

Where can we find the poor in the Philippines?

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ABSTRACT

This study aims to describe the characteristics of the residence of poor families included in the 1994 Family Income and Expenditure Survey of the Philippines. The average barangay poverty incidence is estimated to be 37% with a standard error of 0.63%. Also, an estimated 23.3% of the barangays have poverty incidence greater than 60%. Twelve characteristics are associated with barangay poverty incidence and include whether the barangay is urbanized or not, total number of stores, factories, and financing institutions and the presence or absence of street pattern, housing project, newspaper circulation, telegraph system, electricity, water works system, postal system and telephone lines in a barangay. The high density poor barangays (barangays with poverty incidence greater than 60%) have low total number of stores, factories and financing institutions. Although 65% of the high density poor barangays have electricity, more than 50% of them are not urbanized and are without street pattern, housing project, newspaper circulation, telegraph system, water works system, postal system and telephone lines.

KEYWORDS: Poverty; Complex Survey; Correlates of Poverty

1. INTRODUCTION

The problem of poverty is a nationwide concern. The government as well as some non-government organizations (NGOs) have proposed and implemented interventions to eradicate or at least lessen poverty incidence in the country. However, most of the beneficiaries of these measures were criticized as not being the 'real' poor. A possible reason for this may be technical in nature like locating the poor families, that is, finding the place where most of the resident families are poor.

Several studies were conducted to describe the poor families or households in the Philippines. Marquez and Virola (1995) presented an updated profile of the Philippine poor based on the 1985, 1988, 1991, and 1994 FIES. In their study, poor households were characterized with respect to age, sex and occupation of the household head, source of income, expenditure and consumption pattern, payment of taxes, type and tenure of housing, source of water supply, kind of toilet facilities, availability of electricity, ownership of household appliances, and involvement in entrepreneurial activities. The study concludes that the following characteristics of the poor have not changed significantly since 1985:

- Poor households have an average of 6 members, one more than the average size of non-poor households.
- Heads of poor households are employed and are found in the agriculture, fishing and forestry sector.

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In terms of the place where the poor people are, the study only had the opportunity to look at the poverty statistics at the regional level with rural and urban disaggregation. The study shows that:

- Poverty incidence is lower in urban areas compared to rural areas. Also, reduction of poverty incidence is also faster in urban areas.
- Poverty has eased in the Visayas, especially Region VII, but has grown worse in Mindanao.

Other studies likewise were conducted to identify indicators of poverty which are not income-based. These indicators describe the well-being of poor households. Noriega (1995) used the results of the 1994 Poverty Mapping Survey conducted by the Department of Social Welfare and Development to identify variables describing the well-being of households for classifying poor from the non-poor households. A poverty classification scheme based on the social, economic and nutrition needs of the households was developed. Studies of Orbeta and Hilario (1995) and Reyes, et al. (1996) on Minimum Basic Needs (MBN) indicators as poverty measures, among others, aimed to identify characteristics of the household that are related to its poverty status which are not income-based. Orbeta and Hilario (1995), as cited in Reyes, et al. (1996) reviewed the relationship between the Minimum Basic Needs (MBN) indicators and income groupings using the results of the 1992 Socio-Economic Survey of Special Group of Families. The study concludes that income is a good indicator of deprivation except that of enabling needs of the bottom 30% of the population. Income adequately captures the incidence of deprivation in terms of survival and security needs. Reyes, et al. (1996) extended this study to look at the relationship of income and MBN indicators on the population at large utilizing data from the 1991 FIES.

Balisacan, et al. (1997) identified poor households using both household-specific and location characteristics. The location characteristics were barangay characteristics used as predictors in ordinary least squares regression model of predicting the natural log of adjusted per capita income.

The above-mentioned studies aimed to identify and describe the poor using household head and household characteristics, but none described the geographic location characteristics of poor families. The study of Marquez and Virola (1995) touched on the residence of the poor at an even higher level of aggregation, the regional level. On the other hand, Balisacan (1997) used barangay characteristics but for an objective different from describing the place where one can find the poor households. The studies related to MBN indicators did use some location characteristics like accessibility of potable water and electricity as components of family's basic needs but they were used to characterize poor households. Hence, to further identify and locate the poor, this study will attempt to describe the location characteristics where one can find the poor households in the Philippines.

2. METHODOLOGY

The major data set needed in the computation of poverty statistics is obtained from the Family Income and Expenditure Survey (FIES), a nationwide survey conducted by the National Statistics Office every three years since 1985. About 25,000 households were interviewed for every conduct of the survey in the years 1985-1994. This number was

deemed sufficient to provide reliable estimates of income and expenditure levels for each province, key city and key municipality of the country. The latest available FIES data that can be used for analyses is that conducted in 1994 and is the one used in this study.

The 1994 FIES is designed with the urban and rural areas of each province as principal domains. Within each domain, a pre-determined number of primary sampling units (PSUs) is selected at the first stage of sample selection procedure with probability proportional to size. Barangays which are classified as either urban or rural are the primary sampling units (PSUs) and households within each sample barangay comprise the secondary sampling units (SSUs).

Using the 1994 FIES data set, design-based estimates of poverty incidence at the barangay level are computed. Each household is classified as either poor or non-poor by comparing the household income with the poverty threshold of the region where the household belongs. The total number of poor households and total number of households in a barangay are then estimated using the probability weights of the sampled households. Using these two counts, poverty incidence at the barangay level is estimated as a ratio of total number of poor households to total number of households in a barangay. Only those barangays included in the 1994 FIES are considered in the analysis.

The location characteristics of the sampled barangays in FIES are identified from the 1990 Census of Population and Housing (CPH). These characteristics together with the estimated poverty incidence provide the data for this study. They are barangay level data generated by following the sampling design of the 1994 FIES which is stratified random sampling with proportional allocation.

The barangay poverty incidence is used to categorize a sample barangay as high density, average density and low density poor barangay. Those barangays with poverty incidence greater than 60% are classified as high density poor barangays; those with 40% to 60% poverty incidence as average; and those with less than 40% poverty incidence as low. Likewise, each barangay is cross-classified with the categories of the following characteristics:

1. urbanized or not
2. accessible to highway or not
3. with or without street pattern
4. with or without a town/provincial hall
5. with or without a church
6. with or without a plaza
7. with or without a cemetery
8. with or without a market place
9. with or without an elementary school
10. with or without a high school
11. with or without a college or university
12. with or without a public library
13. with or without a hospital
14. with or without a barangay center

15. with or without a barangay hall
16. with or without a housing project
17. with or without a newspaper circulation
18. with or without a telephone service
19. with or without a postal service
20. with or without a water works system
21. with or without electricity
22. with or without telegraph system.

The association between classification of barangays according to poverty incidence and these 22 characteristics of the barangay is tested using chi-square test of independence. Since the sampling design of the data set used in this study is stratified random sampling in proportional allocation, the common Pearson chi-square test statistic was used. Rao and Thomas (1989) reports that under the stratified random sampling with proportional allocation, the adjusted chi-square test statistic in the test of independence is asymptotically conservative and is well approximated by the common Pearson test. Furthermore, barangay poverty incidence is correlated with other location characteristics which were measured in at least the interval scale. These characteristics are total number of stores, total number of factories, and total number of financing institutions. The weighted Pearson product moment correlation is estimated and tested for significance from zero. The correlation coefficients are weighted according to the sampling design of FIES.

3. RESULTS AND DISCUSSION

The average poverty incidence of FIES sample barangays is estimated to be 37% with a standard error of 0.63%. There are sample barangays wherein all households are poor (hence, having poverty incidence of 100%) while there are also barangays with poverty incidence of 0%. The percentage distribution of barangays by density of poor households is presented in Table 1. More than half of the sample barangays (57.5%) have poverty incidence less than 40% or are low density poor barangays while 23.3% of the barangays have poverty incidence greater than 60% or are high density poor barangays.

Table 1. Estimated percentage distribution of barangays by density of poor households residing in the barangay based on the 1994 FIES.

DENSITY OF POOR HOUSEHOLDS IN A BARANGAY	Low	Average	High
PERCENTAGE	57.5	19.5	23.3

As shown in Table 2, one can find, based on all sample barangays of the 1994 FIES, an average per barangay of 7 stores with a maximum value of 79 stores, 3 factories with maximum value of 29 factories, and 7 financing institutions.

Table 2. Characteristics of sample barangays of the 1994 FIES based on 1990 CPH.

CHARACTERISTIC	N	MEAN	STD. DEV.	MIN	MAX
Total number of stores	1105	7.3	5.3	0	79
Total number of factories	1098	3.3	4.1	0	29
Total number of financing institutions	1096	7.4	17.1	0	90

It may also be observed that 62.5% of the 1994 FIES sample barangays are not urbanized while 81% have access to highways. The barangays are also described by the presence or absence of some amenities like electricity and water works system. The percentage distribution of sample barangays by barangay amenity is presented in Table 3.

Table 3. Percentage distribution of sample barangays of the 1994 FIES by presence or absence of some amenities based on the 1990 CPH.

AMENITY	PRESENCE	ABSENCE
Street pattern	63.23%	36.77%
Town/provincial hall	8.27%	91.73%
Church	87.11%	12.89%
Plaza	42.50%	57.50%
Cemetery	24.58%	75.42%
Market	25.29%	74.71%
Elementary school	79.68%	20.32%
High school	26.76%	73.24%
College	6.72%	93.28%
Public library	4.97%	95.03%
Hospital	9.64%	90.36%
Barangay center	60.67%	39.33%
Barangay hall	67.02%	32.98%
Housing project	16.39%	83.61%
Newspaper circulation	29.70%	70.30%
Telegraph	12.58%	87.42%
Electricity	84.64%	15.36%
Waterworks system	47.63%	52.37%
Postal service	31.03%	69.97%
Telephone lines	26.79%	73.21%

At least 80% of the sample barangays have a church or place of worship and one of the basic amenities, electricity. Also, almost 80% of the sample barangays have an elementary school while at least 60% of the barangays have street pattern to follow, a barangay hall and a barangay center for community activities. On the other hand, a public library is absent in about 95% of the sample barangays. Also, at least 90% of the sample barangays are without a town or provincial hall, a college, and a hospital. At least 80% of the barangays are without housing project and a telegraph system while at least 70% are without a cemetery, a market, a high school, a college, newspaper circulation and even telephone lines. At least 55% of the sample barangays are without a postal service and a plaza. It is also alarming to note that 52% of the sample barangays are without waterworks system.

Table 4 summarizes the results of the 2×3 chi-square test of independence between the presence of amenity and density of poor households, and their corresponding computed contingency coefficients.

Table 4. Computed chi-square test statistic and corresponding estimated contingency coefficient of the characteristics of the 1994 FIES sample barangays computed using the 1990 CPH data.

BARANGAY CHARACTERISTIC	$\chi^2(P)$	CONTINGENCY COEFFICIENT (C)
With or without telephone lines	175.746**	0.395
With or without a newspaper circulation	153.416**	0.372
With or without electricity	99.534**	0.311
Urbanized or not	84.207**	0.286
With or without postal service	73.093**	0.267
With or without waterworks system	58.791**	0.242
With or without a housing project	57.981**	0.239
With or without a telegraph	56.608**	0.237
With or without street pattern	42.480**	0.209
Accessible to highway or not	33.575**	0.186
With or without a hospital	33.324**	0.184
With or without a public library	29.680**	0.175
With or without a high school	30.190**	0.174
With or without a college	22.937**	0.153
With or without a market	17.674**	0.135
With or without town/provincial hall	9.033*	0.097
With or without a barangay hall	6.200 ^{ns}	0.081
With or without a barangay center	5.108 ^{ns}	0.073
With or without an elementary school	3.993 ^{ns}	0.065
With or without a plaza	3.916 ^{ns}	0.064
With or without a church	3.421 ^{ns}	0.060
With or without a cemetery	0.739 ^{ns}	0.028

** significant at 1% level

* significant at 5% level

^{ns} not significant at 5% level

Out of the 22 characteristics evaluated, 16 are found to have significant association with the density of poor households in a sample barangay based on its poverty incidence. The presence or absence of church, plaza, cemetery, elementary school, barangay center and hall in a barangay are not associated with the density of poor households. A church is found in at least 87% of all sample barangays. Hence, its presence in a barangay is not related to the barangay's density of poor households.

In identifying the location characteristics of sample barangays, which are highly associated with the density status, those characteristics with computed contingency coefficient of at least 0.200 are selected. Among the 16 characteristics found to have a significant association with the density status, only 9 have this property. This set of characteristics includes whether the barangay is urbanized or not and the presence or absence of street pattern, housing project, newspaper circulation, telephone system, electricity, water works system, postal and telegraph system in a barangay. The highest association with density of poor households ($C = 0.395$) is obtained from the presence of telephone lines while the lowest ($C = 0.209$) is from the presence of street pattern.

In terms of whether the sample barangay is urbanized or not, 81.61% of the high density poor barangays are not part of the city. The distribution of high density poor barangays by the other eight characteristics which are found significantly associated with the barangay poverty incidence are shown in Table 5. More than 50% of the high density poor barangays are without street pattern, housing project, newspaper circulation, telegraph system, water works system, and postal system and telephone lines. However, 65% of the high density poor barangays have electricity since most of the sample barangays are with an electrification system (84.64% have electricity, refer to Table 3).

In terms of characteristics measured in at least the interval scale, namely: total number of stores, factories, and financing institutions, the computed weighted Pearson correlation coefficients with barangay poverty incidence are all negative values, -0.3023, -0.4131, and -0.2163, respectively. The coefficients indicate that the lower the total number of stores, factories, and financing institutions, the higher is the barangay poverty incidence. Hence, high density poor barangays can be described as those barangays with low count in total number of stores, factories, and financing institutions.

Table 5. Estimated percentage distribution of sample barangays of the 1994 FIES by presence or absence of amenities found to be associated with barangay poverty incidence.

AMENITY	PRESENCE	ABSENCE
Street pattern	45.95%	54.05%
Housing project	4.04%	95.96%
Newspaper circulation	5.86%	94.14%
Telegraph	1.35%	98.65%
Electricity	65.02%	34.98%
Waterworks system	32.29%	67.71%
Postal service	11.66%	88.34%
Telephone lines	1.35%	98.65%

4. CONCLUSIONS

On the average, the poverty incidence of sample barangays is 37% with standard error of 0.63% and at least 23% of the sample barangays have poverty incidence greater than 60%. There are, on the average, 7 stores, 3 factories, and 7 financing institutions per sample barangay. A high 87.11% of the sample barangays have a church while at least 95% of them are without a public library. Elementary schools are also predominant and so is the presence of electricity. However, more than 50% of the sample barangays are without water works system.

Among the 22 characteristics of the barangays studied, 12 are found to be associated with barangay poverty incidence. Binary characteristics include urbanity of a sample barangay, presence of street pattern, housing project, newspaper circulation, telegraph system, electricity, water works system, postal system and telephone line. Also included are total number of stores, factories and financing institutions.

Although at least 65% of the high density poor barangays are with electricity, 81.61% of these barangays are not urbanized. Other characteristics of high density poor barangays include the absence of street pattern, housing project, newspaper circulation, telegraph system, water works system, postal system and telephone lines. High density poor barangays are also characterized by low total number of stores, factories and financing institutions.

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