Montenegro - Multiple Indicator Cluster Survey 2013

United Nations Children's Fund, Statistical Office of Montenegro

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Sampling

Sampling Procedure

The primary objective of the sample design for the Montenegro Multiple Indicator Cluster Survey was to produce statistically reliable estimates of most indicators, at the national level, for urban and rural areas, and for the three regions of the North, Centre and South of the country.

A stratified, two-stage, cluster random sampling approach was used for the selection of the survey sample.

The target sample size for the Montenegro MICS was calculated as 4,600 households. For the calculation of the sample size, various indicators were used, including the following: the contraceptive prevalence rate for women who are currently married or in a union (with a 2005 estimate of 39.4 percent, and a calculated sample size of 1,050 households); child disability (with a 2005 estimate of 12.5 percent and calculated sample size of 4,456 households); and child labour (with a 2005 estimate of 9.9 percent and a sample size calculation of 9,444 households).

Since the sampling frame (the 2011 Population Census) was not up-to-date, a new listing of households was conducted in all the sample enumeration areas prior to the selection of households. For this purpose, listing teams were formed to visit each enumeration area, and to list the occupied households.

MONSTAT was responsible for recruitment of the teams responsible for listing and fieldwork. For each team, the maps and descriptions of the selected cluster from the 2011 Census were provided. The interviewers' task was to go to the specific area and to mark whether the dwelling is occupied or unoccupied; to fill in the name for head of household and correct address; and to note whether children under 5 live in the household. The listing was carried out from 22 January until 10 February 2013.

Lists of households were prepared by the listing teams in the field for each enumeration area and sent to MONSTAT. Afterwards, the updated lists of households were divided into two categories: households with children under 5 and households without children under 5. A different number of households was selected systematically from each category in the sample enumeration areas.

The sampling procedures are more fully described in "Multiple Indicator Cluster Survey 2013 - Final Report" pp.279-281.

Response Rate

Of the 4,596 households selected for the sample, 4,425 were found to be occupied. Of these, 4,052 were successfully interviewed for a household response rate of 91.6 percent.
In the interviewed households, 3,606 women (age 15-49 years) were identified. Of these, 3,493 were successfully interviewed, yielding a women's response rate of 96.9 percent within the interviewed households.
In the interviewed households, 1,872 men (age 15-49 years) were identified. Of these, 1,799 were successfully interviewed, yielding a men's response rate of 96.1 percent within the interviewed households.
There were 1,441 children under age five listed in the household questionnaires. Questionnaires were completed for 1,420 of these children, which corresponds to a response rate of 98.5 percent within interviewed households.
Overall response rates of 88.7, 88.0 and 90.2 percent were calculated for the completion of the women, men and children under five questionnaires, respectively.

Weighting

The 2013 Montenegro MICS is not self-weighting, essentially, by disproportional allocation of the sample to the strata, categories of households (with/without children under 5) and the final non-response. For this reason, sample weights were calculated and these were used in the subsequent analyses of the survey data.

The major component of the weight is the reciprocal value of the sampling fraction employed in selecting the number of sample households in a particular sampling stratum, from certain Primary Sampling Unit (PSU) within certain category. The sampling fraction is the product of the probabilities of selection at every stage in each sampling stratum.

A second component in the calculation of sample weights takes into account the level of non-response for the household and individual interviews. The adjustment for household non-response is equal to the inverse value of: RRhc = Number of

interviewed households in stratum hc /Number of sample occupied households in stratum hc

The non-response adjustment factors for women's, men's and under-5s' questionnaires are applied to the adjusted household weights. The numbers of eligible women, men and children under 5 were obtained from the roster of household members in the Household Questionnaire for households where interviews were completed. Since the men's questionnaires were conducted only in half of the households, this half sample approach was taken into account during the calculation of men's sample weights.

The design weights for the households were calculated by multiplying the above factors for each enumeration area and second-stage stratum (with/without children). These weights were then standardised (or normalised), one purpose of which is to make the weighted sum of the interviewed sample units equal the total sample size at the national level. Normalisation is achieved by dividing the full sample weights (adjusted for nonresponse) by the average of these weights across all households at the national level. This is performed by multiplying the sample weights by a constant factor equal to the unweighted number of households at the national level divided by the weighted total number of households (using the full sample weights adjusted for non-response). A similar standardisation procedure was followed in obtaining standardised weights for the women's and under-5s' questionnaires and men's questionnaires. Adjusted (normalised) weights varied between 0.09 and 5.01 in the 230 sample enumeration areas (clusters).

Sample weights were appended to all data sets and analyses were performed by weighting each household, woman, under-5 child or man with these sample weights.

Questionnaires

Overview

The questionnaires for the Generic MICS were structured questionnaires based on the MICS5 model questionnaire with some modifications and additions. Household questionnaires were administered in each household, which collected various information on household members including sex, age and relationship. The household questionnaire includes List of Household Members, Education, Child Labour, Child Discipline, Household Characteristics, Water and Sanitation, Handwashing.

In addition to a household questionnaire, questionnaires were administered in each household for women age 15-49, children under age five and men age 15-49. The questionnaire was administered to the mother or primary caretaker of the child.

The women's questionnaire includes Woman's Background, Fertility, Desire for Last Birth, Maternal and Newborn Health, Postnatal Health Checks, Illness Symptoms, Contraception, Unmet Need, Attitudes Toward Domestic Violence, Marriage/Union, Sexual Behaviour, HIV/AIDS, Tobacco and Alcohol Use and Life Satisfaction.

The men's questionnaire includes Men's Background, Attitudes Toward Domestic Violence, Marriage/Union, Sexual Behaviour, HIV/AIDS, Tobacco and Alcohol Use and Life Satisfaction.

The children's questionnaire includes Child's Age, Birth Registration, Early Childhood Development, Breastfeeding and Dietary Intake, Immunization, Care of Illness and Anthropometry.

The questionnaires are based on the MICS5 model questionnaire. The questionnaires were translated into Montenegrin from the English version of the MICS5 model and were pre-tested in Podgorica, Niksic and Cetinje during January 2013. Based on the results of the pre-test, modifications were made to the wording and translation of the questionnaires.

Data Collection

Data Collection Dates

Start	End	Cycle
2013-03-04	2013-05-10	N/A

Data Collection Mode

Face-to-face [f2f]

DATA COLLECTION NOTES

Training for the fieldwork was conducted over 12 days in February 2013 for both surveys. 55 participants attended the fieldwork training. Training included lectures on interviewing techniques and the contents of the questionnaires, and mock interviews between trainees to gain practice in asking questions. Towards the end of the training period, trainees spent two days in practice interviewing in Bar in both urban and rural areas. Trainees also practiced measuring the weight and height of children in a kindergarten in Bar.

The data were collected by eight teams for the general population survey; each was comprised of two interviewers, one editor, one measurer and a supervisor. Training, fieldwork and data processing were conducted at the same time for the Montenegro MICS samples. Fieldwork began for both surveys on 4 March 2013 and was concluded on 10 May 2013.

Data Collectors

Name	Abbreviation	Affiliation
Statistical Office of Montenegro	MONSTAT	

SUPERVISION

There is one supervisor for each of the eight data collection teams in the field.

Data Processing

Data Editing

Data was entered using CSPro software. The data was entered on 10 microcomputers and carried out by 15 data entry operators and one data entry supervisor. In order to ensure quality control, all questionnaires were entered twice and internal consistency checks were performed. Procedures and standard programmes developed under the global MICS5 programme and adapted to the Montenegro questionnaire were used throughout. Data processing began simultaneously with data collection in March 2013 and was completed in May 2013 for both surveys. Data was analysed using the Statistical Package for Social Sciences (SPSS) software program, Version 18, and the model syntax and tabulation plans developed by UNICEF were used for this purpose.

Data Appraisal

Estimates of Sampling Error

Sampling errors are a measure of the variability between the estimates from all possible samples. The extent of variability is not known exactly, but can be estimated statistically from the survey data.
The following sampling error measures are presented in this appendix for each of the selected indicators:
- Standard error (se): Sampling errors are usually measured in terms of standard errors for particular indicators (means, proportions etc). Standard error is the square root of the variance of the estimate. The Taylor linearisation method is used for the estimation of standard errors.
- Coefficient of variation (se/r) is the ratio of the standard error to the value of the indicator, and is a measure of the relative sampling error.
- Design effect (deff) is the ratio of the actual variance of an indicator, under the sampling method used in the survey, to the variance calculated under the assumption of simple random sampling. The square root of the design effect (deft) is used to show the efficiency of the sample design in relation to the precision. A deft value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a deft value above 1.0 indicates an increase in the standard error due to the use of a more complex sample design.
- Confidence limits are calculated to show the interval within which the true value for the population can be reasonably assumed to fall, with a specified level of confidence. For any given statistic calculated from the survey, the value of that statistic will fall within a range of plus or minus two times the standard error (r + 2.se or r – 2.se) of the statistic in 95 percent of all possible samples of identical size and design.

For the calculation of sampling errors from the MICS data, SPSS Version 18 Complex Samples module has been used. The results are shown in the tables that follow. In addition to the sampling error measures described above, the tables also include the weighted and unweighted counts of denominators for each indicator. Sampling errors are calculated for indicators of primary interest, for Montenegro, for urban and rural areas, and for the regions. Ten of the selected indicators are based on household members, 14 are based on women, six are based on men and seven are based on children under 5. All indicators presented here are in the form of proportions.

Other forms of Data Appraisal

A series of data quality tables are available to review the quality of the data and include the following:
- Age distribution of the household population
- Age distribution of eligible and interviewed women
- Age distribution of eligible and interviewed men
- Age distribution of children under 5 in household and children under 5 questionnaires
- Birth date reporting: Household population
- Birth date and age reporting: Women
- Birth date and age reporting: Men
- Birth date and age reporting: Under-5s
- Birth date reporting: Children, adolescents and young people
- Birth date reporting: First and last births
- Completeness of reporting
- Completeness of information for anthropometric indicators: Underweight
- Completeness of information for anthropometric indicators: Wasting
- Heaping in anthropometric measurements
- Observation of birth certificates
- Observation of vaccination cards
- Presence of mother in the household and the person interviewed for the under-5 questionnaire
- Selection of children age 1-17 years for the child labour and child discipline modules
- School attendance by single age
- Sex ratio at birth among children ever born and living

The results of each of these data quality tables are shown in appendix D in document "Multiple Indicator Cluster Survey 2013 - Final Report" pp.303-312.

Related Materials

Questionnaires

Montenegro Multiple Indicator Cluster Survey 2013 - Questionnaire

Title	Montenegro Multiple Indicator Cluster Survey 2013 - Questionnaire
Author(s)	UNICEF Statistical Office of Montenegro
Country	Montenegro
Language	English
Filename	Montenegro (National and Roma Settlements) 2013 MICS_English_Questionnaire.pdf

MICS 5 Changes to MICS5 Questionnaires since June 9, 2013

Title	MICS 5 Changes to MICS5 Questionnaires since June 9, 2013
Language	English
Filename	http://mics.unicef.org/tools

Reports

Montenegro Multiple Indicator Cluster Survey 2013- Report (English)

Title	Montenegro Multiple Indicator Cluster Survey 2013- Report (English)
Author(s)	UNICEF Statistical Office of Montenegro
Country	Montenegro
Language	English
Filename	https://mics-surveys-prod.s3.amazonaws.com/MICS5/Central%20and%20Eastern%20Europe%20and%20the%20Commonwealth%20of%20Independent%20States/Montenegro/2013/Final/Montenegro%20%28National%20and%20Roma%20Settlements%29%202013%20MICS_English.pdf

Montenegro Multiple Indicator Cluster Survey 2013- Report (Montenegrin)

Title	Montenegro Multiple Indicator Cluster Survey 2013- Report (Montenegrin)
Author(s)	UNICEF Statistical Office of Montenegro
Country	Montenegro
Language	Montenegrin
Filename	https://mics-surveys-prod.s3.amazonaws.com/MICS5/Central%20and%20Eastern%20Europe%20and%20the%20Commonwealth%20of%20Independent%20States/Montenegro/2013/Final/Montenegro%20%28National%20and%20Roma%20Settlements%29%202013%20MICS_Montenegrin.pdf

Montenegro Multiple Indicator Cluster Survey 2013- Key Findings (English)

Title	Montenegro Multiple Indicator Cluster Survey 2013- Key Findings (English)
Author(s)	UNICEF Statistical Office of Montenegro
Country	Montenegro
Language	English
Filename	https://mics-surveys-prod.s3.amazonaws.com/MICS5/Central%20and%20Eastern%20Europe%20and%20the%20Commonwealth%20of%20Independent%20States/Montenegro/2013/Key%20findings/Montenegro%202013%20MICS%20KFR_English.pdf

Montenegro Multiple Indicator Cluster Survey 2013- Key Findings (Montenegrin)

Title	Montenegro Multiple Indicator Cluster Survey 2013- Key Findings (Montenegrin)
Author(s)	UNICEF Statistical Office of Montenegro
Country	Montenegro
Language	Montenegrin
Filename	https://mics-surveys-prod.s3.amazonaws.com/MICS5/Central%20and%20Eastern%20Europe%20and%20the%20Commonwealth%20of%20Independent%20States/Montenegro/2013/Key%20findings/Montenegro%202013%20MICS%20KFR_Montenegrin.pdf

Technical documents

MICS 5 Survey Plan Template

Title	MICS 5 Survey Plan Template
Language	English

Filename   http://mics.unicef.org/tools

MICS 5 Supply Procurement Instructions

Title   MICS 5 Supply Procurement Instructions
Language English
Filename   http://mics.unicef.org/tools

MICS 5 Fieldwork Duration, Staff, Data Processing and Supply Estimates Template

Title   MICS 5 Fieldwork Duration, Staff, Data Processing and Supply Estimates Template
Language English
Filename   http://mics.unicef.org/tools

MICS 5 Indicator List

Title   MICS 5 Indicator List
Language English
Filename   http://mics.unicef.org/tools

MICS 5 Changes to Indicator List since June 9, 2013

Title   MICS 5 Changes to Indicator List since June 9, 2013
Language English
Filename   http://mics.unicef.org/tools

MICS 5 Sample Size Calculation

Title   MICS 5 Sample Size Calculation
Language English
Filename   http://mics.unicef.org/tools

MICS 5 Household Selection Template

Title   MICS 5 Household Selection Template
Language English
Filename   http://mics.unicef.org/tools

MICS 5 Manual for Mapping and Household Listing

Title   MICS 5 Manual for Mapping and Household Listing
Language English
Filename   http://mics.unicef.org/tools

MICS 5 Sample Weight Calculation Template

Title   MICS 5 Sample Weight Calculation Template
Language English
Filename   http://mics.unicef.org/tools