Role of Functional Literacy to Productive Employment in the Context of Regional Economies

Melbert O. Hungo
Criselyn S. Sescon
College of Teacher Education
Southern Leyte State University
Tomas Oppus, Southern Leyte, Philippines

Abstract

This paper aimed to explore the factors that closely influence the unemployment rate among regions in the Philippines. This study assumed that the literacy rate, the minimum wage rate, and the population rate affected the unemployment rate. The data were acquired from the National Statistics Authority where literacy rate, minimum wage rate, and population rate were the independent variables and unemployment rate as the dependent variable. The data gathered in this study was taken from the data sets and utilized multiple-regression analysis using Eureqa software. Based on the findings, the closest factor that caused the escalation of the unemployment rate was literacy rate. Therefore, it was concluded that productive employment in some regions was not dependent on literacy rate.

Keywords: Literacy rate; Multiple regression model; Population rate; Unemployment rate; Wage rate

Introduction

This paper determined the increase and decrease of unemployment rate when influenced by minimum wage rate, literacy rate and regional population rate as the predictors. Accordingly, unemployment occurs when people without work are actively seeking jobs. Hence, unemployment is defined as “a status where people who do not have a job, actively look for a job, and currently available to work for a job vacancy” (Amadeo, 2019). Abott (2011) also defined unemployment as the circumstances in which the able-bodied people who are looking for a job cannot find a job, and people who are temporarily laid off and are waiting to be called back for a job.

Unemployment is a struggle in many countries. Studies show that there are many countries where the escalation of the unemployment rate is evident such as in South Africa, Greece, Spain, Iraq, and Egypt (Betcherman, 2013). The reasons for the increase are varied and wide-ranging. In South Africa, the reasons include poor education and training, weak labor demand, and a general lack of entrepreneurial interest. Furthermore, in Greece, their problem is structural and requires microeconomic policies to remedy the situation (Freeman, 2010). In some countries, some observable factors that contribute to the unemployment rate includes economic problems, technological advances, and seasonal fluctuations that affect a country’s employment situation (Sugiyarto & Endriga 2008).

Similarly, the Philippines has also been facing an analogous problem (Lawrence, 2012). There are people in certain regions that are jobless and unemployed despite the education they attained. That is why some Filipino professionals and other skilled graduates prefer to work abroad since job
opportunities there are accessible. Should the government incessantly fail to provide job opportunities that would match the skills acquired by our graduates, the Philippine economic problem will continue to rise and unemployment rate will continue to increase.

The recent study identified the factors which closely affect the increase and decrease of unemployment rate among regions in the Philippines. It is believed that the findings would serve as input for policy formulation, thus giving impact in addressing the Philippines’ continuous unemployment problem.

Framework of the Study

![Figure 1. Schematic diagram of theoretical and conceptual framework](image)

This study is anchored on the attribution theory which emphasizes how things are changed when they interact with external and internal factors (Kelley, 1967). Attributions could be categorized in two ways: 1) whether they are stable (permanent) or unstable (constantly changing); and 2) whether they are internal (inside) or external (outside). An internal factor is seen as being within the control and an external factor as outside of control. The factors that are being combined will show whether a success or a failure can be attributed to ability, effort, task difficulty, or luck (Kelley, 1967).

This theory is applied to the current study because if the dependent and independent variables interact, it clearly shows a similar phenomenon and situation that is observed to exist and happen. The unemployment rate as the dependent variable is unstable because it is constantly changing when associated with independent variables (literacy rate, population rate, and wage rate). These independent variables are likewise associated with external factors because these are stable or permanent and beyond control.

Moreover, the unemployment rate is believed to have some factors that affect the increase and decrease in its percentage rate. That is why internal and external factors are considered in this study in order to provide a clear picture of other possible factors that can greatly affect the unemployment rate. One identified factor is the minimum wage rate since the demand-deficient of unemployment sometimes occurs when wages are too high (Amadeo, 2011). In addition, the literacy rate is also assumed to affect the unemployment rate as well as the population rate. Therefore, these variables provide information on the effect of the unemployment rate when predictors are associated and correlated to the dependent variable. Likewise, due to the correlation between the two variables, the factor that most influences to unemployment rate can be determined in this study.

Methodology

The study used correlational design using multiple regression analysis. Data were acquired from the National Statistics Authority that included unemployment rate as dependent variable and literacy rate, minimum wage rate and regional population as independent variables. The data used in this research study were gathered from the data sets using the data mining procedures and had been standardized to come up with the accurate result of the analysis. The standardized data were run through the use of Eureqa application software to establish a predictive model between unemployment rate versus wage rate, literacy rate, and regional population. The result of the analyzed-standardized data was
interpreted to determine the factor that influence unemployment rate over salary wage rate, population rate and literacy rate among the seventeen (17) regions of the country. To generate the result, the researchers employed a multiple regression model as a tool in analyzing the given set of data. Likewise, the data was analyzed using Eureqa program to describe the predictions among variables. Eureqa is very useful in describing and making predictions based on linear relationships between predictors and a response variable.

Results and Discussion

Table 1 shows the raw data of the dependent variable (Unemployment rate) and the independent variables (Literacy Rate; Minimum Wage Rate; Regional Population).

As gleaned from Table 1, Calabarzon is the most populated area with 14, 414, 447 million people living in it, and their minimum wage rate is as low as Php 286. With this figure, the unemployment rate certainly increases. Rapid population growth, by all means, has an impact on unemployment in the sense that a congested place daunts any skilled worker to be part of the group. Phillips (2018) observed that overcrowding would lead to the destruction of wilderness areas, unsustainable use of local resources, a rise in pollution of every type, and an overall declination in the quality of life. He further claims that each additional person would mean to have more competition for the jobs, more demand for housing, services, and other resources, and greater strain on infrastructure and the environment.

On the other hand, the minimum wage also contributes to the unemployment rate in this region since the minimum salary is not that high, thus, it is not convincing to anyone who is looking for a job. However, a study of Neumark and Wascher (2006) reveals that in New Jersey, there is still a 4.6% decrease in employment despite a minimum wage increase. This therefore implies that high minimum wage has no big impact in the increase of employment rate. In fact, a series of new studies on the minimum wage discloses that the minimum wage showed a low impact on unemployment (Syrios, 2015).

Meanwhile, Central Luzon has a high minimum wage of eight hundred forty-nine pesos and eighty centavos (Php 849.80). Such amount surely invites high-skilled workers within and outside Central Luzon. However, with this high minimum wage, the low-skilled workers within the area are threatened due to the fact that employer demands high-skilled workers. Furthermore, with high minimum wage, employment rate would most likely be reduced due to closure of some establishments or firms. Millsap (2018) cited the study of Paul Beaudry, David Green and Ben Sand which highlights the impact of the high minimum wage to employment and it claims that the increase in wages has a negative effect on employment over 10-year intervals. Further, Millsap posited that higher wages affect employment via firm closures is also consistent with a study which found out that lower quality business or firms are more likely to close following a minimum wage increase.

This section presents the data obtained from the data sets through data mining. The presentation of the data follows the sub-levels coherent with the identified objectives.

Unemployment Rate versus Literacy Rate

Figure 2 shows the distribution of the data of the Unemployment Rate versus Literacy Rate in a scatter plot.

As shown in Fig. 2, majority of the regions have high literacy rate (92%-98%) and have a low unemployment rate (3% - 5%). This means that literacy is the main contributor to the increase in employment among regions. However, there are certain regions where literacy rate is high yet, the
Table 1. Raw data of dependent and independent variables among regions

<table>
<thead>
<tr>
<th>NO</th>
<th>REGION</th>
<th>LIT. RATE</th>
<th>MIN. WAGE RATE</th>
<th>REG. POPULATION</th>
<th>UNEMPLOYMENT RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National Capital Region</td>
<td>99</td>
<td>463.3</td>
<td>12,877,253.0</td>
<td>7.9</td>
</tr>
<tr>
<td>2</td>
<td>Cordillera Administrative Region</td>
<td>95</td>
<td>101.67</td>
<td>1,722,006.0</td>
<td>3.4</td>
</tr>
<tr>
<td>3</td>
<td>Ilocos Region</td>
<td>98</td>
<td>539.0</td>
<td>5,026,128.0</td>
<td>8.2</td>
</tr>
<tr>
<td>4</td>
<td>Cagayan Valley</td>
<td>95</td>
<td>728.0</td>
<td>3,451,410.0</td>
<td>2.3</td>
</tr>
<tr>
<td>5</td>
<td>Central Luzon</td>
<td>98</td>
<td>849.8</td>
<td>11,218,177.0</td>
<td>7.1</td>
</tr>
<tr>
<td>6</td>
<td>CALABARZON</td>
<td>98</td>
<td>286.0</td>
<td>14,414,774.0</td>
<td>7.0</td>
</tr>
<tr>
<td>7</td>
<td>MIMAROPA</td>
<td>95</td>
<td>260.0</td>
<td>2,963,360.0</td>
<td>4.0</td>
</tr>
<tr>
<td>8</td>
<td>Bicol Region</td>
<td>97</td>
<td>102.33</td>
<td>5,796,989.0</td>
<td>4.5</td>
</tr>
<tr>
<td>9</td>
<td>Western Visayas</td>
<td>95</td>
<td>287.0</td>
<td>4,477,247.0</td>
<td>4.7</td>
</tr>
<tr>
<td>10</td>
<td>Central Visayas</td>
<td>95</td>
<td>318.0</td>
<td>6,041,903.0</td>
<td>4.7</td>
</tr>
<tr>
<td>11</td>
<td>Eastern Visayas</td>
<td>94</td>
<td>476.0</td>
<td>4,440,150.0</td>
<td>4.0</td>
</tr>
<tr>
<td>12</td>
<td>Zamboanga Peninsula</td>
<td>94</td>
<td>525.0</td>
<td>3,629,783.0</td>
<td>4.5</td>
</tr>
<tr>
<td>13</td>
<td>Northern Mindanao</td>
<td>94</td>
<td>297.0</td>
<td>4,689,302.0</td>
<td>5.7</td>
</tr>
<tr>
<td>14</td>
<td>Davao Region</td>
<td>94</td>
<td>332.5</td>
<td>4,893,318.0</td>
<td>4.7</td>
</tr>
<tr>
<td>15</td>
<td>SOCCSKSARGEN</td>
<td>92</td>
<td>297.7</td>
<td>4,545,276.0</td>
<td>3.9</td>
</tr>
<tr>
<td>16</td>
<td>Caraga</td>
<td>95</td>
<td>650.0</td>
<td>2,596,709.0</td>
<td>3.7</td>
</tr>
<tr>
<td>17</td>
<td>Autonomous Region in Muslim Mindanao</td>
<td>82</td>
<td>260.0</td>
<td>3,781,387.0</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Figure 2. Pattern of unemployment rate when interacted with the literacy rate.

unemployment rate is also high. It is a common knowledge that literacy is the only key to resolve the common and pressing problems in any country and Filipinos do believe that being functionally literate helps them find a better and wholesome job. This notion leads the Philippine government to allocate huge budget in education and provide a free education program to all Filipinos in elementary, secondary (Tan, 2017) and even in the selected tertiary education like in State Universities and Colleges (SUCs) through Republic Act 10931, “An Act Promoting Universal Access To Quality Tertiary Education By Providing For Free Tuition And Other School Fees in States, Universities and Colleges” (Official Gazette, 2017).

Literacy provides competence and skills necessary for employment. The reason why the Filipino government has been investing great chunks of the budget for the education of Filipino people because they believe that education reduces poverty among Filipino families and provides them with better life. However, evidence shows that there are
still regions whose literacy rate is high, yet the unemployment rate is also high. One identified reason for such is due to the limited job opportunities available in the job market and only those highly skilled workers qualify for the job. In addition, these regions most likely produce graduates where their skills are mismatched to the skills needed in the market. This implies that literacy is not the sole factor that contributes to the increase and the decrease in the unemployment rate. Job opportunities, job mismatching, job suitability, and others, which are not yet known and discovered could be the factors that contribute to the unstable movement of unemployment rate among regions. Therefore, the Philippine government should be more sensitive and subtle in looking into these issues to both facets of possibilities that functional literacy is not enough to resolve the increase and the decrease in the unemployment rate. Issues in mismatching, as well as the creation of more job opportunities for the new qualified graduates, should be given more consideration in order to address these persistent challenges in the country. The study of Arendt (2016) stressed that education is the only essential contributor to avoid dropping out of the labor market, which significantly lowers the unemployment rate. Although this is not true to all regions, however, functional literacy should always be given so much importance because according to Krattenmaker (2019), “it takes more than a college degree to get the best jobs. It separates the most successful college-educated workers from fellow graduates who take jobs for which a high school diploma used to be sufficient.

Unemployment Rate versus Minimum Wage Rate

Figure 3 shows the distribution of the data of the unemployment rate versus the minimum wage rate in a scatter plot.

As depicted in Fig. 3, there are regions with a high minimum wage rate (P1000) where the unemployment rate is low, ranging from 4% to 5%. Likewise, there are also regions with low minimum wage rate ranging from 300-500 and with high unemployment rate (4.5%-7%). It is seen in the figure that there is an exponential pattern between the minimum wage rate and the unemployment rate.

Wage is the motivator among people to get employed. This is the reason why people are striving hard to find a job to be able to work and to provide for their basic needs. If the wage is high, naturally, people are more motivated to work hard. In the same manner, people who are already employed in any organization continue to work hard and perform well in their jobs so as to be promoted and increase their wages. Waldrop (2018) says that the high minimum wage attracts employment to people thus, the employment rate somehow increases. The minimum wage does not cover today’s basic living expenses for a family, so if a minimum wage is as low as it does, workers rather settle for other means of earning money than working much and paid less in return. In this regard, the Philippine government should be sensitive enough to deal with this issue because the country might be losing more promising professionals and competent graduates whom we consider as the hope of our struggling country because of job migrations. The wage rate increase has been an issue in the Philippines since

![Figure 3. Pattern of unemployment rate when interacted with minimum wage.](image)
then, and this issue is still unresolved right now. The provision for the wage rate increase in the Philippines to both public and private institutions should be dealt with seriously to hold, retain, and bring back the Filipinos from working in other countries.

Unemployment Rate versus Regional Population Rate

Figure 4 shows the distribution of the data of the Unemployment Rate versus the Regional population in a scatter plot.

It is evident in Fig. 4 that there is an upward linear trend of the unemployment rate when interacted with population growth. This data shows that if the population rate is high, the unemployment rate tends to get high. It is indeed true that if there is a large population rate in the country, the unemployment rate tends to grow and proliferate. This study clearly shows how employment is affected by population growth. Possibly, the generation of job opportunities in the job market cannot accommodate the fast-growing population which is also increasing. The scenario implies that the government has to strengthen the reproductive health bill in the Philippines which is believed to be one of the best solutions to control the rapid population growth in the country.

A similar study conducted by Ilegbinosa (2014) revealed that Nigeria has been experiencing a population explosion for the past 50 years due to high fertility rates which quadrupling its population over time. Nigeria’s big concern today is whether sufficient employment opportunity can be generated to absorb the country’s growing pool of labor and whether this can take place rapidly enough. Furthermore, Ilegbinosa (2014) emphasized that the problem of unemployment in any country appears to be more serious mainly due to the fast population growth and the inability to provide jobs for the growing population. This scenario happens in the Philippine setting where the population growth becomes unmanageable that results to the increase of unemployment rate.

However, when the relationship between the unemployment rate versus regional population rate, minimum wage rate, and the literacy rate are analyzed using multiple regression analysis, the result is different and it is revealed by this model:

The exponential equation above reveals a general pattern that has a constant value of .037. This result shows that literacy rate greatly influences the unemployment rate because of its quadratic effect (.345 lit. rate$^2$). This means that the higher the literacy rate, the higher is the unemployment rate. In this study, this finding is true in some regions.

Population rate, on the other hand, has a minimal effect on the unemployment rate and the minimum wage is found to be an unused variable in this study. Based on the model, the result implies that functional literacy among regions in the Philippines has no great impact on employment rate. Therefore, literacy is not the sole solution to address the pressing problem of employment rate in the country. Although literacy in common understanding is the only key to resolve unemployment, however, the current study shows that literacy has less contribution to employment rate of the country. Possibly, job mismatching, limited job opportunities, production of poor-skilled and less competent
graduates can be considered.

As observed, Philippine Higher Education Institutions (HEIs) have been producing graduates every year, nevertheless, many of these graduates failed to find a job. These college graduates are either under qualified, overqualified, or their professions do not fit to the job available in the market. This concern is the result of mismatching between universities and the needs of the job market. Milan (2010) said that the country’s education system continues to produce graduates whose training and skills are not attuned and do not complement the needs of the labor market in both local and international demands. This mismatching can either be qualification mismatching which occurs when the qualified graduates apply to job opportunities that are not in line with their professions or a skill mismatching which happens when a graduate has a higher or lower educational qualifications, credentials, or skill level than that of the requirement needed to do a particular job (Hall, 2015). In a study conducted with 36 African countries focusing on the most important employment problems of young people, it was found out that more than half of the countries being surveyed identified skills-mismatching as the main problem to enter the labor market. This scenario reveals that highly educated individuals are forced to migrate to other places where their skills and professions are highly needed. This condition had been voiced for many times in the past by business leaders and politicians but both government and private sectors have failed to implement the appropriate matching between the skills of the job seekers and the job opportunities in the job market. Though there is an increase of employment in the regions, the labor market has not increased its number of job opportunities which results to unequal and unbalanced number between job seekers and job opportunities. This is due to slow and dragging creation of jobs that are suited to the qualifications of the new graduates which cater to the needs of people who are seeking and needing job (Urrutia, 2017).

Additionally, Milan (2010) said that the government might be incapable of providing jobs, instead they remain dependent on the overseas job market. Urrutia (2017) says that the country’s uneven employment market has traditionally led millions of Filipinos to seek better-paying jobs overseas. The Philippines has long been a labor exporting market and about 2,500 Filipinos leave from the country, sending billions of dollars, and remittances to the country, but the government does little to promote employment. Moreover, other graduates prefer to stay at home and remain jobless because of their acquired skills and earned degrees that disqualify them in the labor market. This somehow contributes to the increase in the unemployment rate in some regions despite the high rate of literacy.

**Conclusion**

The main objective of this study is to determine the factors that closely influence the unemployment rate. This is important because it provides ample information on the cause of the country’s pressing problems. Based on the foregoing findings, the literacy rate, wage rate, and the population rate affect the increase and decrease of the unemployment rate among the regions in the country. However, among the three, it was found out that literacy rate greatly contributes
to the increase of the unemployment rate. The result of the current study contradicts to the idea that literacy is the only key to reduce poverty among people in the country. The recent result implies that the increase of the unemployment rate is due to the following: (a) the programs offered in Higher Education Institutions are not aligned to needs of the labor market both local and abroad; b) the skills and competencies acquired by these functional literate graduates do not match the need of the job market; (c) the job opportunities are lesser than the graduates produced; and (d) the functional literate and highly-skilled people prefer to be self-employed rather than being employed where the minimum wage is very low. Based on these findings, it is concluded that the role of functional literacy to productive employment is not true to all regional economies.

**Recommendation**

The result of this study unveils some of the issues about the increase of unemployment to some regions in the country. The findings are expected to contribute to the existing research literature in employment, unemployment, and to serve as a strong basis for the government’s policy making.

However, the scope and limitation of the research study and its findings provide a conceptual platform for conducting future research in this field. While the study reveals some important aspects about employment and its impact to government issues and challenges. There is much more to be learned about the cause of the increase of unemployment to some regions in the country.

Since this study has its limitations, it is hereby recommended that (1) school officials should coordinate with the local government officials and carefully assess the program objectives, literacy skills and competencies needed prior to employment; (2) realign the programs in Higher Education Institutions to the skills needed in the community; (3) increase the minimum wage, and lastly, (4) provide more job opportunities that would match to the skills and competencies acquired by the graduates.

**References Cited**


Freeman, R. (2010). Labor regulations, unions, and social protection in developing countries: Market distortions or efficient institutions? In D. Rodrik, & M. Rosenzweig, Handbook of development economics (pp. 4657-4702). Cambridge: NBER.


