INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
IFPRI

PROJECT NOTE DECEMBER 2021

Survey Design and Rural Labor Measurement: Lessons from Three Studies

Kate Ambler, Sylvan Herskowitz, and Mywish K. Maredia

Effective policies and programs aiming to reduce poverty require a clear understanding of how people earn their livelihoods. While great gains have been made in the quantity and availability of data, capturing individuals' labor supply and types of job activities is still challenging. Measuring employment is especially difficult in settings where productive activities are informal, leading to irregular intensity of engagement, and seasonal, where the majority of effort and earning is concentrated in specific periods of the year. These characteristics tend to be especially relevant in rural labor markets in low-income countries where agriculture and agriculture-linked employment are preeminent.

In a set of three studies, IFPRI researchers Kate Ambler and Sylvan Herskowitz, in collaboration with Mywish Maredia of Michigan State University, explore the ways in which survey design can affect the quality of resulting labor data in rural populations. The papers examine the effects of household roster order, question type, and recall windows on resulting data. Survey design decisions matter and, if not careful, can induce unintended noise, or more troublingly, bias in resulting data.

Household Roster Order

The first study, "Are We Done Yet? Response Fatigue and Rural Livelihoods," was recently published in the Journal of Development Economics. Using a sample of rural households in Ghana, the authors found that response fatigue occurring within the labor module caused losses of roughly 8% of reported labor supply in the form of number of activities reported and hours worked. These losses were especially pronounced among women and youth whose losses were estimated at 12%.

The authors show two distinct mechanisms that lead to this bias: differential vulnerability and differential exposure to respondent fatigue. First, activities of both female and youth family members are more likely to be unreported by respondents when they are positioned later in the household roster. And second, women and especially youth tend to be systematically listed later in household rosters, exposing them to greater amounts of respondent fatigue.

In addition to the implications for research using similarly structured data, such as many large multi-topic household surveys, these results have a number of implications for future study design. While the avoidance of proxy reporting may be a first best solution, this may require considerable additional surveying costs and may further induce a different bias stemming from availability to self-report. Researchers who want to make comparisons of labor supply across different demographic groups should therefore strongly consider randomizing the ordering of the household roster when they reach the labor module. If not, differential exposure to fatigue could bias the resulting data. If, on the other hand, household (and not

individual) level aggregates of household labor matter most, researchers could consider explicitly ordering the sequence of family members in the labor module from greatest to least important contributions.

Question Type

The second study, "Labor (Mis?)Measurement in Agricultural," is available in the IFPRI Discussion Paper Series. Using the same sample of agriculture focused households in Ghana, the authors focus on understanding how work is measured and categorized in relation to the agriculture sector. Other recent research suggests that rural off-farm opportunities are growing in developing countries. Policy response may depend on the sector of individuals' employment and further require a more nuanced understanding of the types of value-added tasks that individuals are conducting as part of their livelihoods.

A widespread approach to categorizing individual labor participation in agriculture-linked work relies on interviewers capturing written descriptions from respondents of their household members' work activities. These descriptions are then assigned standardized industry codes which researchers can then use to determine if the individual participated in the agriculture sector and which types of value-added activities they conducted, if any. This approach is costly to collect, fatiguing for respondents, and may create distortions. The authors compare this standard approach to one where respondents are directly asked how each reported work activity relates to the agriculture sector and find that this more direct approach results in broadly similar conclusions. Given the consistency of results across approaches, researchers who are able to anticipate the categories important for their research goals can save considerable time and resources by trusting respondents to categorize their work themselves. Linked to the findings on deteriorating data quality with respondent fatigue, economizing respondent effort may have substantial gains.

A second finding from this study uses a sequence of task-based questions in which the respondent is asked whether each family member ever contributed to a set of agricultural or non-agricultural work tasks. These responses are compared to characterizations of individual-level labor participation in and outside of agriculture based on the reported main and secondary activities as described above. Twelve percent of the sample have labor tasks that are not captured in the activity data and that would therefore be "missed". Women and youth are more likely to have labor contributions reported in the agricultural tasks missing from their reported main activities, while non-farm work does not suffer from this bias. Finally, the authors conduct a randomized test to see if positioning these task-based questions before the reporting of work activities can reduce the incidence of missed work activities but find no effects. Ultimately, the more clarity that researchers can have on the required level of detail needed for anticipated analysis and the more pointed questions can be to those outcomes, the better the quality of data is likely to be.

Recall Window

The third paper, "Rural Labor and Long Recall Loss," is available as a discussion paper through Michigan State University. The authors examine how recall window length can affect resulting data. In a sample of rural Malawians, the researchers conducted four interviews by phone at approximately quarterly intervals. In each interview, household respondents were asked to report major productive activities in a similar fashion as used in the other studies: reporting primary and secondary activities over the previous 90 days. In the final interview they were also asked to report these activities over the previous year. Reliance on the longer recall periods lead to substantial losses in reported labor participation relative to those based on the shorter recall periods.

Likelihood of working, total activities reported, and number of months worked are all at least 20% lower when relying on the longer recall window than using data from the shorter, quarterly, recalls (although relative underreporting of hours worked is less pronounced). The gap between long and short recall gets bigger with more time between the recalled period and the time of the final interview with the gap reaching as high as 50% for labor participation nine months prior to the endline. Household farm work is underdocumented by 22% while non-agricultural business activities are reduced by almost two thirds (albeit relative to a base of just 9% participation). These gaps between short and long recall are driven by the

sample whose labor contributions were reported for them, by proxy, whereas the losses are less pronounced among those reporting their own labor contributions. Among proxied individuals, these losses are greater still for younger household members.

The results suggest that it is critical for researchers to be familiar with the setting before launching their surveys. Careful qualitative work can help to identify which activities are most likely to be important in the study sample. For studies where a complete accounting of labor participation is needed, shorter, more targeted surveys should be considered to ensure that seasonal labor, occurring at a long interval from the study's main interview schedule, is not missed or distorted.

Conclusion and Recommendations

The authors' work on measurement of labor in rural settings point to some clear conclusions and recommendations when designing labor modules in rural areas. Respondent energy and attention are scarce resources and survey design must always balance research goals against data quality.

Recommendation 1: In targeted surveys with specific goals, survey length can be reduced with targeted questions that reduce survey burden. This approach may not be appropriate for multi-purpose surveys designed for public use.

Recommendation 2: Repetitive modules are prone to losses from response fatigue and lead to biased underestimates. Researchers should be especially mindful of the order and selection of household members (or other items). Querying fewer members could improve data accuracy. Further research should consider whether reducing the quantity of questions within repetitive sequences can reduce losses.

Recommendation 3: Recall windows are key to the measurement of labor. The choice of recall window will impact the data collected, and researchers should consider the ultimate goal of the survey when deciding which recall window to use and whether repeated surveys are appropriate.

Recommendation 4: When measurement issues lead to bias, these studies suggest that women and youth may be most susceptible to undercounting and deserving of careful consideration in survey design.

ABOUT THE AUTHORS

Kate Ambler and Sylvan Herskowitz are Research Fellows with IFPRI's Markets, Trade and Institutions Division (MTID). Mywish Maredia is Professor of Development Economics in the Department of Agricultural, Food, and Resource Economics at Michigan State University.

REFERENCES

Ambler, K., Herskowitz, S., and Maredia, M.K. 2021 Are we done yet? Response fatigue and rural livelihoods. *Journal of Development Economics, 153,* p.102736.

Ambler, K., Herskowitz, S., and Maredia, M.K. 2021 Labor (mis?)measurement in agriculture. *IFPRI Discussion Paper 2050*

Ambler, K., Herskowitz, S., and Maredia, M.K. 2021 Rural labor and long recall loss. *Michigan State University Staff paper #2021-001.*

Funding for this work was provided by the CGIAR Research Program on Policies, Institutions, and Markets (PIM) and 3ie. This publication has not been independently peer reviewed. Any opinions expressed here belong to the author(s) and are not necessarily representative of or endorsed by IFPRI.

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

A world free of hunger and malnutrition

IFPRI is a CGIAR Research Center

1201 Eye Street, NW, Washington, DC 20005 USA | T. +1-202-862-5600 | F. +1-202-862-5606 | Email: ifpri@cgiar.org | www.ifpri.org | www.ifpri.info