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Working Paper Series
Number 97.02

April 1997

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Abstract

This paper validates a Rapid Rural Appraisal wealth ranking technique using standard socioeconomic indicators from a household survey in rural Bangladesh. Key informants stratified 1637 households into three wealth groups according to a number of broad criteria and a questionnaire was subsequently administered to each household. Health, demographic and economic variables derived from the questionnaire were found to differ significantly according to wealth group. Analysis supports the construct validity and the empirical validity of the wealth ranking technique as a means of stratifying households by socioeconomic status. The requirements for external validity, as assessed through the comparison of findings with similar studies elsewhere in South Asia, are also satisfied.

Acknowledgments

The authors are indebted to the BRAC Research and Evaluation Division for their able work in collecting, entering and cleaning the data on which this paper is based. The logistic and editorial support of Mushtaque Chowdhury and Alison Norris, as well as the considered comments from two anonymous reviewers are also gratefully acknowledged.

1. Introduction

Rapid Assessment Procedures (RAP), Rapid Rural Appraisal (RRA) and related approaches employ a range of mainly qualitative research tools to assess the practical needs, opinions, attitudes, and behavior of development clients and practitioners within the complex context of their personal, organizational and social realities (Scrimshaw and Gleason 1992). Among these tools are traditional anthropological methods such as formal and informal interviews, observations and participant observation, as well as newer participatory methods including focus group discussions (FGD), mapping, and sorting techniques. Wealth ranking is perhaps the most widely employed example of the latter group of methods in which a small number of knowledgeable community members categorize village households into wealth ranks using a set of pre-established criteria (Afonja, 1992). Since its introduction in the 1980's, RRA wealth ranking has become an increasingly accepted means of assessing relative socio-economic status in the context of applied research projects and development programs (Chambers, 1994). Despite its popularity, however, rapid wealth ranking techniques are perceived to be "rough approximates" of socio-economic status, while the formal household questionnaire continues to be regarded as the more valid and reliable method of collecting socio-economic information in both academic and programmatic settings.

This paper challenges this prevailing view by comparing the wealth ranking technique with socio-economic indicators collected by means of a formal household questionnaire survey. Data are drawn from a study in rural Bangladesh which employed both methods of measuring household socio-economic status (Evans et al., 1996). Before considering these findings, however, we discuss briefly the strengths and weaknesses of standard approaches of assessing household wealth for the purposes of stratification.

2. Standard Approaches to Socio-economic Stratification

Categorization of households according to levels of wealth is a useful tool in the study and practice of development. For example, many poverty alleviation programs seek to identify the neediest households to ensure maximum program coverage and target the allocation of limited resources. Defining the relevant parameters of poverty in a particular region also permits the development of focused and effective measures to help alleviate indigence. In a like fashion, the capacity to assess changes in the composition of wealth groups over time benefits program evaluation, providing a measure of program success, and enabling the fine-tuning of existing programs, or the development of new ones.

The traditional approach to the measurement of household wealth has been through standardized household interview surveys. Based on a notion of what factors should be considered in the assessment of household wealth, questions are designed to elicit their relative levels in quantitative fashion. Typically a

household wealth assessment might include economic variables relating to assets such as land ownership, expenditure and income. Household food consumption, nutritional indices, educational attainment and levels of health may also be incorporated in a more broadly defined measure of household wealth. It is widely appreciated, however, that more comprehensive definitions of household wealth present significant measurement challenges. Not surprisingly, therefore, there is a tendency to rely on variables that appear to avail themselves to quantification, and to exclude those that don't. However, the ease with which responses are obtained for some of these variables may be offset by their quantitative unreliability due to the well-documented biases related to recall, season, sensitive information, expectations of the interviewee, (mis)information on household members not interviewed and the dynamics between the interviewer and the respondent (Lipton, 1983; Glewwe and Van der Gaag, 1990). Similarly, the complex context of household wealth, and its regional and ethnic variation may be overlooked and/or inadequately represented by a fixed set of reliably quantified variables. Aggregating across dimensions of household wealth (e. g., economic and nutritional), identifying relative weights and finally deriving an overall index introduces further complexity and threatens both the reliability and validity of the final household wealth assessment. Even when these multiple and challenging issues are adequately addressed, the standardized product tends to be time consuming and expensive. Reflecting on these myriad biases and measurement challenges, Chambers writes "Again and again, over many years and in many places, the experience has been that large-scale surveys with long questionnaires tended to be drawn out, tedious, a headache to administer, a nightmare to process and write up, inaccurate and unreliable in data obtained, leading to reports, if any, that were long, late, boring, misleading, difficult to use, and anyway ignored" (Chambers, 1994a: 956).

3. RRA as a Response

In the late 1970's, widespread disillusion with the formal survey questionnaire prompted the development of Rapid Rural Appraisal (RRA) and other action-oriented approaches to data collection. Pioneered by Robert Chambers, and the Institute for Development Studies at Sussex, RRA methods have since achieved popular acceptance as a relevant, efficient and cost-effective alternative to the formal survey. Mainly utilized as a didactic tool in development planning and evaluation, RRA has also given rise to an experiential descendent, Participatory Rural Appraisal (PRA), which emphasizes local control over the research process.

RRA wealth ranking has been heralded as a quick and effective means of assessing socio-economic status, perhaps *more* detailed and intuitive than the survey itself (Chambers, 1994). However, its action-oriented proponents have been slow to establish its scientific credibility. Validation studies are few in

number, and have not, for the most part, reached established academic journals. Indeed, program and policy-makers have tended to be skeptical of qualitative forms of measurement such as participatory ranking, or scoring, dismissing them as less "scientific", less valid, and therefore less applicable for cross-study comparisons than quantitative measures (Rajaratnam, 1992).

To validate the RRA wealth ranking method, this paper compares ranking results to a number of standard socio-economic indicators derived by questionnaire survey. To respond to the charge that wealth ranking does not lend itself to cross-regional comparison, the internal consistency of the method is also assessed through the analysis of inter-regional differences.

Validity denotes the extent to which a measurement tool is measuring what it was designed to measure. Three basic kinds of validity can be distinguished: content, empirical, and construct (Nachimas and Nachimas, 1992). Content validity involves both face validity, a subjective assessment of the accuracy of the measure, and sampling validity, a theoretical construct which concerns whether the sample population is adequately measured by the instrument. Empirical validity, which assesses the relation between the measuring instrument and the measurement outcome, is commonly evaluated by tests of predictive validity. A correlation or validity coefficient is computed based on the relations between the results of a given measurement and an external criterion. Lastly, construct validity involves testing whether the instrument is linked to the theoretical basis for the research. Tied to the concept of validity is that of generalizability, also known as external validity, which concerns the extent to which the research can be applied to larger populations (Nachimas and Nachimas, 1992).

4. Methods

All data are obtained from the study entitled *Barriers to Participation in BRAC RDP* (Evans et al. 1996). BRAC is an indigenous non-governmental organization involved in promoting the welfare and development of the rural poor. It was established in 1972 in response to the mass migration and resettlement of refugees in northeastern Bangladesh following the country's war of liberation. BRAC is currently involved in rural development activities in over 20,000 villages nationwide. The largest of BRAC's initiatives is its integrated Rural Development Programme (RDP). Among the components of this multi-sectoral program are institution building, functional education, savings and group trust funds, credit disbursement, training in income and employment generation activities, legal literacy, and non-formal primary education. The purpose of the *Barriers* study, was to determine the existence and characteristics of a group of impoverished households who were eligible, yet not participating in RDP.

In this study, each of the 55 villages sampled were surveyed by 'para', an administrative sub-division of the village. Following extensive training in wealth ranking, interviewers were grouped into five teams each with a supervisor. In each para, the team responsible assembled a group of three to five key informants. No particular criteria were used in the selection of key informants apart from the obvious considerations of availability and interest. Each group of key informants was asked to enumerate all the households in the para by the name of the household head and whether or not the household had a BRAC RDP member. Deliberate efforts were made to probe about the existence of female-headed or widowed households, and households where the household head had either died, disappeared, or was unable to work due to sickness. Following household enumeration, an RRA approach to wealth ranking was employed using wealth criteria and categories derived from a previous study (BRAC, 1995). Key informants were asked to assign each household into one of three wealth groups based on the criteria presented in Table 1. To ensure that key informants fully understood the criteria for classification, they were asked to describe the attributes of each wealth group to the interviewers. In addition, large cards with the wealth rank criteria written in Bengali were placed in front of the informants as a continuous reference. After the initial ranking, the names of households classified into each of the three wealth groups were reviewed to ensure that key informants agreed on their assigned rank. In cases of divergent opinion, a rank was not assigned until consensus was reached.

Table 1. Characteristics of Wealth Groups

Wealth Group 1	Wealth Group 2	Wealth Group 3
• generally food secure; any shortage is mild and temporary • many household assets, some luxuries • no members doing "food-for-work" • large land owner (>0.05 hectares), or if no land, has a good business or profession	• experience periodic/ seasonal food insecurity • few household assets, only necessities • sell more than 100 days labor/ year • work force in household is healthy and commands a good daily wage • little land (<0.05 hectares) or landless	• chronic food insecurity • very few assets, lacking basic necessities • sell more that 100 days of labor per year, participate in "food-for-work" • adult workforce weak due to death absenteeism, or chronic illness • household workforce is mainly comprised of children, women and the elderly who command a low daily wage • little land (<0.05 hectares) or landless

Following the census and wealth ranking, a random sample of 30 households were selected for questionnaire interview according to whether or not they were members of BRAC RDP, or whether they were eligible for membership. Eligible households must possess less than 0.5 acres of land, and sell more than 100 days of labor a year. The questionnaire consisted of five main parts: 1) a household census, 2)

health profile 3) crisis screen 4) socio-economic assessment, and 5) information on BRAC membership. Respondents were most often spouses of the head of household or in some cases the head of household. The questions were pretested during the interviewer training process to ensure they were easily understood. Subsequent to the interview, quality checks of the original questionnaires were performed by returning to the homes of the respondents and repeating selected questions.

For the purposes of this paper, we wish to examine the validity of the wealth rank technique as a means of assessing relative socio-economic status. In particular we wish to explore the construct validity of the method, which involves establishing whether the instrument is empirically related to the basis of the research, or more specifically, whether the technique supports the proposition that a household's characteristics differ significantly according to its wealth rank. To test the empirical validity of the wealth ranking method, one way analysis of variance is used to determine the statistical significance of the relationship between the categorical independent variable, wealth rank, and a selection of socio-economic variables collected by means of the household questionnaire (see Table 2.). It should be emphasized that while we use socio-economic indicators derived from the survey questionnaire as a criterion to assess the validity of the wealth ranking approach, this does not imply that we consider them gold standards of socio-economic status. Rather we use them in the absence of better criteria, and to illustrate how the wealth ranking method successfully captures classic dimensions of socio-economic status of concern in the academic literature.

Table 2. Variable Definitions

HEALTH	
CHRONILL	Total number of individuals with symptoms lasting more than six months in household divided by household size.
MORBID	Total number of individuals with self-reported illness divided by household size.
ASSISTNCE	Total number of individuals requiring assistance divided by household size.
HHIMPAIR	Total number of individuals with chronic impairments in household divided by household size.
WKDAYSILL	Total number of individuals with symptoms causing work loss divided by household size.
DEMOGRAPHIC	
HHSIZE	Household size expressed as the total number of members present in the household
DEPEND	The dependency ratio expressed as the total number of dependents in the household (<16, >59) divided by the number of adults (>15, <60).
PROPCHED	Number of school-aged children(ages 6-15 years) in household who are attending school divided by all children of school-age in the household. In cases where household have no children, the group mean was applied to differentiate them from households with many uneducated children.
MALEDSC	Score which indicates the average years of formal education received by male adults (>16 years of age) present in the household or absent for less than 3 years.
FEMEDSC	Score which indicates the average years of formal education received by female adults (>16 years of age) present in the household or absent for less than 3 years.
SOCIO-ECONOMIC	
FDEXCU	Household expenditure on food in last week expressed per consumption unit.
ASSETS	The market value of assets owned by household expressed as a percentage of the highest net value of assets recorded in the sample.
HOUSE	The monetary value of materials used for constructing the floor, roof and walls of the main household dwelling expressed as a percentage of the highest net value of housing materials recorded in the sample.
INCOME	Total household income from all sources in the last month.
HHCRISIS	Index based on the occurrence/ non-occurrence of five crisis events (no food in past 48 hours, death of household worker, periods of unemployment, dwelling damage beyond repair, breakup in family resulting in economic hardship). A higher index score represents a more crisis-prone household.
LANDSC	Scale from 1-5 which indicates the relative landholding status of the household (1= landless, 2= 0.001 to 0.01 hectares; 3= 0.011 to 0.05 hectares ; 4= 0.051 to 0.1 hectares; 5= 0.11+ hectares).

5. Results

As described above, a group of key informants from each para assigned wealth ranks based on pre-determined criteria. While this rapid assessment of relative household wealth was found to be reliable in pre-testing, we wished to ascertain its validity against socio-economic indicators collected by survey methods. Using analysis of variance, we compared the three wealth groups according to a variety of health, demographic and socio-economic indicators from the survey questionnaire which were considered pertinent to the assessment of overall socio-economic status. Variable definitions are provided in Table 2.

As Table 3 illustrates, wealth rank stratifies the sample across virtually every variable considered. For three of the six household health variables, strongly significant inter-group differences are detected (propill, morbid, assistnce: $p<0.001$). Significant differences between the wealthy group (Group 1), and poor and very poor households (Groups 2 and 3), are evident for two variables (hhimpair, wkdaysill), however, no distinction is apparent between Groups 2 and 3. In general, however, it appears that wealthier households tend to be healthier. For example, Group 1 households have fewer members who suffer from acute or chronic illness, or impairment requiring assistance. Such households also have fewer members who miss days of work due to illness. Similarly, Group 2 households appear to enjoy better health status than Group 3 households.

Table 3. Household Characteristics by Wealth Group

	Mean Values by Wealth Group			**ANOVA**		**Group Comparisons**		
	1 n=275	**2 n=513**	**3 n=849**	**F ratio**	**sig**	**1 vs 2**	**1 vs 3**	**2 vs 3**
HEALTH								
propill	18.1	22.2	25.5	10.8	***	+	+	+
chronill	0.19	0.23	0.25	6.0	**		+	
morbid	0.24	0.30	0.34	9.1	***	+	+	+
assistnce	0.09	0.05	0.03	20.2	***	+	+	+
hhimpair	0.33	0.44	0.47	11.0	***	+	+	
wkdaysill	0.17	0.23	0.26	12.3	***	+	+	

Table 3. Household Characteristics by Wealth Group (continued)

DEMOGRAPHIC								
hhsize	6.8	5.4	4.7	95.3	***	+	+	+
depend	1.06	1.09	1.01	1.7				
propched	70	62	47	32.8	***	+	+	+
maledsc	4.5	2.2	0.9	155.3	***	+	+	+
femedsc	2.4	0.9	0.4	125.3	***	+	+	+
SOCIO-ECONOMIC								
fdexcu	23	13	8	114.4	***	+	+	+
assets	40	25	13	433.6	***	+	+	+
house	19	9	5	116.8	***	+	+	+
income	5048	3098	1745	48.4	***	+	+	+
hhcrisis	1.2	2.0	2.6	130.8	***	+	+	+
land	4.3	2.8	1.7	495.6	***	+	+	+
significance levels	*<.05		**<.01		***<.001			

Strongly significant group differences are also evident for four of the five demographic variables considered (hhsize, propched, maledsc, femedsc: $p<0.001$). Wealthy households (Group 1) tend to be significantly larger in size, and have higher proportions of men, women, and children who have received formal education compared to poorer households (Groups 2 and 3). In a similar fashion, highly significant differences are observed between poor and very poor households (Groups 2 vs. 3). No group differences in the dependency ratio of households are detected.

All of the more traditional socio-economic variables considered vary significantly between wealth rank groups. Household food expenditure, assets, income, value of housing materials, and land ownership decrease dramatically with increasing poverty ($p<0.001$). Conversely, greater poverty is directly related to the magnitude and extent of crises experienced by a household ($p<0.001$).

The comparison of mean socio-economic indicators provides strong evidence of the empirical validity of the classification of wealth provided by informants. However, it is also interesting to consider the dispersion of these variables by wealth rank. It may be that there are a large number of households for which the wealth ranking provided by informants is inconsistent with quantitative rankings of specific socio-economic indicators. The distribution of asset holdings by wealth rank reveals as expected that the large majority of poor households (Group 3) possess few assets (Figure 1). By contrast, a greater number of wealthy households (Group 1), report "high" asset holdings than poorer households (Groups 2 and 3). It

is interesting to note, however, that middle and low asset holdings are also reported by the wealthy group which suggests that other criteria of wealth may be important in distinguishing this group. Figure 2 considers wealth rank by landholding. As anticipated, the large majority of poor households are landless, whereas the bulk of wealthy households possess more than 0.5 hectares.

Figure 1: Assets Score by Wealth Group

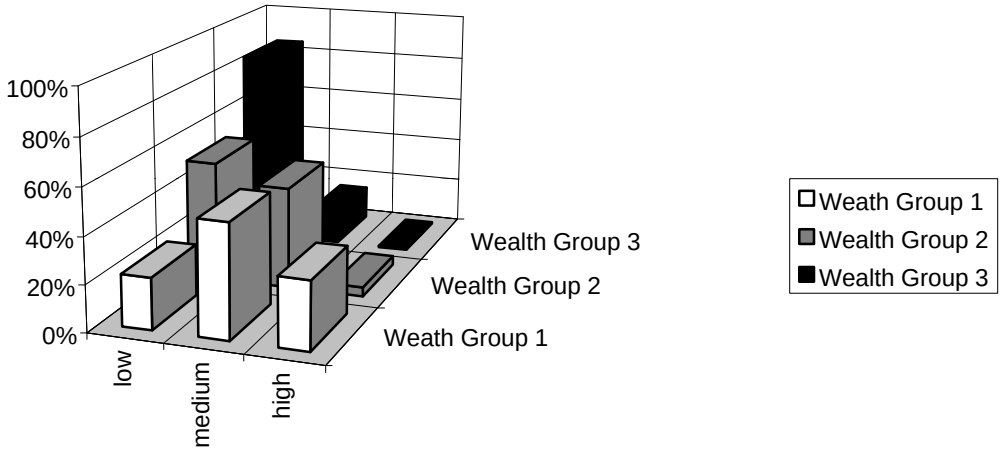
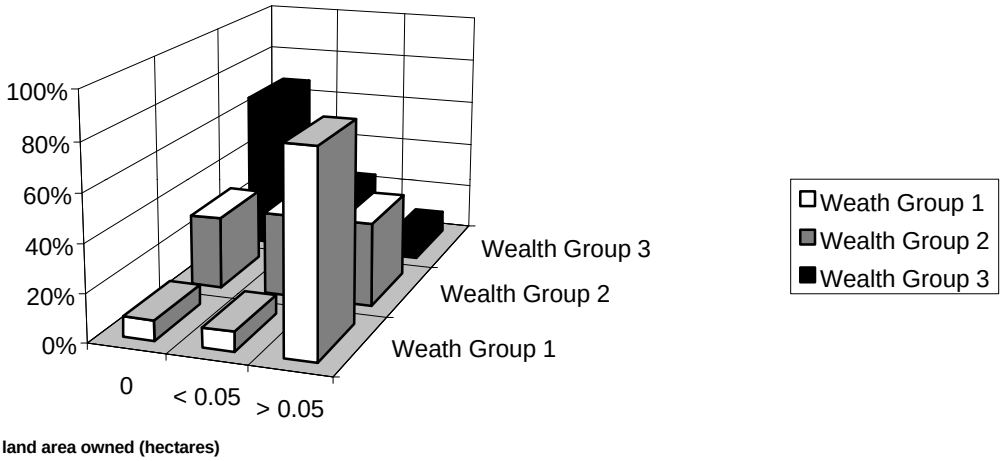


Figure 2: Land Ownership by Wealth Group



Finally, to assess the extent to which the wealth ranking method is comparable and generalizable across regions, we evaluate regional differences in mean asset and land ownership scores by wealth group. As Figures 3 and 4 reveal., the degree of consistency across regions is quite remarkable.

Figure 3: Assets Score by Region

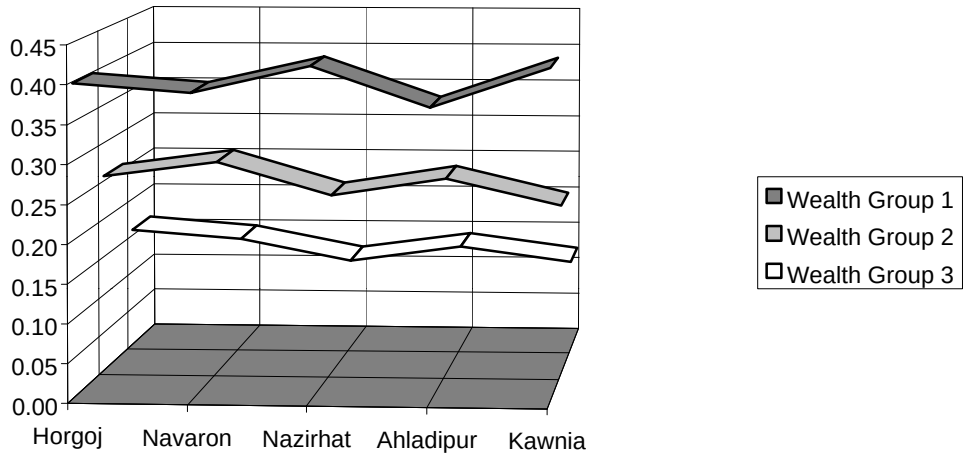
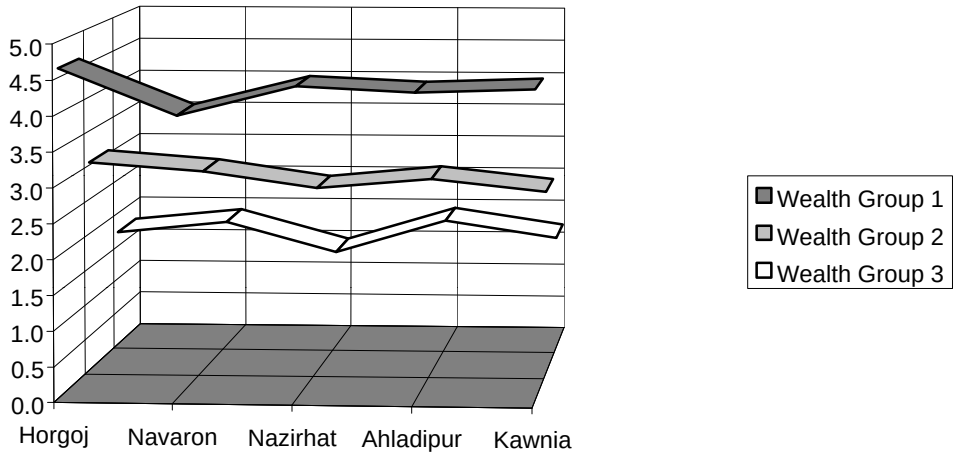


Figure 4: Land Ownership Scale by Region



6. Discussion

Observed inter-wealth group differences across health, demographic, and socio-economic measures of household well-being are consistent with our hypotheses and support the construct validity of the wealth ranking technique. The statistical significance of these inter-wealth group differences meets the requirement of empirical validity (Table 3). An assessment of external validity is more difficult due to the paucity of comparable population-level data. Of note here is a similar study undertaken in India that also concluded that household wealth ranking corresponds to more formal survey techniques in assessing socio-

economic status (Rajaratnam, 1992). A further indication of external validity is obtained by comparing the socio-economic stratification derived from this study with results from the "Analysis of Poverty Trends Project" of the Bangladesh Institute for Development Studies (BIDS) (Rahman et al. 1992) (Table 4.). The BIDS study calculates the proportion of households falling into three wealth groups according to a number of poverty criteria. When one compares the distribution of households derived by means of the wealth ranking method used in this paper with BIDS figures for income, the RRA wealth ranking indicates a comparatively larger proportion of households in extreme poverty. Recognizing the multi-dimensional character of poverty, however, the BIDS study assesses three additional measures: the state of household structures; access to health facilities; and the extent to which households are crisis-prone. When these dimensions of poverty are taken into account, the proportion of moderately to extremely impoverished households is substantially increased, and concur to a larger degree with results obtained using the wealth ranking technique.

Table 4. Comparing RRA Wealth Ranking and BIDS Poverty Assessments in Rural Bangladesh

	Wealth Categories		
Method of Poverty Assessment	Not impoverished	Moderate poverty	Extreme poverty
RRA Wealth Ranking	24%	27%	49%
BIDS 1992			
• Income	45%	30%	25%
• Condition of hhold dwelling	40%	18%	42%
• No health care access	12%	88%	
• Prone to crisis	24%	33%	93%

The analysis also demonstrates the striking ability of local informants to accurately differentiate households according to an array of culturally appropriate criteria of wealth (Table 1). However, while these broad criteria provide a guide for the categorization of household wealth, there is no basis for determining how key informants employed these criteria when assigning household ranks. For example, we do not know the extent to which one criterion might have predominated over others in the process of

decision-making, nor are we aware whether other unspecified criteria were implicitly considered. For these reasons, it is difficult to assess the content validity of the wealth ranking technique. However, there may be a downside in specifying the parameters of socio-economic status in advance, as in the survey questionnaire, by foregoing the opportunity to exploit local knowledge of inter-household differences *and/or* omitting key variables which may be salient in assessing relative wealth. Furthermore, even with culturally sensitive formal questionnaires, respondents are often *reticent* to disclose specific details regarding their socio-economic status (i.e. the extent of household savings, or migrant remittances received) or may be predisposed to providing "desired" answers in order to please the interviewer or to satisfy perceived self-interest (Guijit, 1992).

By employing broadly yet locally specified criteria to describe each wealth rank, the RRA method is able to adapt to specific community or cultural circumstances. Unlike standard rigidly-defined socio-economic indicators which are often insensitive to local conditions, the wealth ranking approach can combine the multiple dimensions of wealth, in a culturally-appropriate manner. Based on the assumption that "insiders" know more about the criteria of wealth and/or poverty relevant to their community than do "outsiders", the wealth ranking method sidesteps the perennial academic problem of determining what indicators of socio-economic status are the most discriminating and appropriate.

A limitation of the wealth ranking approach, is the inability to identify or quantify differences in specific dimensions of household wealth. However, if one's purpose is to broadly assess the socio-economic status of populations or households, the wealth ranking approach can accomplish this for a fraction of the time and financial costs of a socio-economic survey. Indeed, as a quick and inexpensive tool for socio-economic stratification, the wealth ranking approach easily meets Chambers' criteria of "optimal ignorance" and "appropriate imprecision" (Chambers 1994).

While a strength of the wealth ranking method is its ability to adapt to local circumstance, it also charged that this sensitivity limits meaningful cross-regional comparison. However, when we assessed regional differences in selected socio-economic indicators by wealth rank, we observed remarkable inter-regional consistency. In short, in the context of rural Bangladesh, there appears to be some basis for cross-regional comparison if standard criteria for wealth group classification are employed. This finding, however, needs to be tested in other cultural/ national settings.

Perhaps the most useful and appropriate application of the wealth ranking method is to track household socio-economic status over time. In a given setting, the ranking method may be used to monitor the individual fortunes of households and/or assess levels of population wealth at several points in time as a means of evaluating program success or general socio-economic change.

In conclusion, although there is sufficient evidence to suggest the wealth ranking method is a valid means of stratifying rural households according to socio-economic status, further analysis is needed to assess its reliability and practicality. For example, the sensitivity of the method to the number, age, and gender of key informants or the attributes of facilitators are factors which may influence reliability. While this study did not employ criteria for the selection of key informants, further work would usefully explore the influence (if any) of group composition on ranking results (Adams et al., 1993). The quality of facilitation is another important area of inquiry. To what extent can the arts of rapport building, listening and critical self-awareness fundamental to the method be taught? Finally, given limits to the extent of group knowledge about the individual fortunes of particular households, and the need to sustain participation throughout the exercise, specific efforts are needed to determine the maximum number of households that a group of informants can reasonable classify. However, in further efforts to prove and improve the scientific worthiness of the wealth ranking method, it is important to heed Chamber's admonition that the approach not be "standardized or routinized". The great strength of the wealth ranking method lies in its sensitivity to local circumstance and its emphasis on local expertise (Chambers, 1994).

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