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Research Article

The Effect of Micro-Enterprises on Poverty and Unemployment in the Philippines

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ABSTRACT

The importance of micro-enterprises in economic growth cannot be overstated. Often, micro-enterprises are seen as a vital source of employment. However, the existence of poor people, as well as low educational attainment, poor health, low-level income, and an increase in the unemployment rate, remains obvious. The study investigates the effect of registered micro-enterprises on the numbers of unemployed and poor households in the Philippines. The study used panel regression as the primary statistical treatment to examine micro-enterprises effect on the number of poor households and unemployment in the 17 regions of the Philippines. The findings revealed that the number of poor households is significantly affected by the number of registered micro-enterprises under the random effect model. As for micro-enterprises effect on unemployment, the results demonstrate that the number of unemployed is considerably affected by the number of registered micro-enterprises under the fixed effect model. The study recommends promoting micro-enterprises laws, increasing financial support, and improving training programs for micro-enterprises.

Keywords: *Development, Micro-enterprises, Poor households, Poverty, Unemployment*

Introduction

For many years, micro-enterprises have contributed to economic progress. Many experts and policymakers have identified micro-enterprises as crucial in creating opportunities for individuals. According to the UP Institute for Small-Scale Industries (2020), micro-enterprises are the backbone of the Philippine economy, contributing to economic growth and development. Micro-enterprises are also seen as a critical source of employment in several countries. They are seen as more efficient than other types of enterprises since they generate employment and income opportunities for people with low incomes or those from low-income families. Furthermore, micro-enterprises are more adaptable because they provide jobs for people in varied fields or specializations,

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provide innovation in goods and services, and develop people's entrepreneurial abilities.

In the Philippines, the recorded establishments are 1,246,373 businesses in the country. Of these, 1,241,733, or 99.63%, are micro, small, and medium enterprises (MSMEs), and 4,640, or 0.37%, are large enterprises. Micro enterprises account for the most significant number of 90.43% (1,127,058) of the total establishments, followed by small enterprises at 8.82% (109,912) and medium enterprises at 0.38% (4,763). In employment numbers, MSMEs account for a total of 6,351,466 jobs, equivalent to 66.97% of the total employment in the country. Micro enterprises account for the most significant number at 33.95%, followed closely by small enterprises at 26.26%, while medium enterprises lag at 6.77% (Department of Trade and Industry, 2023).

Meanwhile, significant improvements have been brought about by countries' economic growth, such as an increase in investment and infrastructure; however, the existence of poor people is still visible, with low educational attainment, poor health, a low level of income, and an increase in the unemployment rate. According to Caplan (2019), billions remain poor even if the world is becoming more affluent. One strategy to combat poverty and unemployment is to change people's lives, such as enhancing their livelihoods through businesses. According to Evangelista (2013), micro-enterprises help solve various economic problems by creating job possibilities, increasing income or wealth, and promoting social empowerment.

Unfortunately, the COVID-19 pandemic has strongly affected the Philippine economy, hurting micro enterprises and aggravating poverty in families. The Philippine Statistics Authority (PSA) states that small businesses make up about 88.77% of all registered businesses in the Philippines and were struck by the pandemic. In 2020, the number of registered small businesses fell by 30.5% from the previous year, with most businesses having to shut down because of strict lockdown rules, as noted by Delgado and Moreno (2021). Meanwhile, poverty was made evident as poor Filipino households grew from 16.7% in 2018 to 18.1% in 2021, or approximately 19.99 million Filipinos living below the poverty line (Philippine Statistics Authority, 2021). The Asian Development Bank (ADB) stated that the pandemic pushed an additional 2.3 million Filipinos into poverty in 2020, with urban poor communities severely affected due to business shutdowns and loss of employment (de Vera, 2022). On another note, unemployment rates rose to their highest levels during the pandemic's worst, reaching a record high of 17.6% in April 2020. The Department of Labor and Employment (DOLE) as reported by Rey (2020), indicated that about 4.5 million employees lost their jobs in the early stages of the pandemic, most of which were from small companies. By 2021, unemployment rates started to improve, but it was still around 7.8%. However, the recovery was not strong.

Most research focuses on the marketing aspect of micro-enterprises and how they might contribute more to economic growth. Studies also focus on small and medium-sized businesses rather than micro businesses. On the other hand, some studies look at micro-enterprises' contribution to other factors or disciplines. This study addresses a void in which micro-enterprises are seen as unimportant in addressing poverty and unemployment issues. The study's main objective is to examine the effect of registered micro-enterprises on the number of unemployed and poor households in the Philippines.

The study is connected to Schumpeter's theory of development, which suggests that all economic activities take the same path and are repetitious. According to the theory, the circular flow system would be possible with the assistance of entrepreneurs who provide new items and services to the market, a new production technique, and a new source of resources (Croitoru, 2012). The theory is pertinent to the research as it describes how owning a business or being an entrepreneur may help oneself and the communities grow. Also, the theory is built for society, as it contains methods and social inclinations closely related to society. For example, to incorporate innovation into society, one must first understand change and recognize that the innovation process exclusively attempts to produce stability and equilibrium in the community, especially in people's lives.

Review of Related Literature

To eliminate poverty, causes must be first addressed. However, tackling the root causes of poverty is not as simple as it appears. Unemployment, starvation, criminality, feuds, inequality, low education, and other factors contribute to poverty (Brown, 2011). Poverty will undoubtedly increase because of the ongoing disparity and flat income received by most families every month.

Several studies have explored the role of micro-firms in establishing employment possibilities, generating revenue, and improving and developing people's livelihoods (Hassan & Ahmad, 2016; Vallas & Boteach, 2014). The findings of past studies indicate that microenterprises had a favorable impact on job creation. Furthermore, it was shown that most micro-enterprise owners produce substantial revenue in addition to their employees' salaries. In addition, giving more jobs may encourage discouraged employees to return to the labor field. Regarding livelihood, it encourages people and communities to start businesses, allowing them to express their creativity while also growing their family and income.

However, it was shown that not all micro-entrepreneurs could contribute to poverty reduction because micro-enterprises face hurdles such as management and socioeconomic concerns (Adebayo & Nassar, 2014). Furthermore, while micro-enterprises can aid in alleviating poverty, their long-term viability remains difficult. This causes additional issues not just in poverty alleviation but also in the lives of small and microenterprises (Koshy, Perumal, & Prasad, 2007).

Dvoulety (2017), on the other hand, noticed and examined the dynamics of the relationship between entrepreneurship and unemployment. The findings indicate that, following the economic shock caused by the increase in unemployment, many people are seen to be engaged in business. However, it was reported that the favorable effects may be felt after two years. According to Cowling and Bygrave (2004), microenterprises are the primary contributors to a country's economic success. Because they foster creativity and provide opportunities for locals. As a result, these findings provide compelling evidence for governments and policymakers to encourage and support individuals and communities in starting businesses to combat unemployment.

Many studies have asserted the effectiveness of micro-enterprises as a technique for combating poverty. The current study differs from previous studies in terms of the variables, and statistical treatment used that the current study utilizes not only the number of micro-enterprises but also the number of poor households and unemployed, and in terms of the statistical treatment, panel regression was the primary statistical used in the present study. However, past and present studies aim to analyze the impact of microenterprises on poverty reduction and job creation. Most of the evidence came from the global south, home to most of the world's poor countries. According to Midgley (2008), micro-enterprises and microfinance initiatives are making a significant contribution to worldwide poverty reduction. Furthermore, its contribution is not limited to the money individuals and families receive or earn from running a business. However, it also focuses on social development issues such as employment, education, and health. Finally, starting a business is one of the most cost-effective strategies to alleviate poverty because it provides disadvantaged people with stability and sustainable livelihoods while also assisting in developing skills and knowledge.

Methods

Research Design

The study used a quantitative research strategy and focused on the interaction of variables to provide a more in-depth understanding of the investigated phenomenon. According to Creswell (2003), quantitative research begins with a problem description, hypothesis, literature evaluation, and statistical data analysis procedures to explain and confirm a studied phenomenon. Specifically, a quantitative research design was utilized in this study to determine how the increase in registered micro-enterprises over time affects the number of unemployed and poor households in the Philippines.

Sources of Data

For the data sources, the Bureau of Micro, Small, and Medium Enterprises office provided the data required to examine the impact of registered micro-enterprises in each region. The number of unemployed, on the other hand, was obtained from the Philippine Statistics Authority. Meanwhile, the number of poor households was calculated using the Philippines Statistics Authority's Family Income Expenditure Survey data. The survey included information on Filipino families' level of consumption and expenditure, as well as their sources of income. It also covers information such as the number of family members, their occupations, wages, and household features, allowing for a clear discussion of the Filipinos' level of income and spending patterns. Furthermore, the survey is carried out every three years. As a result, the data utilized to calculate the number of low-income families was limited to 2006, 2009, 2012, 2015, 2018, 2021, and 2023. As a result, the statistics used to match the number of poor households, the number of unemployed, and the number of registered micro companies all range from the same year. Additionally, majority of the data of the study were gathered from the Philippine Statistics Authority as the one who conducts census and is responsible for collecting, compiling, analyzing, and disseminating statistical information

Statistical Treatment

Moreover, the study employed different statistical treatments using Stata's statistical software to analyze the data better.

1. Panel Regression Model: Three Approaches

Panel Regression was used to analyze the effect between the variables and to gain a thorough understanding of the phenomenon for the data obtained involved time periods. At this moment, different models of Panel Regression were employed.

a. Pooled Least Square Model (PLS)

The pooled least square model is often employed when the study has data for each year or period. The model assumes that coefficients are constant, referring to both the slopes and intercepts. Since the study has two dependent and one independent variable, ordinary least square regression was utilized to assess and estimate the pooled data.

b. Fixed Effect Model (FEM)

The Fixed Effect model allows the individual-specific effects to be correlated with the regressor. Each individual has a different intercept term and the same slope parameters. Also, dummy variables were utilized under the fixed effect model to know the effect of the variables between the regions.

c. Random Effect Model (REM)

The Random Effect model assumes that the individual-specific effect is a random variable uncorrelated with the explanatory variables of all past, current, and future periods. The study has two dependent and independent variables; therefore, a multivariate analysis should be performed. However, multivariate analysis was impossible under the random effect. It is a fixed effect model because the random and fixed effects belong to the univariate panel regression, wherein the model only relates a single dependent variable at a time (Bou & Satorra, 2014). Baltagi (1981) proposed the univariate regression model, stating that the random and fixed effects are unit-specific intercepts. As a result, the study has separate results for the fixed effect result of the poor households and micro-enterprises and unemployment and micro-enterprises. The same goes for the random effect result.

2. T-test and F-test

The T-test, or the test of the individual significance of parameters, and the F-test, the test of the overall significance of the parameters, are also examined in the study. Suppose there is a significant effect between the variables. The decision rule for the T-test is as follows: when the computed t-value is greater than the t-critical value, the null hypothesis should be rejected, and when the computed t-value is less than the t-critical value, the null hypothesis should be accepted. On the other hand, the decision rule for the F-test is as follows: when the F-value is greater than the F-critical value, the null hypothesis should be rejected, and when the F-value is less than the F-critical value, the null hypothesis should be rejected.

3. Hausman Test (Test between Fixed Effect Model and Random Effect Model)

The Hausman Test was performed to determine the best panel model suited for the study. Hausman Test tests whether there is a significant difference between the random and fixed effect model. The Hausman test rule states that a fixed effect model is applicable when the chi-square is less than the significance level. In comparison, if the chi-square is greater than the significance level, using a random effect model is appropriate.

Result and Discussion

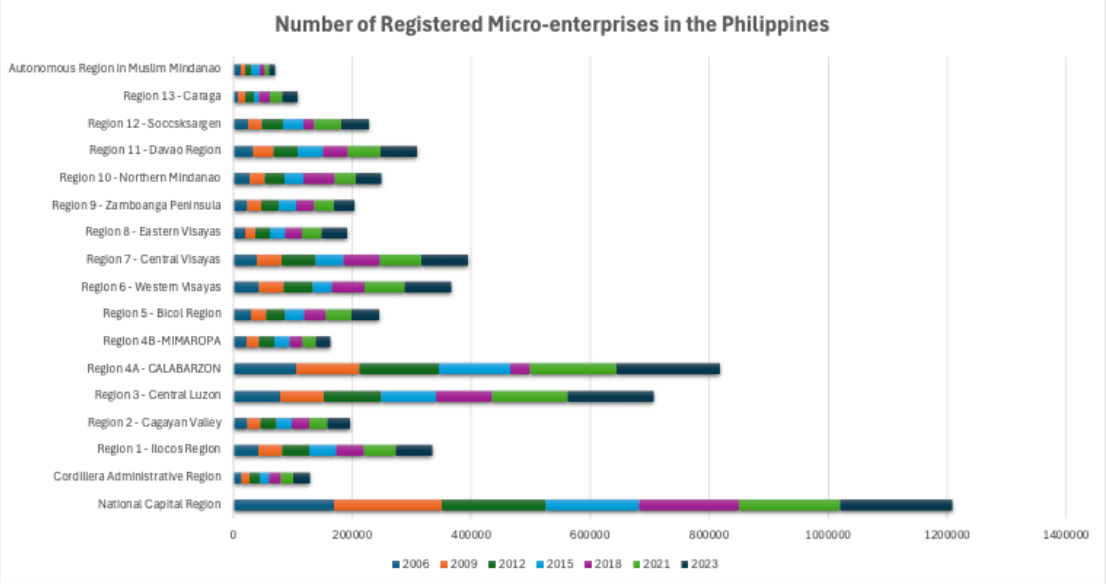

Figure 1. Number of Registered Micro-enterprises in the Philippines

A look at registered micro-enterprises in the Philippines from 2006 to 2023 displays a vibrant sector showing enormous development over the recent period, yet experiencing huge spikes and dips coupled with regional imbalance. The data presented in Figure 1 highlights key economic hubs and evolving entrepreneurial trends. As of 2023, the regions with the highest number of registered micro-enterprises are: National Capital Region (NCR) with 173,452, Region 4A – CALABARZON with 173,452, Region 3 – Central Luzon with 143,544, Region 7 – Central Visayas with 78,443, Region 6 – Western Visayas with 78,391, Region 11 – Davao Region with 62,008, Region 1 – Ilocos Region with 60,448, Region 5 – Bicol Region with 46,921, Region 12 – Soccsksargen with 46,404, Region 10 – Northern Mindanao with 43,475, Region 8 – Eastern Visayas with 43,464, Region 2 – Cagayan Valley with 38,696, Region 9 – Zamboanga Peninsula with 34,727, Cordillera Administrative Region (CAR) with 28,045, Region 13 – Caraga with 25,240, Region 4B – MIMAROPA with 25,117, and Autonomous Region in Muslim Mindanao (ARMM) with 10,388. These ranking underscores the economic dominance of NCR, CALABARZON and Central Luzon, which collectively house most micro-enterprises in the Philippines. In accordance with Roa (2019), the region is renowned as an industrial powerhouse because of its strategic location, which makes it an appealing place for investors. More micro-enterprises are being established as a result of this.

The quantity of registered micro-enterprises has shown various trends in the different regions throughout the observation periods:

- 2006-2009: The period was a mixed one. While economically core regions like NCR (+6.86%) and CALABARZON (+0.28%) increased, together with Central Visayas (+2.69%), Davao Region (+0.11%), and a massive jump in Caraga (+42.28%), several other regions saw their decreases. Marked declines were seen in ARMM (-39.53%),

Bicol Region (-14.29%), and Eastern Visayas (-14.33%). Other regions like CAR, Ilocos, Cagayan Valley, Central Luzon, MIMAROPA, Western Visayas, Zamboanga Peninsula, Northern Mindanao, and Soccsksargen also declined.

- 2009-2012: This was generally a decade of strong growth. High growth in micro-enterprises was felt in most regions. The growth leaders were Soccsksargen (+51.16%), Eastern Visayas (+49.89%), Central Visayas (+41.20%), Caraga (+33.20%), and Central Luzon (+30.48%). ARMM also bounced back strongly (+17.14%). NCR had a decline (-3.18%).
- 2012-2015: General decline characterized this period for most regions. Significant declines were observed in Caraga (-41.33%), Western Visayas (-34.32%), Central Visayas (-19.59%), CALABARZON (-9.78%), and NCR (-9.93%). ARMM, however, registered high growth (+68.94%), while Davao Region had low growth (+4.46%). Some other regions experienced slight declines.
- 2015-2018: These were years of substantial recoveries and some deep slumps. Regions like Caraga (+101.57%), Western Visayas (+73.73%), and Northern Mindanao (+61.26%) had strong percentage growth, often coming from a weaker base in 2015. Central Visayas (+31.33%) and the Bicol Region (+17.70%) also grew strongly. However, CALABARZON had a sudden and anomalous decline (-71.88%). The ARMM (-49.77%), Soccsksargen (-47.36%), and MIMAROPA (-13.09%) also had deep declines. The National Capital Region (NCR) had moderate growth (+5.86%).
- 2018-2021: Expansion mainly persisted or resumed for most areas. CALABARZON registered a remarkable rebound (+334.09%) from its low in 2018. Soccsksargen rebounded remarkably well (+147.56%), too. Robust expansion was likewise experienced in Central Luzon (+34.21%) and Davao Region (+32.60%). Northern Mindanao and ARMM fell with -33.10% and -1.55%, respectively.
- 2021-2023 (2-year term): This new term indicates dynamic and extensive growth in nearly all regions. Leaders in percent growth were ARMM (+36.50%), Eastern Visayas (+32.84%), and CAR (+32.32%). High growth rates were also posted in Cagayan Valley (+25.04%), Northern Mindanao (+23.90%), and Caraga (+21.45%). Positive growth was posted by all the regions, indicating a robust expansion phase for micro-enterprises

The micro-enterprise registration trends give some clues about the Philippine Economy. First is economic concentration, wherein the consistent dominance of NCR, CALABARZON, and Central Luzon reflects their status as first-rate economic drivers, benefiting from enhanced infrastructure, bigger markets, and established business ecosystems. The second is sectoral volatility and resilience. Although the micro-enterprise sector is sensitive to economic conditions, policy changes, and possibly data reporting changes, as seen in the fluctuations, namely the troughs around 2012-2015 and the anomalous data for some regions (e.g., CALABARZON 2015-2018), the strong overall growth, especially in the 2021-2023 years, reflects the sector's resilience and the enduring entrepreneurial spirit, perhaps driven by post-pandemic recovery and digitalization. Another is the regional development dynamics wherein the high growth rates of regions like CAR, Eastern Visayas, and ARMM in recent years reflect budding entrepreneurial activity and the potential success of targeted development efforts. ARMM's volatility in the past could be a sign of unusual regional issues, but its recent boom is a positive sign.

Meanwhile, in 2021, most of the Philippines gradually recovered from the strictest lockdowns imposed in 2020. The period leading into 2023 had further relaxations of restrictions, increased mobility, and the return of economic activities. This reopening created a more favorable climate for businesses. Micro-enterprises that may have temporarily closed or scaled down operations could reopen, and new ones could be established to meet recovering consumer demand. The data show universal growth among regions from 2021 to 2023, pointing to this recovery trend. For instance, even the National Capital Region (NCR), which was subjected to extensive lockdowns, had a

+10.67% increase. According to The World Bank (2020), progress in raising the number of micro-enterprises and decreasing the number of unemployed has been uneven because, despite employment creation, the Philippine population continues to grow. As a result, it is more difficult for Filipinos to find work because the number of jobs generated is limited compared to the number of persons entering the labor market. Meanwhile, despite the significant contribution of micro-enterprises in the areas, the number of poor households continues to climb. Kuddus (2020) stated that every region has its share of urban poor, specifically those who struggle to meet their basic needs due to the city's high prices.

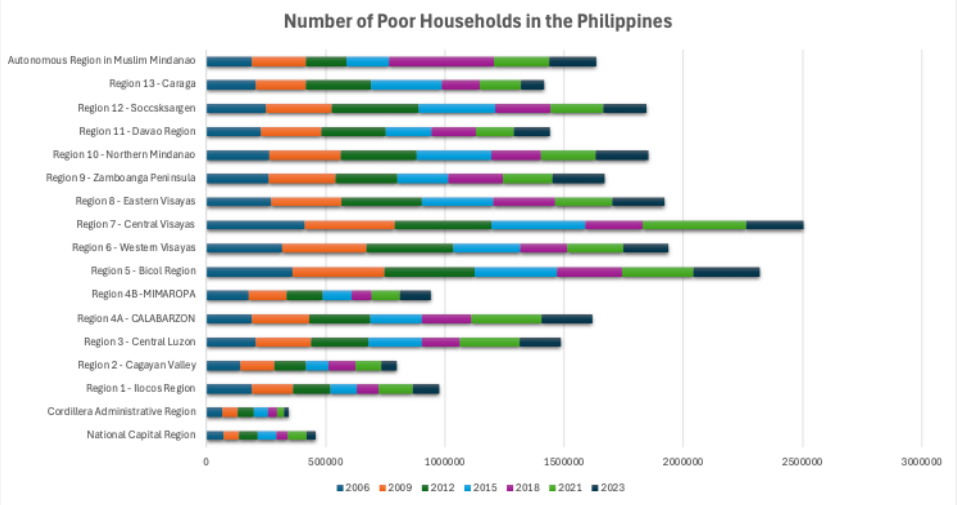

Figure 2. Number of Poor Households in the Philippines

The analysis interprets the number of poor households across Philippine regions from 2006 to 2023, as presented in Figure 2. It outlines regional rankings, examines trends in 3-year intervals, discusses the implications, and specifically addresses changes from 2021 to 2023 considering the COVID-19 pandemic. As of 2023, the regions with the highest number of poor households are: Region 5 – Bicol Region with 277,103, Region 7 – Central Visayas with 241,890, Region 10 – Northern Mindanao with 220,383, Region 8 – Eastern Visayas with 219,667, Region 9 – Zamboanga Peninsula with 216,807, Region 4A – CALABARZON with 215,324, Autonomous Region in Muslim Mindanao (ARMM) with 195,733, Region 6 – Western Visayas with 190,118, Region 12 – Soccsksargen with 181,127, Region 3 – Central Luzon with 173,307, Region 11 – Davao Region with 151,169, Region 4B – MIMAROPA with 129,238, Region 1 – Ilocos Region with 109,725, Region 13 – Caraga with 98,604, Region 2 – Cagayan Valley with 65,337, National Capital Region (NCR) with 38,496, and Cordillera Administrative Region (CAR) with 19,323. This ranking indicates that poverty remains a more significant challenge in certain regions, particularly in Bicol and parts of Visayas and Mindanao, while NCR and CAR report the lowest numbers of poor households.

The trends in poor household prevalence have varied across regions and over different periods:

- 2006-2009: Some regions, such as NCR (-12.79%), Ilocos Region (-9.72%), and MIMAROPA (-9.11%), experienced a decline in poor households. Others, such as CALABARZON (+27.13%), Bicol Region (+6.55%), and ARMM (+18.89%) experienced a rise.
- 2009-2012: This was a mixed performance year. NCR (+19.63%) and Central Luzon (+3.07%) had growth. All other regions, like Ilocos Region (-10.43%), Cagayan Valley (-9.00%), MIMAROPA (-6.08%), and ARMM (-25.47%), experienced significant reductions in low-income families.
- 2012-2015: There was a general trend of poverty reduction in all areas. Ilocos Region (-27.46%), Cagayan Valley (-27.20%),

MIMAROPA (-19.40%), Western Visayas (-22.79%), and Caraga (+9.45%, an increase) are among others. NCR saw a slight increase (+4.85%).

- 2015-2018: During this period, the trend of poverty reduction in most regions prevailed. Substantial reductions were noted in NCR (-38.94%), CAR (-36.80%), Central Visayas (-39.16%), and Caraga (-46.30%). The exception was ARMM, with a sudden increase in poor households (+145.91%), perhaps because of regional problems or data anomalies.
- 2018-2021: The period usually embraces the initial noticeable economic impact of the COVID-19 pandemic. The majority experienced an increase in poor households. For instance, NCR (+57.14%), Ilocos Region (+57.14%), Central Luzon (+59.61%), and CALABARZON (+41.18%) had notable increases. However, declines were experienced in ARMM (-46.77%) and CAR (-19.77%), maybe because of intensified interventions or differently affected pandemics in these territories. 2021-2023 (2-year period): A general reduction in poor household count was observed in all areas. This reflects a period of economic recovery and practical poverty reduction efforts after the initial economic shock of the pandemic. NCR had a sharp decline (-50.00%), CAR (-36.23%), Ilocos Region (-23.64%), Cagayan Valley (-38.46%), and Caraga (-42.47%).

The data generally shows a positive trend in poverty reduction in most regions from 2006 to 2018. This result implies that various economic development programs and poverty reduction initiatives undertaken before the pandemic were effective. However, the sudden rise in poor households observed in many regions between 2018 and 2021 highlights the susceptibility of many Filipino households to economic shocks such as the COVID-19 pandemic. The disruption of livelihoods was high, resulting in a rise in poor households. Concurrently, the persistently high numbers of poor households in some regions (e.g., Bicol, some parts of Visayas, and Mindanao) highlight the persistent regional disparities in economic opportunities and access to basic resources. These regions may need more targeted and specialized interventions for poverty reduction. Overall, the decline in poverty levels from 2021 to 2023 indicates that attempts at economic recovery and the rollout of social protection programs (such as cash transfers and livelihood assistance) during and after the pandemic's peak have likely been instrumental in facilitating household recovery. Although the recent decline is welcome, the overall figures indicate that poverty remains a significant issue. There is a pressing need for sustained and responsive measures to sustain this downward trend and enhance resilience against future economic shocks.

Figure 3. Number of Unemployed in the Philippines

The regions with the largest populations and economies (CALABARZON, NCR, Central Luzon) predictably have the highest number of unemployed individuals as shown in Figure 3. According to Mazon & Ligaya (2019), the reason for the high number of unemployed in the region, even though it is one of the most developed, is that employees are prepared to wait for the proper job even if it takes a long time rather than accept a job that does not match their abilities and knowledge. As of 2023, the regions with the highest absolute numbers of unemployed are: Region 4A – CALABARZON with 408,000, National Capital Region (NCR) with 378,000, Region 3 – Central Luzon with 246,000, Region 6 – Western Visayas with 148,000, Region 7 – Central Visayas with 135,000, Region 10 – Northern Mindanao with 131,000, Region 5 – Bicol Region with 121,000, Region 1 – Ilocos Region with 117,000, Region 13 – Caraga with 81,000, Region 8 – Eastern Visayas with 80,000, Region 11 – Davao Region with 76,000, Region 12 – Soccsksargen with 67,000, Region 9 – Zamboanga Peninsula with 53,000, Region 4B – MIMAROPA with 49,000, Autonomous Region in Muslim Mindanao (ARMM) with 41,000, Region 2 – Cagayan Valley with 39,000, and Cordillera Administrative Region (CAR) with 23,000.

The figures indicate huge variations in unemployment rates between years:

- 2006-2009: These years experienced huge spikes in unemployment in some regions based on the figures, most significantly NCR (+407%), CAR (+294%), MIMAROPA (+134%), and ARMM (+198%). Some other regions, such as Central Luzon and CALABARZON, experienced declines. These huge initial spikes must be taken carefully since they may reflect data discrepancies or certain events affecting those years.
- 2009-2012: Most regions experienced a remarkable decline in unemployment compared to the high 2009 levels. CAR (-79.5%), Ilocos Region (-49.1%), Bicol Region (-41.9%), Western Visayas (-29.6%), and ARMM (-75.4%) recorded steep declines. NCR and CALABARZON had comparatively fewer changes.
- 2012-2015: Unemployment continued to fall or remain stable in most areas. Steep declines were observed in NCR (-17.6%) and Western Visayas (-13.2%).
- 2015-2018: The pattern of declining unemployment generally persisted during the pre-pandemic buildup. NCR (-17.2%), Central Luzon (-22.3%), and Central Visayas (-15.3%) posted further decreases. Eastern Visayas registered a high spike (+217%), an outlier during this period.
- 2018-2021: This phase candidly depicts the effects of the COVID-19 pandemic. All but one of the regions felt a sharp escalation in the total number of jobless. Significant spikes included CALABARZON (+87.9%), NCR (+78.6%), Central Luzon (+42.3%), Caraga (+195.9%), and Cagayan Valley (+115.2%). This reflects the immense layoffs brought on by lockdowns and economic breakdowns.
- 2021-2023 (2-year period): Consistent with the economic recovery, all areas exhibit a considerable unemployment decline. Steep declines from the 2021 peak were recorded, such as CAR (-51.1%), Cagayan Valley (-60.6%), Caraga (-44.1%), NCR (-42.0%), and CALABARZON (-47.6%).

Most unemployed people are always in the most populous and economically active areas (NCR, CALABARZON, Central Luzon). Though these areas have more employment opportunities, they also have higher difficulty accommodating the entire workforce. The 2018-2021 surge emphatically demonstrates the calamitous impact of the pandemic on jobs nationwide. No area was exempt from severe job losses. On the other hand, the overall reduction in unemployment from 2021 to 2023 is a resilient positive sign of post-pandemic recovery. It indicates that employment is being regained as economic activity returns to normal. Although recovery is visible, the number of unemployed individuals is still high, especially in large areas. This highlights the necessity for policies that promote sustainable economic growth and generate enough quality jobs.

Table 4. Pooled Least Square Regression Results

Variable	Coefficients
Microenterprises on Poor Households	-0.4621*
F (1,117)	5.32
R-squared	0.0435
Adj. R-squared	0.0353
t-statistics	-2.31
p-value	0.023

The regression analysis employed for the Pooled Least Squares Model results on the number of poor and unemployed households is univariate, or two single equations, as the study comprises two dependent and one independent variable. The coefficient for the micro-enterprises and poor households was -0.4621, indicating that an increase in micro-enterprises would decrease the number of poor households. The COVID-19 pandemic has taken a heavy toll on the livelihoods of many. Problems such as loss of income and job opportunities were overarching challenges seen significantly in the poor regions of the Philippines, as Fallesen (2021) reported. As a result, micro-enterprises are becoming engines of growth and poverty reduction in small communities because they support livelihood and growth-oriented activities for people experiencing poverty, according to Endris and Kassegn (2022).

With an R-squared of 4.35%, the model needs to be higher. This suggests that the variety in micro-enterprises explains just 4.35% of the variation in poor households. This demonstrates that an increase in registered micro-enterprises does not directly influence the number of poor households in the Philippines. On the other hand, the t-test result is greater than the t-critical value of 2.000 at the 5% significance level, indicating no significant relationship between the two variables. This suggests that the null hypothesis is accepted, which states that there is no significant relationship between the number of registered micro-enterprises and the number of poor households. Meanwhile, F-test results show that there is a significant effect on the number of poor households if the number of registered micro-enterprises is taken collectively, with an F-value of 5.32, which is greater than the F-critical value of 3.94 at the degree of freedom 1 and at 5 percent level of significance.

Table 5. Pooled Least Square Regression Results

Variable	Coefficients
Microenterprises on Unemployed	2.5860*
F (1,117)	132.11
R-squared	0.5303
Adj. R-squared	0.5263
t-statistics	11.49
p-value	0.000

In terms of the result of the micro-enterprises on the number of unemployed, variables have a direct association with a coefficient of 2.5860, whereby an increase in the number of micro-enterprises would lead to an increase in the number of unemployed. According to Lim et al. (2020), micro-enterprises can assist people in finding work, but the benefits will only be felt after some time. It may take years to see the benefits of micro-enterprises regarding employment. In connection with the pandemic, implementing strict quarantine and mobility restrictions to reduce the spread of the virus adversely affected many workers,

resulting in the need to employ different ways, such as selling online, to earn income. However, since most people are doing online businesses, not all have experienced its benefits.

The R-squared result, on the other hand, indicates that the model is satisfactory, with a value of 53.03%. This means that the variation in micro-enterprises explains 53.03% of the unemployed. The t-test results demonstrate a significant relationship between the two variables since the t-test value is greater than the t-critical value of 2.000 at the 5 percent significance level. This means that the null hypothesis is rejected, which states that there is no significant relationship between the number of registered micro-enterprises and the number of unemployed. On the other hand, the test results show that micro-enterprises significantly affect the number of unemployed when taken collectively, with an F- value of 132.11, which is more than the 3.94 F-critical value at degree of freedom 1 and 117 with a 5% level of significance.

Table 6. Fixed Regression between Micro-Enterprises and Poverty

Regressors	Coefficients	p-values
Micro	-0.8962	0.008
CAR	-154341.6	0.008
Region I	-37958.77	0.439
Region II	-81030.31	0.139
Region III	82669.05	0.022
Region IV-A	115870.7	0.000
Region IV-B	-65020.64	0.246
Region V	142541.9	0.008
Region VI	103611.3	0.032
Region VII	188066.7	0.152
Region VIII	78804.06	0.415
Region IX	44272.26	0.147
Region X	76290.1	0.615
Region XI	25107.1	0.175
Region XII	72621.45	0.944
ARMM	22242.11	0.710
CARAGA	-4067.96	0.000
R^2 = 0.7763 **t-stat** = 2.72	**Adj R^2** = 0.7386 **F (17,101)** =20.62	

The coefficient value of -0.0892 in the Fixed Effect Model indicates that the micro-enterprises have an inverse relationship with the number of poor households. This indicates that as the number of micro-enterprises increases, the number of poor households will decrease. According to Ayoo (2021) micro-enterprises are not a strategy for poverty alleviation, but they can contribute to solving the problem of poverty by allowing alternative commodities and services to enter. However, the sustainability of micro-enterprises remains a struggle because it confronts various issues, including a lack of or limited access to money, a lack of government backing, and a lack of sufficient knowledge on the part of individuals or entrepreneurs. Furthermore, most micro-enterprises founded in the Philippines are funded by loans, increasing the risk of individuals or Filipino families becoming buried in debt.

Meanwhile, half of the regions had a significant outcome when the number of registered micro-enterprises and poor households were compared. The first is the Cordillera Administrative Region (CAR), which has a smaller population than the National Capital Region (NCR), making it advantageous for the people who live there for government projects, programs, and strategies to be targeted and efficiently implemented. Economic activities, such as increased

business, tremendously benefit individuals in CAR as a result. Furthermore, the region is rich in agricultural resources, which aids people and communities in the sale and production of goods and services.

Region III, often known as Central Luzon, has a significant result between the two variables. Region 3 has a high number of registered micro-enterprises with low number of poor households. This leads to the conclusion that an increase in microenterprises contributes significantly to reducing the number of poor households. Furthermore, Region VI, or the Western Visayas, is the region with the fastest economic growth and contribution to the national GDP due to increased investments, infrastructure, and enterprises. As a result, the number of poor households in the region is decreasing.

Region IV-A, also known as the CALABARZON Region, is one of the regions with the lowest number of poor households. Despite this, the number of registered micro-enterprises was negligible. The explanation for this could be that micro-enterprises are mainly concerned with contributing to families rather than the entire community. Meanwhile, Region IV-B, also known as the MIMAROPA Region, is in the same boat as the former since progress in reducing the number of poor households in the region has been sluggish and gradual in recent years. On another note, Region V, often known as the Bicol Region, was seen with pervasive poverty; even with many earning, there was only enough money to cover their basic needs. The reason for this is that the inhabitants in the region rely solely on rural jobs, and the majority of them are unskilled workers as a result of the inability of the locals to complete their schooling. Furthermore, Region VII, often known as the Central Visayas Region, has the highest number of poor households. The results demonstrated that increasing the number of micro-enterprises did not ultimately aid in reducing the number of poor households.

Meanwhile, about one-third of the population of Region XI, or the Davao Region, is poor, according to Philippine Statistics Authority Region XI – Davao Region (2023). This signifies that poverty is the primary problem in the region. The increase in micro-enterprises is insignificant, with poor households encountering financial difficulties for micro-enterprise owners (Sumina et al. 2022). Finally, the CARAGA region has a low number of micro-enterprises because individuals have demonstrated a lack of interest in micro-enterprises, yet most micro-enterprise owners do take advantage of government assistance and training. As a result, micro-enterprises in the CARAGA region affect or reduce the number of poor households. Finally, the general conclusion indicates that when the number of registered micro-enterprises increases, the number of poor households decreases in most regions. Because micro-enterprises allow people and communities to engage in businesses that can expand their creativity and grow their family and income, they contribute more to the development of small-town family and income, they contribute more to the development of small towns and rural areas in terms of livelihood (Mendoza et al. 2022).

The model, on the other hand, is acceptable with an R-squared value of 77.62%. This suggests that the variation of the micro-enterprises explains 77.62% of the variations in poverty. The t-test results indicate that the null hypothesis of no significant relationship between the number of registered micro-enterprises and the number of poor households is rejected, with a computed t-value of 2.72, greaters than the t-critical value of 2.000 at the 5% significance level. According to the F-test results, the number of registered micro-enterprises has a significant effect on the number of poor households when taken collectively, with an F-value of 20.62, which is greater than the 1.32 F-critical value with degrees of freedom of 17 and 101 at the 5% level of significance.

Table 7. Fixed Regression between Micro-Enterprises and Unemployed

Regressors	Coefficients	p-values
Micro	-0.9817	0.0077
CAR	-521072.8	0.0000
Region I	-355529.6	0.0000
Region II	-507681.6	0.0000
Region III	-121384.5	0.0043
Region IV-A	34162.27	0.0526
Region IV-B	-492088.7	0.0000
Region V	-399043.9	0.0000
Region VI	-324693.4	0.0000
Region VII	-317811.8	0.0000
Region VIII	-445506.4	0.0000
Region IX	-497297.7	0.0000
Region X	-432150.8	0.0000
Region XI	-416315.4	0.0000
Region XII	-466506.1	0.0000
ARMM	-502787.2	0.0000
CARAGA	-511454.5	0.0000
R^2 = 0.7659 **t-stat** = -1.78	**Adj R^2** = 0.7160 **F (17,101)** =18.50	

The result of the Fixed Effect Model between unemployment and micro-enterprises presented in Table 7, with a coefficient value of -0.9817, indicates that there is an inverse relationship between the number of registered micro-enterprises and the number of unemployed. Micro-enterprises contribute substantially to family and national employment by providing various jobs, particularly to discouraged workers (Bayisa, 2020). This indicates that as the number of registered micro-enterprises grows, there will be a decrease in the number of unemployed people. The outcome is similar to Eva et al. (2023), where a significant number of staff employ most business owners. Furthermore, these businesses were discovered to be expanding, which provides additional jobs and allows them to employ more people. Amato and Candio (2024), on the other hand, described the influence of the number of unemployed on micro-enterprises, indicating that the existence of micro-enterprises is also advantageous to micro-enterprises because it contributes to an increase in the number of workers, which leads to increased production efficiency. In exchange, the more commodities are created, the better it is for the people and the economy.

Meanwhile, the R-squared value for the result of the Fixed Effect Model indicates that the variation of the micro-enterprises explains 76.59% of the variations on unemployment, and the model is acceptable because it is greater than 50 percent. The estimated t-value of -1.78 indicates a no significant relationship between the number of unemployed and registered micro-enterprises because it is less than the t-critical value of 2.000 at 5 percent significance. This means that the null hypothesis is accepted, which states no significant relationship exists between registered micro-enterprises and the number of unemployed people. On the other hand, the F-test results revealed that there is a significant effect between the number of unemployed and the number of registered micro-enterprises if the number of registered micro-enterprises is taken collectively, with an F-value of 18.50 which is greater than the 1.32 F-critical value with degrees of freedom of 17 and 101 at 5 percent level of significance.

All the regions recorded an inverse effect between micro-enterprises and unemployment. By maintaining a good business climate for micro-enterprises in Region II or the Cagayan Valley region, micro-enterprises generate employment and income for the people. As a result, it benefits people in terms of stable employment for smaller firms. Region III, known as Central Luzon, has one of the highest unemployment rates, yet the results demonstrate that micro-enterprises can assist individuals in finding work. However, other factors can contribute to lowering the number of unemployed people in Central Luzon, as it is one of the regions closer and more accessible to the National Capital Region.

Meanwhile, as stated in the results of the number of poor households above, the increase in micro-enterprises was shown to be focused on providing more advantages to families in Region IV-A or the CALABARZON region. In terms of unemployment, micro-enterprises aimed at families and small communities assist members of the family or members of the community in finding work. Because Region IV-B is well-known for its eco-tourism, the number of micro-enterprises that service and cater to tourists grows. More people will be able to find work as a result of this. Furthermore, because Region V, or the Bicol Region, is rich in natural resources such as minerals and mining, it has aided individuals in selling and establishing micro-enterprises in the region, providing employment to the people.

Furthermore, Region VII, or the Central Visayas, and Region VII, or the Eastern Visayas Region, are regarded as the gateway between Luzon and Mindanao, with benefits in obtaining various products and things that might assist smaller firms. As a result, micro-enterprises in the region can sell or invent products and sell them in the market. Eventually, if micro-enterprises become stable, they can help to reduce the number of unemployed people. Finally, for the Mindanao regions (Region X or the Northern Mindanao Region, Region XI or the Davao Region, Region XII or the Socksargen, and ARMM), it is similar to the result of the poor households because the number of micro-enterprises in the regions of Mindanao is few compared to the NCR, the increase on the micro-enterprises is easily felt and seen by the people about the decreasing number of micro-enterprises.

Furthermore, it was discovered that most of the region's unemployed were concentrated in rural areas, where labor is seasonal, and pay is low. The difference in findings between the two variables is also minor for Region I or the Ilocos Region. The region recognizes that it is sluggish to adjust to changes in employment, resulting in many unemployed people compared to the other areas. Fortunately, the region focuses on improving workers' skills and knowledge to adapt to changing work environments and technology.

Region VI, or the Western Visayas Region, has produced impressive results regarding micro-enterprises and unemployment. It is difficult for residents in the region to hold their occupations because employment opportunities are limited and, at times, seasonal. Because the area is also reliant on agriculture for a living, floods and droughts reduce the need for employees, resulting in poor revenue development. Region IX, or the Zamboanga Peninsula Region, has one of the lowest unemployment rates since employment prospects are focused on the service industry and agriculture. As a result, the increase in the number of micro-enterprises affect the number of unemployed, as most Filipinos in the Zamboanga Peninsula are employed. Finally, the results for unemployment and micro-enterprises in the CARAGA region are the same as those for poor households, indicating that both inverse effects.

Table 8. Random Effect Model between Micro-Enterprises and Poverty

Variable	Coefficients
Microenterprises on Poor Households	-0.7561*
R-squared	0.0684
t-statistics	-2.73
p-value	0.006

With a coefficient value of -0.7561, the finding of the random effect model for micro-enterprises on poverty demonstrates that the two variables have an inverse relationship. While the R-squared result suggests that just 6% of the variation in poor households is explained by micro-enterprise variation, the model is unsuitable because it is less than 50 percent. The computed t-value for the relationship between the two variables revealed a significant relationship between the number of micro-enterprises and poor households, with a t-value of 2.73, greater than the 2.000 t- t-critical value at the 5% significance level. This suggests that the null hypothesis is rejected, which states that no significant effect exists between the number of registered micro-enterprises and the number of poor households.

Table 9. Random Effect Model between Micro-Enterprises and Unemployed

Variable	Coefficients
Microenterprises on Unemployed	1.9509*
R-squared	0.0306
t-statistics	6.05
p-value	0.000

In terms of the value of the coefficient of 1.9509, the results of the random effect model for micro-enterprises on unemployment revealed that there is a direct relationship between the variables, with an increase in the number of registered micro-enterprises resulting in a 1.9509 increase in the number of unemployed. However, the model did not perform well, with an R-squared value of 3%, lower than 50%. This suggests that the variation in micro-enterprises explains 3% only of the unemployed. In addition, the t-test findings demonstrate a significant relationship between the two variables with a t-critical value of 6.05, which is more than the 2.000 t-critical value at the 5% significance level. Therefore, the null hypothesis that there is no significant relationship between the number of registered micro-enterprises and the number of unemployed is rejected.

Table 10. Hausman Test Results

Hausman Test	Chi-Sq Statistics	p-value
Micro-enterprises and Poor Households	0.62	0.431
Micro-enterprises and Unemployment	3.77	0.000

The Hausman Test results reveal that employing the random effect panel regression model for the number of poor households and micro-enterprises is preferable since the computed value is greater than the 5 percent significance level. While for micro-enterprises and the number of unemployed, the estimated value is 0.000, which is less than the 5% significance level, the fixed effect panel regression model is recommended.

Conclusion

The analysis presents a dynamic but imbalanced environment for micro-enterprises in the Philippines, with significant growth concentrated in key economic centers such as the National Capital Region (NCR), CALABARZON, and Central Luzon, with other areas experiencing high volatility. Despite the sector's resilience, particularly during the post-pandemic recovery period of 2021-2023, its direct impact on poverty and unemployment remains complex. The preferred Fixed Effect model indicates a significant inverse relationship between micro-enterprise growth and the number of poor households, emphasizing their potential poverty-reducing role, particularly when considering regional contexts. However, the link with unemployment is less conclusive across the various models, although the Fixed Effect model also indicates an inverse relationship (although statistically insignificant at the level

of the individual variables). This would suggest that while micro-enterprises help stimulate economic activity, their poverty-reducing role may be mediated by factors such as the quality and type of employment generated, time lags, or regional characteristics that the models do not fully capture. The data also presents the susceptibility of both households and micro-enterprises to economic shocks, since the data presents a sharp rise in poverty and unemployment during the initial period of the Covid-19 pandemic of 2018 to 2021.

Based on these findings, several recommendations are proposed. First, policy interventions must encourage a more inclusive and resilient micro-enterprise sector, particularly by directing support (e.g., access to finance, digital literacy, and market linkages) to regions lagging in micro-enterprise development but with high poverty and unemployment rates. Second, addressing the extreme regional disparities requires continued investment in infrastructure, education, and targeted development programs in areas like Bicol, Eastern Visayas, and Mindanao regions to construct more balanced economic opportunities. Third, there is a need to strengthen social safety nets and construct resilience mechanisms to shield households and micro-enterprises from future economic shocks. Finally, programs must not only aim to raise the incidence of micro-enterprises but also address how to encourage the generation of high-quality, sustainable jobs in the sector, as well as additional research to understand better the comples interlinkages between micro-enterprises growth, quality employment, and unemployment dynamics in different regional contexts.

References

Adebayo N, Nassar, M (2014) Impact of Micro and Small Business Entrepreneurship on Poverty Reduction in Ibadan Metropolis, Southwestern Nigeria. International Review of Management and Business Research, 3, 1603-1626.

Amato, S Candio, P (2024) Enhancing micro-enterprises performance: the role of the regional environment. Strategic change, 33(6). https://doi.org/10.1002/jsc.2596

Ayoo, C (2021) Poverty reduction strategies in developing countries. Rural Development – Education, Sustainability, Multifunctionality. https://doi.org/10.5772/intechopen.101472

Baltagi, B (1981) Simultaneous equations with error components. Journal of Econometrics, 17 (2), 189-200. DOI: https://doi.org/10.1016/0304-4076(81)90026-9

Bayasi, B (2020) Factor affecting micro and small enterprises contribution to employment generation: the case of Addis Abeba City. St. Mary's University. http://hdl.handle.net/123456789/5313

Bou, J, Satorra, A (2014) Univariate versus multivariate modeling of panel data. Economics Working Papers 1417, Department of Economics and Business, Universitat Pompeu Fabra.

Brown, J (2011) Poverty, hunger, and poor health: what's the real problem? Children Hunger Fund.

Caplan, B (2019) The Philosophy of poverty. The Library of Economics and Liberty. Retrieved from https://www.econlib.org/the-philosophy-of-poverty-my-opening-statement/

Cowling, M, Bygrave, W (2004) Entrepreneurship and unemployment: relationship between unemployment and entrepreneurship in 37 nations participating in the global entrepreneurship monitor 2002. Foundation for Entrepreneurial Management, London Business School.

Creswell, J (2003) Research design: Qualitative, quantitative and mixed methods approach 2nd edition. SAGE Publications.

Croitoru, A (2012) Schumpeter, J.A., 1934 (2008), The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle, New Brunswick (U.S.A) and London (U.K.): Transaction Publishers. Journal of Comparative Research in Anthropology and Sociology, 3 (2).

David, J, Mohammad, U (2019) The relationship between poverty and unemployment in Niger state. Signifikan Journal Ekonomiks, 8 (1). DOI: 10.15408/sjie.v8i1.6725

Delgado, E, Moreno, R (2021) The effects of covid-19 pandemic on small and medium enterprises. International Journal of Academe and Industry Research, 2(4), 57-58.

Department of Trade and Industry (2023) 2023 Philippine MSME statistics. Retrieved from https://www.dti.gov.ph/resources/msme-statistics/

De Vera, B (2022) ADB: Pandemic hardest on poor. Inquirer. Retrieved from https://newsinfo.inquirer.net/1652815/adb-pandemic-hardest-on-poor

Dvoulety, O (2017) Relationship between unemployment and entrepreneurship dynamics in the Czech regions: a panel VAR approach. Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 65 (3), 987-995. DOI: 10.11118/actaun201765030987

Endris, E, Kassegn, A (2022) The role of micro, small and medium enterprises (MSMEs) to the sustainable development of sub-Saharan Africa and its challenges: a systematic review of evidence from Ethiopia. Journal of Innovative Entrepreneurship 11, 20. https://doi.org/10.1186/s13731-022-00221-8

Eva, C, Harris, J, Bodle, K, Foley, D, Hunter, B, Nichols, N (2023) Its self-determination. Blackfullas making right decisions for blackfullas. Why indigenous-owned businesses create better indigenous employment outcomes. Australian Journal of Social Issues, 59(1). https://doi.org/10.1002/ajs4.292

Evangelista, R (2013) Entrepreneurship in the Philippines: opportunities and challenges for inclusive growth. Center for International Private Enterprise. Retrieved from https://www.cipe.org/resources/entrepreneurship-philippines-opportunities-challenges-inclusive-growth/

Fallesen, D (2021) How Covid-19 impacted vulnerable communities in the Philippines. World Bank Blogs. https://blogs.worldbank.org/en/eastasiapacific/how-covid-19-impacted-vulnerable-communities-philippines

Hassan, T, Ahmad, B (2016) The Role of Micro Enterprises in Employment and Income Generation: A Case Study of Timergara City Dir (L) Pakistan. International Journal of Economics & Management Sciences, 5, 1-5. https://doi.org/10.4172/2162-6359.1000318

Koshy, Perumal, Prasad (2007) Small and microenterprises: a tool in the fight against poverty. Munich Personal RePEc Archive. Retrieved from https://ideas.repec.org/p/pra/mprapa/22827.html

Kuddus, M, Tynan, E, McBryde, E (2020) Urbanization: a problem for the rich and the poor? Public Health Reviews, 41 (1). https://doi.org/10.1186/s40985-019-0116-0

Lim, J, Aquino, J, Garcia, J, Ong, R, Soliman, D (2020) The impact of demand side barriers and supply side barriers to financial inclusions: a study on micro enterprises in Metro Manila. Review of Integrative Business and Economics Research, 9(3).

Mazon, C, Ligaya, C (2019). Relationship between unemployment and job-vacancy in the National Capital Region. Department of Labor and Employment. Retrieved from https://psa.gov.ph/sites/default/files/ncs-manuscripts-powerpoint/8.9.2%2520Analysis%2520of%2520Labor%2520Market%2520Situation%2520in%2520the%2520Philippines.pdf

Mendoza, X, Bruno, L, Maglaque, B, Solis, J (2022) Influence of the factors of business opportunities among micro and small enterprises in selected areas of Cavite. Asian Journal of Management Entrepreneurship and Social Science, 3(1).

Midgley, J (2008) Microenterprise, global poverty and social development. International Social Work.

Philippine Statistics Authority (2019) Gross national income & gross domestic product. Retrieved from https://psa.gov.ph/statistics/national-accounts/sector3/Gross%20Domestic%20Product

Philippine Statistics Authority (2021) The proportion of poor Filipinos was recorded at

18.1% percent in 2021. Philippine Statistics Authority. Retrieved from https://psa.gov.ph/content/proportion-poor-filipinos-was-recorded-181-per-cent-2021

Philippine Statistics Authority Region XI – Davao Region (2023) 2023 full-year poverty estimates of Davao del Sur. Philippine Statistics Authority. https://rsso11.psa.gov.ph/content/2023-full-year-poverty-estimates-davao-del-sur

Rey, A (2020) DOLE sees 5 million jobs losses due to pandemic. Rappler. Retrieved from https://www.rappler.com/philippines/261529-dole-sees-5-million-jobs-lost-coronavirus-pandemic/

Suminah, S, Suwarto, S, Sugihardjo, S, Anantanyu, S, Pagmaningrum, D (2022) Determinants of micro, small, and medium-scale enterprise performers' income during the Covid-19 pandemic era. Heliyon, 8(7). https://doi.org/10.1016/j.heliyon.2022.e09875

The World Bank (2020) The middle class in the Philippines: an exploration of the conditions for upward mobility. International Ban for Reconstruction and Development. https://documents1.worldbank.org/curated/en/557901593691283617/txt/The-Middle-Class-in-the-Philippines-An-Exploration-of-the-Conditions-for-Upward-Mobility.txt

UP Institute for Small-Scale Industries (2020) Uplifting Micro, Small, and Medium Enterprises (MSMEs) in the Philippines thru DTI's 7Ms: Suggested Policies for Implementation. UP Institute for Small-Scale Industries. Retrieved from https://beta.entrepreneurship.org.ph/2020/02/21/uplifting-micro-small-and-medium-enterprises-msmes-in-the-philippines-thru-dtis-7ms-suggested-policies-for-implementation/