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# **Capturing Intra-Household Distribution and Poverty Incidence: A Study on Bangladesh**

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## **I. Introduction**

The Bureau of Economic Research (BER) at Dhaka University has been implementing a research project titled “Capturing Intrahousehold Distribution and Poverty Incidence: A Study on Bangladesh” with financial support of the International Development Research Centre (IDRC), Ottawa. The project was launched on 15 March 2004 and was due to be completed by 8 March 2006. To facilitate the process of finalization of project outputs, upon a request for an extension, the project completion date was extended by six months. The first Technical Progress Report on the Project was submitted in September 2004 followed by the second Technical Progress Report in July 2005. While the third Technical Progress Report was submitted in December 2005, this is the final Technical Report on the project.

This Report is organised as follows: after this brief introduction in Section I, Section II summarises the main project objective and activities undertaken to meet the objectives; Section III briefly describes the project outputs; Section IV gives the dissemination activities and finally Section V concludes.

## **II. The Project Objective and Activities Undertaken**

The main objective of the research project has been to improve the estimation and the analysis of poverty in Bangladesh by taking into account intra-household resource allocation behaviour. To attain this objective, the project designed and implemented a primary household level survey, covering a total of 1039 households. For capturing the intra-household resource allocation behaviour the survey integrated the anthropological approach of observing agents closely with the traditional survey methods of obtaining data based on detailed questionnaires and checklists. Like any other household surveys, the BER survey collected data on a wide variety of subjects, including household characteristics, demography, educational attainment and economic activities of household members, and consumption and expenditures on food and non-food items. However, there were several interesting features of this survey.

- ❖ First, unlike the most widely used technique of obtaining the information on consumption through the ‘recall method’, the BER survey, by using specially trained

enumerators, recorded the actual individual specific dietary intake by directly weighing the consumption of food items by household members. To reduce the measurement errors associated with recording of food intake, and to minimize the problem of distorted food intake behaviour because of the presence of the enumerators, data on dietary intake for each household was collected for 3 days during the survey period. The food preparation techniques were also keenly observed and all the ingredients used during cooking were recorded to work out the food nutrients available at the household level. Apart from measuring the food consumption, the survey also considered the amount of food sent outside home and plate wastes in order to not overestimate the food intake.

- ❖ Another important feature of the survey was to record the time spent by individual household members on different types of activities. The information on time allocation was gathered to assess the nature of physical activities undertaken by each member within household, which then could be used to determine individuals' energy requirements. In order to avoid the problem of atypical time spending pattern, a 24-hour time allocation chart on individual members was filled in for 3 days. A large number of activities were listed in the chart so that the time spent on different level of physical activity-intensive jobs could be identified more accurately.
  
- ❖ Yet another interesting dimension of the survey was to gather very detailed information on women within the households in order to assess their relative economic status and bargaining power. All data corresponding to individual women's off-home income-earning works, within household income-earning activities, ability to make decisions on a wide variety of matters, assets brought at marriage, other unearned income, being subject to domestic violence, etc. were recorded by undertaking a quasi-participatory approach to information gathering. In a conservative society like Bangladesh, the difficulties associated with collection of information on intra-household issues cannot be overstated. Taking this into consideration, the BER survey employed specially trained female enumerators, most of whom hailed from the same region where the survey was undertaken, with experiences of undertaking participatory research.

The survey generated a very rich database, which in itself has turned out to be an important project output. Based on this database, it has been possible to undertake rigorous analysis of the issues pertaining to intra-household distribution and discrimination. The research component of the project has included review of the relevant literature, descriptive analysis of the data, econometric estimation and simulations using a computable general equilibrium model.

### **III. Project Outputs**

As has already been mentioned above, the database itself has become an important project output. There has already been a lot of interest amongst researchers from different countries for using this data. It is expected that this database will trigger some interesting research works in the near future.

When the original proposal was submitted, it was envisaged that four technical papers would be prepared as project outputs. Partly because of the research team's interest and partly because of the richness of the data provoking more intense analysis, 12 technical papers have now been prepared. The following summarizes the technical papers:

- In the first technical paper by Selim Raihan, Jami Hussain, and Bazlul Khonkder, indicators and measurement issues of poverty in Bangladesh have been reviewed. The authors discuss various household surveys as well as a number of income poverty estimates of Bangladesh undertaken during the last three decades. The review unveils the fact that the concepts and indicators employed for poverty measurement largely concentrate on the aggregate household level without giving attention to the importance of intra-household resource allocation.
- In the second technical paper, Abdur Razzaque and Sayema Bidisha, review the indicators of women empowerment and intra-household gender relations in the context of Bangladesh. They find that the relevant literature has identified women's role in decision making, involvement in actual spending, physical mobility, degree of exposure to ill-treatment by other family members, social awareness and involvement in wage employment and participation in NGO micro-credit programmes as the indicators of female

empowerment. One of the objectives of this review is to find out the general empowerment indicators that have been used by various researchers and thus can be used for gathering information for the BER survey. The review suggests that, despite some evidence of gender based discrimination and important differential effects of gender-specific resources on the intra-household spending patterns, the role of female bargaining power or empowerment in intra-household resource allocation is not well explored and hence not well established yet.

- In the next technical paper, Abdur Razzaque, Selim Raihan and Mokammel Toufique explain the methodology of the BER survey and report some broad findings as regards the basic household characteristics, education, health, income and occupation, women empowerment issues, food consumption patterns, expenditure patterns, physical activities pointing out some gender based differences in several respects. When the gather data from the survey is compared with the findings from other surveys, it is found that during the last decade food and calorie consumption have increased and the composition of food consumption basket has changed. Although urban people are found to consume more varieties, rural people tend to take more calories. More than half of the sample population is found to consume less calories than their requirements. Important disparity against female is evident in terms of calorie consumption, expenditure allocation, educational attainment as well as health status.

- Going beyond the conventional method of poverty estimation that specifies household level poverty line such as the cost of basic needs (CBN) approach, in another technical paper, Abdur Razzaque and Selim Raihan consider individual specific poverty line based on individuals' calorie requirements, which have been derived from the individual level data on health status and physical activity. In an interesting endeavor they reveal that about 70 percent of the CBN poor consume less calories than their requirements, while more than 54 percent of the CBN non-poor individuals are also 'calorie poor'. This indicates the gross inappropriateness of the CBN approach in identifying poverty at the individual level.

- How Bangladeshi households respond to demand calories with the rise in household income has been the subject matter of another technical paper by Abdur Razzaque and Mahbubur Rahman. This is an important issues since it is often assumed that policies that increase incomes also improve the nutritional status of the population, while the empirical

studies undertaken for many other countries provide no systematic relationship between income and demand for calories. Using the actual calorie intake data, unlike the most frequent use of expenditure survey data in deriving calories consumed by household members, and a variety of estimation techniques, Razzaque and Rahman unearth a strong non-linear association between the expenditure level (as a proxy for household income) and calorie demand with the estimated elasticities ranging from about 0.10 to 0.30. Even for the households that have per capita calorie intake lower than the accepted adequacy level, the elasticity declines rapidly as income rises, from which the authors call for studying the importance of non-food expenditure taking into cognizance of households' perception about nutritional status and the labour market opportunities.

- In the next technical paper Abdur Razzaque and Mokammel Toufique revisit the evidence of gender discrimination within a framework that incorporates health, physical activity and intra-household resource allocation. When the focus is on total calorie intake, the unequal calorie consumption of male and female can be explained by the disparity in their activity levels and the household is inequality averse in health outcomes of its members. These results are quite similar to those derived in an influential paper by Pitt *et al.* (1990). However, when the preference of food items is taken into consideration, adult women are found to be the most deprived group in terms of their share in such preferred items as fish, meat, milk, eggs, and sugar. Although female bargaining power can alter intra-household distributional patterns, it is not necessarily the female who are benefited from the relatively better bargaining position.

- The determinants of domestic violence against women and its implications on the resources allocated to women are the concerns of Mokammel Toufique and Abdur Razzaque in another technical paper. The authors find that education (self and husband's) and household's economic status reduce the risk of violence while female participation in income earning or NGO activities do not produce similar impacts. Quite interestingly, the authors reveal that women subject to domestic violence, although do not receive significantly different calories, they do receive significantly lower calories from the preferred food items, and also their food and non food expenses are significantly lower when compared to women reporting no incidence of domestic violence.

- The common preference model of household behavior is tested in another technical paper by Abdur Razzaque, Ahsanuzzaman and Mahbubur Rahman. Using husband's and wife's resources brought at marriage and male and female incomes as the two proxies for intra-household bargaining power the authors find evidence against the unitary framework of modeling household behavior. The testing of the unitary model is also extended beyond the conventional budget share approach, as the authors also consider the individual calorie adequacy ratio and the proportion of individual calorie generated from the preferred food items. Important impacts of women empowerment is also found in the case of these two variables.
- In their technical paper Abdur Razzaque, Mokammel Toufique and Mahbub Alam look into the issue of allocation of household resources on addictive goods and eating outside home, the resource allocation on which have clear male bias. While male members' greater participation in the labour market can partly explain their needs for eating out, it is found that members having the scope of eating out opt for food items that are generally preferred and more expensive than those available for other household members. Since these consumption patterns are usually characterized by men, they are likely to have important implications for intra-household resource allocation. The results of the authors' empirical exercise show that although the improved female bargaining power, measures as the women share of household income, cannot always reduce the participation in those activities, it reduces the share of household resources allocated to addictive goods and eating out significantly.
- Abdur Razzaque and Musfique Khan contribute a technical paper to examine the factors affecting children's welfare in an intra-household setting. They find that a rise in household expenditure does not ensure better allocation of household resources towards children and also nor it is sufficient to ensure better status of children's food security. On the other hand, mothers' relative bargaining ability reduces the probability of children being malnourished and improves children's food security, consumption of preferred food items and non-food budget shares. With respect to calorie allocation, although girls are discriminated, they are favored in terms of the allocation of non-food expenses.
- Abdur Razzaque and Mahbubur Rahman analyze the intra-household distribution of expenditure to some specific goods consumed by some particular individuals using a demand

system framework. The results show discrimination against women as the income and price elasticities are higher for goods consumed by women compared to those consumed by males. Hence, females are likely to be more vulnerable since they are more affected by any income or price shock. In the case of child goods, however, the discrimination is found to be against boys.

- Finally, Selim Raihan and Bazlul Khondker develop a nano-simulation CGE model, to explore the effects of different policy simulations at the household-member levels. Following their simulation results, trade liberalization leads to welfare losses for most of the individuals in the household. Because of the use of intra-household information, the authors' exercise could explore into the relative gender burden of adjustment. It is found that the burden of negative impacts is to be borne more by the adult females and child members of the households.

Apart from the above mentioned technical papers, John Cockburn of University of Laval and Anyck Dauphin of University of Quebec in collaboration with Abdur Razzaque of BER have prepared a paper on "Child Poverty and Intra-household Allocation". This paper reveals that in terms of food allocation, children are discriminated within the household. Amongst the children, boys are favoured in terms of food intake relative to requirement and food expenditure, but girls are given preference over non-food expenditure.

#### **IV. Dissemination Activities and Plan**

The BER research team involved in the project is delighted to see that the project outputs have generated a lot of interest amongst academics and researchers working on poverty issues. Several rounds of discussions have already taken place on the findings from the project and given the interest in the issues we are now planning to have an extended dissemination programme.

It is to be pointed out here that, as part of the project activities, on behalf of the BER research team, Dr Razzaque, attended the Poverty and Economic Policy (PEP) workshop, which was held in Addis Ababa during 17-21 June 2006. During the Addis Ababa visit, Dr Razzaque shared the project findings with Ms Martha Melesse of IDRC who had been overseeing the



project. A large number of participants also expressed their interest in the Bangladesh project, and, as such, methodological issues and findings were also discussed with them in the sideline of the PEP workshop. Ms Martha Melesse also organized a meeting involving researchers from Africa, the UK, and Canada, where the Bangladesh project was discussed. Apart from these, in the closing Plenary Session of the PEP workshop, Dr Razzaque was invited to present a paper on ‘child poverty and intra-household inequality’, which was prepared in collaboration with Dr John Cockburn and Dr Anyck Dauphin, using the BER survey and database. This formal presentation also helped draw the attention of all the participants from many different countries attending PEP workshop, and the IDRC funded Bangladesh project was appreciated by all.

In Bangladesh, the BER research team has now held a number of small-group focused discussion sessions. In the first of such event, methodology and findings were discussed with a selected group of academics. Some important feedbacks were received and everyone attended the discussion meeting strongly recommended to undertake further dissemination activities. Discussions also took place with Dhaka-based think tanks such as, Unnayan Shamannay, and Drishti Research Centre.

The BER research team members also discussed their project with the World Bank (Dhaka Office) staff overseeing its poverty related studies. The Bank Staff showed a lot of interest in the project and its findings. Several technical papers have been given to them for their comments and opinions. The World Bank staff also highlighted the need for wide dissemination of the project findings.

### **❖ Future Activities for Dissemination**

The BER research team contacted one of the leading Dhaka-based think tanks, the Centre for Policy Dialogue (CPD), for holding a focused discussion on the project. Senior staffs of CPD have been informed about the project and they have suggested that the BER research team make a presentation of the project in front of the full house of CPD research staff. A date for presentation will be fixed soon and it is expected that the BER research team will present a number of technical papers in that event.

The BER research team has been trying to organize at least two dissemination meetings outside Dhaka. The Bangladesh Academy for Rural Development (BARD) has expressed its interest in organizing a seminar in Comilla, where it is located. The seminar is expected to be held in the last week of September. The other regional seminar will be held in Rajshahi in the first week of October.

The Bureau is to host a day-long dissemination workshop to launch the project findings formally. The modalities for this workshop are being developed. The BER expects to invite academics, researchers and policy makers in this workshop. The date for this workshop will soon be finalized, with the third week of October being a possible time for the event to take place.

Given the interest in the issue, the research team is considering publishing all the technical papers under an edited volume. Necessary English language editing and formatting works are being carried out now for this. The BER is going to approach Bangladesh's key publishers for a possible publication. Academic journal publication of several technical papers is also being attempted.

## **V. Concluding Remarks**

The IDRC supported BER project has been a very significant research initiative because of several reasons. First of all, it has generated a great interest in thinking about poverty measurement issues from a different perspective. Linking intra-household distribution with the measurement of poverty incidence has been discussed for a long time, but under this project an attempt has been made for the first time in Bangladesh. Second, the project has provided important insights about intra-household allocation of resources, which will be of great use in understanding how poverty affects gender relations within the household, the nature of resource allocation in favour of children relative to adults, and amongst children, boys vis-à-vis girls. Third, the project gave the opportunity of implementing a survey methodology by integrating the anthropological approach with the traditional questionnaire based survey method. Fourth, the project contributed enormously to poverty research capacity building in Bangladesh. Not only the researchers involved in the project benefited, but a large number of female enumerators were also trained on studying the issues related to intra-household matters. Fifth, in terms of the findings of the project, the research project has

been a huge success. Its findings have been truly thought-provoking with clear policy implications on addressing the challenges associated with the measurement of poverty incidence in Bangladesh. The dataset that has been developed under this project is likely to be a source of further studies. More importantly, the project findings are going to invite new research in similar areas.

As the project leader, I take this opportunity to thank IDRC for supporting the Bureau project. The study would not have been feasible without its support and cooperation. Thanks are also due for choosing to collaborate with a Dhaka University-based research outfit. The BER research team also appreciates the IDRC support and has very much enjoyed working for the project. We are really grateful to IDRC for making it possible for us to do such an interesting and useful research project.