

North Macedonia 2023 Technical Document

Sampling

A stratified multi-stage cluster sample design was used to complete 1,000 face-to-face surveys.

Target Population/Coverage:

Non-institutionalized adult population (15 years of age or older) living in households. Stratification and selection used population data from the 2021 National Population Census from the State Statistical Office and the 2021 Local Elections from the State Election Commission in North Macedonia.

Stratification:

The sampling frame was stratified by geographic region and urbanicity, resulting in a total of 16 strata groups. The regions include: Eastern Region, Northeastern Region, Pelagonia, Polog, Skopje, Vardar, Southwestern Region, and Southeastern Region. The regions were further stratified by urban/rural status as defined by the central statistical office.

Sample Selection:

Primary Sampling Units (PSUs) are primary electoral units. PSUs were selected using probabilities proportional to population size, where the total 18+ population was the measure of size. A total of 100 PSUs were selected.

Within each selected PSU a random starting point was identified. Using the right-hand rule and a fixed interval of 3 households (i.e. every third household is selected), interviewers selected eligible households until the required number of interviews were completed. In large apartment buildings (with 10 or more residential units), an interval of 5 was used. Within each selected household, interviewers listed all eligible (15+ adults) individuals and the CAPI program randomly selected a respondent. In case of refusals or non-contacts, households were replaced along the random route using the same interval.

Data Collection: July 13, 2023 – September 30, 2023

AAPOR3 response rate: 58%

Weighting: The sample data were weighted to minimize bias in survey-based estimates. The weighting procedure was formulated based on the sample design and was carried out in multiple stages. A probability weight factor (base weight) was constructed to correct for unequal selection probabilities. At the next step, the base weights were post-stratified to adjust for non-response and to match the weighted sample totals to known target population totals obtained from country-level census data.

Design Effect: 1.46

Margin of error: $\pm 3.8\%$ (95% confidence level)

Population sources used for constructing weights were based on the following:

Age, Gender, Education, Strata/Region: 2021 Population Census

Age	SAMPLE_UNWTD	SAMPLE_WTD	TARGET
15-29	11.9	20.3	21.4
30-49	28.6	33.3	33.1
50-64	26.4	25.2	24.8
65+	33.1	21.2	20.7
Education	SAMPLE_UNWTD	SAMPLE_WTD	TARGET
No education/Primary/Lower secondary	22.4	33.0	34.4
Upper secondary	57.8	46.4	45.4
Tertiary	19.8	20.6	20.2
Sex	SAMPLE_UNWTD	SAMPLE_WTD	TARGET
Male	44.8	48.4	49.2
Female	55.2	51.6	50.8
Strata/Region	SAMPLE_UNWTD	SAMPLE_WTD	TARGET
Eastern -- Urban	6.1	6.1	6.0
Eastern -- Rural	1.9	2.4	2.5
Northeastern -- Urban	5.0	5.1	5.2
Northeastern -- Rural	3.0	3.3	3.2
Pelagonia -- Urban	8.0	8.2	8.3
Pelagonia -- Rural	4.0	3.6	3.5
Polog -- Urban	5.0	5.0	4.9
Polog -- Rural	8.0	8.5	8.3
Skopje -- Urban	23.0	22.8	23.0
Skopje -- Rural	10.0	9.7	9.5
Southwestern -- Urban	5.0	4.9	5.1
Southwestern -- Rural	5.0	4.8	4.7
Vardar -- Urban	6.0	5.7	5.6
Vardar -- Rural	2.0	2.1	2.1
Southeastern -- Urban	4.0	3.6	3.8
Southeastern -- Rural	4.0	4.3	4.2