Young Lives Methods Guide

Cohort Maintenance: Tracking and Attrition

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Repeated interviews with the same subjects are a defining feature of longitudinal studies. Ensuring that the Young Lives children, their families and communities continue to participate in the study is essential to providing a picture of how the children's experiences of poverty change over time and across generations. It is also essential to ensuring that attrition bias is kept low, maximising the possibilities for precise analysis of the survey data, and strengthening its statistical validity.

In Round 1, there were nearly 12,000 children in the survey sample, in 2 cohorts, one aged 6 to 18 months and a second aged 7 to 8, spread across the four study countries. By the projected fifth round in 2015, many of these children will have moved to seek education or work; some will have left home, married and had children of their own; others will have died. A few will have decided that they no longer want to participate in the study. Keeping track of such a widely dispersed and mobile group of young people and minimising the numbers who drop out of the study presents logistical, administrative and managerial challenges.

Why track?

Young Lives is unusual in that it aims to keep track of all children in the cohort, even if they change location. Tracking is a costly and time-consuming part of the study. It is a priority because:

- Tracking children between rounds reduces the amount of time spent looking for people while the survey is being carried out
- Tracking maintains continuity of social contact and trust between researchers and respondents
- The cohort is relatively small for a longitudinal study, and this makes minimising attrition rates particularly important for reducing attrition bias and keep the statistical validity of the data
- The study period is relatively long. Minimising attrition will ensure that the findings from later survey rounds are not biased.

Attrition is inevitable. The number of respondents who do not participate in each round of data collection will inevitably cumulate over time ('wave non-response'). While tracking the children aims to minimise non-response, it also aims to explain it when it does happen. This means that attrition can be analysed to ensure that it does not lead to biased inferences being drawn from survey data.

Tracking Young Lives children and maintaining response rates

After the first survey round, a tracking system was established with the aim of updating basic information about each child between survey rounds. This included household location and the names and addresses of two contacts for the child within the community but outside the household. Tracking rounds not only update information about location, but also serve as an early warning system for potential challenges during the survey and as a mechanism for maintaining connections between researchers and respondents.

After Round 2, a set of follow-up protocols was implemented to increase the efficiency of tracking rounds. These now usually take place about a year before survey rounds, but this varies from country to country, according to both seasonal considerations and the age of index children when tracking is scheduled.

Wherever possible, researchers trace the new location of children who have moved and visit them at their new address. Patterns of migration differ across countries, and this has an impact on response rates. In Peru, for example, where migrants in the sample are widely dispersed, attrition rates are higher than in Vietnam, where internal migration is restricted. Some of the Peruvian Young Lives children have left Peru; in this case researchers are hoping to use an online or phone survey to ensure that the children are not lost to the study.

Minimising attrition rates is about more than being able to locate children. Equally important is talking to respondents who want to drop out of the study to understand their reasons and perhaps keep them in the cohort by addressing their concerns. In some cases, respondents are unhappy about the length and complexity of the survey, and the amount of time needed to complete it. Ensuring that the survey is well-paced and contains a range of different methods for engaging respondents is an important aspect of keeping attrition low.

All field teams produce and carry printed information about the study, explaining what data will be used for, and in some countries field teams also give photographs to respondents and their families. Pilot rounds for the survey always include training for enumerators on how to reduce refusal rates. Perhaps most important, however, is that across all four countries, many of the same fieldworkers have been retained for several rounds of the survey and often visit the same households in each round. This continuity has been helpful in keeping refusal rates low.

Patterns of attrition in the early rounds of Young Lives

Young Lives had an attrition rate of 2.8% across the whole sample between Rounds 1 and 3. This is not only low in absolute terms, but also when compared with attrition rates for other longitudinal studies in developing countries (Outes Leon and Dercon 2008). Table 1 illustrates the causes of this attrition between Rounds 1 and 2, showing the distribution of non-response across three categories of attrition for each of the study countries.

Table 1. Attrition rates by category and country, Rounds 1 to 2 (Outes Leon and Dercon 2008: 5)

		Attrition categories			
	Sample Size	*Child died*	*Refused to answer*	*Untraceable*	**Attrition rate (including deaths)**
Ethiopia	2,998	67	11	31	1.43
India	3,019	35	14	25	1.31
Peru	2,766	6	64	33	3.51
Vietnam	3,000	13	3	16	0.64
Total	11,783	121	92	105	2.7

Feedback from the tracking process suggests that relatively high rates of refusals in Peru compared with the other countries was in some cases linked to poor community understanding of the study's purpose. A member of the Peru team reflected that not enough work had been done in the first round of the survey to avoid giving the impression that the study was a project from which respondents would gain direct benefit. The same researcher also attributed the relatively high attrition rate to family break-ups, and to a relatively empowered urban population who did not face cultural barriers in refusing to continue participating if they chose not to.

Child death accounts for a significant proportion of attrition, especially in Ethiopia, which is to be expected. In particular, the younger cohort can be expected to experience higher death rates than the older cohort. Attrition rates become more similar across cohorts when child deaths are excluded. Table 2 shows attrition rates excluding deaths for the younger and older cohorts across all three survey rounds. It illustrates both wave non-response and similar levels of attrition across the two cohorts once deaths have been excluded.

Table 2. Attrition as % of whole sample, excluding deaths

	Round 1 to 2	**Round 2 to 3**	**Round 1 to 3**
Older Cohort	1.8	1.2	3
Younger Cohort	1.9	0.8	2.7
Both Cohorts	1.9	1.0	2.8

Attrition bias arises when sample attrition is non-random. Attrition between Round 1 and Round 2 has been assessed for attrition bias using two attrition probit tests, statistical processes which search for patterns in outcome variables and household characteristics of attriting households (Outes Leon and Dercon 2008). This analysis showed that there were some non-random patterns across most countries:

- child deaths correlated with households in lower wealth index, and in rural areas
- refusing and untraceable households were mostly at the higher end of the wealth index
- untraceable households were more likely to be in urban areas.

Despite following these non-random patterns, the probit tests show that attrition between Round 1 and Round 2 was an overwhelmingly random phenomenon.

Forthcoming challenges for cohort maintenance

One of the major challenges of maintaining the cohort of a longitudinal study is the need to follow the life-cycle events of the participants. For this reason, tracking between Rounds 3 and 4 will be particularly important for the Young Lives teams, as the older cohort begin to reach the age when many are likely to leave home and school. Among the Young Lives children there will be culturally diverse ways of meeting this milestone, and some have particular implications for tracking. In Ethiopia, for example, there are likely to be instances of older children making several short migrations between rounds, during which they could easily become lost to the study.

Although originally scheduled for 2012, Round 4 will now take place in 2013, when the younger cohort will be the same age that the older cohort children were in Round 2. A longer period between survey rounds adds to the possibilities for attrition and will demand increased vigilance in tracking.

A key challenge as the study approaches its later rounds is the issue of potential respondent fatigue. While all children in the sample participate in the survey at regular intervals, others are also part of the sub-sample for the qualitative research rounds, and yet others are involved in a range of sub-studies focused on particular issues ranging from social protection to early childhood care and education. It is the responsibility of the Principal Investigator in each country to ensure that no single respondent is overloaded by the study. Maintaining effective tracking systems is essential to this.

References and Further reading

Moffitt, R., J. Fitzgerald and P. Gottschalk (1999) 'Sample Attrition in Panel Data: The Role of Selection Observables', *Annales d'Economie et de Statistique* 55-56: 129-52

Outes-Leon, I. and S. Dercon (2008) *Survey Attrition and Attrition Bias in Young Lives*, Technical Note 5, Oxford: Young Lives http://www.younglives.org.uk/files/technical-notes/survey-attrition-and-attrition-bias-in-young-lives

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