

University of the Philippines
SCHOOL OF ECONOMICS

Discussion Paper 7905

March 1979

ON HOW TO MEASURE POVERTY

by

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Abstract

The meaningfulness of a poverty measure depends on both the social acceptability of the poverty line and the accuracy of the measured distribution of purchasing power to which the line is applied. In particular, the use of linear programming to construct a minimum food budget and the uncritical use of the 1975 Family Income and Expenditures Survey of the National Census and Statistics Office has led Tan and Holazo (1978) to some very questionable conclusions. As early as 1975, the Social Indicators Project, making the first effort to construct poverty thresholds for application to a national cross-section of purchasing power (namely the FIES series of the NCSO), showed that absolute and relative poverty worsened during 1961-1971. In 1977 the PREPF Project found that the 1975 FIES had very serious defects, and rejected using it to update the poverty trend; on the basis of independent PREPF surveys, adjusted for consistency with the National Income Accounts, it felt that about three-fifths of all households in 1975 should be rated as poor (below ₱10,000 annual income per household, somewhat more generous than the average SIP Total Threshold), but could not draw any conclusion about the 1971-1975 trend.

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Poverty: Size and Trend

Table 1 compares recent estimates of the incidence of poverty in the Philippines in 1965, 1971 and 1975. The three sources are: (a) the Social Indicators Project of the Development Academy of the Philippines; (b) the Equity Project within the research program on Population, Resources, Environment and the Philippine Future; and (c) the recent IEDR discussion paper by Tan and Holazo. For short, these will be referred to as SIP, PREPF and TH respectively.

The SIP estimates indicate that poverty has been worsening. These were first done in 1974, using data for 1961, 1965 and 1971, and the results were fairly widely publicized in an SIP summary-booklet in 1975.^{1/} The procedure was (a) to construct two poverty lines, termed the Food Threshold and the Total Threshold, and (b) to superimpose these poverty lines on the cross-sectional distributions of incomes and of expenditures provided by the Family Income and Expenditures Survey (FIES) of the National Census and Statistics Office, thus segregating those households below the threshold. The poverty incidence rate is the proportion of households who are below the threshold; this has been growing. Since the total number of households is constantly

^{1/} See DAP (1975).

Table 1

COMPARATIVE ESTIMATES OF POVERTY INCIDENCE IN THE PHILIPPINES
(% of Households)

Type of Poverty Line; Base Data	Philippines		Metro Manila		Range Outside Metro Manila	
	1965	1971	1975	1965	1971	1975
<u>Food Threshold Only</u>						
(1) SIP - Using FIES income data	48	57	68	24	34	58
(2) SIP - Using FIES expenditure data	34	41		17	25	
<u>Food and Other Needs</u>						
(3) PREPF - Using PREPF income estimates						
						61
(4) SIP - Using FIES income data	76	78	80-90	49	59	70-80
(5) SIP - Using FIES expenditure data	70	70		47	52	
(6) Tan-Holazo - Using FIES income data	41	44	52	11	16	41
(7) Tan-Holazo - Using FIES expenditure data	25	26		6	9	
						15-71
						12-51

Sources: (a) SIP. For 1965 and 1971, Mangahas, (1976), pp. 245-246; for 1975, Mangahas, Quizon and Lim (1977), Table 12.

(b) PREPF. Mangahas (1977), p. 26.

(c) Tan-Holazo (1978), Tables 10 and 14.

growing, due to population growth, then all the more is the absolute number of poor households growing. The poverty incidence estimate is lower when the FIES expenditure data, rather than income data, are used, because the FIES figures indicate a unrealistically large degree of dissaving, especially among the lower income classes, viz., the income figures appear to be grossly understated. Even when the expenditure distribution is used, the size of the incidence rate is large: for 1971 about 70% of all households are below the Total Threshold, and about 40% are below the Food Threshold.

When the 1975 FIES summary material became available, in early 1977, the SIP procedure was again applied by the PREPF project, with the result that poverty would have appeared to have drastically worsened further. Using the Food Threshold alone, and no allowances for any other of the basic needs, Table 1 shows that Philippine poverty would have appeared as rising from 57% in 1971 to 68% in 1975; in Metro Manila in particular it would have appeared as rising from 34% in 1971 to 58% in 1975. This was simply incredible. If one were to apply the Total Threshold then obviously the computed incidence rates would have been unrealistically enormous, in the region of 80-90% for the country as a whole in 1975 (the PREPF project did not bother to make the exact computation, since the result would have been so unreasonable anyway). The estimation problem was easily identified: the FIES data had gone from bad to worse. In the first place, after adjusting for inflation, the FIES data of 1971 and 1975 would assert

that average real incomes of households had fallen; but this is contradicted by the regular reports, from the National Income Accounts, of annually rising per capita income, all throughout the 1960s and the 1970s. Secondly, the FIES survey of 1975 captured less than half of the income which the National Accounts data are able to measure. The FIES average income per household in 1975 is less than ₱6,000; but aggregate Personal Income (from the National Accounts) divided by the number of households yields an average of over ₱13,000 for the same year.^{2/}

Faced with this situation, the PREPF Project decided to abandon the FIES data set altogether. Instead it used a new baseline distribution formed by splicing together income data from a PREPF national survey, and a PREPF Metro Manila, upper-income-classes-oriented survey, adjusted so as to meet the required income average of ₱13,100 per household. (The reference year for these surveys was also 1975). The PREPF total poverty line, meant to allow for all basic needs, was set at the round figure of ₱10,000 as an overall Philippine average.^{3/} Together with the baseline distribution, it implied a poverty incidence level of 61%, which is much more reasonable (line 3 of Table 1). This is the base from

^{2/} For a detailed critique of the FIES data, see Mangahas, Quizon and Lim (1977).

^{3/} See Mangahas (1977). In comparison, the SIP Total Thresholds for 1975 were ₱11,872 for Metro Manila, ₱9,905 for Urban Areas Outside Manila, and ₱8,668 for Rural Areas. So the PREPF guideline is, roughly speaking, about ₱1000 more generous.

which the PREPF poverty projections to the year 2000 were made.

The more recent TH estimates also show an increasing incidence of poverty, since, like the SIP estimates, they use the FIES distributional data. Since the TH method differs only in construction of the poverty line, it is not an independent confirmation of the poverty trend; the FIES series would display the same trend for almost any poverty line -- SIP was simply the first attempt to estimate poverty incidence from national cross-sections such as the FIES. The TH poverty line turns out to be very low (more on this later), and so the derived poverty incidence rates are likewise very low, in fact less than two-fifths of the SIP incidence rates. For 1971, for instance, the SIP total poverty rate is 70% but the TH rate is only 26% (Table 1, lines 5 and 7), which is an enormous difference. In Metro Manila, the TH estimates tell us that poverty rose from only 16% in 1971 to 41% in 1975, which, if accurate, would be a rather grievous indictment of the New Society; but then, we have already seen that in 1975 the FIES distributional data suffered a great deterioration in quality.^{4/}

One cannot shrug off these confusing findings with the facile remark that 'different assumptions give different conclusions'. The choice among assumptions cannot be entirely subjective and arbitrary, even if they pertain to something as normative as the poverty line.

^{4/} Although Tan and Molazo include the PREPF research in their list of references, their paper contains no warnings regarding the interpretation of FIES-based poverty incidence rates.

Value-judgments can never be completely avoided; so technicians should select those which they gauge as having a wide social appeal. By avoiding personalistic assumptions, researchers will avoid drawing overly-tenuous conclusions which carry a great danger of deliberate misinterpretation and misuse. For instance, does the TH paper mean to say that the SIP finding of widespread poverty is "refuted," since their incidence rates are much lower? Such material is ready-made for apologists of the political regime. On the other hand, do they seriously maintain that poverty mushroomed during 1971-1975, thus gratifying the opponents of the New Society? One can almost see the propagandists on either side clipping out only those findings supportive to the cause.

Selecting a Food Threshold: Linear Programming vs Common Sense

Tan and Holazo have used linear programming to solve for the basket of foods which minimizes the cost of acquiring at least the recommended daily allowance (RDA) of nutrients, as set by the Food and Nutrition Research Center (FNRC). As indicated in Table 2, the cost of this basket in Metro Manila, for example, is found to be ₱2,460 per year at 1975 prices, which works out to ₱6.74 per day, for a family of six.^{5/} According to the TH appendix, the basket^{6/} contains:

^{5/} A father of 40-42, a mother of 37-40, a son 16-19, a daughter 13-15, a son 7-9, and a daughter 1-3 years of age.

^{6/} This is the LP basket under additional constraints in order to allow 'more variety' in food choice.

Table 2

COMPARATIVE POVERTY LINES FOR A FAMILY OF SIZE 6
(Pesos per year)

	1965	1971	1975
	<u>Metro Manila</u>		
<u>Food</u>			
Social Indicators Project	2476	4284	7123
Tan-Holazo	636	1094	2460
<u>Food and Other Needs</u>			
Social Indicators Project	4497	7203	11872
Tan-Holazo	1615	2634	4984
	<u>Range Outside Metro Manila</u>		
<u>Food</u>			
Social Indicators Project	1732-1981	3000-3428	5201-5943
Tan-Holazo	582-720	1000-1308	2059-2817
<u>Food and Other Needs</u>			
Social Indicators Project	3148-3597	5000-5762	8668-9905
Tan-Holazo	1166-1631	1865-2349	3680-4337

Sources: (a) SIP. For 1965 and 1971, Mangahas (1976), pp. 265-266;
for 1975, Mangahas (1977), p. 26n.

(b) Tan-Holazo, op. cit., Table 9a.

	<u>grams per day</u>
kangkong	315
assorted shellfish	8
galunggong	92
mike	2,080
green papaya	800
kanote roots	480
edible oil	19

The question now is: who among the Filipinos would share the value-judgment that this basket represents, food-wise, the boundary of poverty? Would the majority agree? Would a meaningful minority of say 25% agree? Would an 'enlightened minority', such as the community of social scientists, agree? Would they agree that ₱7 per day for feeding a family of six in Manila in 1975 would be just over the boundary already? Would they agree that even ₱10 per day would be clearly over the boundary, and that a family with this much for food in 1975 could no longer righteously claim to be poor?

We may note the following:

(a) The basket doesn't contain any rice.^{7/} Instead, the LP solution advises the family to eat 2 kilos of noodles per day. Suppose

^{7/} Neither is there any rice in the minimum-cost baskets for Laoag, Baguio, Dagupan, Cabanatuan, Legaspi, Iloilo, Tagbilaran, Butuan, Zamboanga or Davao. Even where rice is recommended - namely in San Fernando (La Union), Tuguegarao, Batangas, San Pablo, Cebu and Tacloban - it never outweighs, gram for gram, noodles or corn.

a family had a ₱10 food budget, insisted on consuming rice, and then failed to meet the RDA; are we expected to conclude that the family 'is not really poor', but is undernourished only because it fails to appreciate (or does not know) the nutritional value of noodles relative to rice?

(b) Simply informing the poor of the contents of the basket, say over the radio, would not bring them any material benefit.

(c) It is quite feasible to learn, from a direct survey, what the Filipino public regards as a food budget on the boundary of poverty. Specifically, in the SIP survey of Batangas in June 1974, the following question was asked:

Sa palagay ninyo, magkano ang gagastusin sa pagkain ng pamilya araw-araw, na kung bababa pa rito ay ipalalagay ninyong kayo ay mahirap?

(How much would you spend for food daily for your family such that, without this amount, you would consider yourself poor?)

The average of the replies of 184 urban respondents in Batangas was ₱12.10 per day, or ₱363 per month. This is already nearly double the TH food line for 1975 for Metro Manila; and yet we would expect the perceived food threshold for Metro Manila to be even larger, since (i) food costs are lower in Batangas than in Manila^{8/}, and (ii) food prices in Manila in 1975 were over 7% higher than in 1974.^{9/}

^{8/} The LP-food basket costs ₱6.61 per day in Batangas and ₱6.74 per day in Manila (Tan-Holazo, pp. 38-39).

^{9/} Mangahas, Quizon and Lim, Table 12n.

The approach of the Social Indicators Project was more straightforward. The FNRC had already designed, not only the RDA, but also a recommended simple menu. The menu, which presumably incorporates the sum total of FNRC judgments regarding relative food prices, total costs of preparing food, Filipino eating habits, etc. is as follows:

BREAKFAST

Rice * Boiled dilis * Tomato-egg salad * Coffee with milk *
Milk for the children

LUNCH

Fish pinangat * Munggo guisado * Rice * Papaya

SNACK

Boiled camote with margarine * Milk for the children

DINNER

Fish sinigang with tomato, fish, sitaw, kangkong, tamarind,
talong * Rice * Glazed camote * 10/

The costing of this menu, for the food quantities felt necessary for the reference family of size 6, was also done by the FNRC, and found to be ₱14 per day in December 1973 in Metro Manila. The SIP simply accepted the FNRC budget, only making adjustments for price differences across space and time, with the best available price indexes. In Metro Manila,

^{10/} See Abrera, "Philippine Poverty Thresholds," in Mangahas (1976), p. 238.

the SIP food threshold for 1975 became ₱7,123 per year (Table 2), or ₱19.52 per day. The latest available up-date of the SIP food threshold is:

<u>Family size of 6</u>	<u>1978 Food threshold per day^{11/}</u>
Metro Manila	₱23.75
Urban Areas Outside Manila	20.60
Rural Areas	18.83

Thus, if one wonders why the SIP Food Threshold is nearly three times the TH food line, the answer is simple: compare the menus. The SIP Threshold corresponds to the prepared-food recommendation, not a raw-food or a nutrient recommendation, of the FNRC, which is the pertinent official agency. It is true that the FNRC prescribes a merienda, beverages like coffee and milk, fruit with lunch, and dessert after dinner. Are these luxuries? The FNRC only specifies camote, papaya and tinned milk, not cake, apples and fresh milk.

X A poverty line is meant to be a critical boundary. It should be just as valid to assume that a family over the boundary is not-poor, as to assume that one below it is poor. The TH line, it seems to me, is bare subsistence only, and much worse than the borderline of poverty. In any case, the scientific way to resolve the issue is to examine the attitudes of the general public, e.g., undertake a survey of individuals' perceptions, as the SIP did in Batangas in 1974.

^{11/} "Towards Equitable Sharing of Income in the Year 2000," Chapter 7 of a forthcoming PREPF publication.

The Total Threshold: Allowing for Non-Food Needs

The SIP did not attempt to set monetary norms for specific minimum non-food needs. It simply assumed that the cost of food should constitute 60% of the total poverty boundary budget, and obtained its Total Thresholds by dividing its Food Thresholds by 0.6. Its justifications were that (a) the available expenditures survey data indicated that 60% was roughly the food expenditure ratio for households below the median, and (b) its Batangas survey of perceived poverty lines for food, rent, clothing and medical care resulted in the perceived food need being 64% of the perceived total need (urban - 59%; rural - 65%).^{12/}

On the other hand, the TH method uses specific normative assumptions for other consumption needs. For (a) Schooling and (b) Medical Care, the poverty boundary used is the NCSO-FIES household average for expenditures in the rural area of the relevant region. There is some normative assumption used for (c) Rent, Fuel, Light and Water, but not clearly explained in the paper. For (d) Clothing, it is assumed that two sets per person is the minimum required. (In contrast, the SIP survey in Batangas discovered that the respondents perceived six sets of clothing to be the poverty boundary).

^{12/} Mangahas (1976), p. 252. Incidentally, Tan-Holazo label the above ratio-approach as "Orshansky's method" (after Molly Orshansky, who worked on the U.S. poverty line). But it is so simple a technique that there is no need to dignify it by naming it after Miss Orshansky, who could not have been the first to conceive of it anyway.

Curiously enough, the TH method results in a poverty line where the food component is roughly 40-50%, compared to the SIP's 60%, even though the TH poverty norms are much more stringent. By Engels' Law, one ordinarily expects the food share in the budget to be larger, the poorer is the individual.

In my opinion, the contribution of the Tan-Holazo paper lies elsewhere. It shows that there is a wide variation in consumer prices in various trading centers, such that it is advisable, regardless of the poverty-line criterion, to compute different poverty lines applicable to all these different areas. It is thus not too adequate, for instance, to have only one general line for Urban Areas Outside Manila. Another implication is that estimation of poverty incidence requires region-specific measurement of the distribution of purchasing power, be it "total income" or "total expenditure".

CONCLUSIONS

1. Poverty in the Philippines probably worsened during 1961-1971. By 1975 it was still very high, the best estimates available being that three-fifths of all households were poor. One cannot tell whether conditions worsened or improved over 1971 to 1975 because the official distributional monitoring system broke down in 1975. The 1975 estimate cited is based on an independent cross-section taken as part of the PREPF research program; but this source is not comparable to the earlier official cross-sections.

2. There is a limit to which the technician's choice of a poverty line can be entirely subjective or arbitrary. In the final

analysis, the poverty line must be a social concept, and the technician must design his poverty line with an eye for social understandability and acceptability. He must appreciate 'common sense', i.e., he must discern the values of the common people.

3. The SIP Food and Total Thresholds are still far superior to the Tan-Holazo poverty lines, since the former are much closer to the social assessment of the poverty boundary, as indicated by (a) the recommended food menu of the official nutrition research agency and (b) survey material on Filipino perceptions of the position of the poverty boundaries as to food, clothing and other needs.

4. Technicians may wish to recognize different degrees of poverty; in fact, if the society recognizes such degrees, then technicians are advised to do likewise. As a start, there could be two degrees, 'poverty' and 'destitution', distinguishing mahirap from say dukhâ.^{13/} Perhaps the Tan-Holazo lines could be better used as destitution boundaries.

5. Poverty lines should be set in real terms and regularly adjusted for price changes across time and space. At current rates of inflation, adjustments should be at least annual and preferably semestral. The significant contribution of Tan and Holazo was the demonstration that region-specific poverty lines are needed.

^{13/} The SIP perception survey consistently used mahirap, and interviewers were warned not to embellish the term with any explanations.

6. A poverty line is similar to the red warning line on a thermometer: it is not much use being precise about the position of the red line if there is a basic malfunction, e.g., if the mercury has leaked out. All poverty lines need to be applied to some reliable baseline distribution of purchasing power. Unfortunately, the FIES surveys of the NCSO have grown less and less reliable, and the last one in particular (1975) can no longer be used for computations of poverty incidence.

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