Establishing large panel studies in developing countries: the importance of the 'Young Lives' pilot phase.

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Young Lives
An International Study of Childhood Poverty

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Abstract

Establishing panel studies in developing countries is difficult, owing to the absence of routine long-term surveillance systems found in developed countries. Consequently, these studies need particularly careful design to ensure that all necessary information is captured at the outset and that the data are maintained in a format suitable for longitudinal analysis. Under these circumstances, the pilot study becomes particularly important.

A pilot study for the Young Lives International Study of Childhood Poverty was carried out in South Africa during 2001 and 2002. The pilot included developing the various survey instruments, the approaches to fieldwork, a data entry system and an analysis package. Households containing 166 one-year-old children and 107 eight-year-olds were included.

The results of the pilot study are discussed in terms of the processes followed and the lessons learnt for running large panel studies in developing countries.

Introduction

Harpham et al (2003) have recently discussed the value of panel or longitudinal studies for understanding processes which have multiple determinants and outcomes that occur over long periods. One such issue is the impact of poverty on the lives of children, which is the focus of the Young Lives project, a panel study of children growing up in poverty in four developing countries[b] (Harpham, 2002). However, running panel studies in developing countries is fraught with difficulties, owing to the lack of reliable long-term surveillance systems, which are commonplace in developed countries. Consequently, panel studies in developing countries need particularly careful design to ensure that all necessary information is captured at the outset and that the data are maintained in a format suitable for longitudinal analysis. Under these circumstances, the pilot study becomes particularly important.

Prescott and Soeken (1989, p.60) stated that pilot studies "are underdiscussed, underused and underreported" and van Teijlingen and Hundley (2002) also point out that the pilot study should not merely be regarded as a feasibility study. Indeed, pilot studies have much more to tell us than merely whether the chosen research tools have face validity. The pilot will tell us about the processes required to achieve the desired results and serve to forewarn us of methods that are too cumbersome or inappropriate for the chosen study population. This paper focuses on these process issues in addition to providing insights into the type of results that can be anticipated from the much larger main study.

In order to achieve the overall study objectives of the Young Lives project, which necessitates inter-country comparisons, an additional country was selected in which to develop the survey instruments and the methodology for managing the fieldwork and data processing. Selecting a country that was not going to be directly involved in the main study, in this case, South Africa, helped to ensure that all questions and methods were generic to the overall study objectives and did not become specific to the circumstances of one country. In addition, the survey instrument, or rather the entire research 'package', was designed in a way that made it more likely to be replicable in other countries in the event that the project is expanded in future rounds.

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b   Young Lives plans to follow 2000 one-year-old children in each of Ethiopia, Peru, India and Vietnam for 15 years. Information on 1000 8-year-old children in each country will also be collected. Further details can be found at http://www.younglives.org.uk.

Methods

Selection of sites and sample size

The Young Lives project uses a purposive sampling system to establish sentinel sites containing poor children within a variety of policy and economic situations (20 sites of 100 children in each country). This aspect of the main study could not be fully replicated in the South African pilot, which was therefore conducted in two sites: one urban area, including the very poor, in informal housing, and some less poor households, in formal housing, and a very poor rural area.

In the pilot study, households with eligible one-year-old children (6-17.9 months) were identified by using local fieldworkers who went door to door to register potential participants. Eight-year-olds (7.5-8.5 years) were identified from school records and then followed up by visits at home. One hundred and sixty six one-year-old children were included and 107 eight-year-olds. These sample sizes were considered sufficient for a thorough test of the questionnaires and allowed for fieldwork to be completed within two weeks at each site.

Questionnaires

In the main Young Lives study the primary caregiver and, when the child is old enough, both the caregiver and the child, will be interviewed every three to four years. The height and weight of each child will also be measured and questionnaires covering community level data will be completed for each sentinel site at every data collection round. In addition to the index child (6-17.9 months), anthropometric and community questionnaires, 8-year-old children and their caregivers will be interviewed to give an immediate comparative picture of older children.

Every questionnaire used in the Young Lives study consists of a 'core' element and a country-specific element, which focuses on issues important for that country. The core elements of the questionnaires are shown in Boxes 1 and 2.

BOX 1 CORE 6-17.9 MONTH OLD HOUSEHOLD QUESTIONNAIRE

Section 1:	Locating information	Section 8:	Economic changes
Section 2:	Household composition	Section 9:	Socio-economic status
Section 3:	Pregnancy, delivery and breastfeeding	Section 10:	Caregiver psychosocial well-being
Section 4:	Child care	Section 11:	Social capital
Section 5:	Child health	Section 12:	Tracking details
Section 6:	Caregiver background	Section 13:	Anthropometry
Section 7:	Livelihoods and time allocation		

The aim of the questionnaires is to include key measures of the infant outcome variables of interest, namely health, nutritional status and cognitive development, and factors that are likely to affect these and the later outcome measures.

Questionnaires were developed by the research team in consultation with experts and literature from various relevant fields. Much effort was expended on selecting the most reliable questions and then refining the eventual long lists of questions to those considered essential for the task. Manuals were prepared and these described both the methods for conducting the survey and the justification for each of the questions used. It was anticipated that some questions would have to be adapted to the specific country of use. In the case of South Africa, for example, questions relating to 'caste' were excluded, as they did not apply in the selected sites, and local terms for certain foodstuffs and illnesses were introduced to clarify certain questions.

During the questionnaire design several points were considered. Data quality was regarded as being of paramount importance in such a large study therefore respondent burden, recall error and question clarity, order and sensitivity were among the data quality issues considered when designing the questionnaire. The Young Lives Study is one of breadth rather than depth and to keep the questionnaire length reasonable many compromises had to be made with regard to content.

BOX 2 CORE 7.5-8.5 YEAR OLD HOUSEHOLD QUESTIONNAIRE

Section 1: Locating information
Section 2: Household composition
Section 3: Births and deaths
Section 4: Child school
Section 5: Child health
Section 6: Caregiver background
Section 7: Livelihoods and time allocation

Section 8: Economic changes
Section 9: Socio-economic status
Section 10: Child mental health
Section 11: Social capital
Section 12: Tracking details
Section 13: Anthropometry

The data being collected vary greatly in their nature, and the extent to which they can be used for different types of analysis also varies. We needed to consider the following issues. Some variables are transitory in nature. For example, the measures of child physical morbidity refer to a point or period in time. Cross-sectional analyses provide some information but their use for longitudinal analysis will be limited and needs more careful consideration. For example, the prevalence of diarrhoea is a useful morbidity indicator for cross-sectional analysis. However,

linking whether or not a child had diarrhoea in survey one with any outcome indicator at a later survey is unlikely to have much validity. In contrast, a less transient variable will be more useful for longitudinal analysis. For example, low height-for-age is a measure of chronic malnutrition and it is accepted that children generally settle into 'growth channels' in the latter half of infancy. Consequently, linking height-for-age in survey one with later indicators, such as development stage for age, should be more feasible.

Some measures vary within an individual and this has implications for how a variable is composed to represent this variability and how it is used in analysis. A common example is measurement of behaviours. One might ask what is "usually done" or what was "done last time a particular event occurred" or some other summary measure. Each have their strengths and weaknesses but frequently the resulting variable is more useful for "population analyses" than "individual analyses". When interviewing children directly, it might be easier to ask with reference to a specific event, e.g. "did you take care of your younger brother yesterday?" where taking care of siblings might be something that children do on some days but not on others. We can use this information to compare the occurrence of sibling care between, say, gender groups. If we repeated the question a week later then we might expect similar proportions of children to answer in the affirmative but they will not necessarily be the same ones as the previous week. This makes linking the occurrence of sibling care asked in this way to an outcome more problematic because of the internal variability of the sibling care measure.

Some variables are very culture-specific. This will limit the cross-country comparative analyses, and possibly some sub-group analyses within country. Even variables which seem quite objective, such as birth weight, which is categorised as small/average/large, can be interpreted quite differently and will be more limited than knowing the actual birth weight and local standards against which to calibrate it.

Some variables are proxies for other variables that are difficult or impossible to measure. This affects their interpretation, especially when attempting to establish causation. For example, attendance at antenatal care can represent a number of different issues (foetal nutrition, child care practices, maternal knowledge), some or all of which might be associated with an outcome variable.

The questionnaires were regarded as 'works in progress' and considerable time was spent re-ordering questions into sequences that are more logical and many questions that the fieldworkers found confusing or culturally inappropriate were amended. It was important that when the questionnaires were introduced to the fieldworkers they were not regarded as a finished product but were intended to be refined in the light of local knowledge. Subsequent to the pilot, many questions were dropped or changed, skip patterns were adjusted and additional instructions provided for the interviewers. This had the disadvantage that there were some changes in the questionnaires between each pilot site and this limited comparative analyses of the results from the different sites. However, as the objective of the pilot was primarily to arrive at the most reliable questionnaire possible, the data and its subsequent analysis were considered less important than the research process.

Owing to time constraints and the availability of existing well-tested instruments and guidelines, the anthropometry section was omitted from the pilot.

Ethics

The pilot study was given ethical approval by the Rand Afrikaans University. Fieldworkers were thoroughly trained regarding respondents' rights to privacy and confidentiality of data. Small tokens of appreciation (footballs or small food hampers) were given to participating families.

Fieldworker training

Having explained the rationale of the study and the overall design, the trainers and fieldworkers worked through the questionnaires discussing each question. Much debate ensued as to the precise meaning of complex questions and their translation into five local languages. This was followed by revision of the questions and further role-play exercises and practice sessions with friends and neighbours before questions were finalised. In the pilot study, full translation and back translation was not possible, owing to time constraints (although this is the preferred method). However, appropriate translations for all technical terms were agreed upon during a full day discussion and the fieldworkers then applied only these translations in the field. The master copies of questionnaires were in English and administered in isiZulu, isiXhosa, Sesotho, Sepedi and Setswana.

Fieldwork

The supervisors were responsible for the fieldwork logistics, including negotiation of access to the community, accommodation, food, transport and remuneration. Access to the rural community was obtained with permission from local community leaders. Access in the urban area was through formal local political structures.

The wellbeing of the fieldworkers also had to be taken into account. Medical concerns included protection from malaria and provision of potable drinking water for the fieldworkers in rural areas. Since the pilot study took place in a 'low risk' malaria area, mosquito repellents were used both day and night although chemoprophylaxis would have been necessary had the survey taken place in higher risk areas. In urban areas, security of fieldworkers is often a concern and this was addressed by avoiding work after dark and, where necessary, having fieldworkers working in pairs.

Fieldworkers administered three to four questionnaires per day. A fieldwork supervisor was present on the first, third and fifth days, for the urban sites, and throughout the fieldwork in the rural area. Completed questionnaires were checked on site and serious errors rectified by repeat visits to the household.

Data entry

A Microsoft® Access database and data entry template was prepared by the Statistical Services Centre of Reading University and data entered by an experienced data clerk.

Analysis

Data was exported from Microsoft® Access databases for analysis in the Statistical Package for the Social Sciences (SPSS version 11).

Wealth Index

In developing the 'wealth index' used in this study attention was given to distinguishing between an 'asset index', which is a merely a measure of capacity for production, for example, ownership of a plough, versus a 'wealth index', which is a measure of economic well-being and is not production or location specific. The wealth index captures variables that are broader than

production assets such as home ownership and the durability of that home, plus access to infrastructure such as water and sanitation.

The wealth index (Table 1) was constructed from (1) the number of people per room as a continuous variable; (2) a set of 10 consumer durable dummy variables, each equal to one if a household member owned a radio, fridge, TV, bicycle, motor vehicle, mobile phone, landline phone, microwave, sewing machine, or satellite TV; (3) a set of three dummy variables equal to one if the house had electricity, brick or plastered wall, or a sturdy roof (such as corrugated iron, tiles or concrete); (4) a dummy variable equal to one if the dwelling floor was made of a finished material (such as cement, tile or a laminated material); (5) a dummy variable equal to one if the household's source of drinking water was piped into the dwelling or yard; (6) a dummy variable equal to one if the household had a flush toilet or pit latrine; (7) a dummy variable equal to one if the household used electricity, gas or kerosene.

All variables were scaled for scale equivalence, i.e. 0 to 1 and weights were arbitrary because the weighting makes little difference when the contributing variables of the index are highly correlated, as they are here (housing, consumer durables, services). The wealth index was calculated by taking the average of the scores for housing quality, consumer durables and services (Table 1).

TABLE 1. DEFINING A WEALTH INDEX

COMPONENTS OF WEALTH INDEX AND SCORE	CONTRIBUTING VARIABLES
H = Housing quality (/4)	Rooms/person, wall, roof, floor durability.
CD = Consumer Durables (/10)	Radio, fridge, TV, bicycle, car, mobile phone, landline phone, microwave, sewing machine, satellite TV
S = Services (/4)	Electricity, water, sanitation, cooking fuel.

Wealth Index = (H+CD+S)/3   Range = 0.0 – 1.0

The wealth index captures variables that are broader than production assets, such as home ownership and the durability of the home, plus access to infrastructure such as water and sanitation. It was designed in such a way that up to three locally specific consumer durables

could be used in each country. For example, in Ethiopia, ownership of a modern bed, table or chair replaced the microwave, sewing machine and satellite TV used in the South African pilot.

Follow up study

The sites were revisited one year later in order to assess the feasibility of follow up and the stability of indicators.

Results

Ethics

Conducting a large international study poses considerable ethical challenges. In the case of Young Lives, it was agreed that the London School of Hygiene ethics committee would review the overall study and that each of the institutions involved (University of Reading, the London School of Hygiene and Tropical Medicine, South Bank University, the University of Sussex, the South African Medical Research Council, and Save the Children, UK) would check the proposal against their own institutional standards. This resulted in what we believe were high ethical standards.

These ethical standards are well recognised in South Africa, a country which has played a leading role in setting ethical standards for medical and public health research (South African Medical Research Council, 2001), but in some countries it is hard to follow ethical guidelines 'to the letter'. In some societies, 'informed consent' by individuals is virtually impossible to attain. Consent is sometimes only possible when an authority figure, such as a local chief, gives permission for the interview. This type of power relationship can result in both 'unwilling consent' and 'unwilling refusals'. In several of the countries chosen for the main study, an authoritarian history contributed to a tendency for poor people to merely 'do what they were told' with little real understanding or ability to refuse. Even if it is possible to obtain consent, getting written consent is often impossible because study participants are frequently illiterate or reluctant to 'sign' any document with a cross or thumbprint. With the best will in the world, following internationally accepted ethical guidelines to the letter can be very difficult. In such circumstances, careful training of fieldworkers to ensure that people were properly informed of their right to refuse, despite potential influence by authority figures, was used to help ensure ethically acceptable procedures.

Questionnaire design and application

Despite using experienced fieldworkers, initial training took four days. The questionnaires were long and complex and, although inputs were checked on site, some basic errors were still overlooked. For example, questions that should have been skipped were often completed and questions that were at the bottom of a page, on which other questions were to be skipped, were omitted. These problems were reduced by redesigning the layout of questionnaires and highlighting the skip patterns more clearly. Fieldworkers played a critical role in helping to revise questions for the local context, translations, sequence of questions and how best to deal with sensitive questions.

The first draft of the community questionnaire, despite being based on existing instruments, proved ineffective for use in South African conditions. One of the shortcomings of the initial draft was that many of the questions, especially those relating to livelihoods, were only relevant to specific rural settings, whereas Young Lives includes a wide range of urban and rural communities. The pilot allowed us to identify the shortcomings and the questionnaire was extensively revised for use in the other countries. The community questionnaire was also modified to ensure that all the information collected provided relevant background with which to contextualise the various components of the household questionnaire. The definition of a 'community' was also potentially problematic and was defined geographically, rather than on the basis of social organisation.

The process of developing the questionnaires had attempted to ensure that questions were both academically sound, i.e. had an appropriate theoretical basis, and would be understood in practice. To this end, a multidisciplinary team was involved including epidemiologists, anthropologists, social scientists, statisticians, economists and, importantly, those involved in working with children and dissemination of information on children's rights and welfare. This process was reasonably successful although with so many disciplines represented there had been a tendency for everyone to want their special interest included, which made keeping the questionnaires short a very challenging task. However, the detailed discussion of questions and the piloting process in South Africa gave a deeper understanding of the issues being asked about and the fieldwork manual was therefore able to be very specific and practical. In addition, conditions in the field were documented carefully so that information which was not being captured in the questionnaire would not be lost. In the second pilot site we were better able to capture the complexity of poverty since the fieldworkers had pointed out that we were not really assessing the depth of poverty issues. This was achieved by having less prompting of pre-coded variables and making maximum use of the category "other". Answers that had not been anticipated were then included in the final versions of the questionnaires.

The pilot also provided information on the feasibility of the proposed study design. Thus, the questionnaire was not merely administered and the completed forms brought in but the fieldworkers were asked to complete a timesheet and note if the respondent showed signs of getting bored or rushing the interview. They were also asked to note any ethical or procedural problems that occurred. In the final analysis, this information gave a clear idea of how long the questionnaire could be and those sections which were regarded as potentially too sensitive or

difficult to be reliable. One such item was a proposed section on child abuse. Detailed questions on child abuse, while clearly important, simply could not be properly addressed in a large questionnaire of this kind. Box 3 indicates the type of feedback obtained during a typical fieldworker debriefing session.

Manuals

The Young Lives team compiled a set of documents to accompany each of the four questionnaires (1-year-old and 8-year-old household, community and child). The first is a 'questionnaire justification document' developed to argue for the relevance of every theme and/or question included in the questionnaires. The second is an 'interviewer manual' and contains aims, definitions, explanations and instructions for supervisors and interviewers for each of the sections, as well as every question included in the different questionnaires. This manual also includes detail on field preparations including ethics and consent, fieldworkers' tasks, interviewing procedures, how to conduct the interview and fill out the questionnaire. The aim of these documents is to ensure a proper understanding of the intended purpose and context of each question. This became particularly important when translating questionnaires into other languages. The third document is an 'analysis pack' and is designed to help research teams carry out data checks and prepare their preliminary reports. The 'analysis pack' consists of suggested tabulation plans, SPSS syntax files, an outline (suggested headings) of the preliminary report, and an example of a database. The manuals are central for ensuring consistency and achieving a similar standard in data collection, data analysis, and reporting of findings across countries.

BOX 3 – TYPICAL FIELDWORKER'S COMMENTS DURING DEBRIEFING

- I didn't understand what that question meant.
- The respondent got angry when I asked that question.
- There is no easy Zulu word for that.
- The respondent loved these questions.
- The skip pattern didn't work – this section is confusing, it jumps from one subject to another.
- I don't think the respondent was telling the truth.

The fieldworkers contributed to the manuals by commenting on content, style and length. This was done by completing an evaluation form each day of the fieldwork and making detailed written and verbal comments where appropriate.

Data entry

There were many teething problems with data entry. The use of a template is invaluable for ensuring that all datasets are consistent and that error-trapping routines can be introduced at data entry, but slight variations in format or data entry techniques often led to frustrating 'crashes'. At the simplest level, this involved anomalies caused by using European or United States date formats (day/month/year or month/day/year). A more serious problem was caused by use of different calendars in some countries. For example, Ethiopia uses the Julian calendar and dates are therefore 7 or 8 years earlier than when using the Gregorian calendar. In addition, many developing societies do not record dates formally at all and may only be able to relate a date of birth to a significant event, such as a major drought or presidential election. The latter is sufficiently accurate to age an adult but is not sensitive enough for establishing the age of an infant.

Data entry into a formatted template (an electronic version of the questionnaire) was much slower than most data entry personnel were used to. However, the consensus was that slower but better controlled data entry will lead to better data quality in the long run. Despite the difficulties experienced with this process during the pilot, it provided invaluable experience in how the system needed to be refined for wider scale use. With the benefit of hindsight from data entry in the four main study countries, it is evident that more error trapping routines should be built into the template to avoid the entry of invalid codes and, for example, ages or weights that fall outside the project's requirements or normal limits.

Wealth index

Analysis of wealth status was not carried out by selecting quintiles, as is often practised in economic analyses, since the intention is to monitor changes over time and we are interested in absolute cut-offs rather than the position within an overall distribution. This technique facilitates inter country comparability because a wealth index of 0.4 in Peru is exactly the same as 0.4 in India, since the index is based on the same assets plus one or two country-specific durables designed to improve inter country comparability.

However, despite needing similar cut points for the purposes of inter country analyses, it can be more appropriate to use different cut points for within country analysis. The poverty lines for the overall study were initially set, arbitrarily, at 0.2 and 0.4 but this proved to be inappropriate

for the South African pilot data since too few households fell below the 0.2 cut off. In the case of normally distributed data, uniform cut points can be used but, in the case of non-normally distributed data, arbitrary equal divisions may be less appropriate. The wealth distribution in the South African pilot data was positively skewed (Figures 1 & 2) therefore the cut points were raised so that the lowest wealth category had sufficient numbers for analysis. Cut points of 0.45 and 0.66 were used for the one-year-old children (Table 2), and 0.6 and 0.8 for the 8-year-olds (Table 3). These categories produced three wealth categories, referred to as 'very poor', 'poor' and 'less poor'. It should be noted that even though the cut points for within country analysis may be chosen arbitrarily, the same cut points need to be used for analysis of subsequent survey rounds in order to measure changes in households between and within wealth categories.

Non-normally distributed data is likely to be common in pilot studies, with relatively small samples, but it may also be an issue in the main study. Careful examination of the frequency distribution of the wealth index may reveal polymodal distributions, in which case it may be more appropriate to analyse the data according to naturally occurring divisions, rather than using arbitrary cut points. The frequency distribution of wealth in the 1-year-old households suggests this type of effect in that there appear to be modes at 0.3 and 0.6 (Figure 1).

FIGURE 1. FREQUENCY DISTRIBUTION (%) OF WEALTH INDEX FOR HOUSEHOLDS WITH ONE-YEAR-OLD CHILDREN

TABLE 2 CHARACTERISTICS OF THE 1-YEAR-OLD CHILDREN AND THEIR HOUSEHOLDS

	Urban		Rural		Very Poor (Wealth Index <0.45)		Poor (Wealth Index 0.45-0.65)		Less Poor (Wealth Index ≥0.66)	
Total	106		56		47		74		41	
Male	70	66%	29	52%	29	62%	44	60%	26	63%
Female	36	34%	27	48%	18	38%	30	41%	15	37%

FIGURE 2. FREQUENCY DISTRIBUTION (%) OF WEALTH INDEX FOR HOUSEHOLDS WITH 8-YEAR-OLD CHILDREN
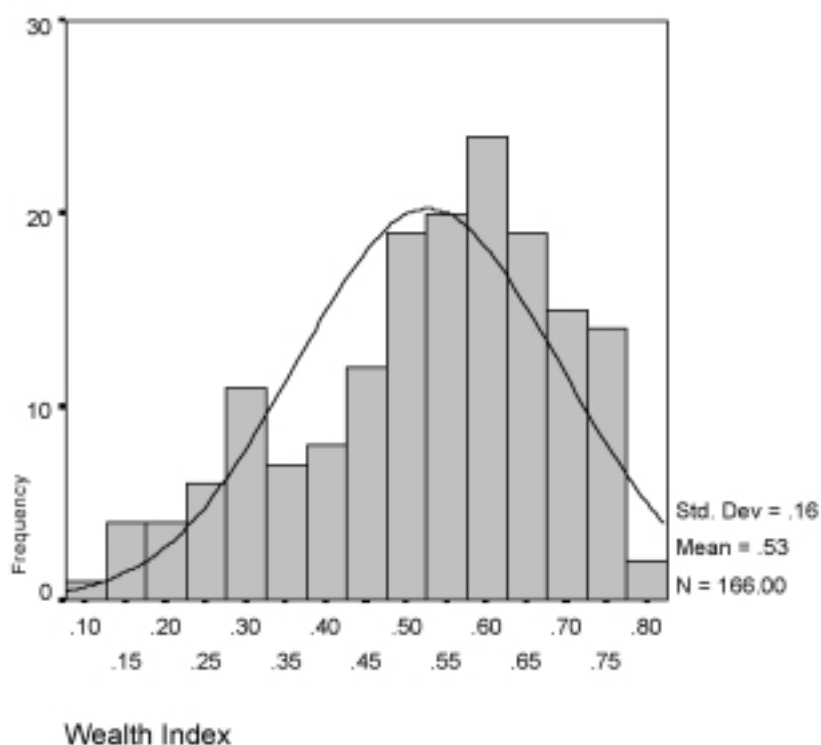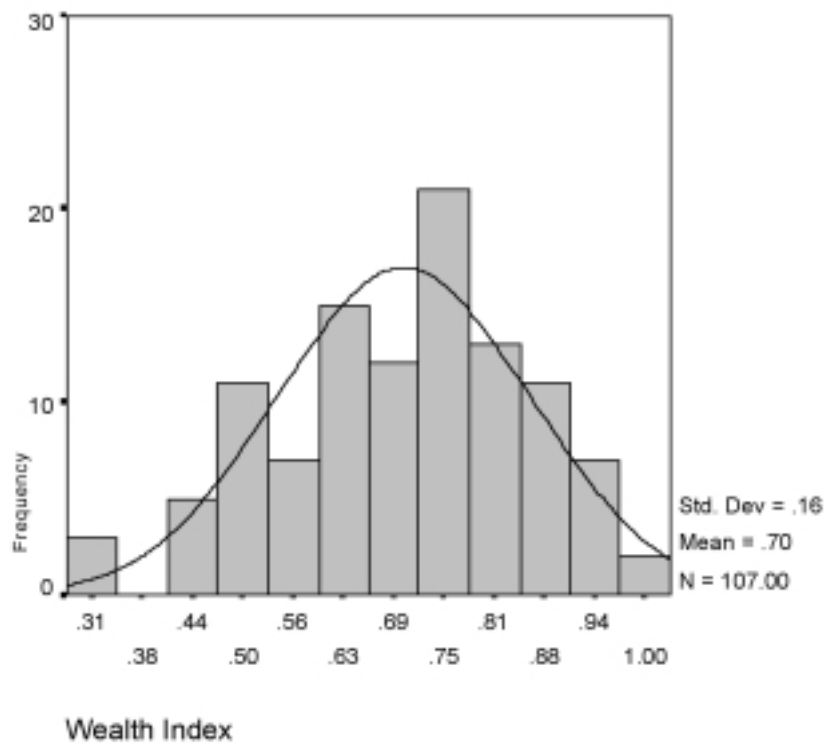

TABLE 3 CHARACTERISTICS OF THE 8-YEAR-OLD CHILDREN AND THEIR HOUSEHOLDS

	Urban	Rural	Very Poor (Wealth Index <0.6)	Poor (Wealth Index 0.6-0.79)	Less Poor (Wealth Index ≥0.8)
Total	55	52	25	50	32
Male	30 55%	29 56%	13 52%	30 60%	16 50%
Female	25 45%	23 44%	12 48%	20 40%	16 50%

As an example of the type of results produced by this analysis, Table 4 shows a high rate of unwanted pregnancy, which is apparently independent of wealth or place of residence (χ^2=0.153, P=0.927 and χ^2=0.000, P=1.000 respectively). Low birth weight (as reported by the primary caregiver) was marginally more common in the poorer households, although not significant (χ^2=0.413), but was significantly more common in the rural households (χ^2=9.798, P=0.002). These results are consistent with expectations for child health in this region and support the hypothesis that the wealth index as used here is indeed capturing determinants related to child welfare.

Table 5 shows how people's responses to common economic shocks vary quite widely. In poor communities, death (or departure of household members) is common and death was the commonest reported shock in this sample. One of the commonest responses was to "do nothing" which, although at face value may be regarded as a 'non result', can be very meaningful. The poorest of the poor are often trapped by perceived helplessness, which renders them unable to make any further response to new shocks. The commonest response was to "eat or buy less". Whilst this is an obvious response, it clearly could have a profound impact on the welfare of young children. This table also highlights the importance of social capital, with aid from relatives and friends being the commonest response to a death in the household.

TABLE 4 BIRTH AND DELIVERY CHARACTERISTICS (1 YEAR OLD HOUSEHOLDS)

	Urban		Rural		Very Poor (Wealth Index <0.45)		Poor (Wealth Index 0.45-0.65)		Less Poor (Wealth Index ≥0.66)	
Wanted pregnancy										
Yes	28	27%	16	29%	12	27%	21	30%	11	28%
No	**70**	**71%**	**40**	**71%**	**33**	**73%**	**49**	**70%**	**28**	**72%**
Low birth weight baby (self reported)										
Yes	6	6%	13	23%	8	17%	7	10%	4	10%
No	**95**	**94%**	**44**	**77%**	**38**	**83%**	**65**	**90%**	**36**	**90%**

TABLE 5 EXAMPLE OF HOUSEHOLD RESPONSES TO ECONOMIC SHOCKS. (8-YEAR-OLD HOUSEHOLDS)

RESPONSES TO SHOCKS

Economic shocks	**Nothing**	Sell goods/ use savings	Use credit	**Eat/buy less**	Work more/ start work	**Aid from relatives/ friends**	Total
Natural disaster				1			1
Birth/new household member	1			1			2
Reduction in household members	**3**	**1**	**1**	**3**	**1**	**5**	**14**
Pay for education	1			1			2
Illness or injury	1	1		3			5
Loss of income	2					1	3
Change in food availability	1						1
Livestock died				1			1
Moved/migrated	1	1		1			3
Divorce/separated					1		1
Victim of crime		1					1
Car accident	1			1			2
Total	**11**	**4**	**1**	**12**	**2**	**6**	**36**

Follow up

Although most participants were traced successfully one year later, much higher mobility of the urban population made tracking in urban areas more difficult and often required at least three visits to find the child (Table 6). The main lesson learned from this exercise was that having a detailed list of potential contacts outside the index household, e.g. relatives or friends who might know where the index child had moved to, is essential in urban areas. Detailed descriptions of how to physically find households, including a sketch map of the site, made tracking easier. In addition, clear criteria need to be established in advance of the tracking exercise in order to determine how much effort should be expended in tracking children who have moved. In the case of the pilot study, the budget (and potential value) of the follow-up was very limited and consequently success was lower than might be expected with the more rigorous follow-up planned for the main study.

TABLE 6 FOLLOW-UP RESULTS AT ONE YEAR

LOCATION			FOLLOW-UP RESULTS			
RURAL	*FOUND*			*NOT FOUND*		
	Found on first visit	48	89%	Moved away	2	4%
	Found on visit			House not found	2	4%
	2 or 3	I	2%	Child not found	I	2%
Total 54 100%		**49**	**91%**		**5**	**9%**
URBAN	*FOUND*			*NOT FOUND*		
	Found on first visit	27	56%	Moved away	I	2%
	Found on visit 2 or			Died	2	4%
	3	II	23%			
				Not at home		
				(3 visits)	I	2%
				Not found	6	13%
Total 48 100%		**38**	**79%**		**10**	**21%**

Discussion

This study focuses on the impacts of poverty on child welfare and attempts to link local level outcomes to macro level determinants, such as national and local policy arenas. In order to do this we had to bring together a wide range of research disciplines and extract from each a range of questions. This meant that economists, public health specialists, development experts and anthropologists had to arrive at combined survey instruments. In order to do this a comprehensive process of piloting was established which included both academics and experienced fieldworkers who were able to assess the likely validity of questions before fieldwork commenced. This study was unusual in that over one year was spent in the pilot phase alone, including the choice of suitable research questions, reviewing previous questionnaires of relevance, adapting these for local settings and designing a training programme. The pilot study also included setting up a data management system, a critical component of panel studies, and conducting initial analyses. The pilot phase continued until a first round of follow-up had been completed.

One concern raised in the discussion of the wealth index by the project team was that there is overlap, in some senses, between consumer durables and assets like cattle, which although technically a production asset can also represent a form of savings. This was an issue for the pilot study which found that rural people often held very few durable assets but nonetheless had cattle and land, which may not be productive but were nonetheless regarded as 'wealth'. However, the consensus from discussion of the pilot results was that productive assets tend to be too geographically specific to be useful for this analysis. For example, ownership of cattle may be a misleading indicator of wealth when a person from a fishing village may have no cattle but still be wealthy. In general, the wealth index is intended to be a measure of economic wellbeing and should not be an indicator of welfare, heath or social assets, since these are captured by other variables in the dataset.

The pilot allowed the analysis of wealth to be tested in one country and indicated that refinement of the wealth measure, by adding more country-specific assets, may be necessary in future rounds to make the index more sensitive. The wealth index can be treated as a continuous variable and can therefore be used effectively and sensitively in regression and other analyses with the larger sample sizes (2000 1- year-olds and 1000 8-year-olds per country) in the main study.

In any longitudinal study the ability to trace participants over time is of paramount importance. Part of the rationale for the pilot study was to confirm that people could be found in subsequent visits and that stable variables (i.e. those which should not have changed, or would have changed predictably, such as age) remained consistent. Critics have implied that longitudinal studies in developing countries are not feasible, but this pilot and evidence from the Birth To Twenty project (now in its thirteenth year of follow up) have demonstrated that, with appropriate techniques, people in developing communities can indeed be traced over long periods (Richter, Norris & de Wet, in press). That is not to say that the process is easy, and it can be costly in terms of both time and effort, but appropriate systems can ensure good retention rates.

Experience from the Birth to Twenty study shows that loss to follow up is highest in the first year or two of the child's life and therefore interim contacts with respondents are important between the main survey rounds (Richter, Norris & de Wet, in press). In countries where there are well-established migration routes with, for example, most movement from rural areas being to one or two major cities, it may be possible to track participants over considerable distances if these cities already include sentinel sites with trained staff available.

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BOX 4 – FEATURES OF THE PILOT PHASE

- The *entire research process* was piloted from the questions to be used, through training and fieldwork, to data entry and analysis.
- The approach was *flexible* and instruments and methods were regarded as 'works in progress'.
- *Local knowledge and experience* of the fieldworkers contributed to both study design and content.
- Piloting in another country helped to produce *generic research instruments*.

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Conclusion

The South African pilot study proved invaluable for developing the various survey instruments, the approaches to fieldwork, the data entry system and the analysis package (Box 4). Whilst there is a great deal of expertise in the UK and country teams working on the main study, there can be no substitute for 'hands on' experience in a developing country setting when developing research instruments for that use. The process involved a good deal of trial and error, but ultimately led to a better product. Another benefit of using a single country for the initial pilot has been that it helped to ensure that the survey instruments were sufficiently generic to ensure that comparable datasets can be produced in the widely differing circumstances in each of the study countries. Time will be the judge of our success in this regard, but the fact that relatively few country-specific questions had to be added suggests that the core questionnaire is a reasonably sound instrument.

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