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CASE STUDY

EquityTool helps assess real-time analysis of crowdsourced data by wealth quintiles

UNICEF Bangladesh increases the useability of U-Report crowdsourced data by creating a representative sample for equity analysis of crowdsourced surveys



METRICS FOR MANAGEMENT

BACKGROUND

The United Nations Children’s Fund (UNICEF) uses evidence-based information to inform programming decisions around the world, including use of the U-Report platform to crowdsource information across 68 countries. U-Report is a mobile-based crowdsourcing communication platform¹ that works on several channels (e.g., Facebook Messenger, Viber, and WhatsApp) accessed via smart phones and short messaging service (SMS) for traditional mobile phones.

U-Report exists to connect young people with their representatives; improve programs for women, children, and young people; and draw the attention of local, national, and international development and policy actors to urgent issues. With more than 11 million users in 68 countries,² U-Report provides a pool of respondents and data, creating a valuable source of information for stakeholders focused on international development. U-Report data can be disaggregated by age, gender, country, and sub-national characteristics in real-time, allowing stakeholders to access U-Report information to understand U-Reporters’ opinions and concerns. Previous studies identified U-Report as a timely, low-cost, and highly credible platform for collecting and sending information, but the data developed was not sufficiently representative to allow statistical analysis.³

To address this challenge, in December 2018, UNICEF Bangladesh identified and tested the [EquityTool](#) — a simple, low-cost methodology to assess the socio-economic wealth of respondents — in its U-Report platform to increase useability and representativeness of data crowdsourced from U-Report.

This case study describes how the use of a short, easy-to-answer EquityTool survey within the U-Report platform enabled effective real-time wealth assessment of users (called U-Reporters) and provided valuable information for future application of crowdsourced data for equity analysis by simple wealth assessment and by categorizing data from U-Reporters by wealth quintiles.

EquityTool

- A simple way to assess if programs are reaching the poor.
- A collaborating panel of experts* in the field of wealth measurement and relative wealth indices worked together to develop this validated method to simplify equity assessment.

*Partners included UNICEF, USAID, Population Services International (PSI), MSI Reproductive Choices, Results for Development, BroadBranch, and Metrics for Management.

CHALLENGE: EFFECTIVE ASSESSMENT OF CROWDSOURCED SOCIO-ECONOMIC DATA

For many programs, it is time consuming and expensive to collect community and household-based information and analyze the same for equity considerations based on household level wealth information. This creates barriers for development programs to collect information they need to make informed programming decisions that can effectively address the needs of the most vulnerable and the poor. Crowdsourcing, however, provides a low-cost, rapid method for gathering near real-time data, providing a practical solution particularly in resource limited settings where data collection is often cost prohibitive. But crowdsourced data is less reliable compared to more rigorous, expensive, and time-consuming surveys such as Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS). And collecting statistically representative data from crowdsource applications can be challenging. As a crowdsourcing application, U-Report addresses the challenge of cost and time by significantly lowering the cost and nearly eliminating labor for data collection. However, it is not a traditional survey instrument, and is not designed for implementing lengthy questionnaires like the DHS wealth index.

The opt-in nature of U-Report results in data that are not sufficiently representative to accommodate high-quality statistical analysis. For UNICEF Bangladesh to use this valuable source of data effectively for programmatic planning and population analysis, the U-Report data needed to be more representative without compromising the timeliness or credibility of the data, or impeding the mandate of the U-Report platform: to bring young people together and empower them to express themselves regardless of social status.⁴

Restrictions on face-to-face contact imposed by the COVID-19 pandemic further highlighted the value of crowdsourcing data.

The early implementation of U-Report in Bangladesh focused on registering U-Reporters via digital channels commonly used by more affluent households, rather than SMS. As a result, researchers hypothesized that the U-Reporters would skew wealthier. They also theorized that if they could accurately measure this, then they could use the features of the underlying software (RapidPro) to build equitable samples. Although the membership would skew wealthier, at scale they would still have enough members to build representative samples across wealth quintiles.

1 <http://www.jogh.org/documents/2021/jogh-11-09001.pdf>

2 <https://www.unicef.org/innovation/U-Report>

3 [ibid.](#)

4 [ibid.](#)

SOLUTION: FIND A SIMPLE WAY TO COLLECT HIGH-QUALITY WEALTH DATA

The EquityTool is a simple and easy-to-use tool that allows users to measure relative wealth by comparing the wealth of respondents to the national or urban-only population of the country. It is available for over 60 countries and survey questions are pre-translated into local languages. The EquityTool also supplies the appropriate guidance for data analysis. The EquityTool requires only six to 18 questions from the Demographic and Health Survey (DHS) Wealth Index for a respondent's country, reducing the number of questions and variables needed for accurate wealth assessment. The questions can be incorporated into any survey platform and is free to use. The short set of questions facilitates easier and faster — and, potentially, less expensive — data collection and analysis of wealth distribution. This allows for fast and accurate comparisons across programs and populations. EquityTool data lets users make near real-time adjustments in program delivery leading to increased organizational effectiveness and strengthened program outcomes.

For this study, UNICEF Bangladesh used the EquityTool to assess the socio-economic profile of U-Reporters in Bangladesh. UNICEF Bangladesh administered the seven EquityTool survey questions for Bangladesh to 56,800 U-Reporters through RapidPro, the open-source software framework that powers U-Report.⁵ Participation in the survey was voluntary, but only those who answered all seven EquityTool questions were included in the wealth quintile analysis.

Researchers created a “flow” — a decision-tree logic that guides participants through a series of messages and responses and collects a data point at each step — in RapidPro to lead users progressively through the EquityTool questions for Bangladesh. By including these questions, researchers were able to assign U-Reporters to one of the five wealth quintiles for a national sample, and to understand whether survey respondents were more, less, or equally wealthy compared to the national population.

The user's quintile was stored in a contact field in U-Report enabling subsequent polls or communications to be targeted by wealth quintile, facilitating analysis of future surveys to be disaggregated by wealth quintile, and allowing future adjustments of EquityTool scoring. Furthermore, researchers were able to build a RapidPro flow to create a sample of U-Reporters representing equitable wealth distribution.

RESULTS: UNDERSTANDING AND IMPROVING EQUITABLE REPRESENTATION FROM U-REPORT DATA

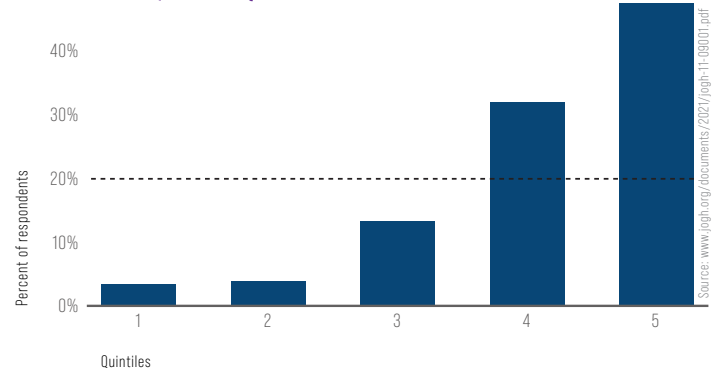
Of the 56,800 U-Reporters who received the survey, 23.8% began the survey and 80.3% of these completed all seven questions. This indicates that respondents did not find the survey onerous. EquityTool analysis identified respondents from all five wealth quintiles and found that 79% of respondents came from the two wealthiest quintiles, with just

5 <http://www.jogh.org/documents/2021/jogh-11-09001.pdf>

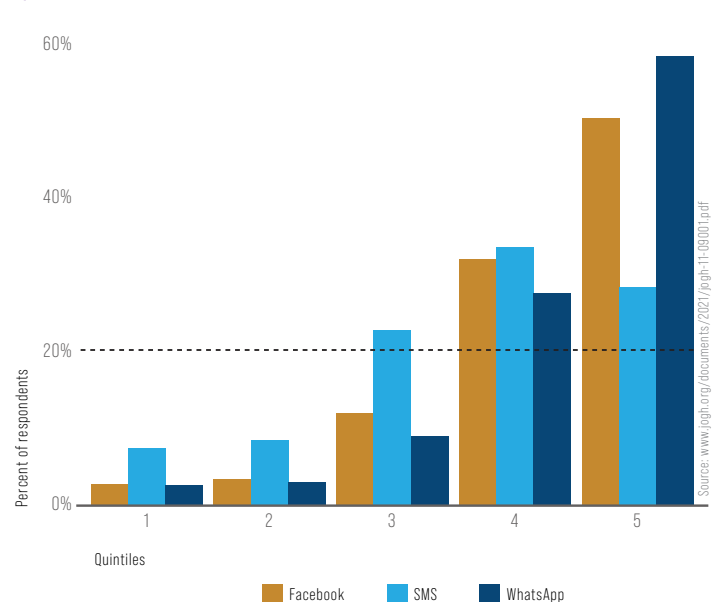
21% from the three lowest quintiles. These analyses indicate that most U-Reporters recruited through the digital channels prioritized in the Bangladesh U-Report roll-out were more affluent, as hypothesized, than the distribution expected from a random sample. Further analysis found the most equitable distribution among SMS users and the least equitable among WhatsApp users. Following this analysis, researchers then randomly re-sampled a group of 1,828 regular and frequent U-Report respondents who represented an equitable cross-section of Bangladesh's population by wealth for future surveys.

UNICEF Bangladesh concluded that the EquityTool integration with the U-Report platform enhanced the quality of crowdsourced data for statistical analysis and application, and would build a representative sample across all five wealth quintiles for the universe. It also provided valuable insight on the use of crowdsourced data in programming and wealth assessment. This study enabled UNICEF Bangladesh to better understand population needs, and will facilitate adaptation of future programming interventions.

QUINTILE DISTRIBUTION FOR ALL U-REPORTERS WHO COMPLETED EQUITYTOOL QUESTIONS



QUINTILE DISTRIBUTION BY RESPONDENT CHANNEL



The EquityTool enables UNICEF country offices to:

- Monitor membership uptake and adapt recruitment tactics to ensure more equitable distribution;
- Invest in appropriate channels to improve equity;
- Build sample groups within RapidPro for specific questions where equitable representation is critical in making a programming decision based on responses.

NEXT STEPS

The EquityTool analysis confirmed that U-Reporters in Bangladesh were likely to be from more affluent populations. Although U-Report is reaching the poorest quintiles, it is possible to increase representation from poorly represented wealth quintiles through a targeted approach for enrollment. Recommendations for increasing representation in U-Report data include:

- Combine U-Report and EquityTool to increase representativeness of data generated by U-Report based surveys.
- Institute peer referral recruitment initiatives to increase inadequately represented quintiles among the U-Reporters. RapidPro flows already exist to execute and expedite this type of recruitment drive.
- Diversify channel recruitment and ensure that U-Report promotion targets a range of channels reaching all wealth quintiles to improve the innate representativeness of the data.
- Apply EquityTool analysis over time to allow users to adjust recruitment techniques or allow program staff to adjust.

This research also provides insights for the broader use of U-Report, and potentially other crowdsourcing platforms, to provide statistically representative wealth assessment data.

Using the EquityTool allows for selection of a sub-sample of regular respondents that is evenly distributed across the five wealth quintiles, improving the representativeness of future surveys, and increasing the value of the data generated by the community. This expands the potential for use of crowdsourced data in program planning, monitoring, and accountability. The EquityTool can also assist in increasing representation in survey data for sub-national surveys, to provide critical program and monitoring information.

For more information on how UNICEF Bangladesh used the EquityTool to help identify those most in need, [read the full article here](#).

M4M can help you use the EquityTool in your project. For more information contact communications@m4mgmt.org.



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Lessons Learned

1. U-Report platform promotion should be informed by wealth analysis to improve the equity in representation of crowdsourced information.
2. The EquityTool can be applied over time to allow users to adjust recruitment techniques and continuously improve representation.
3. The EquityTool can support disaggregation by sub-national and other program-relevant criteria to increase usability of crowdsourced data.
4. Crowdsourced data is always strongest when used in conjunction or triangulation with traditional data sets.

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