Data for Decisions in Nutrition

International Food Policy Research Institute (IFPRI) and icddr,b

ESTIMATING THE MONETARY AND NON-MONETARY COSTS ASSOCIATED WITH THE ONE NUTRITION COVERAGE SURVEY IN BANGLADESH

DATA ANALYSIS PLAN

November 2025

Project Note

DataDENT (Data for Decisions in Nutrition, www.datadent.org) aims to transform the availability and use of nutrition data by addressing gaps in nutrition measurement and advocating for stronger nutrition data systems. This work was carried out by the following DataDENT partner: International Food Policy Research Institute (IFPRI). Collaborator includes the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b). This work was funded by the Gates Foundation. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the Gates Foundation.

Measuring the coverage of multi-sectoral nutrition interventions provides valuable insights into their reach and helps identify gaps in service delivery. Since recommended nutrition interventions vary by life stage, coverage measurement must be tailored to each stage. This makes measuring coverage challenging in population-based household surveys, given the wide range of target groups. Surveys such as the Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) primarily focus on women with births in the past two years and children under five. As a result, these surveys often miss data on interventions targeted at other critical life stages, such as the pre-conception phase, adolescence (10–19 years), and school-aged children (6–9 years). In addition, these surveys currently do not include coverage measures for some multi-sectoral nutrition interventions such as nutrition-sensitive agriculture, nutrition-sensitive social protection, and food fortification.

The One Nutrition Coverage Survey (ONCS) is a methods-focused household survey designed to collect data on comprehensive multi-sectoral nutrition interventions mapped to a country's multi-sectoral policy. Insights into cost considerations, both the monetary and non-monetary aspects of survey implementation, will provide important evidence on the feasibility and applicability of conducting a comprehensive coverage survey.

While household surveys in low- and middle-income countries have expanded in scope and complexity, significant gaps remain in empirical evidence regarding respondent burden and costs associated with the survey (World Bank, 2024). Addressing this gap is essential to ensuring that future survey replications are well-informed, and evidence-based. For the ONCS, we will track monetary costs in terms of the dollar amount spent, and non-monetary costs in terms of the level of effort (LOE), respondent time burden, and respondent fatigue. Several of the non-monetary cost measures are innovative (i.e., LOE and respondent fatigue estimations), which we are testing in this methods-focused survey. This effort has two key benefits: a) it provides monetary and non-monetary cost estimates associated with the ONCS and b) it documents the process of estimating survey costs.

This analysis plan describes the methods for estimating the four types of costs (one monetary and three non-monetary) associated with conducting the ONCS summarized in **Table 1**.

Table 1: Summary of data source and indicator for monetary and non-monetary costs associated with the One Nutrition Coverage Survey

		Data source	Indicator
Monetary cost	Cost by various study phases (design, preparatory, survey, post-survey, dissemination)	Budget template	• % share of phases • Per respondent cost • Per minute cost
Non-monetary cost	Perceived level of effort for each questionnaire module	Scoring[1] of questionnaire module by key stakeholders involved in the study	• Total level of effort score for each questionnaire module
	Time burden for the respondent	Collected during the interview with the respondent (automated in CAPI)	• Average time per questionnaire module
	Respondent fatigue	Respondents' perception of how difficult the questions were to answer and how tiring it was to participate in the survey, measured on a Likert scale	• % of respondents reporting too difficult and/or very tiring

[1]Scopring will be based on 1. Challenging to customize (0-5); 2. Length (0-5); 3. Exogenous topic (0-5); 4. Extra logistics (0-5); 5. Changes in survey design/eligibility (0-5); 6. Increases sample size (0-5); 7. Burden on training (1-5); 8. Burden on supervision (0-5); 9. Burden on data processing and analysis (0-5); 10. Burden on respondent (1-5)

CAPI=Computer Assisted Personal Interview

1. Estimating the Monetary Costs

The total cost of the survey will be comprised of expenses for five different distinct phases:

1. **Design phase:** Convening, landscaping policies, sampling designs, developing questionnaire, consultations with survey partners.
2. **Pretest:** Translating questionnaires into local languages, developing the Computer-Assisted Personal Interview (CAPI), pre-testing and cognitive testing, and analyzing data from the pre-test and revising the questionnaires.
3. **Training:** Training of enumerators, implementing the survey (household listing and conducting interviews), and cleaning data.
4. **Data analysis:** Cleaning data, analyzing data, and preparing the main findings.
5. **Dissemination:** Presenting results to stakeholders in an in-country meeting.

The main cost components for each phase are shown in Figure 1. The actual dollar amount for each cost component will be recorded after the survey is completed, providing the actual cost estimate. The survey firm's proposed budget will not be used, as it includes organizational overhead and profit margins that could unnecessarily inflate the survey cost.

Figure 1: Main cost components and activities for each phase of ONCS

	Design	Pretest	Training	Data collection	Data analysis
Activities	• Questionnaire development • Sampling • CAPI • Procurement	• Classroom training • Field test, • Questionnaire revision	• Class training • Field practice • CAPI revision	• Data collection • Data cleaning • Data management	• Data analysis • Indicator calculation
Cost components	• Salaries	• Salaries and per-diems, • Equipment • Training • Transportation	• Salaries and per-diems, • Equipment • Training • Transportation	• Salaries, Per-diems, • Transportation	• Salaries, Software

1.1 Analysis methods

After collating cost data by survey phase and overall survey, we will calculate unit costs per respondent (Adams et al., 2023) and cost per minute (World Bank, 2024). Estimates will be made for each survey phase to show where monetary resources are most spent. Finally, we will compare these costs with those of similar surveys.

2. Estimating the Non-monetary Costs

The three types of non-monetary cost data we will analyze are (1) level of effort per survey module, (2) time burden to the survey respondent, and (3) respondent fatigue. Methods of analysis for each non-monetary cost type are described below.

2.1 Estimating the level of effort to implement ONCS survey modules

The level of effort (LOE) will be estimated for the design and implementation of each ONCS module across the three types of questionnaires: household head, women of reproductive age, and adolescent. For each module, topic experts will rate the LOE across ten dimensions (**Figure 2**). Topic experts are members of the study team—including the DataDENT research team and the in-country survey partner—who are directly involved in the survey's design or execution. They are purposively selected to score the LOE based on their perceptions of survey design and/or implementation. LOE scoring will be conducted after survey data collection is complete. **Table 4** summarizes the respondent types and the timing of LOE scoring.

The dimensions of LOE were informed by discussions with survey implementers including MICS team **(Table 3)**. Each module will be scored on a scale of 0–5 or 1–5 (where 0 or 1 = minimum effort and 5 = maximum effort), depending on the dimension.

Table 3: Overview of dimensions of effort and scoring guide

Dimension	Scale	Guide for scoring
Design of modules		
Challenging to customize	0-5	This measures the difficulty of adapting the existing module to the current survey and considers the effort required to develop the module from scratch. If the module was very difficult to adapt or required extensive adjustments, including lengthy discussions, score it as 5. If the process was straightforward and required little effort, score it as 0, meaning very easy.
Length	0-5	This evaluates the time required to administer the module. Scoring should be based on the actual time taken, not the number of questions, as a module with many questions may not take long, while a module with few questions could require significant time.
Exogenous topic	0-5	This assesses the relevance of the module's content to the survey's core focus. If the module appears less relevant to the survey's purpose or topic, assign a higher score.
Changes in survey design/eligibility	0-5	This assesses the extent to which the module requires changes to the overall survey design. (In most cases, this may be minimal or none. However, some specialized modules may require change or considerations in survey design or affect participant eligibility)
Increases sample size/design	0-5	This evaluates whether the module requires additional respondents. Some modules may target specific conditions that require more participants to achieve adequate statistical power for estimation.
Implementation of modules		
Extra logistics	0-5	This measures the additional resources or arrangements needed to implement the module. Score it higher if the module requires extra logistics, such as job aids or specialized equipment.
Burden on training	1-5	Scoring starts at 1, acknowledging that some effort is always involved in training. Score higher or lower depending on how challenging it was to train the enumerators.
Burden on supervision	0-5	Burden on supervision refers to the effort and challenges supervisors face in overseeing the module's administration of the module and reviewing responses. Consider the frequency of mistakes and the effort to guide enumerators in correctly administering the module.
Burden on data processing and analysis	0-5	This assesses the time required and the complexity of coding involved in data cleaning and processing.
Burden on respondent	1-5	Scoring starts at 1, recognizing that some level of fatigue is inevitable. Score the module based on your perception of respondent fatigue or difficulty.

An average score for each dimension per module will be calculated based on the scores provided by multiple participants.

Questionnaire modules

Household Head

- Household eligibility and consent (HE)
- Household composition and demographics (HCD)
- Asset ownership (AO)
- Access to amenities, financial services and groups (AA)
- Household food insecurity experience scale (HF)
- Nutrition-sensitive agriculture program receipt (NSA)
- Food vehicle fortification coverage (FV)

Woman of Reproductive Age

- Woman's information (WI)
- Barriers to health care (BC)
- Birth history (BHC)
- Women of Reproductive Age – General (WRA)
- Current pregnancy interventions (CP)
- Antenatal care – previous pregnancy (PP)
- Delivery care and postnatal care (DC)
- Nutrition support to mother (NSM)
- Diet Quality Questionnaire (DQQ-Woman)
- Nutrition sensitive social protection programs – CASH (SPC)
- Nutrition Sensitive social protection programs – Food (SPF)
- Nutrition Sensitive social protection programs – Inkind (SFY)
- School Feeding (SFY)
- Child immunization, Children 0-23m (CI)
- Diet Quality Questionnaire, Child 6-23m (DQQ-Children)
- Early childhood, Children 0-59m (EC)
- School-aged children, Child 5-9y (SAC)

Adolescent

- Adolescents' interventions (AD), 10-19y
- Diet Quality Questionnaire (DQQ-Adolescent)

SCORING

Dimensions of efforts

- Challenging to customize (0-5)
- Length (0-5)
- Exogenous topic (0-5)
- Changes in survey design/eligibility (0-5)
- Increases sample size/ design (0-5)
- Extra logistic (0-5)
- Burden on training (1-5)
- Burden on supervision (0-5)
- Burden on data processing & analysis (0-5)
- Burden on respondent (1-5)

Figure 2: Dimensions and scales used to estimate the level of effort required for each questionnaire module

The dimensions of effort capture perceptions of the work required to design and implement each survey module. The first dimension, 'Challenging to customize', assesses the difficulty of adapting the existing module to specific contexts or populations and the effort required to develop it from scratch. 'Length' evaluates the time required to administer the module. 'Exogenous topic' measures the relevance of the content to the core focus of the survey. 'Extra logistics' looks at additional resources or arrangements needed to implement the module, such as visual aids, specialized materials or equipment, specialized personnel, extra transport, etc. The 'Changes in survey design/ eligibility' assesses the extent to which the module necessitates changes to the overall survey design. 'Increases sample size' determines whether the module requires a larger number of respondents to achieve adequate statistical power. The dimensions of 'burden on training', burden on supervision', and 'burden on data processing and analysis' evaluate the effort required by the module on training needs, supervision efforts, and the complexity of data handling, respectively. Lastly, 'burden on the respondent' refers to the perceived difficulty or inconvenience the module may cause participants. **Table 3** summarizes the scoring guide for the respondents.

Table 4: Summary of respondent types and timing of LOE scoring

LOE Dimensions	DataDENT research team (IFPRI/JHU1)	In-country survey partner	Timing of scoring
Design phase			
Challenging to customize	n=6	-	After finalizing the questionnaire
Length	n=6	n=3	After finalizing the questionnaire
Exogenous topic	n=6	n=3	After finalizing the questionnaire
Changes in survey design/eligibility	n=6	n=3	After finalizing the questionnaire
Increases sample size/design	n=6	n=3	After finalizing the questionnaire
Implementation phase		n=5	
Extra logistics	n=6	n=5	After finalizing the questionnaire
Burden on training	n=2	n=5	After completing the survey training
Burden on supervision	-	Sup(n=8 & QC (n=6)	After completing data collection
Burden on DP & analysis	n=6	-	After completing initial data checks
Burden on respondent	-	Enumerators (40)	After completing data collection

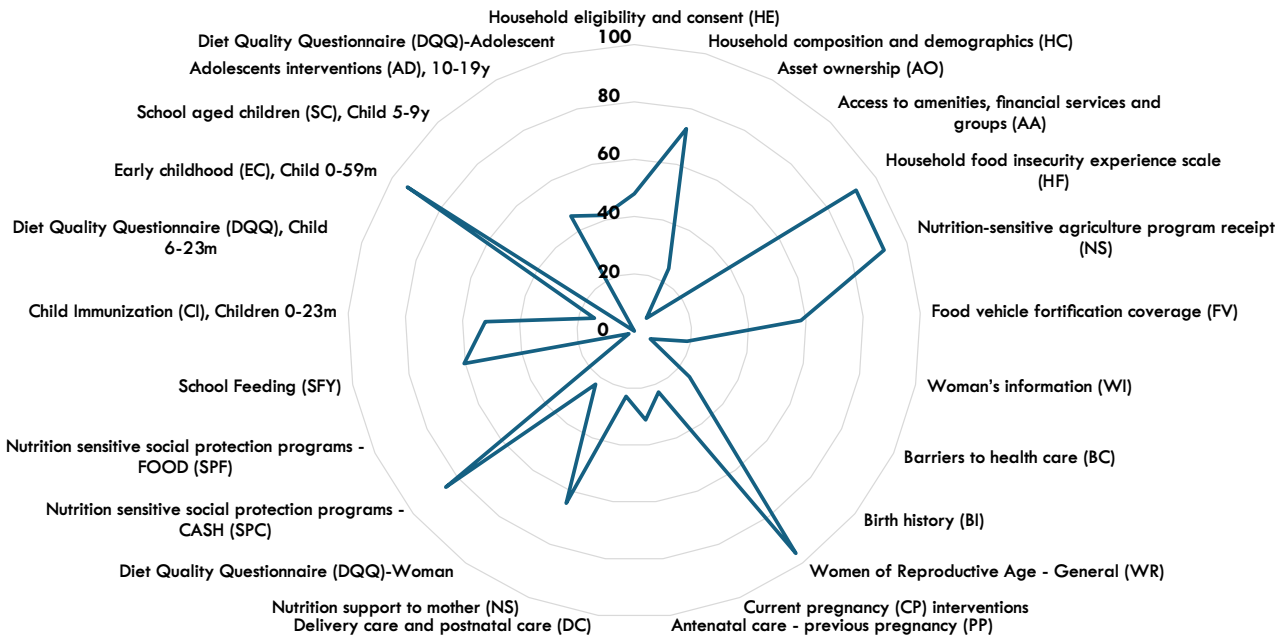
Sup=Supervisor; QC=Quality Controller; [1]Only currently pregnant and past pregnancy modules.

2.1.1 Analysis methods

We will first calculate the average score for each module, which will be standardized to a scale of 1–10. Since not all modules will be administered to all respondents, we will use the number of respondents as weights to calculate the final weighted level of effort scores. Scores will range from 1–10, with higher scores indicating that a greater perceived level of effort will be required to design and implement the module.

An illustrative example of the total LOE score visualized as a radar chart is shown in Figure 3.

Figure 3: Example radar chart to visualize the total LOE scores across different questionnaire modules.



2.2 Estimating the time burden to survey respondents

The ONCS questionnaires are administered to heads of households, women of reproductive age (15–49 years), adolescents, and the person responsible for shopping. The data source for measuring the time burden will be paradata (data that describes how the data was collected, i.e., the processes and quality of data collection). We will program our CAPI to track the time duration to administer each questionnaire module across respondent types.

2.2.1Analysis methods

By summing up the time (in minutes) for all modules administered to each respondent type, we can calculate the total time taken per respondent. From this, we will compute the average time and range required for each respondent type. Additionally, the average time per household will be calculated by summing up the total time across all respondent types within that household.

2.3 Measuring respondent fatigue

The ONCS questionnaires conclude with two questions for survey respondents designed to assess their fatigue, specifically any difficulty in answering questions and their level of tiredness after the survey.

The two questions are as follows:

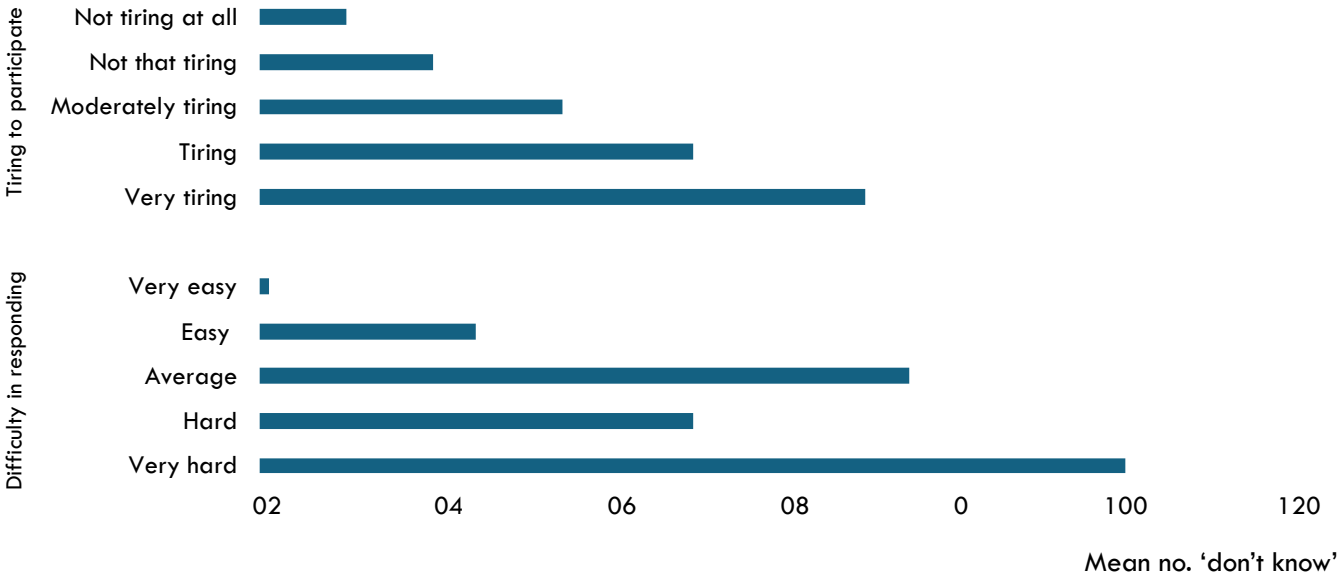
1. How difficult was it to answer the questions in this survey? (Response: Very hard, hard, average, easy, and very easy)
2. How tiring was it to participate in this survey? (Response: Very tiring, tiring, moderately tiring, not that tiring, and not tiring at all).

The two questions are on a five-point Likert scale.

2.3.1 Analysis methods

Reponses to each question will generate a score ranging 1–5. We will calculate the mean score for difficulty and fatigue for each respondent type. We will also analyze the correlation between responses to these questions and the duration of the interview. Figure 4 shows an example figure.

Figure 4: Example bar chart to visualize the mean number of 'don't know' responses by the fatigue-rating scale.



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