STEP Survey Weighting Procedures Summary
(Based on The World Bank Weight Requirement)

Macedonia

March 13, 2014

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1   Survey Design Overview

The Macedonia survey firm implemented a Partial Literacy Assessment design. The Partial assessment required each selected person to attempt to complete a General Booklet comprising Reading Components and a set of Core Literacy Items.

1.1   Target Population

The target population for the Macedonia STEP survey comprises all non-institutionalized persons 15 to 64 years of age (inclusive) living in private dwellings in urban areas of the country at the time of data collection. This includes all residents except foreign diplomats and non-nationals working for international organizations.

Although the target population is defined as persons aged 15 to 64 (inclusive), the sampling frame was based on estimation of the population aged 18-64 (inclusive), with the right to vote in the Republic of Macedonia and living in urban settlements (town) as defined by the Macedonian law.

Subpopulations of Interest
Survey results were required for the following two subpopulations based on ethnicity:
- Macedonians (and other ethnicities)
- Albanians

Exclusions
Persons aged 15 to 17 (inclusive) were not explicitly included in the sample frame due to the fact that they do not have the right to vote in the Republic of Macedonia. This group of 15 to 17 year old persons is most probably living in a dwelling with a person who is 18 to 64 years old and therefore the 15 to 17 year old persons are likely present in the target dwellings.

Forecasts done by the Macedonian State Statistical Office at June 2011 report that people aged 15 to 19 (inclusive) in overall Macedonia represents 7.2% of the population (currently there are no forecasts for the age category 15-17, but the only data available are for the Census 2001, so not totally reliable). It is therefore credible to expect that the potential exclusion is not exceeding 5% of the country's urban population.

1.2 Sample Frame

The sample frame for the selection of first stage sample units is the file 'PSU sampling frame (FINAL)'. The sample frame is a list of 1280 first stage sampling units, i.e., Electoral Polling Stations, which was updated at the time of the 2011 Elections in Macedonia.

Table 1 provides the sample frame count of the number of PSUs & the number of persons aged 18-64 by stratum.

Table 1: Macedonia Sample Frame Count of # of PSUs & # of Persons Aged 18-64 by Stratum		
	# of PSUs	
Stratum - Ethnic Group Proportion	Electoral Polling Stations	# of Voters
A: 90% to 100% Macedonian Voters	960	658,742
B: 75% to 90% Macedonian Voters	92	70,705
C: 60% to 75% Macedonian Voters	45	35,026
D: 40% to 60% Macedonian Voters	69	59,398
E: 25% to 40% Macedonian Voters	26	22,257
F: 10% to 25% Macedonian Voters	52	42,545
G: 0% to 10% Macedonian Voters	36	32,723
Total	1,280	921,396

1.3   Sample Design

The Macedonia sample design is a stratified 3 stage sample design. The stratification objective was to obtain an approximately proportional sample from two ethnic groups, Macedonian and Albanian. To meet this objective, the sample was stratified by 7 Ethnic Groups based on the proportion of Macedonian voters in each PSU as follows:

Stratum A: 90% to 100% Macedonian Voters
Stratum B: 75% to 90% Macedonian Voters
Stratum C: 60% to 75% Macedonian Voters
Stratum D: 40% to 60% Macedonian Voters
Stratum E: 25% to 40% Macedonian Voters
Stratum F: 10% to 25% Macedonian Voters
Stratum G: 0% to 10% Macedonian Voters

First Stage Sample
The primary sample unit (PSU) is an Electoral Polling Station; each PSU is uniquely defined by the sample frame variable 'PSUsmpID'.

The first stage units were selected by the World Bank Survey Methodologist. The sampling objective was to select 289 PSUs, comprised of 268 Initial PSUs and 21 Reserve PSUs. Although 289 PSUs were selected, only 268 PSUs were activated; none of the 21 reserve PSUs was activated during data collection.

The PSUs were selected using a systematic probability proportional to size (PPS) sampling method, where the measure of size was the number of registered voters aged 18 to 64 in a PSU.

Second Stage Sample
 The second stage sample unit (SSU) is a household. The sampling objective was to obtain interviews at 15 households within each selected PSU. The Macedonian survey firm conducted field listing within each selected PSU.

The survey team expected the non-response rate to be in the range of 30% to 50%. In order to allow for a low response rate, a sample of 45 households was selected in each PSU using a systematic random method.

Table 2 provides the overall sample allocation for the household sample for the activated PSUs.

Table 2: Macedonia Overall Sample Allocation for 'Activated' PSUs by Stratum

Stratum - Ethnic Group Proportion	Activated PSUs	Sampled Households		
		Initial Sample	Reserve Sample	Total
A: 90% to 100% Macedonian Voters	147	2205	4410	6615
B: 75% to 90% Macedonian Voters	15	225	450	675
C: 60% to 75% Macedonian Voters	8	120	240	360
D: 40% to 60% Macedonian Voters	25	375	750	1125
E: 25% to 40% Macedonian Voters	16	240	480	720
F: 10% to 25% Macedonian Voters	32	480	960	1440
G: 0% to 10% Macedonian Voters	25	375	750	1125
Total	268	4020	8040	12060

Third Stage Sample

The third stage sample unit was an individual aged 15-64 (inclusive). The sampling objective was to select one individual with equal probability from each selected household.

2   Data Collection Outcomes

The final survey weights depend on the outcome from the attempt to obtain an interview at each selected household. The treatment of each sampled case in the weighting process depends on the result code assigned to the sampled household and the result code assigned to the selected person. The result codes used in STEP are listed in Table 3. A variable called '**final_status**' with these code values was assigned to each sampled case; the variable 'final_status' was revised to '**Final_Result**' during the weighting process.

Table 3: *Partial Literacy Assessment* Result Codes for Sampled Households and Selected Persons	
I. Household-level Codes	
Code	**Code Description**
01	Refusal-Household
02	Household unusual circumstance (e.g., death in family, illness, fire in dwelling, etc.)
03	No knowledgeable household member found after 3 visits (only a child, non-competent adult, etc.)
04	Temporarily absent/unavailable for field period (information from other persons)
05	No competent household member to interview (because of severe illness, mental disability, etc.)
06	Language problem – no household member spoke a language understandable by survey team, no translator available
07	Dwelling could not be found / selected address has no household
08	Vacant dwelling / selected address has no household
09	Dwelling not habitable/dwelling destroyed/dwelling converted to commercial use
21	Household Refusal to continue Household Module (i.e., begun but not complete)
22	Household unusual circumstance (e.g., death in family, illness, fire in dwelling, etc.) prevented continuance
31	No household member in the eligible range of 15-64
94	Case dropped due to data quality issue
95	Sample case justifiably not activated, e.g., reserve sample household not needed , sample goal achieved
96	General non-response; Reason unspecified by survey firm
97	Household not interviewed due to sample selection error – wrong household selected in its place
II. Person-level Codes	
Code	**Code Description**
	Individual modules 2-7 not begun or unacceptable interview
32	Refusal by Selected Person to begin modules 2-7
33	Unusual circumstance - Selected Person (e.g., death in family, illness, fire in dwelling, etc.)
34	Refusal - Another household member refused to let selected individual do individual modules
35	Unable to contact Selected Person after three visits during field period
36	Temporarily absence/unavailability of Selected Person for field period (info from household member)
37	Hearing Problem - Selected Person is deaf or so hard-of-hearing, no translator available
38	Learning or mental disability (includes emotional conditions like severe depression) of Selected Person
39	Speech impairment of Selected Person prevented participation, no translator available
40	Language problem – Selected Person's language not understood by survey team, no translator available
98	Sample selection error – an incorrect eligible person was selected
99	Sample selection error – an ineligible person was selected
	Individual modules 2-7 begun but not completed
51	Refusal by Selected Person to continue modules 2-7
52	Unusual circumstance - Selected Person
	General Booklet (module 9) not begun
61	Unable to read or write in language of General Booklet – Selected Person refused to begin
62	Refusal by Selected Person to begin General Booklet
63	Unusual circumstance - Selected Person
64	Blindness or visual impairment of Selected Person prevented completion of General Booklet

Table 3: *Partial Literacy Assessment* Result Codes for Sampled Households and Selected Persons	
65	Physical disability of Selected Person prevented completion of General Booklet
	General booklet (module 9) looked through or attempted but not completed
71	Selected Person looked at Booklet but unable to read & write the language of Booklet - did not begin
72	Refusal by Selected Person to continue the General Booklet
73	Interruption – unacceptably long, General Booklet administration terminated
74	Unusual circumstance - Selected Person
75	Attempted General Booklet but no answers marked
76	Marked some items but did not attempt all items in General Booklet
77	Marked some items & attempted all items in GB
78	Marked all items in GB

3   Weighting Overview

While the Macedonia three-stage stratified cluster design greatly enhanced the operational feasibility of data collection, it resulted in differential probabilities of selection for the selected persons. Consequently, each selected person in the survey does not necessarily represent the same number of persons in the target population. To account for differential probabilities of selection due to the nature of the design and to ensure accurate survey estimates, STEP requires a sampling weight for each person that participated in the survey.

In general, the objectives of the STEP weighting are to construct a set of survey weights to,
1) compensate for unequal probabilities of selection;
2) compensate for household-level non-response and person-level non-response.

The general weighting procedure for the Macedonia STEP survey required the following tasks.

1) Creation of a data file to input into the weighting process;

2) **World Bank (WB) Weight Requirement**:

   Create survey weights for sampled cases of households and persons that provided sufficient data to be considered a participant in the survey. This requirement does not necessarily include the completion of an assessment General Booklet, nor does it necessarily include the completion of all household and individual questionnaire modules.
   a) Calculation of a PSU weight for 268 sampled PSUs;
   b) Calculation of a household weight for each sampled household;
      i) Calculation of a household-level non-response adjustment independently for each PSU.
   c) Calculation of a person weight for each selected person (SP);
      i) Calculation of a non-response adjustment independently for each sampled person.

3) The required output from the weighting process is a final Macedonia data file with the survey design weights (i.e., for each sampled PSU, household, person) appended to each data record.

4   Files - Weighting Process

4.1   Input Files

The key file for the weighting process is the file 'STEP Macedonia - Data for Weighting_s7' provided by the WB core team. This file contains a data record for each of the 12,060 sampled households from the Macedonia sample frame. An SPSS version, i.e., 'STEP Macedonia - Data for Weighting_s7.sav', was created for the weighting process.

4.1.1   Revisions to Input Data File

The following general revisions were made to the Macedonia SPSS data file 'STEP Macedonia - Data for Weighting_s7':

1) '*Final_Result*', the code for the final interview outcome; created by revising the variable '*final_status*' as follows:

   a) '*final_status*' revised as follows into '*Final_Result*':
      i)   IF (field_rst = 1 | field_rst = 3) Final_Result=final_status.
      ii) IF (field_rst = 2) Final_Result=95.
      iii) IF (field_rst = 4) Final_Result=97.
      iv) IF (field_rst = 5) Final_Result=98.
      v)   IF (field_rst = 6) Final_Result=99.

   b) Refer to Table 3 in section 2 for the list of **Final_Result** codes.
      i)   The data file variable '*field_rst* - Fieldwork result code' was used to create the variable '*final_status*'.
         - For , '*field_rst*' the description of the codes is as follows:

Code	Code Description
1	Activated; for an 'initial sample' HH this means that it was contacted, for a 'reserve sample' HH it means that it was activated for an interview attempt.
2	Never activated; applicable to reserve sample HHs, the case was correctly never activated, i.e., the prescribed fieldwork procedures were followed.
3	Wrongly activated; applicable to reserve sample cases, the reserve case was activated, but according to the prescribed fieldwork procedures it should <u>not</u> have been activated (i.e., a reserve sample HH was incorrectly activated).
4	Wrongly never activated; applicable to reserve sample cases, the reserve case was never activated but according to the prescribed fieldwork procedures it should have been activated (i.e., a reserve HH should have been activated based on the provided activation order, but it wasn't).
5	Incorrect eligible HH member selected; during the random selection process, an incorrect household member was selected from the list of <u>eligible</u> members.
6	Ineligible HH member selected; during the random selection process, an <u>ineligible</u> household member was selected.

2) '*final_status*', the code for the result of the Interview (N.B., the survey firm assigned codes 1 to 78):
   a) added value labels; the value labels for '*final_status*' are as follows:

Table 4:   VALUE LABELS for the variable 'final_status'

00-No assigned code	36-SP absent for entire survey period'
01-Refusal-Household	37-SP deaf or hard of hearing'
02-Unusual circumstance-Household	38-SP learning or mental disability'
03-No knowledgeable household member found after 3 visits	39-SP speech impairment'
04-Temporarily absent/unavailable for field period	40-SP language problem'
05-No competent household member to interview (e.g., due to severe illness, mental disability, etc.)	51-Refusal by SP to continue modules 2-7'
	52-Interview termination-SP unusual circumstance'
06-Language problem	61-SP unable to read language of General Booklet (GB)'
07- Dwelling could not be found / selected address has no household	62-SP refusal to begin GB'
	63-SP unable to do GB due to unusual circumstance'
08-Vacant dwelling / selected address has no household	64-SP blindness or visual impairment-unable to do GB'
09-Dwelling not habitable/dwelling destroyed/dwelling converted to commercial use	65-SP physical disability'
	71-SP looked through GB-unable to read & write language of GB'
10-Wrong Household Member Selected	72-SP refused to continue GB after starting'
21-Household Refusal to continue Household Module (i.e., begun but not complete)'	73-GB interruption too long'
	74-GB terminated due to unusual circumstance'
22-Household module terminated due to unusual circumstance'	75-Attempted GB but no answers marked'
	76-Attempted part or all of GB; less than 3 correct Core answers'
31-No eligible household member aged 15-64'	77-Marked some items & attempted all items in GB'
32-Refusal-Refusal by SP to begin modules 2-7'	78-Marked all items in GB'
33-Interview termination-SP unusual circumstance'	99-Sampled Household not activated
34-Refusal-Other Household Member refused to let SP participate'	
35-Unable to contact SP after 3 attempts'	

4.1.1.1 Input File – Revised for Weighting

The SPSS Revised Input File for weighting is 'W00-MKD Final Revised Data File(6-Mar-2014)'. This file is the primary file for the process of creating the survey weights; it includes all 12060 sampled cases; each case includes a final result code. Table 5 provides the list of key variables for weighting purposes that are included in the file.

Table 5: Key Variables in Primary Input File for Weighting Process		
Variable Name	**Source**	**Description**
Country	Sample File	Country abbreviation code
Stratum	Sample File	Stratum - Ethnic Group Proportion
SmplID	Sample File	Sampled case ID#
PSUsmpID	Sample File	PSU Sample ID#
PSUsmp_Type	Sample File	PSU Sample Type (Initial, Reserve)
hhn	Final Data File	Household ID #
HHsmpOrder	Sample File	Sample activation order
HHsmpSeq	Sample File	Household Sample Sequence #s 01 to 30
HHsmpType	Sample File	HH Sample Indicator
PS	Sample Frame	Polling Station ID #
VoterCnt_All	Sample Frame	Registered voters count
VoterCnt_18to64	Sample Frame	Registered voters (aged 18-64) count
age	Final Data File	age of selected individual
gender	Final Data File	gender of selected individual
HHcount	Final Data File	Number of listed households in PSU
m1c_a_clean	Final Data File	NUMBER A-# of eligible persons
m11_q07	Final Data File	Result code of interview
final_status	Final Data File	Final Status Code of interview
field_rst	Final Data File	Fieldwork result code
Final_Result	Created during weighting	Overall Final Result of the interview

Table 6 provides the breakdown of the 12060 sample cases by the final result of the interview attempt, i.e., by '*Final_Result*' code.

Table 6: Macedonia: Number & Percentage of Sampled Dwellings by Final Result Code of Interview
'*Fnal_Result*'

Final Result of Interview, i.e., '*Final_Result*'	# of Sample Cases	Percent of Sample Cases
01-Refusal-Household	1049	8.7%
02-Unusual circumstance-Household	29	0.2%
03-No knowledgeable household member found after 3 visits	45	0.4%
04-Temporarily absent/unavailable for field period	795	6.6%
05-No competent household member (e.g., severe illness, mental disability, etc.)	22	0.2%
07-Dwelling could not be found / selected address has no household	283	2.3%
08-Vacant dwelling / selected address has no household	387	3.2%
09-Dwelling not habitable/destroyed/converted to commercial	144	1.2%
21-Household Refusal to continue Household Module (begun,not complete)	16	0.1%
22-Household module terminated - unusual circumstance	2	0.0%
31-No eligible household member aged 15-64	316	2.6%
32-Refusal by SP to begin modules 2-7	9	0.1%
34-Refusal-Other Household Member refused to let SP participate	1	0.0%
35-Unable to contact SP after 3 attempts	1	0.0%
36-SP absent for entire survey period	6	0.0%
37-SP deaf or hard of hearing	1	0.0%
51-Refusal by SP to continue modules 2-7	6	0.0%
52-Interview termination-SP unusual circumstance	1	0.0%
61-SP unable to read language of General Booklet (GB)	62	0.5%
62-SP refusal to begin GB	72	0.6%
63-SP unable to do GB due to unusual circumstance	7	0.1%
64-SP blindness or visual impairment-unable to do GB	20	0.2%
65-SP physical disability	8	0.1%
71-SP looked through GB-unable to read/write language of GB	27	0.2%
72-SP refused to continue GB after starting	33	0.3%
73-GB interruption too long	2	0.0%
74-GB terminated - unusual circumstance	3	0.0%
75-Attempted GB, no answers marked	3	0.0%
76-Attempted part or all of GB; <3 correct Core answers	76	0.6%
77-Marked some items, attempted all items in GB	149	1.2%
78-Marked all items in GB	3540	29.4%
95-Household not activated	4934	40.9%
97-Household not interviewed - field procedure error	1	0.0%
98-Incorrect eligible household member selected	10	0.1%
Total	12060	100.0%

4.2 Final Output Files from Weighting Process

The final output file from the weighting process is,

1) MKD-W01-STEP(HH) Weighted Data-Final Design Weights (6-Mar-2014)

   a) This file contains the original data variables from the Macedonia data file 'STEP Macedonia - Data for Weighting_s7.dta' and the applicable PSU weights, household weights, person weights, and other associated variables that were created during the weighting process.

   b) The file contains a data record for each of the 7126 cases that were activated or should have been activated during the data collection operation.
      i) 4037 participating households with a final household weight
         ◆ For participating households, the weighted sum of the household weights is 249,155.
      ii) 4009 participating selected persons with a final person weight
         ◆ For participating individuals, the weighted sum of the person weights is 689,287.

   c) In addition to the Macedonia data file original variables, the weighted data file includes several additional variables that were created during the weighting process. The essential variables that are needed for estimation of survey results are included in the final weighted data file.

      i) Table 7 provides a list of additional variables from the weighting process that are included in the final weighted data file.

      ii) Table 8 provides a list of variables from the weighting process that are not included in the final weighted data file. These variables are available from other interim files that were created during the weighting process.

      iii) Table 9 provides the frequency count of final status codes for the 7126 sampled households that were activated or should have been activated in the final weighted data file 'MKD-W01-STEP(HH) Weighted Data-Final Design Weights (6-Mar-2014)'.

Table 7: Variables Created During Weighting Process - *Included in Macedonia Weighted Data File*

Variable Name	Description	Values
Final_Result	Final Result Code	Refer to Table 2 for code descriptions
RespCat_HH	Final Response Category-Households	1-Participant HH 2-Ineligible HH 3-Non-participant Eligible HH 4-Non-participant Unknown Eligibility HH
RespCat_SP	Final Response Category-Selected Person	1-Participant SP 2-Non-participant SP 3-Not applicable - non-participant HH
W1_PSU	Basic PSU Weight	n/a
W2_FinHHwt	Final Household Weight Use for estimation of Household characteristics	n/a
W3_FinSPwt	Final Person Weight	n/a

Table 8: Variables Created During Weighting Process – Not *Included in Macedonia Weighted Data File*

Variable Name	Description	Values
St_estpopn_18to64	Stratum population aged 18-64	n/a
ST_PSUs	Stratum Number of PSUs	n/a
PSU_HHsmpd	PSU Sample Size - HHs	n/a
W2_HH	Basic Household Weight within PSU	n/a
PSU_RespFreq	Count of 'RespCat_HH' in PSU	n/a
HH_k	# of participant HHs in PSU	n/a
HH_x	# of Ineligible HHs in PSU	n/a
HH_z	# of Non-participant Eligible HHs in PSU	n/a
HH_u	# of Non-participant Unknown Eligible HHs in PSU	n/a
Elig_Prop_HH	Proportion of Eligible HHs - known eligibility	n/a
R_adj_HH	Response adjustment ratio for HHs	n/a
EligPers_Cnt	Eligible Person Count in Sampled HH	n/a
W3_SP	Selected Person weight within household	n/a
R_adj_SP	Response adjustment for selected person	n/a
EP_PSU_RCat	Total Eligible Persons-PSU Participant Households	n/a
EP_k	PSU - # of Participant SPs in participant HHs	n/a
EP_z	PSU - # of Non-participant SPs in participant HHs	n/a
EP_PSU_RCat	PSU - Total Eligible Persons	n/a

Table 9: Macedonia: Frequency/Percent of Final Status Codes For Activated Sample Cases (i.e., excludes cases with Final_Result=95)

Case 'Final_Result' Code	Frequency	Percent
01-Refusal-Household	1049	14.7%
02-Unusual circumstance-Household	29	0.4%
03-No knowledgeable household member found after 3 visits	45	0.6%
04-Temporarily absent/unavailable for field period	795	11.2%
05-No competent household member (e.g., severe illness, mental disability, etc.)	22	0.3%
07-Dwelling could not be found / selected address has no household	283	4.0%
08-Vacant dwelling / selected address has no household	387	5.4%
09-Dwelling not habitable/destroyed/converted to commercial	144	2.0%
21-Household Refusal to continue Household Module (begun,not complete)	16	0.2%
22-Household module terminated - unusual circumstance	2	0.0%
31-No eligible household member aged 15-64	316	4.4%
32-Refusal by SP to begin modules 2-7	9	0.1%
34-Refusal-Other Household Member refused to let SP participate	1	0.0%
35-Unable to contact SP after 3 attempts	1	0.0%
36-SP absent for entire survey period	6	0.1%
37-SP deaf or hard of hearing	1	0.0%
51-Refusal by SP to continue modules 2-7	6	0.1%
52-Interview termination-SP unusual circumstance	1	0.0%
61-SP unable to read language of General Booklet (GB)	62	0.9%
62-SP refusal to begin GB	72	1.0%
63-SP unable to do GB due to unusual circumstance	7	0.1%
64-SP blindness or visual impairment-unable to do GB	20	0.3%
65-SP physical disability	8	0.1%
71-SP looked through GB-unable to read/write language of GB	27	0.4%
72-SP refused to continue GB after starting	33	0.5%
73-GB interruption too long	2	0.0%
74-GB terminated - unusual circumstance	3	0.0%
75-Attempted GB, no answers marked	3	0.0%
76-Attempted part or all of GB; <3 correct Core answers	76	1.1%
77-Marked some items, attempted all items in GB	149	2.1%
78-Marked all items in GB	3540	49.7%
97-Household not interviewed - field procedure error	1	0.0%
98-Incorrect eligible household member selected	10	0.1%
Total	7126	100.0%

5   Weight Calculations based on World Bank (WB) Weight Requirement

The input file for the process of calculating the weights based on the World Bank (WB) weight requirement is 'W00-MKD Final Revised Data File(6-Mar-2014)'.

5.1   First-stage Weight (PSU Weight)

The basic first stage weight, i.e., the PSU weight, is based on a sample of 268 PSUs. Although 289 PSUs were initially selected to allow for 21 reserve PSUs for non-responding PSUs, only the 268 'initial' PSU sample was actually activated during data collection; none of the 21 'reserve' PSUs was used for the Macedonia STEP data collection. Therefore, the STEP survey weight is based on the probability of selection for each of the 268 'initial' PSU sample.

For the Macedonia sample of PSUs, the probability of selection of the jth PSU, say p_j , may be represented as,

    1) $p_{gj} = \dfrac{y_g * m_{gj}}{M_g}$

where,

    y_g - the number of sampled PSUs in stratum g,

    m_{gj} -   the measure of size for the jth PSU in stratum 'g', in the case of the Macedonia STEP Survey the measure of size for the first stage selection of PSUs was the number of persons aged 18 to 64 in a PSU,

    M_g -the total number of persons aged 18 to 64 in stratum 'g', based on the sample frame information, is represented by

    2) $M_g = \sum_1^{y_g} m_{gj}$

Table 10 provides the Macedonia stratum counts for y_g and M_g.

Table 10: Macedonia Overall PSU Sample Allocation for 'Activated' PSUs by Stratum			
Stratum		**Sampled PSUs**	**# of Voters (18 to 64)**
Ethnic Group Proportion	**g**	**y_g**	**M_g**
A: 90% to 100% Macedonian Voters	1	147	658,742
B: 75% to 90% Macedonian Voters	2	15	70,705
C: 60% to 75% Macedonian Voters	3	8	35,026
D: 40% to 60% Macedonian Voters	4	25	59,398
E: 25% to 40% Macedonian Voters	5	16	22,257
F: 10% to 25% Macedonian Voters	6	32	42,545
G: 0% to 10% Macedonian Voters	7	25	32,723
Total		268	921,396

The basic first stage weight for the jth PSU, W1$_{gj}$ (i.e., weighted data file variable '**W1_PSU**'), is calculated as the inverse of its probability of selection:

    3) $\mathbf{W1}_{gj} = \dfrac{1}{p_{gj}} = \dfrac{M_g}{y_g * m_{gj}}$

> ➢ **The basic first stage PSU weight is appended to the STEP data file.**

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The basic first stage weight is similarly calculated for each of the 268 PSUs.

5.2   Second-stage Weight (Household Weight)

5.2.1   Basic Household Weight

The basic second stage weight for the kth household in PSU 'j', $W2_{jk}$, is calculated as follows:

4) $W2_{jk} = \frac{N_j}{n_j}$

where,

   N_j -   the number of <u>listed households</u> (i.e., weighted data file variable '**HHcount**') in the jth PSU,

   n_j -   the number of households sampled in the jth PSU.

The basic second stage weight is similarly calculated for each of the 12060 sampled households.

5.2.2 Second-stage Response-adjusted Household Weight

5.2.2.1 Second-stage Household Response Categories

The second-stage response adjustment was carried out for each sampled PSU, i.e., at the PSU level.

For treatment in the weighting process the data collection outcomes for the sampled households may be summarized in four possible categories: participant, ineligible, non-participant with known eligibility, non-participant with unknown eligibility.

Participant - A participating household '**k**' is an <u>eligible</u> sampled household that provides sufficient data to be considered a participant in the survey. The sampled households '**k**' with person-level result codes 32-40, 51-88 and 98-99 satisfy the requirement for classification of the household as a survey participant. The result codes and corresponding code descriptions for participating households '**k**' are as follows:

I. Household-level Codes – Participant, Eligible Household	
Code	**Code Description**
	Individual modules 2-7 <u>not</u> begun
32	Refusal by Selected Person to begin modules 2-7
33	Unusual circumstance - Selected Person (e.g., death in family, illness, fire in dwelling, etc.)
34	Refusal - Another household member refused to let selected individual do individual modules
35	Unable to contact Selected Person after three visits during field period
36	Temporarily absence/unavailability of Selected Person for field period (info from household member)
37	Hearing Problem - Selected Person is deaf or so hard-of-hearing, no translator available
38	Learning or mental disability (includes emotional conditions like severe depression) of Selected Person
39	Speech impairment of Selected Person prevented participation, no translator available
40	Language problem – Selected Person's language not understood by survey team, no translator available
	Individual modules 2-7 begun but not completed
51	Refusal by Selected Person to continue modules 2-7
52	Unusual circumstance - Selected Person
	General Booklet (module 9) not begun
61	Unable to read or write in language of General Booklet – Selected Person refused to begin
62	Refusal by Selected Person to begin General Booklet
63	Unusual circumstance - Selected Person
64	Blindness or visual impairment of Selected Person prevented completion of General Booklet
65	Physical disability of Selected Person prevented completion of General Booklet
	General booklet (module 9) looked through or attempted but not completed
71	Selected Person looked at Booklet but unable to read & write the language of Booklet - did not begin
72	Refusal by Selected Person to continue the General Booklet
73	Interruption – unacceptably long
74	Unusual circumstance - Selected Person
75	Attempted General Booklet but no answers marked
76	Marked some items but did not attempt all items in General Booklet
77	Marked some items & attempted all items in General Booklet
78	Marked all items in General Booklet
98	Sample selection error – an incorrect eligible person was selected by the interviewer
99	Sample selection error – an ineligible person was selected by the interviewer

Ineligible – A sampled household '**x**' is categorized as <u>ineligible</u> if there is no household member in the eligible 15-64 age range. The result codes for ineligible sampled households '**x**' are as follows:

Code	Code Description
II. Household-level Codes – Ineligible Household	
07	Dwelling could not be found / selected address has no household
08	Vacant dwelling
09	Dwelling not habitable/dwelling destroyed/dwelling converted to commercial use
31	No household member in the eligible range of 15-64

Non-participant - Eligibility Known: A non-participating household '**z**' results when an eligible household does not participate due to refusal, unusual circumstance, or the household was selected in error. The result codes for sampled households '**z**' with known eligibility are as follows:

Code	Code Description
III. Household-level Codes – Non-participants, Eligible Household	
21	Household Refusal to continue Household Module (i.e., begun but not complete)
22	Household unusual circumstance (e.g., death in family, illness, fire in dwelling, etc.) prevented continuance
97	Sample selection error – a wrong household was selected in the field

Non-participant - Eligibility Unknown: A non-participating household '**u**' results when a household does not participate due to non-contact with a responsible household member, inconclusive information about the eligibility status of the sampled household, or sample case was not activated (this usually pertains to the reserve sample cases). The result codes for non-participating households '**u**' with unknown eligibility are as follows:

Code	Code Description
IV. Household-level Codes – Non-participants, Unknown Eligibility Household	
01	Household Refusal
02	Household unusual circumstance (e.g., death in family, illness, fire in dwelling, etc.)
03	No knowledgeable household member found after 3 visits (only a child, non-competent adult, etc.)
04	Temporarily absent/unavailable for field period (information from other persons)
05	No competent household member to interview (because of severe illness, mental disability, etc.)
06	Language problem – no household member spoke a language understandable by survey team, no translator available
95	Sample case not activated
96	General non-response; Reason unspecified by survey firm

The total number of sampled households in each PSU may be represented by the following equation.

$$5) \quad n_j = n_{jk} + n_{jx} + n_{jz} + n_{ju}$$

where,

n_j - the number of households sampled in the jth PSU,

n_{jk} - the number of households 'k' that participate in the jth PSU,

n_{jx} - the number of ineligible households 'x' in the jth PSU,

n_{jz} - the number of non-participating households 'z' with known eligibility in the jth PSU,

n_{ju} - the number of non-participating households 'u' with unknown eligibility in the jth PSU.

Table 11 provides the STEP counts of <u>activated</u> households from the Macedonia data file by the outcome categories described above.

Table 11: Sample Count of 'Activated' Households by Final Response Category						
	Final Response Category-Households				**# of HHs**	**% of Total**
Case Final Status Code	**Participant**	**Ineligible**	**Non-participant: Eligible**	**Non-participant: Unknown Eligibility**		
01-Refusal-Household				1049	1049	14.7%
02-Unusual circumstance-HH				29	29	.4%
03-No knowledgeable HH member found				45	45	.6%
04-Temporarily absent				795	795	11.2%
05-No competent HH member				22	22	.3%
07-Dwelling not found - no address info		283			283	4.0%
08-Vacant dwelling		387			387	5.4%
09-Dwelling not habitable		144			144	2.0%
21-HHRefusal to continue HH Module			16		16	.2%
22-HH module terminated - unusual circumstance			2		2	.0%
31-No eligible household member aged 15-64		316			316	4.4%
32-Refusal by SP to begin modules 2-7	9				9	.1%
34- Refusal-Other HH Member refused for SP	1				1	.0%
35-Unable to contact SP after 3 attempts	1				1	.0%
36-SP absent for entire survey period	6				6	.1%
37-SP deaf or hard of hearing	1				1	.0%
51-Refusal by SP to continue modules 2-7	6				6	.1%
52-Interview termination-SP unusual circumstance	1				1	.0%
61-SP unable to read language of GB	62				62	.9%
62-SP refusal to begin GB	72				72	1.0%
63-SP unable to do GB - unusual circumstance	7				7	.1%
64-SP blindness or visual impairment	20				20	.3%
65-SP physical disability	8				8	.1%
71-SP unable to read/write language of GB	27				27	.4%
72-SP refused to continue GB after starting	33				33	.5%
73-GB interruption too long	2				2	.0%
74-GB terminated - unusual circumstance	3				3	.0%
75-Attempted GB, no answers marked	3				3	.0%
76- <3 correct Core answers	76				76	1.1%
77-Marked some items, attempted all items in GB	149				149	2.1%
78-Marked all items in GB	3540				3540	49.7%
97-HH not interviewed - field procedure error			1		1	.0%
98-Incorrect eligible HH member selected	10				10	.1%
Total	4037	1130	19	1940	7126	100.0%

The STEP assumes that the households 'u' with unknown eligibility in the jth PSU are comprised of some proportion, say ε_j, that are eligible households and the complementary proportion, $1 - \varepsilon_j$, that are ineligible households.

Amongst the n_{ju} non-participating households 'u' with unknown eligibility in PSU 'j', the proportion of households with known eligibility is estimated to be

$$6) \quad \varepsilon_j = \frac{Total \; \# \; of \; known \; eligible \; cases}{Total \; \# \; of \; known \; eligible \; \& \; known \; ineligible \; cases} = \frac{n_{jk} + n_{jz}}{n_{jk} + n_{jx} + n_{jz}}$$

➢ **Note that the eligible proportion is the same for all eligible participating households.**

Example 3: Eligible Proportion of Households

For PSU #101, the following household results were obtained:

n_j	n_{jk}	n_{jx}	n_{jz}	n_{ju}
45	16	0	0	29

For PSU # 101, the proportion of households with known eligibility is calculated as,

$$\varepsilon_{101} = \frac{Total \; \# \; of \; known \; eligible \; cases}{Total \; \# \; of \; known \; eligible \; \& \; known \; ineligible \; cases}$$

$$= \frac{n_{jk} + n_{jz}}{n_{jk} + n_{jx} + n_{jz}}$$

$$= \frac{16 + 0}{16 + 0 + 0} = \frac{16}{16} = 1.0$$

5.2.2.3 Response Adjustment Factor for Household Non-participation

A household-level response adjustment is necessary to compensate for households that did not participate in the survey. The household-level response adjustment factor for the jth PSU, R_j, is calculated as follows:

$$7) \quad R_{HH_j} = \frac{Total\ eligible\ households\ in\ PSU\ 'j'}{Total\ particpating\ households\ in\ PSU\ 'j'} = \frac{n_{jk} + n_{jz} + (\varepsilon_j * n_{ju})}{n_{jk}}$$

- ➤ The response adjustment ratio, R_{HHj} , incorporates the adjustment for unknown eligibility, ε_j.
- ➤ The households that are categorized as ineligible, n_{jx} , are excluded from the calculation of the household-level response adjustment.

Example 4: Second Stage Response Adjustment Factor for sampled Households

For example, the following results were obtained for PSU #101

n_j	n_{jk}	n_{jx}	n_{jz}	n_{ju}
45	16	0	0	29

Therefore,

$$R_{102} = \frac{Total\ eligible\ households\ in\ PSU\ \#101}{Total\ particpating\ households\ in\ PSU\ \#101}$$

$$= \frac{n_{jk} + n_{jz} + (\varepsilon_{102} * n_{ju})}{n_{jk}}$$

$$= \frac{16 + 0 + (1.0 * 29)}{16} \approx 2.8125$$

The response adjustment ratio, R_{HHj} , is similarly calculated for all 268 sampled PSUs.

5.2.2.4   Response-adjusted Household Weight

The second stage response-adjusted household weight is calculated as the product of the basic household weight and the response adjustment factor for non-participant households. Therefore, for household 'k' in PSU 'j', the final second stage household weight, W2 $_{Radj}$, is calculated as follows:

$$8) \quad W2_{Radj} = W2_{jk} * R_{HH_j}$$

- ➤ **The final second stage household weight is appended to the STEP data file.**

Example 5: Second Stage Response-adjusted Household Weight

For PSU #101,

$$W2_{Radj} = W2_{jk} * R_{HH_j}$$
$$= 18.3556 \times 2.8125$$
$$\approx 51.625$$

The response-adjusted household weight is similarly calculated for all sampled households.

5.2.3   Second-stage Final Household Weight

The final household weight is the weight used for producing household-level estimates, such as the proportion of households with a specific attribute. This weight is appended to the STEP data file.

The final second stage household weight is calculated as product of the response-adjusted household weight and the final first-stage PSU weight. Therefore, for household 'k' in PSU 'j', the final second stage household weight, W2 $_{HHk}$, is calculated as follows:

$$9) \quad W2_{HH_k} = W2_{Radj} * W1_{gj}$$

- ➤ **The final second stage household weight is appended to the STEP data file.**

Example 6: Final Second Stage Household Weight

For PSU #101,

$$W2_{HH_k} = W2_{Radj} * W1_{gj}$$
$$= 51.625 \times 2.555$$
$$\approx 131.895$$

The final second stage household weight is similarly calculated for all sampled households.

5.2.4 Weighted Household Counts

The STEP data collection found that some of the sampled households are ineligible for reasons such as vacant, not habitable, no eligible household member, etc.

Table 12 provides the weighted count of households based on the listed households in the 268 sampled PSUs in the Macedonia data file.

Table 12: Macedonia – Estimated Number of Households by Stratum			
		Weighted Sum of HHs	**Weighted Sum of HHs**
Stratum - Ethnic Group Proportion	**# of Participant HHs**	**(Before Non-response Adjustment)** (all HHs, i.e., participants, non-participants, ineligibles)	**(After Non-response Adjustment)** **Eligible households only**
A: 90% to 100% MKD Voters	2213	236,701	192,153
B: 75% to 90% MKD Voters	226	24,172	18,902
C: 60% to 75% MKD Voters	121	11,694	8,571
D: 40% to 60% MKD Voters	374	17,100	12,632
E: 25% to 40% MKD Voters	241	5,429	4,366
F: 10% to 25% MKD Voters	485	9,369	7,490
G: 0% to 10% MKD Voters	377	6,269	5,041
Total	**4037**	**310,734**	**249,155**

As shown in the last row of the last column of Table 12, when ineligible households are excluded, the weighted number of eligible households is **249,155**.

For participating selected households, Table 13 provides a summary of the central tendency for the participating households.

Table 13: Summary - Household Weights	
Statistic	**Final Household Weight**
No. of Cases	4037
Mean	61.72
Std. Error of Mean	0.59
Median	69.03
Minimum	8.08
Maximum	224.13
Sum of Weights	**249,155**

5.3 Third-stage Weight (Person Weight)

5.3.1 Basic Third-stage Person Weight

The basic third stage weight for the ith person, $W3_{jki}$, is calculated as follows:

$$10) \quad W3_{jki} = \frac{a_{jk}}{b_{jk}} = \frac{a_{jk}}{1} = a_{jk}$$

where,

a_{jk} - the number of eligible persons in the kth household in the jth PSU,

b_{jk} - the number of persons sampled in the kth household in the jth PSU, (i.e., n_{jk} =1 person in each Macedonia sampled household).

N.B. $\quad A_{jk} = \sum_{k=1}^{n_{jk}} a_{jk} = total \text{ \# } of \text{ } selected \text{ } persons \text{ } in \text{ } the \text{ } j^{th} \text{ } PSU$

where,

n_{jk} - the number of households 'k' that participate in the jth PSU

Example 7: Third Stage – Basic Person Weight within sampled Household

For PSU #101, selected household # 18 has 3 eligible persons. Therefore,

$$W3_{jki} = \frac{a_{jk}}{b_{jk}} = \frac{3}{1} = 3$$

5.3.2 Third-stage Response-adjusted Person Weight

5.3.2.1 Third-stage Person-level Response Categories

For eligible participating households, there are three possible person-level outcomes, a selected eligible person participates in the survey, a selected eligible person does not participate, a selected person is ineligible.

Participant SP - A participating selected person '**i**' is an eligible sampled person that provides sufficient data to be considered a participant in the survey. The sampled persons '**i**' with result codes 51-78 satisfy the requirement for classification of the person as a survey participant. The result codes for participating persons '**i**' are as follows:

I.	Person-level Codes – Participant in Eligible Selected Household
Code	**Code Description**
	Individual modules 2-7 begun but not completed
51	Refusal by Selected Person to continue modules 2-7
52	Unusual circumstance - Selected Person
	General Booklet (module 9) not begun
61	Unable to read or write in language of General Booklet – Selected Person refused to begin
62	Refusal by Selected Person to begin General Booklet
63	Unusual circumstance - Selected Person
64	Blindness or visual impairment of Selected Person prevented completion of General Booklet
65	Physical disability of Selected Person prevented completion of General Booklet
	General booklet (module 9) looked through or attempted but not completed
71	Selected Person looked at Booklet but unable to read & write the language of Booklet - did not begin
72	Refusal by Selected Person to continue the General Booklet
73	Interruption – unacceptably long
74	Unusual circumstance - Selected Person
75	Attempted General Booklet but no answers marked
76	Marked some items but did not attempt all items in General Booklet
77	Marked some items & attempted all items in General Booklet
78	Marked all items in General Booklet

Non-participant SP - A non-participating person '**q**' results when an eligible person does not participate due to refusal, unusual circumstance, non-contact, language problem, physical disability (hearing, vision, other) or the person was selected in error. The result codes for non-participating persons '**q**' are as follows:

II.	Person-level Codes – Non-participant in Eligible Selected Household
Code	**Code Description**
	Individual modules 2-7 not begun
32	Refusal by Selected Person to begin modules 2-7
33	Unusual circumstance - Selected Person (e.g., death in family, illness, fire in dwelling, etc.)
34	Refusal - Another household member refused to let selected individual do individual modules
35	Unable to contact Selected Person after three visits during field period
36	Temporarily absence/unavailability of Selected Person for field period (info from household member)
37	Hearing Problem - Selected Person is deaf or so hard-of-hearing, no translator available
38	Learning or mental disability (includes emotional conditions like severe depression) of Selected Person
39	Speech impairment of Selected Person prevented participation, no translator available
40	Language problem – Selected Person's language not understood by survey team, no translator available
98	Sample selection error – an incorrect eligible person was selected by the interviewer

Ineligible SP - A sampled person '**f**' is categorized as <u>ineligible</u> if the person is not a member of the target population, for example, the person's age is outside the eligible 15-64 age range. Ineligible sampled persons '**f**' are as assigned the result code 99.

III. Person-level Codes – Non-participant in Eligible Selected Household	
Code	**Code Description**
99	Sample selection error – an ineligible person was selected by the interviewer

Note: there were no ineligible selected persons in the Macedonia STEP Survey.

The third stage person weight is only relevant for sampled households in the final response category RespCat_HH=1, i.e., participating households. Table 14 provides the pertinent frequency counts of the Final Status Codes for the <u>participant</u> households.

Table 14: Final Status Code for 'Participating' Households (i.e., Households with RespCat_HH=1)		
Case Final Status Code	**Frequency**	**Percent**
32-Refusal by SP to begin modules 2-7	9	.2%
34- Refusal-Other Household Member refused to let SP participate	1	.0%
35-Unable to contact SP after 3 attempts	1	.0%
36-SP absent for entire survey period	6	.1%
37-SP deaf or hard of hearing	1	.0%
51-Refusal by SP to continue modules 2-7	6	.1%
52-Interview termination-SP unusual circumstance	1	.0%
61-SP unable to read language of General Booklet (GB)	62	1.5%
62-SP refusal to begin GB	72	1.8%
63-SP unable to do GB due to unusual circumstance	7	.2%
64-SP blindness or visual impairment-unable to do GB	20	.5%
65-SP physical disability	8	.2%
71-SP looked through GB-unable to read/write language of GB	27	.7%
72-SP refused to continue GB after starting	33	.8%
73-GB interruption too long	2	.0%
74-GB terminated - unusual circumstance	3	.1%
75-Attempted GB, no answers marked	3	.1%
76-Attempted part or all of GB; <3 correct Core answers	76	1.9%
77- Marked some items, attempted all items in GB	149	3.7%
78- Marked all items in GB	3540	87.7%
98-Incorrect eligible household member selected	10	.2%
Total	**4037**	**100.0%**

5.3.2.2 Response Adjustment Factor for Selected Person Non-participation

In each participating household in the STEP Survey, one eligible person was selected to be interviewed. Therefore, for each participating household the basic person weight, $W3_{jki}$, would also be the final person weight within a sampled PSU <u>if all persons in the PSU participated</u>. However, when there is one or more non-participating selected persons within a sampled PSU, the basic person-weights for the PSU require a response adjustment so that the final person weight for each participating person in the PSU is also representative of the non-participating person(s) in the sampled households in the PSU. In other words, the total number of participating persons in a sampled PSU must represent the total number of eligible persons in the sampled households in the PSU.

Therefore, within each sampled PSU, a person-level response adjustment to the basic person weight is necessary to compensate for persons that did not participate in the survey.

The total number of eligible persons in each PSU may be represented by the following equation:

$$11) \quad A_{jk} = A_{jki} + A_{jkq}$$

where,

$A_{jk} = \sum_{k=1}^{n_{jk}} a_{jk}$ -   the total number of eligible persons for all n_{jk} participating households in the jth PSU,

$A_{jki} = \sum_{k=1}^{n_{jk}} a_{jki}$ -   the total number of eligible persons 'i' that participate for all n_{jk} participating households in the jth PSU,

$A_{jkq} = \sum_{k=1}^{n_{jk}} a_{jkq}$ -   the total number of non-participating eligible persons 'q' for all n_{jk} participating households in the jth PSU,

Therefore, the person-level response adjustment for the jth PSU, R_{jk}, is calculated as follows:

$$12) \quad R_{SP_j} = \frac{\textit{Total eligible persons in all participating sampled households in PSU 'j'}}{\textit{Total participating persons in all participating sampled households in PSU 'j'}} = \frac{A_{jk}}{A_{jki}}$$

Example 8: Third Stage – Basic Person Weight Response Adjustment

i) For PSU #101, there are 38 eligible persons across all participating households; also, all selected persons participated. Therefore,

$$A_{jk} = \sum_{k=1}^{n_{jk}} a_{jk} = 38 ; \qquad A_{jki} = \sum_{k=1}^{n_{jk}} a_{jki} = 35$$

$$R_{SP_j} = \frac{A_{jk}}{A_{jki}} = \frac{38}{35} = 1.086$$

Table 15 provides the sample counts of the Final Response Category for selected persons.

Table 15: Sample Counts by Selected Person Final Response Category for Participating HHs		
For Participating Households		
Final Response Category-SP	**Frequency**	**Percent**
1-Participant SP	4009	99.3
2-Non-participant, Eligible	28	0.7
Total	**4037**	**100.0**

The above table shoes that there are 4009 participating selected persons for which a final non-zero Person-weight was calculated. The sampled persons in category 2 have a zero-value final person weight.

5.3.2.3   Response-adjusted Person Weight

The response-adjusted person weight is calculated as the product of the basic third stage person weight, and the response adjustment for the basic person weight. Therefore, for the selected person 'i' in household 'k' in PSU 'j', the response-adjusted person weight, W$_{Radj}$, is calculated as follows:

$$13)\quad W3_{Radj} = W3_{jki} * R_{SP_j}$$

➢ **The final third stage person weight is appended to the STEP data file.**

Example 9: Third Stage – Response-adjusted Person Weight

i)   For PSU #101, in participant household # 18 with 3 eligible persons, the selected person was a participant. For this household,

$$W_{3jki} = 3 ; \qquad R_{SP_j} \approx 1.086$$

$$W3_{Radj} = W3_{jki} * R_{SP_j}$$
$$= 3 * 1.086 \approx 3.257$$

The response-adjusted person weight is similarly calculated for all sampled persons.

5.3.3 Third-stage Final Person Weight

The final person weight is the weight used for producing person-level estimates, such as the proportion of persons with a specific attribute. This weight is appended to the STEP data file.

The final person weight is calculated as the product of the final household weight (which incorporates the PSU weight and the response adjustment for the basic household weight) and the response adjusted basic person weight. Therefore, for the selected person 'i' in household 'k' in PSU 'j', the final person weight, $W3_{SP}$ (i.e., weighted data file variable '**W_FinSPwt**'), is calculated as follows:

$$14) \quad W3_{SP} = W2_{HH_k} * W3_{Radj}$$

➤ **The final third stage person weight is appended to the STEP data file.**

Example 8: Third Stage – Final Person Weight

ii)   For PSU #101, selected household # 18 with 3 eligible persons, the selected person was a participant.

$$W2_{HH_k} = 131.895 ; \quad W3_{Radj} = 3.257$$

$$W3_{SP} = W2_{HH_k} * W3_{Radj}$$

$$W3_{SP} = 131.895 * 3.257 \approx 429.601$$

The final person weight is similarly calculated for all sampled persons. Note that the final person weight will be zero for all non-participating selected persons.

5.3.4 Weighted Person Counts

The weighted count of the non-institutionalized persons 15 to 64 years of age (inclusive) living in private dwellings in urban areas of **Macedonia** at the time of data collection is provided in Table 16. Based on the 4009 participating selected persons, the sum of the final person weights from the STEP survey is 689,287.

Table 16: Estimated # of Persons by Stratum		
Stratum **Ethnic Group Proportion**	**Participant** **Selected Persons**	**Weighted Sum** **(Person-weights)**
A: 90% to 100% MKD Voters	2197	514,355
B: 75% to 90% MKD Voters	225	52,772
C: 60% to 75% MKD Voters	120	23,348
D: 40% to 60% MKD Voters	372	40,122
E: 25% to 40% MKD Voters	240	14,351
F: 10% to 25% MKD Voters	480	25,804
G: 0% to 10% MKD Voters	375	18,535
Total	**4009**	**689,287**

For participating selected persons, Table 17 provides a summary of the central tendency of the number of eligible persons in the participating households.

Table 17: Summary - Eligible Persons, Person Weights		
Statistic	**Eligible Persons**	**Final Person** **Weight**
No. of Cases	4009	4009
Mean	2.98	170.74
Std. Error of Mean	0.020	1.93
Median	3.00	147.48
Minimum	1	0.00
Maximum	10	896.51
Sum	**12048**	**689,287**

# 6	Response Rate

The STEP response rate, R, is calculated as follows:

$$15) \quad R_g = \frac{P_g}{n_g - X_g} * 100\%$$

where,

P_g is the number of participating persons aged 15 to 64 in stratum 'g',

n_g is the number of activated sample cases in stratum 'g',

X_g is the number of ineligible sample cases in stratum 'g'.

An overall response rate of 66.9% was achieved in the Macedonia STEP Survey. Table 18 provides the response rate by stratum.

**Table 18:	Macedonia Response Rate by Stratum**

Stratum Ethnic Group Proportion	Activated Sample			Participant	Response Rate
	TOTAL (n_g)	Ineligible (X_g)	Eligible	Selected Persons (P_g)	Selected Persons (R_g)
A: 90% to 100% MKD Voters	3927	540	3387	2197	64.9%
B: 75% to 90% MKD Voters	401	64	337	225	66.8%
C: 60% to 75% MKD Voters	269	51	218	120	55.0%
D: 40% to 60% MKD Voters	765	155	610	372	61.0%
E: 25% to 40% MKD Voters	363	72	291	240	82.5%
F: 10% to 25% MKD Voters	791	143	648	480	74.1%
G: 0% to 10% MKD Voters	610	105	505	375	74.3%
Total	**7126**	1130	**5996**	**4009**	**66.9%**

Table 19 provides the detailed percentage distribution by final result code.

Table 19: Response Rate: Macedonia, Activated HHs by Final Status Code

Case Final Status Code	Frequency	Percent
07-Dwelling could not be found / selected address has no household	283	1.7%
08-Vacant dwelling / selected address has no household	387	4.7%
09-Dwelling not habitable/destroyed/converted to commercial	144	.9%
31-No eligible household member aged 15-64	316	4.0%
Ineligible HHs *(N.B. % is based on total # of activated HHs, i.e., 7126 HHs)*	**1130**	**15.9%**
01-Refusal-Household	1049	20.4%
02-Unusual circumstance-Household	29	.3%
03-No knowledgeable household member found after 3 visits	45	1.4%
04-Temporarily absent/unavailable for field period	795	4.5%
05-No competent household member (e.g., severe illness, mental disability, etc.)	22	.3%
21-Household Refusal to continue Household Module (begun, not complete)	16	.1%
22-Household module terminated - unusual circumstance	2	.0%
32-Refusal by SP to begin modules 2-7	9	.2%
34-Refusal-Other Household Member refused to let SP participate	1	.0%
35-Unable to contact SP after 3 attempts	1	.1%
36-SP absent for entire survey period	6	.2%
37-SP deaf or hard of hearing	1	.0%
97-Household not interviewed - field procedure error	1	5.0%
98-Incorrect eligible household member selected	10	.1%
Non-respondents (Eligible) *(N.B. % is based on total # of Eligible HHs, i.e., 5996HHs)*	**1987**	**33.1%**
51-Refusal by SP to continue modules 2-7	6	.1%
52-Interview termination-SP unusual circumstance	1	.0%
61-SP unable to read language of General Booklet (GB)	62	.8%
62-SP refusal to begin GB	72	4.6%
63-SP unable to do GB due to unusual circumstance	7	.1%
64-SP blindness or visual impairment-unable to do GB	20	.4%
65-SP physical disability	8	.1%
71-SP looked through GB-unable to read/write language of GB	27	.3%
72-SP refused to continue GB after starting	33	.7%
73-GB interruption too long	2	.1%
74-GB terminated - unusual circumstance	3	.1%
75-Attempted GB, no answers marked	3	.1%
76-Attempted part or all of GB; <3 correct Core answers	76	1.0%
77-Marked some items, attempted all items in GB	149	14.4%
78-Marked all items in GB	3540	17.7%
Respondents *(N.B. % is based on total # of Eligible HHs, i.e., 5996 HHs)*	**4009**	**66.9%**
Total *Eligible* Households	**5996**	**100.0%**
Total Activated Households	**7126**	**100.0%**