By addressing corruption, resources can be directed more efficiently.

Furthermore, policymakers should address the mobility of labor effectively, prioritizing the need to establish high-quality jobs. This includes policies that not only guarantee job security but also actively promote skills development. The findings further highlight the importance for policymakers to strengthen entrepreneurship support, especially in attracting investments to boost the business confidence level in the country.

REFERENCES

- Ahmad, Z., & Batul, T. (2011). Relationship among Poverty, Education Expenditure, and Education Status: Empirical Evidence from Pakistan. Proceedings of the World Congress on Engineering, 1. <u>https://www.iaeng.org/publication/WCE2013/WCE2013 pp311-315.pdf</u>.
- Analysis, T. S. (n.d.). How do you interpret the results of the augmented Dickey-Fuller (ADF) test? How to Use and Interpret ADF Test for Time Series. <u>https://www.linkedin.com/advice/0/how-do-you-interpret-results-augmenteddickey-fuller</u>.
- Anil Seth (2007) Granger causality. Scholarpedia, 2(7):1667.
- Asian Development Bank. (2009). Poverty in the Philippines: Causes, constraints, and opportunities (Vol. 1).
- Asian Development Bank. (2016). Ambitious vision to end poverty in the Philippines by 2040. <u>https://www.adb.org/news/features/ambitious-vision-end-poverty-philippines-2040#</u>
- Awan, Masood & Malik, Nouman & Awan, Haroon & Waqas, Muhammad. (2011). Impact of education on poverty reduction. *International Journal of Academic Research*. 3(1).
- Aziz, Osama & Grant, Kenneth & Arshed, Noman. (2020). Does Entrepreneurial Activity Assist in the Alleviation of Poverty? *Journal of Applied Business and Economics*. 22.114-132.10.33423/jabe.v22i7.3256.
- Bangko Sentral ng Pilipinas. (n.d.). Bangko Sentral ng Pilipinas Publications Business Expectations Survey. Bangko Sentral ng Pilipinas. <u>https://www.bsp.gov.ph/SitePages/MediaAndResearch/Business%20</u> Expectations%20Re port.aspx.
- Cabico, G. K. (2023). Half of Filipino families still rate themselves poor sws. Philstar.com. <u>https://www.philstar.com/headlines/2023/05/08/2264732/half-filipinofamiliess</u> <u>tillratethemselves-poor-sws</u>.
- Cammeraat, E. (2020). The relationship between different social expenditure schemes and poverty, inequality and economic growth. *International Social Security Review*, 73(2), 101–123. https://doi.org/10.1111/issr.12236

- Cash Transfer (CCT) Programs of Low and Middle Income Countries on Human Development. Sapienza: International Journal of Interdisciplinary Studies, 2(1), 2–11. <u>https://doi.org/10.51798/sijis.v2i1.16</u>.
- Celikay, F., & Gumus, E. (2017). The effect of social spending on reducing poverty. International Journal of Social Economics, 44(5), 620–632. <u>https://doi.org/10.1108/ijse-10-2015-0274</u>.
- Christoph Hanck, M. A. (2020, September 15). Introduction to econometrics. 16.1 Vector Autoregressions. International Journal of Economics and Financial Management Vol. 3 No. 3 2018 ISSN: 2545 - 5966. <u>https://www.econometrics-with-r.org/16-1-vector-autoregressions.html</u>.
- Cudia, C.P. & Rivera, J.P.R. & Jr, Tullao,. (2019). Alleviating poverty in the Philippines through entrepreneurship. DLSU Business and Economics Review. 28. 121-130.
- Dankumo, A., Ishak, S., Bani, Y., & Hamza, H. (2019). The Relationship between Public Expenditure, Corruption and Poverty in Nigeria. Jurnal Ekonomi Dan Studi Pembangunan, 11(1), 76–89. <u>https://doi.org/10.17977/um002v11i12019p076</u>.
- Dahliah, D., & Nirwana Nur, A. (2021). The Influence of Unemployment, Human Development Index and Gross Domestic Product on Poverty level. Golden Ratio of Social Science and Education, 1(2), 95–108. <u>https://doi.org/10.52970/grsse.v1i2.84</u>.
- De Jongh, J. & Mncayi, P. (2018). An Econometric Analysis on the Impact of Business Confidence and Investment on Economic Growth in Post-Apartheid South Africa. International Journal of Economics and Finance Studies, 10(1), 115-133. Retrieved from <u>https://dergipark.org.tr/en/pub/ijefs/issue/36091/660819</u>.
- Diaz, R. (2021). Effects of Pantawid Pamilyang Pilipino Program (4Ps) and other Conditional
- Epstein & H. Gintis (Eds.), Macroeconomic policy after the Conservative era: Studies in investment, saving and Finance. essay, Cambridge University Press.
- Feriyanto, N., El Aiyubbi, D., & Nurdany, A. (2020). The Impact of Unemployment, Minimum Wage, and Real Gross Regional Domestic Product on Poverty Reduction in Provinces of Indonesia. Asian Economic and Financial Review, 10(10), 1088– 1099. https://doi.org/10.18488/journal.aefr.2020.1010.1088.1099.
- Galvez, D. (2022, August 27). DBM: Not enough funds to address classroom shortage in 2023 budget | Inquirer News. INQUIRER.net. <u>https://newsinfo.inquirer.net/1653841/dbmnotenough-funds-to-addressclassroomshortage-in-2023-budget</u>.

210 | Nuñez, S. M. O., Aguado, R. C. M., Barua, J. M. B., and Capariño, C. M. O.

- Hart, S., Sharma, S., & Halme, M. (2016). Poverty, Business Strategy, and Sustainable Development. Organization & Environment, 29(4), 401-415. https://doi.org/10.1177/1086026616677170.
- Heye, C. (1995). Expectations and investment: an econometric defense of animal spirit. In G. A.
- IBON Foundation. (2023). Jobs created mostly poor and quality work. IBON Foundation. <u>https://www.ibon.org/jobs-created-mostly-poor-and-quality-work/</u>.
- Ines, J. (2023). PISA result indicates PH education system is 5 to 6 years behind DepEd.Rappler. <u>https://www.rappler.com/philippines/deped-reaction-statement-program-international-stude nt-assessment-result-2022/</u>.
- Johansen, S. and Juselius, K. (1990) "Maximum Likelihood Estimation and Inference on Cointegration -with Applications to the Demand for Money," Oxford Bulletin of Economics and Statistics, 52, 169-210.
- Linking Management Theory with Poverty Alleviation Efforts Through Market Orchestration. Journal of Business Ethics, 173(2), 423-446. Advance online publication. <u>https://doi.org/10.1007/s10551-020-04533</u>.
- OECD (2019), "Micro-level impact of social assistance on inclusive growth", in Can Social Protection Be an Engine for Inclusive Growth?, OECD Publishing, Paris. <u>https://doi.org/10.1787/08144ec3-en</u>.
- Okorie, G. C., & Anowor, O. F. (2017). Empirical Appraisal of Poverty-Unemployment Relationship in Nigeria. International Journal of Economics and Financial Research, 3(6), 91-97. <u>http://arpgweb.com/?ic=journal&journal=5&info=aims</u>.
- Oxford Business Group. (2022). Income inequality remains an issue in the Philippines, despite robust economic expansion - asia 2018. Oxford Business Group. <u>https://oxfordbusinessgroup.com/reports/philippines/2018-report/economy/</u> <u>liftingallboats-the-government-works-to-address-persistent-inequality</u>.
- P. Eko PRASETYO, E. Nur CAHYANI / Journal of Asian Finance, Economics and Business Vol. 9, No. 10 (2022) 0039–0048.
- Philippine Institute for Development Studies. (2022). Poverty reduction in ph "more challenging" amid the covid-19 pandemic-pids study. Philippine Institute for Development Studies. <u>https://www.pids.gov.ph/details/poverty-reduction-in-ph-more-challengingamidthecovid-19-pandemic-pids-study</u>.

- Philippine Statistics Authority. (2023). Unemployment Rate in May 2023 was Estimated at 4.3 Percent. Philippine Statistics Authority. <u>https://psa.gov.ph/content/unemploymentratemay2023-was-estimated-43-percent</u>.
- Sachs, J.D., Lafortune, G., Fuller, G., Drumm, E. (2023). Implementing the SDG Stimulus. Sustainable Development Report 2023. Paris: SDSN, Dublin: Dublin University Press, 2023. 10.25546/102924
- Van. (2023). Philippines: Poverty. Asian Development Bank. https://www.adb.org/countries/philippines/poverty.
- Wee, P. & Tan, R. (1997). Performance of Johansen's Cointegration Test. In East Asian Economic Issues (Applied Economics Research Series) (v. 3).
- World Bank Group. (2022). Overcoming Poverty and Inequality in the Philippines: Past, Present, and Prospects for the future. In World Bank. <u>https://www.worldbank.org/en/country/philippines/publication/keyfindingsovercomingpoverty-and-inequality-in-ph-past-present-and-prospects-forthefuture</u>.
- Yu, L., & Li, X. (2021). The effects of social security expenditure on reducing income inequality and rural poverty in China. *Journal of Integrative Agriculture*, 20(4), 1060–1067. <u>https://doi.org/10.1016/S2095-3119(20)63404-9</u>.
- Yusri, K. A., Nikensari, S. I., & Iranto, D. (2021). The Effect of Economic Growth, Inflation and Business Confidence Index on Unemployment in ASEAN-5. Jurnal Pendidikan Ekonomi, Perkantoran, Dan Akuntansi - JPEPA, 2(2), 133–143. <u>http://103.8.12.68/index.php/jpepa/article/view/199/272</u>.

ABOUT THE AUTHORS

SOFIA MAE O. NUÑEZ is a 4th-year student at the Polytechnic University of the Philippines, pursuing a Bachelor of Science in Economics. She has a keen interest in public economics and developmental economics, seeking to understand how these fields impact human lives and influence people's everyday experiences. Her internship at the National Economic and Development Authority in the Trade, Services, and Industry Staff provided her with valuable insights into how the government manages the country's economic standing. This experience was eye opening for her, highlighting the importance of economic policies in shaping fairer and more prosperous societies. She aims to delve deeper into these critical subjects, contributing to discussions on fostering equitable

and thriving communities through well-informed policy interventions. She is particularly passionate about helping her home province of Masbate, which remains one of the poorest provinces in the country, by developing strategies to reduce poverty and promote sustainable development.

REIGN CHRISTINE M. AGUADO is an undergraduate student at Polytechnic University of the Philippines Main Campus taking a Bachelor of Science in Economics. She attended two schools in his secondary education where she earned academic credits under the STEM curriculum that jump started her interest in data analytics. At this stage, she conducted research that mainly focused on social capital, human capital and economic growth. She recently went to Landbank of the Philippines – Siniloan Branch to have handson learning about customer service and financial literacy. She believes that this was a good starting point to gauge his capabilities in performing applications of his learning in the academe. She aims to explore these crucial topics in greater depth, making valuable contributions to conversations about promoting equitable and affluent communities through education policy initiatives.

JAIRA MEI B. BARUA is a 4th year student studying Bachelor of Science in Economics at Polytechnic University of the Philippines. She honed her practical skills during her internship at the National Economic and Development Authority, where she worked under Social Development - Social Protection and Integration Division. Currently, she serves as the Sangguniang Kabataan Treasurer of Barangay Fort Bonifacio, actively engaging in community development. Her research interests encompass social capital, human capital, and development economics. Her past research endeavor was about the impact of economic variables on the education outcome of the Philippines. She aims to delve deeper into these critical subjects, contributing to discussions on fostering fairer and more prosperous societies through well-informed policy interventions.

CHARISSE MAE CAPARIÑO was a student of Bachelor of Science in Economics at Polytechnic University of the Philippines. She achieved a high-honor in Humanities and Social Sciences in Senior High at the same university. She's adept to the use of several multimedia tools, such as Google Suite, Microsoft Offices, Photoshop, Canva and statistical software like EViews and SPSS. During her internships at the Quezon City Youth Development Office and PUP PASUC Office, she honed her administrative, analytical, and data management skills. Her leadership extends to extracurricular activities, as she joined the creative committee in PUP Economic Society in 2023 and Strategic Communication for Luzon at Junior Philippines Economic Society in 2024. Her journey ignited her passion for research and public service, driving her commitment to academic and professional advancement.