Monitoring consumer markets in the European Union 2015

Technical report

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Justice and Consumers

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Produced by Consumers, Health, Agriculture and Food Executive Agency (Chafea) on behalf of

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1. SURVEY METHODOLOGY

This section details the methodology implemented for the survey, from the survey design to the data collection.

1.1.Coordination

Sara Gysen, the Project Manager, has assigned 3 key roles within the central coordination team to ensure ease and efficiency in communications and coordination throughout the execution of the MMS 2015. As Deputy Project Manager, Luke Lloyd has a key role in the overall management of the MMS 2015. Karen Lefever is responsible for the analytical aspects of the survey. Nancy Heremans takes up a leading role in the coordination of the national teams.

1.2.Target population

The target population includes all people aged 18 and above, resident in the country surveyed and having sufficient command of (one of) the respective national language(s) to answer the questionnaire. In addition, only people living in private households are interviewed, excluding prisoners, residents of retirement homes, etc. which are difficult to contact in a telephone survey.

Moreover, eligible respondents were screened on their experience with a range of products and services. 42 markets were included in 2015 and respondents were selected if they had made a purchase in a specific market within a reference timeframe (1, 2 or 3 years) in order to optimise recall.

A handful of markets were excluded from the survey as they are underdeveloped or do not fall under the scope of the survey:

- the "Train services" market in Cyprus, Malta and Iceland
- the "Gas services" market in Cyprus, Malta, Finland, Sweden, Iceland and Norway

Sample sizes were set at 500 consumers per market in most of the EU countries and Norway. In Luxembourg, Cyprus, Malta and Iceland, the target was 250 consumers per market. No quota was set for socio-demographic variables but the overall sample intake was monitored daily, to follow up on the overall composition of the sample on gender, age, region and the possession of a mobile and/or a fixed phone in accordance with the sampling approach adopted.

1.3.Interviewing method

Computer Assisted Telephone Interviewing (CATI) was chosen as the method of surveying because the overall telephone penetration in the EU28 countries, Iceland and Norway is high and therefore guarantees representativeness of the results. Interviewers conducted the survey at national level using a central programme recording directly all survey answers and storing them in one location.

1.4.Languages of interviewing

Interviews were conducted in 28 languages: the 24 official European Union languages, Luxembourgish, Russian, Icelandic and Norwegian.

Language	Country
Bulgarian	Bulgaria
Croatian	Croatia
Czech	Czech Republic
Danish	Denmark
Dutch	Belgium
	Netherlands
English	Ireland
	Malta
	United Kingdom
Estonian	Estonia
Finnish	Finland
French	Belgium
	France
	Luxembourg
German	Germany
	Austria
	Luxembourg
Greek	Greek
	Cyprus
Hungarian	Hungary
Icelandic	Iceland
Irish	Ireland
Italian	Italy
Latvian	Latvia
Lithuanian	Lithuania
Luxembourgish	Luxembourg
Maltese	Malta
Norwegian	Norway

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Language	Country
Polish	Poland
Portuguese	Portugal
Romanian	Romania
Russian	Estonia
	Latvia
Slovak	Slovakia
Slovene	Slovenia
Spanish	Spain
Swedish	Sweden
	Finland

1.5.Sampling frames, sample sizes and sampling design

In every country, a random sample representative of the national population aged 18 or over was drawn, i.e. each person belonging to the target universe had a chance to participate in the survey. For some countries, suitable telephone number register(s) were available for both fixed and mobile lines, whilst for other countries only register(s) for either fixed or mobile lines could be used or even no register existed at all. In case no register was available, RDD[1]-numbers were generated. The following variables for stratification were used: age, region and level of urbanisation, as far as the information was available in the sample frame(s).

For the MMS 2015, a dual sampling frame was introduced:

- **Mobile sample**: potential respondents within a given country that can be reached via a mobile line (regardless of whether they can also be reached via a fixed line). As such, this sample includes respondents from both the mobile only and mixed population.

$$\%\ \boldsymbol{Mobile\ sample} = \frac{\boldsymbol{Proportion\ of\ mobile\ lines}}{\boldsymbol{Total\ population\ of\ phone\ numbers}} = \frac{\boldsymbol{M + MF}}{(\boldsymbol{M + MF}) + (\boldsymbol{F + MF})}$$

- **Fixed sample**: potential respondents within a given country that can be reached via a fixed line (regardless of whether they can also be reached via mobile line). As such, this sample includes respondents from both the fixed line only and mixed population.

$$\%\boldsymbol{Fixed\ line\ sample} = \frac{\boldsymbol{Proportion\ of\ fixed\ lines}}{\boldsymbol{Total\ population\ of\ phone\ numbers}} = \frac{\boldsymbol{F + MF}}{(\boldsymbol{M + MF}) + (\boldsymbol{F + MF})}$$

F = fixed only; M = mobile only; and MF = mobile and fixed

For example, Germany was set to have following proportions in the study: 83% mixed, 9% fixed only, 8% mobile only. Therefore the local teams composed a gross sample of 50% fixed numbers, defined as: ((83%+9%)/(83%+9%)+(83%+8%)) and 50% mobile numbers ((83%+8%)/(83%+9%)+(83%+8%)).

[1] Random Digit Dialling. With RDD, software is used to generate new telephone numbers, starting from a list of starting numbers. New telephone numbers are created and used by adding and subtracting digits in the existing telephone number. The composition of the starting number is important here for obtaining sufficient geographical spread.

Eurobarometer 2014 (Household Communication study) data regarding phone possession were available for all EU countries. Norway and Iceland were not included in the Household Communication study. Therefore, GfK reached out to the national fieldwork agencies in these two countries in order to obtain comparable figures. The figures for Norway originate from the Norwegian Communications Authority, whilst both Statistics Iceland and the Post and Telecom Administration (PTA) were found to be the relevant sources for the figures for Iceland.

In order to further guarantee the representativeness of the sample, the time of calling was predominantly weekday evenings, with interviewing before only authorised upon specific request with a motivated rationale. In case of interviews conducted during the weekend or appointments set up upon respondent request, calls could take place all day long. Also, the birthday rule question was included for landlines to ensure a random selection procedure and minimise potential bias related to the person who would answer the call.

1.6.Questionnaire translation and scripting

GfK conducted a translation and review of the new and amended questions. The translation of the questions was performed by professional translators with the respective national languages as mother tongue. Detailed written instructions were provided to find a balance between making necessary changes and maintaining the comparability with the English master questionnaire and previous waves.

In 2010, the Contracting Authority consulted national experts on the translated questionnaires. For the MMS 2015, the national experts were again given the opportunity to review the translations. The suggested linguistic changes were checked with the professional translators and, when necessary, researchers in the national agencies. Whenever the requested changes were deemed appropriate, the changes were implemented in the questionnaire. When the feedback was related to the content of the question, instead of the translation itself, no changes were made in order to maintain consistency in the question wording. Some final linguistic changes were carried out based on the scripting checks conducted by the national agencies and the feedback received after the pilot interviews.

After the English master questionnaire had been approved by the Contracting Authority, additions and modifications were implemented in the central script. The routings and changes were firstly verified at central level, using the QCheck Scripting software approach. After this check, each national agency tested the script entirely in their respective languages.

1.7.Pilot

The scripted questionnaire was piloted in all participating fieldwork countries by the members of the GfK network. The pilot took place between 23 April and 1 May 2015, although the majority of the interviews were completed on the 23rd and 24th of April. The aim of this pilot was to test that the survey questionnaire, translation and script were all appropriate and correct, before the survey was run on a full scale.

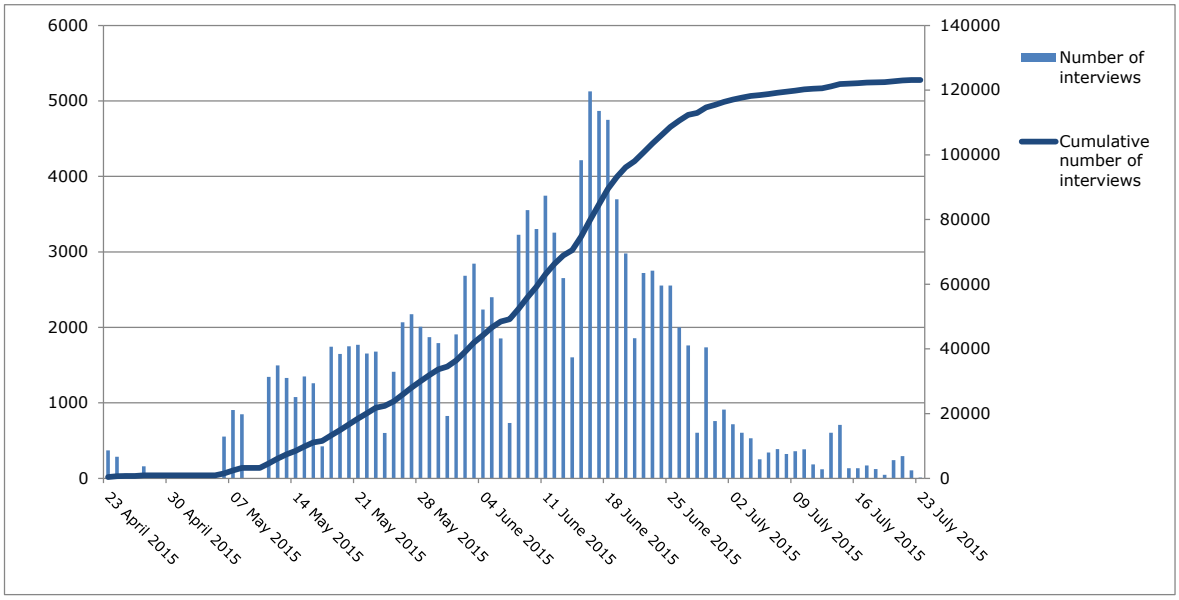
The table below presents the completed interviews per country on total and with a break on gender, age and education level.

Country	Total	Gender		Age			Education level (ISCED)		
		Man	Woman	18-34	35-54	55+	0-2	3-4	5-6
Austria	31	16	15	7	20	4	2	27	2
Belgium	43	19	24	10	16	17	3	4	6
Bulgaria	49	19	30	14	16	19	1	20	18
Croatia	42	11	31	5	13	24	6	20	5
Cyprus	25	14	11	13	7	5	2	10	12
Czech Republic	48	25	23	10	19	19	2	21	6
Denmark	37	18	19	4	16	17	5	12	11
Estonia	53	19	34	6	18	29	8	20	14
Finland	31	18	13	8	8	15	2	10	17
France	41	22	19	12	23	6	8	14	8
Germany	48	22	26	12	24	12	9	23	8
Greece	51	25	26	12	22	17	5	13	19
Hungary	32	13	19	19	4	9	2	21	7
Iceland	24	13	11	7	9	8	4	6	6
Ireland	36	16	20	5	11	20	6	10	14
Italy	38	19	19	5	13	20	6	15	9
Latvia	39	19	20	12	15	12	7	13	12
Lithuania	32	15	17	11	9	12	0	12	14
Luxembourg	30	17	13	8	18	4	5	17	8
Malta	33	9	24	9	8	16	23	3	3
Netherlands	39	21	18	10	18	11	3	20	28
Norway	60	32	28	14	16	30	6	8	6
Poland	47	18	29	14	18	15	0	13	16
Portugal	32	15	17	15	8	9	2	12	12
Romania	49	20	29	18	13	18	4	23	13
Slovakia	45	11	34	14	13	18	3	24	6
Slovenia	50	19	31	11	10	29	3	17	12
Spain	37	16	21	7	16	14	8	14	8
Sweden	34	20	14	7	10	17	2	17	12
United Kingdom	46	22	24	18	13	15	8	7	16
Total	**1 202**	**543**	**659**	**317**	**424**	**461**	**145**	**446**	**328**

1.8.Fieldwork

The main fieldwork was launched on 5 May in Belgium and on 6 May in the other countries. The fieldwork continued until 23 July without interruption, although the majority of the countries completed the fieldwork earlier. Thus, instead of the originally scheduled 7 weeks, fieldwork lasted up to 11 weeks. More details on the difficulties behind the extended fieldwork period are available in the evaluation report.

The figure below gives an overview of the number of completed interviews per day. A total number of 123,138 interviews were conducted during this project. A peak in the number of interviews can be noticed during the first weeks of June. It is a result of the increased field resources allocated towards the survey in order to overcome the difficulties experienced in reaching the target number of interviews.



In total 592,399 market interviews were realised. Detailed information about the number of market interviews per country and exact fieldwork period is shown in the table below.

Country		N° of interviews	Dates		Population 18+
AT	Austria	21,320	23/04/2015	27/06/2015	7,013,156
BE	Belgium	21,235	23/04/2015	4/07/2015	8,919,608
BG	Bulgaria	21,306	23/04/2015	30/06/2015	6,066,663
CY	Cyprus	9,885	23/04/2015	10/07/2015	686,994
CZ	Czech Republic	21,485	23/04/2015	19/06/2015	8,661,391
DE	Germany	21,394	23/04/2015	27/06/2015	67,708,086
DK	Denmark	21,383	23/04/2015	29/06/2015	4,448,815
EE	Estonia	20,764	23/04/2015	23/07/2015	1,072,039
EL	Greece	21,286	23/04/2015	27/06/2015	8,977,473
ES	Spain	21,142	24/04/2015	8/07/2015	38,149,380
FI	Finland	20,800	27/04/2015	23/06/2015	4,373,884
FR	France	21,411	23/04/2015	27/06/2015	51,181,213
HU	Hungary	21,238	23/04/2015	20/06/2015	8,141,626
HR	Croatia	20,454	23/04/2015	13/07/2015	3,470,667
IE	Ireland	21,516	24/04/2015	29/06/2015	3,413,853
IT	Italy	21,330	24/04/2015	1/07/2015	50,606,779
LT	Lithuania	20,993	24/04/2015	15/07/2015	2,410,471
LU	Luxembourg	10,728	23/04/2015	17/06/2015	437,601
LV	Latvia	21,002	24/04/2015	12/07/2015	1,655,468
MT	Malta	10,106	23/04/2015	20/06/2015	349,673
NL	Netherlands	21,705	23/04/2015	4/07/2015	13,384,394
PL	Poland	21,351	23/04/2015	23/06/2015	31,079,334
PT	Portugal	21,404	24/04/2015	24/06/2015	8,570,950
RO	Romania	21,377	24/04/2015	21/06/2015	16,203,605
SE	Sweden	20,935	27/04/2015	25/06/2015	7,690,507
SI	Slovenia	21,202	24/04/2015	17/06/2015	1,702,849
SK	Slovakia	21,230	24/04/2015	10/07/2015	4,410,370
UK	United Kingdom	21,359	23/04/2015	25/06/2015	50,675,967
EU28		561,341			411,462,816
EU15		308,948			325,551,666
EU13(NMS)		252,393			85,911,150
NO	Norway	20,796	24/04/2015	2/07/2015	3,982,064
IS	Iceland	10,262	24/04/2015	14/07/2015	245,596
Total		592,399			415,690,476

1.9.Response rate improvement measures

A range of measures were put in place in order to minimise non-response for the survey, as follows:

- The questionnaire review and testing ensured that the main data collection tool was fit for purpose in all languages before the start of the survey.
- The pilot and the implementation of the pilot feedback further ensured the quality of the questionnaire, both in terms of content and technical aspects.
- Interviewers all followed thorough briefings on the survey in addition to generic interviewer trainings, and were instructed on how to minimise the non-response rate.
    - This preliminary briefing was completed by specific comments on issues identified during the pilot.

2. ANALYTICAL METHODOLOGY

This section presents the methodology used for the data processing, weighting and estimation of the standard errors.

2.1.Data cleaning, processing and validation

All data processing and analyses were centralised at GfK Belgium in order to ensure the quality of the data and analyses. The need for data editing was minimised by the preliminary measures implemented during the fieldwork, such as automatic controls on the responses and warnings on the screen for the interviewers to prevent incorrect answers being stored. In addition, a variable per market was automatically calculated in the script to indicate if all questions for the market were completed. Even if the respondent did not finish the entire interview, the responses could then easily be recuperated for those markets that were completed.

The main stage of the data cleaning process consists of thorough quality controls on the data, including consistency and missing answers checks. In order to maximise the response in more difficult markets, interviews with missing values on the socio-demographic questions asked at the end of the survey were also included.

Following the data cleaning stage, the raw data were processed for the analysis and reporting stages. The Market Performance Indicator and all breaks were computed in order to produce the various data files required for the analysis.

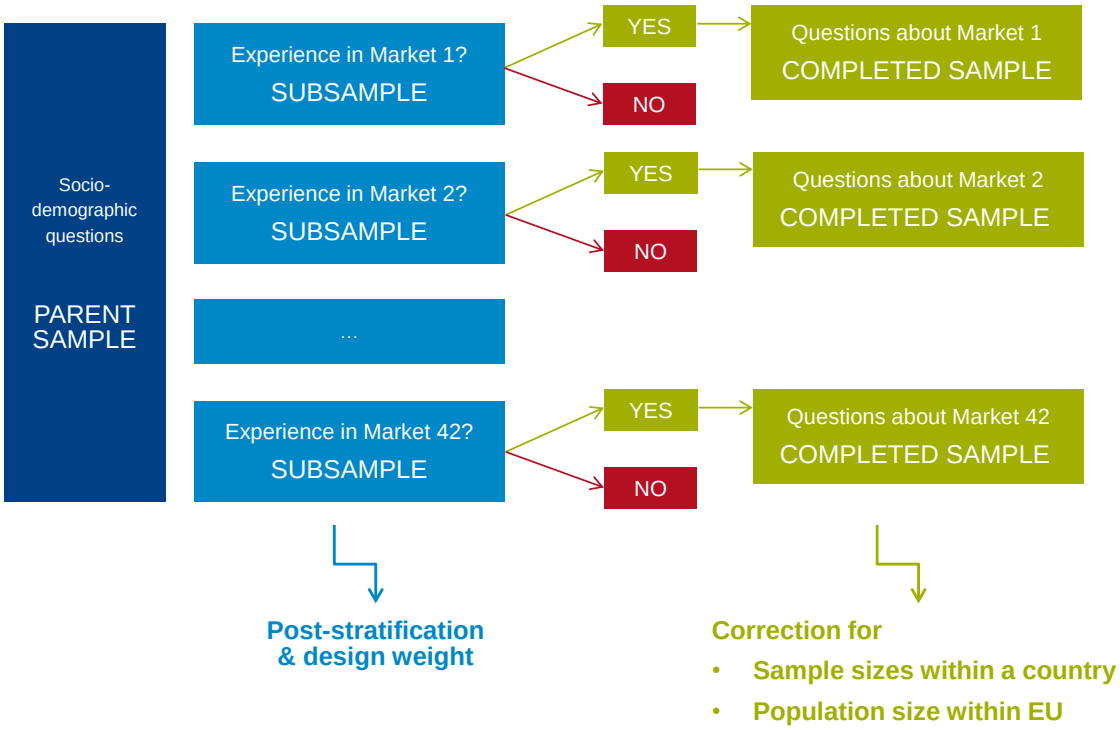
2.2.Weighting

The weighting process consists of the following three steps:

- Post-stratification weight, taking into account: age, gender, phone type and design weight
- Factor to correct for different sample sizes per market within a country
- Factor representing the population distribution across countries

2.2.1.Terminology

The term **parent sample** refers to the total sample of respondents surveyed in a given country, regardless of the market. The term **subsample** is used to refer to the sample per market that consists of all respondents per country who were asked whether they had recent experience in the market ('Yes' or 'No'). This subsample was weighted to be representative of the country population. The **completed sample** is the sample of respondents who answered 'Yes' to the question on recent experience in the given market in a given country. This sample corresponds to the main data file analysed in the reporting phase. The weighting used in the analysis is the weighting of the subsample. An overview of the three different samples is shown in the figure below.



2.2.2.Post-stratification & design weighting

Weighting is most effective when reliable and accurate universe information is available. Unfortunately, these data are not available for this study as consumer profiles for each of the 42 markets are not known. The subsample weighting applied in 2013 was again applied in 2015 in order to improve the representativeness of the survey.

The subsample was weighted in each country and market using a post-stratification weight. Age and gender were included in the 2013 weighting scheme, while the 2015 approach also includes the possession of a mobile and/or a fixed phone and a design weight. The target distributions[2] per country can be found in the table below.

[2] Sources: Eurostat 2015 for gender and age. Eurobarometer 2014 (Household Communication study) data regarding phone possession were available for all EU countries. The figures for Norway originate from the Norwegian Communications Authority, whilst both Statistics Iceland and the Post and Telecom Administration (PTA) were found to be the relevant sources for the figures for Iceland.

	Gender		Age			Possession of type of phone(s)		
Country	**Men**	**Women**	**18-34**	**35-54**	**55+**	**Fixed only**	**Mobily only**	**Mixed**
Austria	48%	52%	27%	37%	37%	5%	59%	36%
Belgium	49%	51%	27%	35%	38%	4%	33%	63%
Bulgaria	48%	52%	26%	34%	40%	7%	55%	38%
Cyprus	48%	52%	34%	34%	32%	5%	32%	63%
Czech Republic	49%	51%	27%	35%	38%	1%	84%	15%
Germany	49%	51%	24%	35%	41%	9%	8%	83%
Denmark	49%	51%	26%	35%	39%	4%	56%	40%
Estonia	46%	54%	28%	33%	39%	3%	60%	37%
Greece	48%	52%	25%	36%	40%	5%	18%	77%
Spain	49%	51%	25%	39%	36%	6%	29%	65%
Finland	49%	51%	27%	32%	41%	1%	85%	14%
France	48%	52%	26%	34%	39%	7%	13%	80%
Hungary	47%	53%	26%	35%	39%	5%	55%	40%
Croatia	48%	52%	26%	34%	40%	7%	16%	77%
Ireland	49%	51%	30%	39%	31%	5%	42%	53%
Italy	48%	52%	22%	37%	41%	5%	44%	51%
Lithuania	45%	55%	27%	35%	38%	3%	67%	30%
Luxembourg	50%	50%	29%	39%	32%	4%	15%	81%
Latvia	45%	55%	28%	34%	39%	1%	72%	27%
Malta	50%	50%	29%	32%	39%	9%	8%	83%
Netherlands	49%	51%	26%	36%	38%	4%	16%	80%
Poland	48%	52%	31%	33%	36%	5%	69%	26%
Portugal	47%	53%	24%	36%	40%	9%	35%	56%
Romania	48%	52%	27%	35%	37%	8%	53%	39%
Sweden	50%	50%	28%	33%	39%	3%	2%	95%
Slovenia	49%	51%	26%	36%	38%	3%	23%	74%
Slovakia	48%	52%	31%	36%	33%	4%	79%	17%
United Kingdom	49%	51%	29%	34%	37%	5%	17%	78%
Norway	50%	50%	29%	36%	35%	1%	59%	40%
Iceland	50%	50%	33%	35%	33%	1%	11%	88%

In case a very low weighting efficiency was observed, constraints on the possession of a mobile and/or a fixed phone could be adjusted, but only without affecting the corresponding MPI score.

The use of a design weight has become common in telephone surveys when calling on both mobile and fixed lines (dual frame) as there is an overlap between frames with respondents who could be sampled from both. This means that the probability to be selected equals the probability of being called on one's fixed line plus the probability of being called on one's mobile line minus the probability of being called both on one's fixed and mobile line.

$$\pi_i = \pi_i(FN) + \pi_i(MF) - \pi_i(FN \cap MF),$$

The latter term, however, is generally very small and can be excluded from the analysis:

$$\pi_i = \pi_i(FN) + \pi_i(MF) \sout{- \pi_i(FN \cap MF)},$$

Another aspect to take into account is that a mobile line is typically used by an individual, while a fixed line is typically a household device, and is thus shared by several (eligible) persons; however, only one person in the household will answer the phone, which means that his/her selection probability will be lower. A full calculation

of the selection probability should therefore rely on data on the number of phone lines per respondent as well as the number of people per line.

This is taken into account in the following formula:

$$\pi_i \approx \frac{n_F}{N_F} * \frac{F_i}{Z_i} + \frac{n_M}{N_M} * \frac{M_i}{Z_i}$$

n_F = sample size fixed numbers; N_F = population size fixed numbers ; n_M=sample size mobile numbers; N_M=population size mobile numbers

F_i = number of fixed lines the respondent can be reached on, Z_i = number of persons that can be reach via these fixed lines

M_i = number of mobile lines the respondent can be reached on, Z_m = number of persons that can be reach via these mobile lines

However, this theory has come under pressure over the past years due to several flaws:

- Having several people using the same fixed line in a household lowers their probability to be selected, but chances are also higher that at least one person is at home, which increases the selection probability.
- If someone uses several mobile lines, their selection probability increases, although it is unlikely that this person will have both mobile phones with them and switched on at all times.

Based on these comments and the need to include several additional questions for the full approach, a different approach was selected. The expected number of people available per line was set to 1 for both fixed and mobile lines, resulting in the following formula:

$$\pi_i \approx \frac{n_F}{N_F} * F_i + \frac{n_M}{N_M} * M_i$$

In this formula, the terms F_i and M_i are equal to 1 if the respondent owns respectively a fixed/mobile line, regardless of the number of fixed/mobile lines they can be reached on.

2.2.3.Combination of completed (or analysed) samples per market within a country

This is the sample of all respondents who answered 'Yes' to the question on recent experience in a given market in a specific country. An extra factor was applied on these country samples to ensure each market has the same weight in the combined results for all markets, goods markets and services markets per country. This factor is necessary, because the obtained sample sizes were not equal for all markets within a given country (500 or 250). The post-stratification weighting per country was used as a basis for this factor.

2.2.4.Combination of completed (or analysed) samples per market for the EU

This is the sample of respondents who answered 'Yes' to the question on recent experience in the given market for all EU 28 countries together. An extra weighting was applied on this EU sample, namely a population weighting.

The post-stratification weighting – multiplied by the factor per country described in the section above– was used as a basis for the population weighting. The population distribution across the countries in the EU was included in this weight, based on population data from Eurostat which can be found in the table below.

Country	Population 18+ count	Population 18+ %
Austria	7,013,156	1.7%
Belgium	8,919,608	2.1%
Bulgaria	6,066,663	1.5%
Cyprus	686,994	0.2%
Czech Republic	8,661,391	2.1%
Germany	67,708,086	16.3%
Denmark	4,448,815	1.1%
Estonia	1,072,039	0.3%
Greece	8,977,473	2.2%
Spain	38,149,380	9.2%
Finland	4,373,884	1.1%
France	51,181,213	12.3%
Hungary	8,141,626	2.0%
Croatia	3,470,667	0.8%
Ireland	3,413,853	0.8%
Italy	50,606,779	12.2%
Lithuania	2,410,471	0.6%
Luxembourg	437,601	0.1%
Latvia	1,655,468	0.4%
Malta	349,673	0.1%
Netherlands	13,384,394	3.2%
Poland	31,079,334	7.5%
Portugal	8,570,950	2.1%
Romania	16,203,605	3.9%
Sweden	7,690,507	1.9%
Slovenia	1,702,849	0.4%
Slovakia	4,410,370	1.1%
United Kingdom	50,675,967	12.2%
Norway	3,982,064	1.0%
Iceland	245,596	0.1%

2.2.5.Factor to correct aggregated sample size

As in 2013, a factor was applied to aggregated sample sizes in order to reflect the actual number of respondents and not the number of market answers. Each respondent was assigned a factor as follows: number of markets answered by the respondent / average number of markets answered for this country. This approach ensures the number of markets answered is taken into account in the analysis. For example, if two respondents respectively answered questions on 7 and 3 markets and their country's average number of markets is 5, the ratio for respondent 1 is then 7/5 = 1.4 and 3/5 = 0.6 for respondent 2. Thus, the sum of the 2 respondents is 1.4+0.6=2. This factor will be applied to the following aggregates: all country and geographical aggregates, as well as the "all markets", "goods markets" and "services markets" aggregates.

2.2.6.Weight trimming

Weight trimming is used to dampen any large variance in the weights: to maximise weighting efficiency while minimising potential non-response bias. After consulting Eurostat, the following approach was chosen. Any computed non-response weights outside the following limits are recoded to the boundary of these limits:

$$\frac{1}{3} \leq \frac{E(w^{HD}) \Big/ (w_i^{HD})}{E(w^{HN}) \Big/ (w_i^{HN})} \leq 3$$

w_i^{HD} = household design weight

w_i^{HN} = the weight determined after adjustment (non-response or calibration)

$E(w^{HD})$ and $E(w^{HN})$ = their respective mean values

This approach does not rely on an absolute threshold, but offers a relative threshold based on the data.

2.3.Trend data

In the 2015 wave of the MMS, a new weighting procedure has been introduced, based on a design weighting and population figures per country – representing age, gender and phone type ownership. This new weight can only be applied to 2015 data, which has led to a break in the time series. To avoid any possible bias arising from this break, differences between 2015 and 2013 were calculated on data weighted using the method used in the 2013 wave, while differences between years 2012-2011 and 2011-2010 were calculated on data weighted using the method from the 2011 and 2010 waves (weight based on country size but not on gender or age).To summarise, the following weighting procedures was used to calculate the results presented in the report for the MMS 2015:

- 2015: Population, gender, age, mobile only/fixed only/mixed & design weighting
- 2015-2013: Population, gender & age weighting
- 2013-2012: Population, gender & age weighting
- 2012-2011: Only population weighting
- 2011-2010: Only population weighting

2.4.Estimation of standard errors

The standard error was estimated using the same method as in 2013: the standard deviation is divided by the square root of the sample size (SD/√n). In this context, the sample size (n) refers to the number of respondents (not the number of markets answered).

3. RESPONSE RATES

3.1. Response rates per country

The following distinctions were made regarding the response information:

- Eligible units (belonging to the target population)
  - Full responses
  - Only partial responses
  - Non-response
- Non-responding units with unknown eligibility
- Non-eligible units (not belonging to the target population)

Response rates were then computed using the by AAPOR[3] defined calculations:

- $RR1 = \frac{I}{(I+P)+(R+NC+O)+(UH+UO)}$
- $RR3 = \frac{I}{(I+P)+(R+NC+O)+e(UH+UO)}$
- $RR4 = \frac{(I+P)}{(I+P)+(R+NC+O)+e(UH+UO)}$

  RR = Response rate; I = Complete interview; P = Partial interview; R = Refusal and break-off; NC = Non-contact; UH = Unknown if household/occupied housing unit; UO = Unknown, other

In RR3 and RR4, an estimate e is introduced, which is the estimated proportion of cases of unknown eligibility that are eligible[4]. The default estimate was used in the calculated response rates. This estimate is based on the proportion of eligible respondents among all contacts in the sample for which a status was obtained.

Whereas only completed contacts are considered as interviews in RR1 and RR3, RR4 also counts partial interviews in the numerator.

The three response rates per country are listed in the table below.

[3] American Association for Public Opinion Research

[4] AAPOR Response Rate Calculator in Excel, accesible via http://www.aapor.org/AAPORKentico/Education-Resources/For-Researchers/Poll-Survey-FAQ/Response-Rates-An-Overview.aspx

	Response rates		
Country	**RR1**	**RR3**	**RR4**
Austria	7%	7%	7%
Belgium	6%	7%	11%
Bulgaria	32%	33%	36%
Cyprus	34%	37%	37%
Czech Republic	11%	11%	13%
Germany	6%	7%	7%
Denmark	13%	20%	23%
Estonia	15%	18%	20%
Greece	12%	14%	15%
Spain	7%	12%	15%
Finland	7%	7%	8%
France	7%	8%	8%
Hungary	10%	10%	11%
Croatia	6%	6%	7%
Ireland	3%	5%	7%
Italy	10%	10%	13%
Lithuania	13%	17%	19%
Luxembourg	6%	6%	6%
Latvia	26%	28%	31%
Malta	61%	62%	64%
Netherlands	3%	4%	5%
Poland	6%	23%	28%
Portugal	10%	16%	18%
Romania	13%	14%	26%
Sweden	6%	8%	9%
Slovenia	11%	26%	28%
Slovakia	6%	8%	12%
United Kingdom	2%	3%	4%
Norway	8%	12%	14%
Iceland	28%	32%	33%

The highest response rates are observed in Malta, Cyprus, Iceland and Latvia. In contrast, the United Kingdom, Ireland and the Netherlands recorded the lowest response rates.

By estimating the amount of eligible contacts amongst those with unknown eligibility, as done in RR3 and RR4, response rates increase especially in Denmark, Spain, Poland and Slovenia.

Furthermore, RR4 shows that a relatively high proportion of interviews were only partially completed in Romania, Slovakia, Belgium, the United Kingdkom and Ireland. Those countries benefit from also including partial interviews in the numerator.

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