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"Changing from the Quality of Life Index to a proxy-means test for income is not likely to imply any gains in either efficiency or efficacy."

Debating Targeting Methods for Cash Transfers: A Multidimensional Index vs. an Income Proxy for Paraguay's Tekoporã Programme

Rafael Perez Ribas
Guilherme Issamu Hirata
Fábio Veras Soares

International Poverty Centre

Family in Santa Rosa del Aguaray, Paraguay. Photo by Fábio Veras Soares (IPC).

International Poverty Centre
United Nations Development Programme

International Poverty Centre
SBS – Ed. BNDES, 10º andar
70076 900 Brasilia DF
Brazil

povertycentre@undp-povertycentre.org
www.undp-povertycentre.org
Telephone +55 61 2105 5000
Fax +55 61 2105 5001

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DEBATING TARGETING METHODS FOR CASH TRANSFERS: A MULTIDIMENSIONAL INDEX VS. AN INCOME PROXY FOR PARAGUAY'S TEKOPORÃ PROGRAMME*

Rafael Perez Ribas** Guilherme Issamu Hirata** and Fábio Veras Soares**

1 INTRODUCTION

There is a lively global debate on how to target beneficiaries of Conditional Cash Transfer (CCT) programmes. In this Evaluation Note we analyze alternative targeting methods for Paraguay's CCT programme, *Tekoporã*. The major practical choice for Paraguay is between a multidimensional quality-of-life index and a proxy-means test for income. We focus on the efficiency and efficacy of these approaches by examining primarily the trade-off between leakage and coverage.

Tekoporã is a CCT programme that is being scaled up in Paraguay. Like other recent CCT programmes, it was designed in the context of a national strategy for combating poverty, as part of the general effort to achieve the Millennium Development Goals (MDGs).

Its pilot started in August 2005, covering 4,500 households in five districts of two departments. *Tekoporã* is gradually expanding and intends to cover 35 districts by 2008. These districts were selected from the pool of 66 districts that had been judged to have the most vulnerable populations, according to a scoring system based on a Geographical Prioritization Index (IPG).

Tekoporã's objective is to break the intergenerational transmission of poverty by means of the cash transfer and follow-up activities for beneficiary households. This follow-up consists of the monitoring of co-responsibilities (between beneficiaries and the programme) with regard to the supply and use of health and education facilities and the development of related family-support activities.

The programme consists of a monthly transfer to extremely poor households living in rural areas and with children up to 15 years old and/or with a pregnant woman. These

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** International Poverty Centre.

households are entitled to a benefit of 30,000 Guaraníes (US$ 6) per child or pregnant woman up to limit of four eligible beneficiaries, in addition to a base-level grant of 60,000 Guaraníes (US$ 12) per month. Thus, eligible households could receive a monthly transfer worth between 90,000 and 180,000 Guaraníes (US$ 18-36).

To identify eligible households during the pilot phase, the Secretary of Social Assistance (SAS) adopted a non-monetary Quality of Life Index (ICV) as the targeting tool. Such an approach has been common throughout Latin America, where the monitoring of poverty has often relied on using a composite index for Unsatisfied Basic Needs.

But a study sponsored by the Inter-American Development Bank (IADB)—whose loan is financing the scaling-up of the programme—has suggested that a proxy-means test (PM) for income level would be a better instrument than the composite ICV (Robles, 2006). In addition to the relative merits of each approach, SAS will have to take into account the likely transitional costs involved in changing its method of targeting. For example, the change could imply significant adjustments in the current registry and administrative systems.

Thus, this Evaluation Note seeks to evaluate the relative performance of the ICV and proxy-means test. First, we explain the targeting approaches that have been proposed. Second, we compare these options in terms of the composition of the target population (poverty incidence) and the cost of coverage. Third, we evaluate the targeting options through some standard indicators of targeting performance.

Since this evaluation is sensitive to the cut-off points chosen by each targeting approach, we also analyse the relationship between leakage and coverage when the eligible population is sorted according to each approach. This analysis allows us to determine which sorting mechanism delivers the lowest leakage given a specific coverage or cut-off point. Fourth, in order to shed some light on the choice between low leakage and high coverage, we propose an index that combines both performance criteria in the targeting analysis. Finally, we draw some conclusion based on the differing results for the proposed targeting approaches.

2 TARGETING TOOLS

Tekoporã is not seeking to be a CCT programme that is as large as such other well-known programmes as *Bolsa Família* in Brazil and *Oportunidades/Progresa* in Mexico. The reason is that it is facing critical budget constraints. Thus, it has followed an approach of first using geographical targeting in order to rank districts according to their poverty level and unsatisfied basic needs. This targeting was based on a Geographical Prioritization Index (IPG), which was composed of both monetary and non-monetary indicators. Thus, districts have been included in the programme based on their IPG score.

In order to prepare a list of potential beneficiaries *within* each selected district, the programme uses the multidimensional index, ICV, previously mentioned, which is derived from a principal-component analysis. The Quality of Life Index (ICV) varies between 0 and100 and is composed of variables related to: housing condition; access to public services such as water, electricity, garbage collection and telephone; health care and insurance; the education of the household head and spouse; years of schooling 'lost' by children aged 6 to 24 years; the occupation of the household head; ownership of durable goods; and the household demographic composition. In contrast to the Geographical Prioritization Index, the ICV does not use any monetary variables.

At first, SAS intended to use ICV equal to 25 as the cut-off point for eligibility. This implied that only households with a score below 25 would be included in the programme. However, when this cut-off point was implemented, the number of selected beneficiaries was below the estimated number of the extremely poor in the pilot districts. This quota was based on estimations given by the IPG-based poverty map of these districts. For this reason, SAS decided to raise the threshold of ICV to 40.

This multidimensional framework was inspired by the Colombian experience with targeting social policies and was proposed by the consultants responsible for designing the best way for the Paraguay programme to distinguish poor households from non-poor households. The choice of the ICV was motivated, in part, by the assumption that the income information available in household surveys—upon which a proxy-means test would be based—does not adequately capture the permanent income status of rural households. Given these concerns, the team responsible for choosing the targeting method opted to treat poverty as a multidimensional phenomenon and proposed the ICV as the best tool.

In Colombia, the ICV is used to identify households that are eligible not only for cash transfer programmes but also for a wide range of social benefits (Sarmiento and Ramírez, 1998). However, if one of the principal aims of cash transfer programmes is to reduce income deprivation, along with addressing associated social problems, then it would be logical to target the transfers to the most income-deprived households. Hence, a multidimensional index such as the ICV would be a suitable targeting tool for cash transfer programmes only if it were closely correlated with household income.

The proxy-means test proposed as an alternative by Robles (2006) consists in using data from the National Household Survey to estimate the coefficients of various socio-economic covariates of income. These coefficients are then used to predict household income. The estimated coefficients would actually be entered into the registry system database in order to predict the income of potential beneficiary households and rank them for eligibility, without the programme being able to directly observe their actual income.

In theory, the proxy means approach might perform better than the multidimensional ICV method if the primary goal were to concentrate on households that are income deprived. However, adopting now the proxy means approach in Paraguay could lead to substantial costs, such as retraining of personnel, changes in computer software, reformulation of the operational manual and revision of the household questionnaire.[1] Hence, in a practical sense, such a change would be justified only if the proxy-means test performed significantly better than the current method. This issue is addressed in ensuing sections.

3 COMPARING TARGET GROUPS

Using the 2005 round of Paraguay's National Household Survey (EPH, *Encuesta Permanente de Hogares*), we define five groupings of households based on five different approaches to targeting. These different approaches include 1) two different cut-off points for the ICV, 2) the proxy-means test, 3) a combination of the ICV and the proxy means, and 4) a universal baseline group.

The baseline group, which we label the 'Geographic group', is composed of all rural households with children younger than 15 years of age and residing in the 35 districts that will take part in the programme by 2008 based on the scores derived from the IPG.[2] Hence, this group represents an approach of 'universal coverage' since neither a proxy-means test nor an ICV approach is used to narrow the target population.

The other four groupings are smaller subsets of the Geographic group:

- ICV40, which includes households with an ICV score of less than 40.
- ICV25, which includes households with an ICV score of less than 25.
- PM (the proxy-means test), which includes households with a *predicted* per capita income that is below the line for indigence (extreme poverty).
- ICV-PM (a combined approach), which includes a) households with an ICV score less than 25 as well as b) households with an ICV score less than 40 as long as their predicted per capita income is below the indigence line.

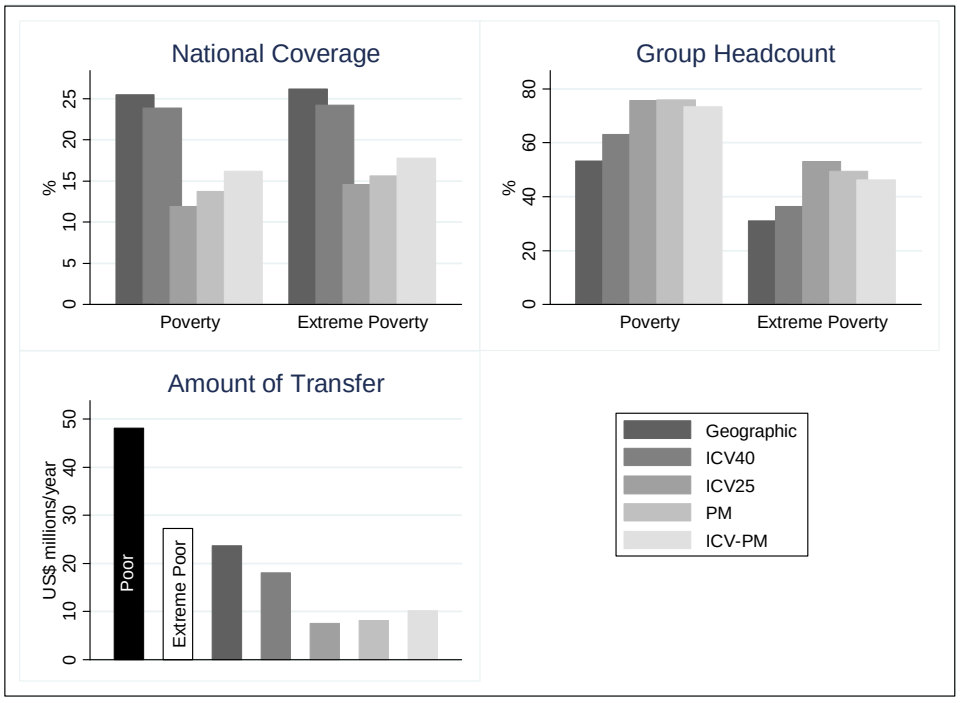
The top panel on the left in Figure 1 (for 'National Coverage') shows the percentages of the total rural poor and the total rural extremely poor within the whole country that each resultant targeting grouping covers.

The right panel of Figure 1 ('Group Headcount') shows the percentage of the poor and the percentage of the extremely poor *within the total grouping that the programme covers*.

The third panel ('Amount of Transfers') presents the total aggregate value of the transfers that each targeting method implies. The first two bars represent the amount of transfer necessary to cover all of the poor and all of the extremely poor in the rural areas of the country. Thereafter, the bars represent the amount of transfer necessary to cover all households of each target group.

FIGURE 1

National coverage of rural poverty, group headcount and the total value of transfers for different population groupings identified by five targeting methods



Note: US$1 = Gs. 5,030.

Source: Own calculations based on EPH 2005.

The Geographic group, which represents, by definition, the maximum coverage of the programme, includes about 26 per cent of both the poor and the extremely poor in all rural areas of the country.[3] However, this broad targeting approach is not likely to be feasible since it entails having a large budget and has a high rate of leakage to the non-poor (as one can verify indirectly by the low bars in the right panel).

Indeed, only about 31 per cent of the households covered by the Geographic approach are extremely poor and only about 53 per cent are poor (see the first bars in the figure for the 'Group Headcount').

In addition, the annual cost of the total transfers for such a grouping, namely, US$ 24 million, approaches the annual cost of the total transfers that would benefit all of the extremely poor in all of the rural areas of the country, namely, US$27 millions (see the second and third bars of the Figure on 'Amount of Transfers').

Excluding the Geographic targeting approach, the ICV40 approach (which targets households with an ICV score less than 40 within the 35 selected districts) has the widest coverage, namely, about 24 per cent of both poor and extremely poor households throughout the country.

The ICV25 targeting approach (which targets households that have a lower ICV score and are, therefore, presumably poorer) has the narrowest national coverage. It covers 12 per cent of the poor and 14.6 per cent of the extremely poor in all Paraguayan rural areas.

However, the annual cost of transfers implied by the ICV40 approach, i.e., US$ 18 million, is considerably higher than that for the ICV25 approach, i.e., US$ 7.5 million (see the fourth and fifth bars of the Figure for 'Amount of Transfers').

In spite of its low national coverage, the ICV25 approach reaches the highest percentage of the extremely poor, namely, 53 per cent, within the population that it covers (see the Figure for 'Group Headcount'). The approach of proxy-means testing (PM) has the second highest percentage, 49 per cent. Both approaches have about the same percentages of the poor, namely, 76 per cent, among the population that they cover.

The next relevant question is the extent to which the populations selected by the ICV25 and by the PM approaches overlap. Table 1 provides this information. It shows that 74 per cent of the grouping selected by the ICV25 approach is included in the grouping selected by the PM approach; conversely, almost 65 per cent of the grouping yielded by the PM approach is included in the grouping selected by the ICV25 approach.

If we examine the grouping selected by the combined ICV-PM approach, we find that 71 per cent of the same households would also be selected by the ICV25 approach and 82 per cent by the PM approach. So the correlations among the three approaches are fairly high. The annual cost of the transfers implied by each of the three approaches is similarly low (compared to the Geographic and ICV40 approaches). The cost of the ICV25 approach is lowest, but only slightly below that of the PM approach.

TABLE 1

Overlap of Targeted Groupings (Per cent)

	Geographic	ICV40	ICV25	PM	ICV-PM
Geographic	100.0	79.2	32.7	37.6	46.0
ICV40	100.0	100.0	41.3	47.5	57.2
ICV25	100.0	100.0	100.0	74.3	100.0
PM	100.0	100.0	64.7	100.0	100.0
ICV-PM	100.0	100.0	71.2	81.7	100.0

Source: Own calculations based on EPH 2005

4 EVALUATING THE EFFICIENCY AND EFFICACY OF TARGETING

The leakage rate (inclusion error) is the percentage of total beneficiaries who are non-poor. The under-coverage rate (exclusion error) is the percentage of the poor not covered by the programme. Hence, a better targeting performance should try to minimize these errors. These rates depend, of course, upon the choice not only of the poverty line but also the poverty measure.

We have chosen two poverty lines, i.e., for poverty and extreme poverty, to analyze the targeting performance of the approaches defined above. Both lines have been calculated based on data from the Paraguayan National Statistics Office[4] (DGEEC, *Dirección General de Estadísticas, Encuestas y Censos*). Based on the headcount ratio (P0), we calculate under-coverage rates and leakage rates for five targeting approaches (including the baseline approach of universal Geographic targeting).

We also try to assess the targeting efficiency of these different approaches by using Kakwani's (1990) 'normal targeting index' and applying it to the Foster-Greer-Thorbecke (FGT) class of poverty measures, namely the headcount ratio (P0), the poverty gap (P1) and the poverty severity measure (P2). This index indicates the marginal poverty reduction achieved by transferring the same amount of money to a particular group in comparison to giving this amount to the whole population (i.e., the latter using a universal transfer).[5] If the index is above one, it is more efficient to target the particular group than opt for universal coverage (in our case, selecting all households within the 35 districts).

Table 2 presents Kakwani's index for our five targeting approaches. It also presents the leakage rate and the under-coverage rate. The three targeting measures actually address different issues. The leakage rate means the efficiency in covering only poor households, and thus excluding the non-poor. The under-coverage rate measures the efficacy in covering all of the poor. Kakwani's index gauges the efficiency of the programme in achieving poverty reduction.

Let the Geographic grouping of the programme's 35 districts represent the whole population of interest. Table 2 shows that the ICV40 group has the lowest under-coverage rate for both extreme and overall poverty, namely 6-8 per cent. These percentages are so low because the ICV40 threshold encompasses almost 80 per cent of the whole population in these districts (see Table 1).

However, ICV40 has a higher leakage rate, i.e., it benefits more non-poor. If this approach were used, 64 per cent of its beneficiaries would not be extremely poor and 37 per cent would not be poor.

The approach that has the highest under-coverage rate but the lowest leakage rate is ICV25. It does not reach 44 per cent of the extremely poor and does not reach 53 per cent of the poor. At the same time, only 47 per cent of its beneficiaries are not extremely poor (compared to 50 per cent or more for the other three approaches) and only about 24 per cent of its beneficiaries are not poor (which is about as low as for the PM approach).

These statistics indicate that the differences in the leakage rates of the four target groups are not as large as the differences in their under-coverage rates. Indeed, even among the three approaches, ICV25, PM and ICV-PM, the maximum difference in the leakage rates is seven percentage points whereas the minimum difference in the under-coverage rates is 13 percentage points.

TABLE 2

Leakage, Under-Coverage and Kakwani's Index by Target Group

		Geographic	ICV40	ICV25	PM	ICV-PM
P0 –	leakage (%)	68.85	63.63	46.99	50.54	53.77
indigence	under-coverage (%)	0.00	7.54	44.32	40.34	31.77
	Kakwani's index	1.0000	1.2269	1.2521	1.2757	1.2872
P0	leakage (%)	46.85	37.01	24.28	24.10	26.56
	under-coverage (%)	0.00	6.17	53.40	46.35	36.49
	Kakwani's index	1.0000	1.0677	0.9324	0.9630	0.9875
P1	Kakwani's index	1.0000	1.2689	1.5637	1.5268	1.4922
P2	Kakwani's index	1.0000	1.3423	1.9186	1.8227	1.7426

Source: Own calculations based on EPH 2005.

The PM approach has targeting statistics close to those produced by the ICV25 group; the former's leakage rate for the extremely poor is slightly higher but its under-coverage rate is slightly lower. Therefore, an alternative targeting method, which has been discussed by the Paraguayan Secretary of Social Assistance and the Inter-American Development Bank, is to combine both of these targeting methods in order to reduce the under-coverage rate without increasing the leakage rate.

For both extreme and overall poverty, the ICV-PM approach has indeed a significantly larger coverage rate (lower under-coverage rate) and maintains a reasonably low leakage rate. Moreover, for targeting extreme poverty, the Kakwani index indicates that the combined ICV-PM approach is the most efficient (having the highest score of 1.2872), edging out the PM approach.

However, if the intention is to reduce poverty severity, which means to alleviate poverty among the most extremely poor, the Kakwani index indicates that the ICV25 approach is the most efficient (having a score of 1.9186). But for targeting overall poverty, the Kakwani index suggests that the ICV40 approach is the most efficient (with a score of 1.0677).

For overall poverty, the other three targeting methods (ICV25, PM and ICV-PM) are worse than the Geographic approach since their Kakwani indices are less than one (meaning that the

universalistic Geographic approach would perform better). A possible explanation for this result is that the 35 selected districts have a high overall poverty incidence (because they were selected precisely for this reason). Thus, any targeting within them only serves to differentiate the extremely poor from the moderately poor.

In summary, we can contrast two approaches and their corresponding outcomes. With regard to overall poverty, the ICV40 approach covers the greatest percentage of the poor but it also includes the largest percentage of the non-poor. By contrast, the ICV25 approach has one of the lowest leakage rates to the non-poor but it also has one of the lowest coverage rates of the poor.

These contrasting outcomes emphasize the problem of an inherent trade-off between efficiency (eliminating the non-poor) and efficacy (reaching the poor). If a programme attaches less importance to inclusion errors (namely, benefiting the non-poor), it will have to spend more money to have the same impact on poverty as a more efficient programme. By contrast, if a programme attaches less importance to reaching as many poor households as possible, its impact on aggregate poverty might be lower even if it is able to improve its efficiency.

5 THE TRADE-OFF BETWEEN LEAKAGE AND UNDER-COVERAGE

One could argue that the analysis above is not appropriate because the ICV40 has a lower under-coverage rate than the PM just because it incorporates a much larger number of beneficiaries. Therefore, in order to investigate in a more general framework the trade-off between leakage and under-coverage, we must assess the extent to which each approach achieves a lower leakage rate for any given coverage rate. That is, we want to know the extent to which each targeting mechanism is able to avoid selection of a higher proportion of the non-poor when it tries to increase its coverage of the poor population.

Figure 2 traces non-parametric functions depicting how the leakage ratio changes (vertical axis) in response to increases in the coverage ratio (horizontal axis) for each targeting approach. In practice, we simulate what happens to the leakage ratio as the coverage ratio increases. The sorting mechanisms that we assess are the ICV and the proxy means. In addition, we show the performance of the combined ICV-PM approach, which consists of sorting the population by the ICV up to the cut-off point of 25, and by the PM above this point.

Notice that now the cut-off point is not relevant to our analysis. As we move to the right on the axis corresponding to the coverage ratio, we are basically moving to a higher cut-off point for both the ICV and the proxy means.

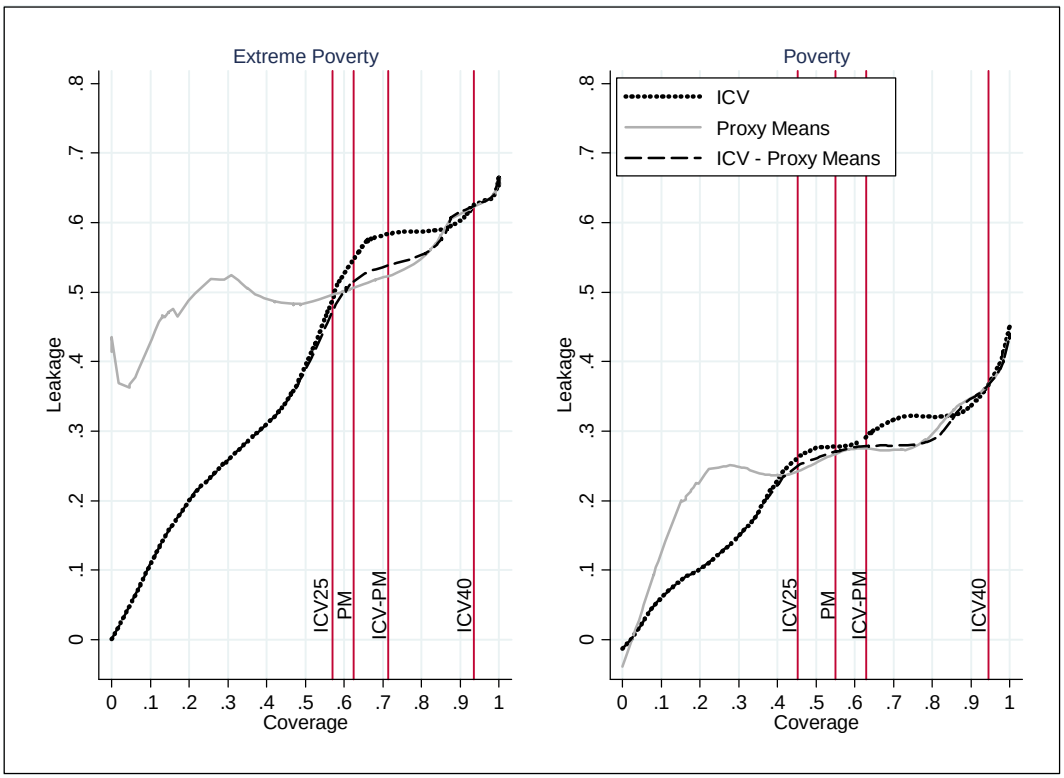
Figure 2 shows both the proportion of the beneficiaries who are *not* poor (panel on the right) and the proportion of the beneficiaries who are *not* extremely poor (panel on the left) that are incorporated into the programme as it increases its coverage of the poor or the extremely poor.

The vertical lines in both panels correspond to the maximum coverage of each target group, discussed in the previous section, in relation to the total number of extremely poor in the Geographical group.

The most efficient criterion to cover up to 40 per cent of all the poor (panel on the right) as well as up to 57 per cent of the extremely poor (panel on the left) is the ICV—the ICV curve is below the PM curve until those two points.[6] If we intend to cover up to 85 per cent of the poor and the extremely poor, the most efficient mechanism would be the proxy means—the PM curve is below the ICV curve until those points. For coverage rates higher than this percentage, there is no difference among the three targeting mechanisms in relation to the leakage rate since all curves overlap.

FIGURE 2

Leakage as a Function of Coverage by Targeting Mechanism



Note: bandwidth = 0.2.

Souce: Own calculations based on EPH 2005.

Note that the marginal increase in the leakage rate is significant (the slope of the line is high) until the coverage of ICV25 in the panel on the right, and until the coverage of ICV-PM for extreme poverty in the panel on the left. Above these coverage rates, the trade-off functions are flatter so that the expansion of the coverage rate does not imply a significant increase in the leakage rate.

This analysis shows how the different targeting approaches perform in terms of leakage for the same coverage rate, i.e., for the same number of poor beneficiaries. In general, the ICV performs better for coverage rates around 40 (57) per cent for the poor (extremely poor), whereas PM performs better for coverage from this level up to 85 cent. For coverage rates above 85 per cent there is virtually no difference in the leakage rate of the different

approaches. As a consequence, the ICV-PM combination provides a generally superior performance overall.

6 THE TOUGH CHOICE BETWEEN LEAKAGE AND UNDER-COVERAGE

Since there is no way to minimize both exclusion and inclusion errors at the same time, policy makers have to make a tough choice. In this section, we try to identify the best choice for Paraguay's *Tekoporã* programme, assuming a range of preferences that goes from a total preference for minimizing inclusion errors to a total preference for minimizing exclusion errors.

In order to clarify the basis for our choices, we construct a welfare index derived from a Cobb-Douglas disutility function. This disutility function measures the loss in welfare triggered by increases in either leakage or under-coverage. However, in order to gauge this welfare loss, it is necessary to weight the relative preference for each one. We do this by using an arbitrary parameter α that varies from 0 to 1.

This parameter determines the political weight (preference) given to under-coverage in relation to leakage. Therefore, a low value of α means that policy makers put more weight on leakage of benefits to the non-poor (efficiency) whereas a high value means that they put more weight on achieving larger coverage of the poor (efficacy).

The disutility index can then be represented as:

$$I = \frac{100}{N} UC^{\alpha} L^{1-\alpha},$$

where *UC* is the absolute number of poor people excluded from the programme (under-coverage), *L* is the absolute number of non-poor covered by the programme (leakage), and *N* is the population size, i.e., the total number of people in the Geographic grouping.

Unlike in our previous analysis, we represent the under-coverage and leakage measures as absolute values, not ratios. If we had used relative values (ratios), the exclusion of one non-poor household might provide a gain equivalent to the inclusion of more than one poor household, independently of the preference for minimizing either under-coverage or leakage. For this reason, we adopt an absolute value approach so that the exclusion of a non-poor household is equivalent to the inclusion of a poor household.

Figure 3 displays the disutility index of the targeting performance as a function of the weight, α, for all four target groups. If we attach a high weight to the leakage rate and, consequently, a low weight to the under-coverage rate, (i.e., α tends to zero), the ICV25 method yields the best combination of efficiency and efficacy (or the lowest disutility) for both poverty and extreme poverty (the ICV25 line is the lowest in this range).

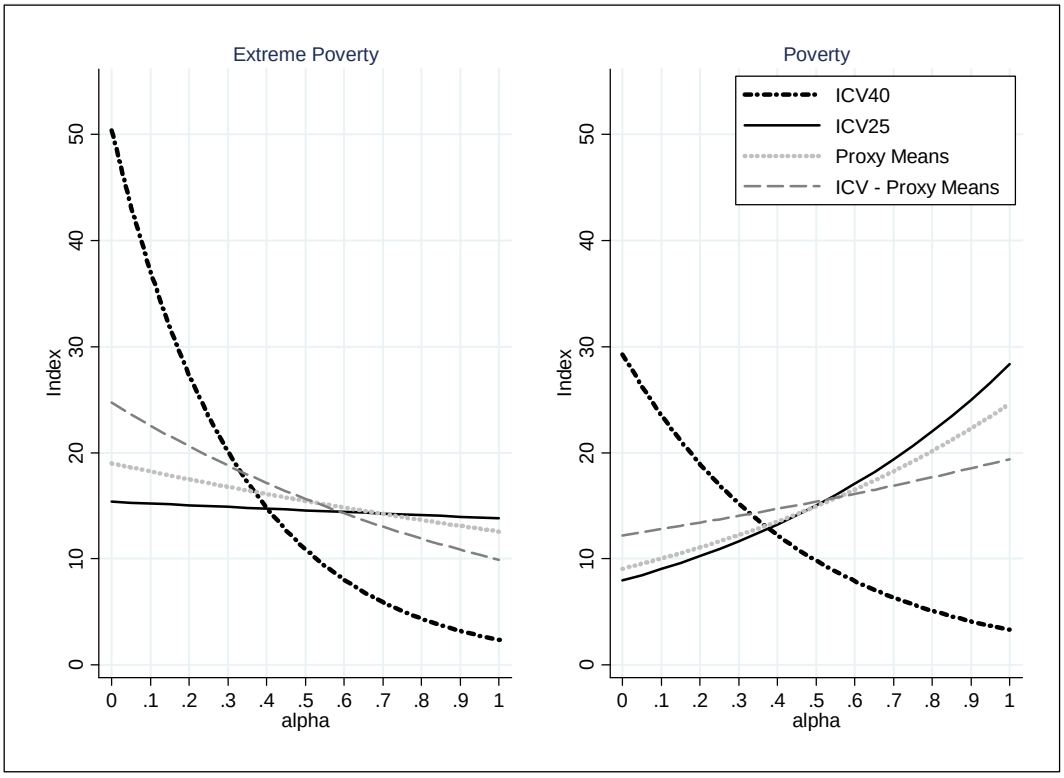
By contrast, if we increase the weight of the under-coverage rate—so that α is higher than 0.4—the ICV40 group becomes the best targeting approach. The two panels show that the ICV40 line is the lowest in this range.

It is worth noting that neither the proxy means approach nor the combined ICV-PM approach achieves the lowest disutility for any value of α.

Therefore, Paraguayan policy makers have basically two options: 1) attribute more importance to the efficiency of the cash transfer programme and thus adopt the targeting mechanism that uses a score of ICV less than 25; or 2) attribute more importance to the efficacy of the programme and thus adopt the targeting mechanism that uses a score of ICV less than 40. As previously noted, the latter is already the current situation in *Tekoporã*.

FIGURE 3

Disutility Index of Targeting Performance by Target Group



Note: alpha = under-coverage weight.

Source: Own calculations based on EPH 2005.

7 CONCLUSION

Tekoporã, Paraguay's CCT programme, is currently being scaled up and its targeting mechanism re-evaluated. However, the simulations presented in this Evaluation Note suggest that changing the targeting mechanism from the composite Quality of Life Index (ICV) to a proxy-means test for income is not likely to imply any gains in either the efficiency or the efficacy of the programme.

Although the general ICV approach does not intend to predict household income per capita—in contrast to the proxy-means test—the ICV mechanism that uses a score of less than 25 to identify the poor is the most efficient in excluding the non-poor from the programme.

In theory, the proxy-means test should be better than the ICV in identifying households that are income poor. But, in fact, the ICV is better able to distinguish the extremely poor. This result might be due to the fact that the parameters of the proxy-means test are usually

estimated based on using the entire income distribution of a population. Therefore, it might not accurately fit the lower tail of the distribution.

The Paraguay programme has already geographically targeted the poorest districts in the country. Thus, efficiency might not be as important as efficacy in implementing the current programme within these districts. However, if no targeting method were used at all *within* these districts, the programme would have high costs.

If the intention of policy makers is to improve the efficacy of the programme in reaching the poor, then maintaining the current targeting mechanism that uses a cut-off point of ICV less than 40 appears to be the best option. Our results show that this criterion provides a higher marginal impact on the headcount ratio for overall poverty**.** However, if the intention is to alleviate extreme poverty, the other criteria—mainly the ICV less than 25—would have a more efficient impact.

Since, according to the leakage function, the gain in coverage of the poor is higher than the loss in leakage of benefits to the non-poor above the cut-off point of 25 for the ICV, the decision between ICV less than 25 and ICV less than 40 will depend on the available budget for the programme.[7] For ICV25 the cost would be US$ 7.5 million and for ICV40 it would be US$ 18 million. Another consideration, in addition to the total cost, is that increasing the threshold from 25 to 40 might provide a greater gain in coverage of the poor without a substantial increase in leakage of benefits to the non-poor.

A final note of caution is in order. The programme had, indeed, initially adopted the ICV25 method but the application of this low cut-off threshold led in the pilot phase to the result that the number of beneficiaries selected was below that estimated to be extremely poor by the IPG-based poverty map. Not surprisingly, there was also a general perception in the five pilot districts that many extremely poor households were being left out of the programme. This triggered numerous complaints to the selection committees. As a result, the managers of the programme increased the threshold to ICV less than 40. Thus, to revert now to the ICV25 threshold could lead to similar reactions and weaken support for the programme at the local level.

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NOTES

1. Note that the proxy-means test being proposed is limited to the variables contained in the current questionnaire. But a proxy means methodology, to be effective, should be based on the newest household survey data available and entail designing a new questionnaire.

2. This provides us with 1,327 individual observations.

3. This figure is quite remarkable since the programme is going to take place in only 15 per cent of all districts (namely, 35 out of 224 districts).

4. The poverty line is equal to Gs. 250,074 for urban areas and to Gs. 151,315 for rural areas; the extreme poverty line is equal to Gs. 143,152 for urban areas and to Gs. 98,517 for rural areas.

5. The Kakwani's index is given by the expression:

$$k_i^* = \frac{-\theta_i\left(\eta_{\theta,i} - \varepsilon_{\theta,i}\right)/\theta \cdot \mu_i}{-\left(\eta_\theta - \varepsilon_\theta\right)/\mu},$$

where θ is the poverty index for the whole population, θ_i is the poverty index for the group *i*, μ is the mean income for the whole population, μ_i is the mean income of the group *i*, η_θ is the elasticity of total poverty with respect to the mean income of the whole population, $\eta_{\theta,i}$ is the poverty elasticity of group *i* with respect to the mean income of this group, ε_θ is the elasticity of total poverty with respect to the income inequality of the whole population, and $\varepsilon_{\theta,i}$ is the poverty elasticity of group i with respect to the income inequality within this group. The poverty elasticities were derived from the method provided by Bourguignon (2002).

6. After ranking the sample by the proxy means score, the first observation is actually not poor. This is why the proxy means curve (the figure on the left) does not start from the origin.

7. We do not consider administrative costs in these statistics. These estimates are based on the value of the transfers that should go to each target group. However, the different targeting options would imply similar administrative costs.

International Poverty Centre
SBS – Ed. BNDES, 10º andar
70076 900 Brasilia DF
Brazil

povertycentre@undp-povertycentre.org
www.undp-povertycentre.org
Telephone +55 61 2105 5000
Fax +55 61 2105 5001