



Analysis of Poverty Incidence in the Municipalities of Zamboanga del Norte

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Abstract

This study analyzed the poverty incidence in the municipalities of Zamboanga del Norte as published by Peace Equity Access for Community Empowerment Foundation (PEF) Inc. (2006). The identified variables of the study consisted of demography, health and sanitation, education, housing, land tenure and governance. The result showed that majority of Municipalities (24 out of 27 Municipalities) belonged to high poverty incidence areas except Dipolog and Dapitan cities including Sindangan municipality. In terms of significant indicators on poverty incidence of this province, it was found out that the population, proportion of households with no access to potable water, no sanitary toilet, elementary cohort survival rate, secondary participation rate and households with lot owned or amortized did influence the poverty situation in Zamboanga del Norte. The present findings of the study suggested that in order to alleviate poverty in the Province of Zamboanga del Norte, the concerned agencies of the government i.e. the DepEd, DOH and DA must address or solve the problems of the municipalities anent health and sanitation, education and land tenure.

Keywords and Phrases: *poverty incidence, independent variables, regression and cluster analysis*

Introduction

The Philippines, being one of the nations which participated in the Millennium Summit in September 2000, has committed to achieve 48 targets including eradication of poverty. It has even included targets on human development and poverty reduction on its medium-term development plans (Reyes, et. al., 2001). Rapid and sustained economic growth is needed to improve the quality of life of the population; at the same time targeted interventions aimed at reducing poverty are needed to reach the very poor and marginalized sectors of the economy.

Accordingly, there are many inter – related causes of poverty in the Philippines. Previous researches showed that access issues in each of the asset categories – human, physical, natural, social, and financial capital – are linked to deprivation. Pro – poor interventions to improve quality and access in any of those areas would result in reduced poverty. It was known and seen to be direct causes of poverty in the Philippines.

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Peace Equity Access for Community Empowerment Foundation (PEF), Inc. (2003), conducted a survey on priority provinces the so called “poverty scanning exercise method”. The scanning method identified 28 priority provinces based on the official secondary data on income, health, education and other socio – economic indicators. Out of the 28 priority provinces, Zamboanga del Norte was identified to have municipalities or barangays with conditions of poverty incidence. National Statistical Coordination Board (NSCB 2005) published a report related to poverty incidence indicators in various municipalities of Zamboanga del Norte based on small areas estimation of local poverty in the Philippines using the 2000 data. Poverty incidence was referred to the population of families or individuals with per income or expenditures less than the per capita poverty threshold to the total number of families or individuals (NSCB, 2005). Further, PEF (2006), published the development index of the municipalities in Zamboanga del Norte in terms of; health and sanitation, education, housing and land tenure and governance.

In an attempt to analyze the findings of the Peace Equity Access for Community Empowerment foundation (PEF), Inc., this study was conducted to identify and analyzed the poverty incidence in the municipalities of Zamboanga del Norte.

Objectives of the Study

The study attempted to analyze and determine the indicators of poverty incidence among twenty seven municipalities (27) in the Province of Zamboanga del Norte through the data published by PEF in 2006. Specifically, the study sought:

1. To identify which municipalities have similar poverty incidence in terms of:
 - 1.1 Demography;
 - 1.2 Health and sanitation;
 - 1.3 Education;
 - 1.4 Housing and land tenure; and
 - 1.5 Governance.
2. To determine which of the identified measures relate to poverty incidence in Zamboanga del Norte.

Materials and Methods

The researcher used a descriptive - correlational method of research through the data published by Peace Equity Access for Community Empowerment Foundation (PEF), Inc. (2006). Specific data sets were taken from the PEF. Sources of the data published by PEF were taken from other sources from the reports of the Department of Agriculture (DA) Zamboanga del Norte, Department of Education Division of Zamboanga del Norte, National Statistics Office, census of Population and Housing, National Mapping and Resource Information Authority, and the Zamboanga del Norte Police Provincial Office. The identified indicators that lead to poverty incidence namely; Demography population; Health and Sanitation (Proportion of Households with no access to potable water and sanitary toilets; proportion of children severely and moderately malnourished); Education (Elementary cohort survival rate, Secondary participation rates, and adult literacy rate); Housing and Land Tenure (proportion of households with electricity connections and proportion of households with lot owned), and Governance (Estimated Crime rate).



The Cluster Analysis is a multivariate exploratory data analysis method which aims to group individuals according to their similarities on certain measurable factors and variables. This method was specifically used in the study to group municipalities according to the set of variables used in the study. The Regression Analysis is a confirmatory data analysis method that seeks to determine the relationship between a dependent variable (poverty incidence) and identified independent variables.

Results and Discussions

Table 1 Group of Municipalities/Cities with Similar Poverty Incidence

Cluster 1	Cluster 2	Cluster 3
La Libertad Rizal, Sibutad Polanco, Pinan Mutia, Sergio Osmena Katipunan, Roxas Manukan, Jose Dalman Siayan, Leon Postigo Salug, Godod, Kalawit Liloy, Tampilisan Labason, Gotalac Baliguian, Siocon Sirawai, Sibuco	Dapitan City Sindangan	Dipolog City

Table 1 is the clustering of municipalities in the Province of Zamboanga del Norte having the same poverty level in terms of demography, health and sanitation, education, land tenure and governance. The researchers used cluster analysis method to fuse municipalities into three groups. It was revealed and manifested that out of the 27 municipalities, twenty-four (24 or 88.89%) of them were grouped in cluster one. The result showed that the sample data provided sufficient evidence to conclude that this province was one of poorest provinces in the Philippines.

Further, the groups of municipalities with high poverty incidence were having remote barangay areas. The result of this study was corroborated to the finding of the study of Reyes (2001), which revealed that poverty is greater in rural than in urban areas. Furthermore, in 1997, poverty incidence in the rural areas was 44.4% greater than the 17.9% incidence in the urban areas in the Philippines. Across regions, the National Capital Region (Metro Manila) has the lowest poverty incidence at 6.4%. Central Luzon (Region III) comes next at 15.4%. Autonomous Region of Muslim Mindanao (ARMM) has the highest poverty incidence, where 3 out of every 5 families can be considered poor.

Table 2 Cluster Analysis of Municipalities in the Province of Zambaonga del Norte

Variable	Cluster 1	Cluster 2	Cluster 3	Grand Centroid
Poverty incidence	58.0	48.2	23	56.0
Population	26326.0	80174.0	107797	33332.2
Proportion of Households with no access to potable water	75.9	61.2	53	74.0
Proportion of households with no access to sanitary toilet	33.4	21.9	6	31.5
Proportion of children severely and moderately malnourished	15.6	15.2	9	15.4
Elementary cohort survival rate	53.4	57.7	79	54.6
Secondary participation rate	38.4	53.3	56	40.1
Adult literacy rate	84.7	91.8	92	85.5
Proportion of households with electricity connections	47.1	77.0	70	50.2
Proportion of households with lot owned/amortized	52.1	45.0	56	51.7
Estimated crime rate	0.3	0.3	0	0.3

Table 2 shows that cluster one (1) comprises of municipalities with high poverty incidence compared to cluster 3. Municipalities with high poverty incidence have higher proportion of household with no access to potable water and sanitary toilet and proportion of children severely and moderately malnourished. In this connection, the elementary cohort survival rate and secondary participation rate occurred relatively low. In addition, most adults constituted in this cluster were illiterate especially in the municipalities of Siayan, Kalawit, Gutalac, Baliguian and Sirawai respectively. Nevertheless, there were few of households’ electricity connections and lots owned or amortized on the respective municipalities. Thus, crime incidents committed along this clustered areas also occurred.

Table 3 Regression Analysis Results between Poverty Incidence and Demography

Model	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
Constant	63.054	4.262	14.793	0.000
Population	0.000211	0.00010	2.03	0.045

Dependent Variable: poverty incidence

Table 3 shows that the computed value of independent variable was statistically significant to poverty incidence. This only indicates that poverty incidence and



demography (population) have bearing on each other. It means that as population of poor households' increases, the poverty incidence also increases. The sample data did not provide sufficient evidence to conclude that the population size did not influence the poverty incidence in the Province of Zamboanga del Norte.

The Study of Reyes (2001) as cited in the demographic characteristics of the Philippines supports the present findings. She asserted that high population growth has and will continue to affect the fight against poverty. Furthermore, as the economy grows vigorously, some of the new entrants to the labor force will join the ranks of the unemployed and will aggregate the poverty situation. Moreover, resources directed towards human capital investments and poverty alleviation will be diluted by the increasing population.

Table 4 Regression Analysis Results between Poverty Incidence and Health & Sanitation

Model	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
Constant	20.478	8.082	2.534	0.019
Proportion of Household with no potable water	0.225	0.107	2.093	0.048
Proportion of Household with no sanitary toilet	0.478	0.090	5.332	0.000
Proportion of children severely and moderately malnourished	0.251	0.308	0.816	0.423

Dependent Variable: poverty incidence

Table 4 revealed that the indicators in health and sanitation, i.e., proportion of household with no access to potable water and sanitary toilet were significantly correlated. This means that indicator of health and sanitation relate poverty incidence. Furthermore, the proportion of households with no access to potable water and sanitary toilet decreases, the poverty situation decreases. Thus, no better access to potable water and sanitary toilet would lead to affect the health condition of every individual which leads to poverty.

The result further explained and suffixed the information gathered by the researchers' personal interview from the key informants (residents) that in Zamboanga del Norte, the main source and access of drinking water is still deep well or artesian well. In fact, most cases of diseases are coming from the type of sources of drinking water and sanitary facilities the residents have. If a certain person contacted with a disease, he needs money after all for medical treatment.

Robertson (2011), supported the present findings and stated that over large parts of the world, humans have inadequate access to potable water and use sources contaminated with disease vectors, pathogens or unacceptable level of toxins or suspended solids which affect the health condition of individual. Therefore, to alleviate poverty there must be a

wide proper dissemination on the garbage and waste disposal in the community with the collaboration from Local Government Units. Further, the municipal leaders are encouraged to put up more projects especially in remote areas to have better access on potable water. Aside from that, the residents themselves should cooperate in the implementation of the program/s given in their respective barangays or localities.

The result only implies that in some remote areas of the municipalities, only few residents have toilets and potable water. This is an indication that this affected municipality to be rated as poor when it comes to health and sanitation. Furthermore, a case similar to this condition leads to a poverty incidence.

Table 5 Regression Analysis Results between Poverty Incidence and Education

Model	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
Constant	133.03	22.64	5.87	0.000
Elem. Cohort survival rate	-0.333	0.1318	-2.52	0.019
Secondary participation rate	-0.367	0.175	-2.09	0.048
Adult literacy rate	-0.516	0.3317	-1.56	0.133

Dependent Variable: poverty incidence

Of the five (3) independent variables identified elementary cohort survival rate and secondary participation rate were significantly correlated as presented in Table 5. These testify that education is a significant factor that influence to poverty incidence. Moreover, the number or percentage of children who finished in elementary and secondary level will affect the poverty incidence. Thus, the more literate children will be, the lesser the poverty incidence in the various Municipalities. Likewise, the Department of Education (DepEd, 2003) slogan supported the present finding which states that “Education is the best poverty solution”. It is therefore necessary that parents would take the risk of their children to educate and to become good leaders. Encouragement of wood crafts will help them go away with poverty. Indeed, education is the key to improve the quality of life. Hence, to educate the young would lessen and perhaps reduce the poverty situation in Zamboanga del Norte.

Table 6 Regression Analysis Results between Poverty Incidence and Housing & Land Tenure

Model	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
Constant	64.942	19.843	3.273	0.003
Pro. Of HH w/ electricity connections	-0.035	0.094	-0.373	0.712
Pro. Of HH w/ lot owned/amortized	0.668	0.259	2.581	0.017

Dependent Variable: poverty incidence



Looking at table 6 the t – computed value among independent variables, proportion of household with lot owned or amortized was relate to poverty. This emphasized that land tenure is a significant factor to improve the way of living. In addition, farming and other production may reduce the poverty incidence. Hence, it can be deduced and recommended from the foregoing that the Department of Agriculture should continue to disseminate the proper technique of farming. Give suggestions to the local communities should be accorded anent to the appropriate root crops or even the best variety of rice and corn that are suitable in the area to give more production. Seminars and trainings to farmers relative to their alternative livelihood income should likewise be conducted.

Table 7 Regression Analysis Results between Poverty Incidence and Governance

Model	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
Constant	61.333	4.821	12.722	0.000
Estimated crime rate	-20.147	15.819	-1.274	0.215

Dependent Variable: poverty

Result in Table 7 showed that the independent variable was not significantly related to the poverty situation in the province. This means that estimated crime rate on crime against property and person is not significantly correlated to poverty incidence in the province of Zamboanga del Norte. This implies that the peace situation in every municipality is stable as far as the crime incidence is concerned.

Indeed, there is a need for intervention and rescue in terms of demography, health and sanitation, education, housing and land tenure particularly in the poorest area of this province. This is evident that most households in the Province of Zamboanga del Norte are still hoping to be provided with the necessary needs from the concerned government agencies. Thus, the higher authorities of the concerned agencies, i.e. the DepEd, the DOH and the DA must address or should continue to look into the solutions of the municipalities anent to health and sanitation, education and land tenure. If all of these were taken care of by the agencies and be given top priorities, probably the Province of Zamboanga del Norte will no longer be included among the list poorest provinces in the country.

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