

# Norwegian Citizen Panel

2015, Fourth Wave

Methodology report

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## BACKGROUND

This report describes the procedures of data collection in the fourth wave of The Norwegian Citizen Panel. Furthermore, the report discusses the representativity of the panel and how the weights are calculated.

The Norwegian Citizen Panel was established as a collaboration between several schools at the Faculty of Social Sciences at the University of Bergen and UNI Rokkansenteret.

ideas2evidence is responsible for the panel recruitment, the administration of the panel, and the technical solutions regarding data collection and computing.

## PANEL RECRUITMENT FIRST AND THIRD WAVE

Panel members were recruited in wave 1 and wave 3. The samples in wave 1 and wave 3 were drawn from the "National Registry" of Norway. This register encompasses everyone born in Norway as well as former and current inhabitants. The Norwegian Tax Administration is responsible for this register but has partly outsourced the administration to the private IT-company Evry. Evry drew the sample on behalf of the Citizen Panel after relevant permissions were acquired from the Norwegian Tax Administration.

25,000 people over the age of 18 were, in both the first and the third wave, randomly drawn from the register. The extracted information was a) last name, b) first name, c) address, d) gender, e) age, and f) phone number (the latter was only included in wave 3). The sample excluded persons without a current home address in Norway.

After receiving the data, everyone over the age of 95 was excluded from the sample.

For a detailed description of the recruitment process in wave 1 and 3, we refer to the respective methodology reports for each wave. Note however that the process differed between these two waves in that recruitment in the first wave was done through postal recruitment only, while we in the third wave in addition to postal recruitment also sent out reminders by text message to all respondents with available phone numbers, and telephonic reminders to a randomly drawn subset of the gross sample.

The total recruitment rate in these two waves were respectively 20 percent in the first wave and 23 percent in the third wave

## DATA COLLECTION FOURTH WAVE

Wave 4 of the NCP involved a data collection from existing members of the panel. The data collection was conducted during the month of March 2015.

This section firstly describes software solutions and pilots. Secondly, it presents the data collection procedure and its results, including response and response rates, the use of different platforms, and time usage.

## SOFTWARE AND PILOTS

The web-based research software Confirmit administer the surveys and the panel. Confirmit is a "Software-as-a-Service" solution, where all software runs on Confirmit's continuously monitored server park, and where survey respondents and developers interact with the system through various web-based interfaces. This provides very high data security and operational stability. The security measures are the most stringent in the industry, and Confirmit guarantees 99.7 percent uptime. ideas2evidence does the programming of the survey in Confirmit on behalf of The Norwegian Citizen Panel (NCP)

The survey went through two stages of pilot testing before it went live to the panel. First, an in-depth pilot test comprising ten master students. This pilot focused on language, mostly concentrating on the clarity of the questions. Thereafter, a broader pilot test, where the survey was sent to approximately 250 high school students. The pilot testing is regarded as successful without any major revisions deemed necessary.

**RESPONSE OF PANEL MEMBERS**

The survey was launched 09<sup>th</sup> of March, 2015. The survey was emailed to email accounts of the 10,509 members of the panel. In these e-mails, the basic information about the Citizen Panel was rehashed, and the individual panel members received a unique URL that led to the questionnaire.

The three first reminders were also sent as e-mail, while the fourth reminder was distributed as a text message.

**Table 1: Response and response rate for new panel members by the different stages of data collection**

	Response	Cumulative Response	Response Rate (%)	Cumulative Response Rate (%)
Invitation (9 <sup>th</sup> of March)	2 594	2 594	28,5 %	28,5 %
Reminder no. 1 (12 <sup>th</sup> of March)	1 658	4 252	18,2 %	46,6 %
Reminder no. 2 (16 <sup>th</sup> of March)	967	5 219	10,6 %	57,3 %
Reminder no. 3 (19 <sup>th</sup> of March)	787	6006	9 %	66 %
Reminder no. 4 (25 <sup>th</sup> of March)	291	6297	3 %	69 %

In total, the wave 4 survey received 6,297 answers. 2,594 respondents completed the survey in the period between the invitation and the first reminder (09<sup>th</sup> – 12<sup>th</sup> of March), a response rate of 28.5 percent. The pattern is similar to earlier waves; most respondents complete the survey before the second reminder is distributed, and most respondents complete the questionnaire shortly after receiving the invitation/a reminder from NCP. For details on the number of respondents after each reminder, we refer you to table 1.

The overall response rate, as reported in table 1, is **69 percent**. Some clarifications concerning the calculation of the response rate are necessary. We present the clarifications, along with the response rate for the respondents recruited in wave 1 and the respondents recruited in wave 3 respectively, in the following.

**RESPONSE OF PANEL MEMBERS RECRUITED IN THE FIRST WAVE**

**Table 2: The historic participation of respondents recruited in the first wave**

			Respondent w04	
			No	Yes
Respondent w01	Yes	w02=yes w03=yes	418	2149
		w02=no w03=yes	170	170
		w02=yes w03=no	511	251
		w02=no w03=no	978	108
	No	w02=yes w03=yes	1	4
		w02=no w03=yes	4	1
		w02=yes w03=no	5	3
		w02=no w03=no	37	1

4,811 of NCPs panel members were recruited in wave 1. Many of them have not actively opted out of the panel, but they have silently withdrawn by not participating. Table 2 is complex, and we will not discuss it in detail. Nevertheless, we include it for informational purposes. As shown by the table, 978 respondents have

not participated in any of the three subsequent waves (w02-w04) after their recruitment. In addition, 37 respondents have not participated in any of the four waves. Including these respondents in the calculation of response rate would arguably give an artificially low rate. Therefore, these 1,015 respondents are not included in the calculation of response rates given above.

2,687 of the eligible panel members recruited in the first wave responded to the questionnaire in wave 4. This gives a response rate of 70 percent.

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**RESPONSE OF PANEL MEMBERS RECRUITED IN THE THIRD WAVE**

**Table 3: Historic participation of the respondents recruited in the third wave**

		Respondent w04	
		No	Yes
Respondent w03	Yes	1833	3534
	No	208	76

NCP have 5,651 panel members that were recruited in wave 3, and all of them are included in the calculation of response rates. 3,610 of the panel members participated in wave 4, which equals to a response rate of 64 percent.

Most members, in total 3,354 as shown in table 3, have participated in two out of two waves. 1,833 panel members participated in the wave 3, but not in wave 4. 76 panel members participated in wave 4, but not in wave 3.

When comparing the response rate of this group to the response rate in the second wave<sup>1</sup>, it is notable that the response rate of the panel members recruited in wave 3 are lower, 64 percent versus 70 percent in wave 2. The recruitment in wave 1 and wave 3 was identical in sample size and sample frame, but in the third wave more, and a different set of, reminders were utilized. In wave 1 prospective panel members were contacted by an invitational letter and a reminder post card. Wave 3 also used an invitational letter and a reminder post card in the recruitment process. In addition, the sample received a reminder by text message, and a subset of the sample were contacted by a telephone call.

**Table 4: Panel members recruited in wave 3. Response rate in fourth wave by recruitment method.**

	Response rate
Invitational letter	71 %
Reminder post card	61 %
Text message	54 %
Telephone	51 %

The increase in the number of recruitment methods (SMS and telephone call, in addition to postal recruitment) in wave 3 resulted in a higher recruitment rate. However, the higher recruitment rate in wave 3 is followed by a lower response rate in wave 4 when compared to the rate achieved in the second wave. The reason for this is

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<sup>1</sup> For the sake of clarity: the fourth wave is the second survey for the panel members recruited in the third wave, just as the second wave was the second survey for the panel members recruited in the first wave.

illustrated in table 4. The wave 4 response rate of the members recruited in wave 3 declines in correspondence to how many reminders the panel members needed in order to be recruited. This indicates that panel members who need multiple reminders in order to be recruited are not as loyal as those who need fewer reminders.

## PLATFORMS

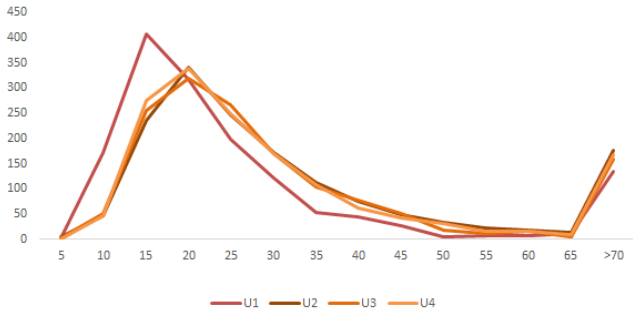
The questionnaire was prepared for data input via smart phones. In order to enhance the respondents' experience with the questionnaire, mobile users were routed away from certain elements in the questionnaire that demanded larger screens. These questions are documented in the codebook.

22 percent of all survey respondents that opened the questionnaire used a smart phone. 11 percent of the mobile users did not complete the questionnaire, but 27 percent (of the 11 percent) answered enough questions to be included in the dataset. Comparatively, on other devices 5 percent of responses were incomplete, and of these 21 percent included sufficient information to be included in the dataset.

In the third wave, mobile users were more likely to leave the questionnaire before completion. This is also the case in the fourth wave.

## TIME USAGE

Figure 1: Time usage of survey respondents in wave 4



The average respondent used 22.4 minutes to complete the questionnaire. The challenge measuring average time usage is that respondents may leave the questionnaire open in order to complete the survey later. This idle time causes an artificially high average for completing the survey. The average of 22.4 minutes therefore only includes the 89 percent of the respondents, which used less than, or equal to, 60 minutes.

As in earlier waves, the NCP questionnaire is divided in different subsets (U1-U4). Figure 1 show that respondents that answered questions in the U1 subset, on average used less time than the other subsets.

## REPRESENTATIVITY

This section describes the representativity of the survey respondents. First, we will discuss factors explaining representativity. Thereafter we apply demographic variables to present data on representativity by different strata. The data on representativity is the foundation for the section on weighting.

### FACTORS EXPLAINING LACK OF REPRESENTATIVITY

There are two main points that can serve as explanations to non-response and lack of representativity:

- ◆ access to and familiarity with the internet (given that a web-based questionnaire was the only available response mode)
- ◆ the motivation and interest of the respondents

The first challenge is strongly related to the age composition of the survey respondents. Although Norway has a very high computer and internet density, the probability of having an e-mail address, and the skills required to access and fill in an online questionnaire, normally decreases with increasing age. The second challenge, motivation and interest, is often explained by the respondents' level of education. In addition to age and education, we added the variables of geography and gender in order to test the representativity of the survey respondents. The variables have the following categories:

- ◆ Age: 19-29 years, 30-59 years, 60 and above.
- ◆ Highest completed education: no education/elementary school, upper secondary, university/university college.
- ◆ Geography: Oslo/Akershus, Eastern Norway, Southern Norway, Western Norway, Trøndelag, Northern Norway.

### REPRESENTATIVITY NORWEGIAN CITIZEN PANEL

The sampling frame of the survey equals to the Norwegian population above the age of 18, comprising a population of approximately 3.9 million individuals. Earlier reports have documented a systematic underrepresentation of respondents belonging to the two lowest educational groups, independent of gender and age. The underrepresentation is particularly strong for young men. As expected, individuals with education from universities or university colleges are systematically overrepresented across all demographic segments. All of these observations are also true for wave 4.

From the age distribution presented in table 5, we see that 18-29 year olds are underrepresented in the net sample of the fourth wave. The age group 30-59 years is clearly overrepresented. The oldest age group, 60 years and above, is close to its representation in the population.

Table 5: Age distribution in the population and the net sample of the fourth wave

	18-29 years	30-59 years	60 years and above
Population	20.3 %	51.9 %	27.8 %
Net sample - w04	13.9 %	56.4 %	29.7%

New patterns emerge when adding gender in table 6; young men are more underrepresented than young women are. In the oldest age group, women are underrepresented while men are overrepresented. Lastly, the share of middle-aged men in the net sample of wave 3 is very close to that of the population, while the women are slightly overrepresented.

**Table 6: Combined distribution of age and gender in the population and the net sample of the fourth wave**

	18-29 years		30-59 years		60 years and above	
	Men	Women	Men	Women	Men	Women
Population	10.4 %	10.0 %	26.7 %	25.2 %	12.9 %	14.8 %
Net sample - w04	6.4 %	7.6 %	27.0 %	29.4 %	16.7 %	12.9 %

The inclusion of education level in table 7 reveals a systematic underrepresentation of respondents with little or no education, independent of age and gender. As discussed in relation to table 5 and 6, the underrepresentation is strong for young respondents. The underrepresentation is also strong for middle-aged respondents with little or no education.

Respondents that have upper secondary education are somewhat underrepresented in all groups, except the young women. Those who have university or university college education are overrepresented, independent of gender and age.

**Table 7: Combined distribution of age, gender and education in the population and the net sample of the fourth wave**

		Population		Net sample - w04	
		Men	Women	Men	Women
No education/elementary school	18-29 years	4.6 %	3.7 %	0.8 %	0.9 %
Upper secondary education		3.9 %	3.2 %	3.1 %	3.1 %
University/university college		1.9 %	3.1 %	2.4 %	3.5 %
No education/elementary school	30-59 years	6.6 %	5.5 %	1.7 %	1.3 %
Upper secondary education		11.6 %	8.8 %	9.7 %	7.5 %
University/university college		8.4 %	10.8 %	15.7 %	20.6 %
No education/elementary school	60 and above	3.3 %	5.1 %	2.7 %	2.8 %
Upper secondary education		6.3 %	7.0 %	4.8 %	3.3 %
University/university college		3.2 %	2.8 %	9.3 %	6.8 %

When it comes to geography, (table 8 below) we observe a slight underrepresentation of Southern Norway, Northern Norway and Eastern Norway, and a corresponding overrepresentation of the capital area – the counties of Oslo and Akershus – and Western Norway.<sup>2</sup>

Young men and women in Northern and Southern Norway are especially underrepresented and young men and women in Western Norway are slightly underrepresented. Older women are generally underrepresented throughout the country, except in Oslo and Akershus. The same is true for young respondents throughout the country.

Middle-aged men are overrepresented in Akershus/Oslo and Western Norway, and somewhat in Trøndelag. Middle-aged women are generally overrepresented in all regions, except in Eastern Norway and Northern Norway where their share in the net sample is very close to that of the population.

<sup>2</sup> A test with smaller geographical units shows that the counties of Møre og Romsdal, Nord-Trøndelag and Hedmark are especially underrepresented. While the counties Oslo, Akershus and Hordaland are clearly overrepresented.



**Table 8: Combined distribution of age, gender and geography in the population and the net sample of the fourth wave**

		Population		Net sample - w04	
		Men	Women	Men	Women
Akershus/Oslo	18-29 years	2.5 %	2.6 %	1.7 %	2.5 %
	30-59 years	6.7 %	6.4 %	7.2 %	8.6 %
	60 and above	2.5 %	3.0 %	4.1 %	3.9 %
Eastern Norway	18-29 years	2.5 %	2.3 %	1.3 %	1.7 %
	30-59 years	6.9 %	6.7 %	6.0 %	6.6 %
	60 and above	3.9 %	4.5 %	5.4 %	3.5 %
Southern Norway	18-29 years	0.6 %	0.6 %	0.3 %	0.3 %
	30-59 years	1.5 %	1.4 %	1.2 %	1.8 %
	60 and above	0.7 %	0.8 %	0.7 %	0.6 %
Western Norway	18-29 years	2.8 %	2.7 %	1.7 %	2.0 %
	30-59 years	6.9 %	6.4 %	7.5 %	7.6 %
	60 and above	3.3 %	3.7 %	4.1 %	3.3 %
Trøndelag	18-29 years	1.0 %	0.9 %	0.8 %	0.6 %
	30-59 years	2.2 %	2.1 %	2.5 %	2.4 %
	60 and above	1.1 %	1.3 %	1.3 %	1.1 %
Northern Norway	18-29 years	1.0 %	0.9 %	0.5 %	0.5 %
	30-59 years	2.4 %	2.3 %	2.4 %	2.2 %
	60 and above	1.4 %	1.5 %	1.3 %	0.8 %

## WEIGHTING

To compensate for the observed biases, we have calculated a set of weights. The weights are equal to the relation between a given strata in the population and the total population, divided by the relation between a given strata in the net sample and the total net sample.<sup>3</sup> This procedure returns values around 1, but above 0. Respondents belonging to a stratum that is underrepresented will receive a weight above 1 and respondents belonging to an overrepresented stratum will receive a weight below 1. We have listed the weights of the different strata in table 11 in the appendix.

When calculating the weights, information regarding the respondents' geographical location, gender and age is based on registry data. These attributes were included in the sample file we received from the Norwegian National Registry. Information regarding the level of education is from the survey. 4.6 percent of the fourth wave net sample have not answered the question about level of education. Because of this, two different weights have been calculated:

- ◆ **Weight 1** is based on demographic variables only (age, gender and geography)

<sup>3</sup> The applied formula for weight  $w_i$  for element  $i$ , in strata  $h$  is:  $w_i = \frac{N_h/N}{n_h/n}$

- ◆ **Weight 2** combines the demographic variables with education. Respondents with missing data on the education variable are only weighted on demography (the education component of the weight is in these cases set to 1).

These variables have the following categories:

- ◆ **Age:** 19-29 years, 30-59 years, 60 and above.
- ◆ **Highest completed education:** no education/elementary school, upper secondary, university/university college.
- ◆ **Geography:** Oslo/Akershus, Eastern Norway, Southern Norway, Western Norway, Trøndelag, Northern Norway.

The method for calculating weights is equal to that of previous waves.

When applied, both weights will provide a weighted N equal to the number of respondents in the dataset.

As shown in the discussion above, of the factors considered, level of education creates the most bias. We therefore strongly recommend using weight 2 in most statistical analyses, as this weight provides the most accurate compensation for the various sources of bias in the net sample. Table 9 shows the effects of weight 2 on the distribution of self-reported level of education in the net sample.

**Table 9: Effect of weight 2 on self-reported level of education**

	Sample - not weighted	Sample - weighted	Population	Difference between sample and population	Difference between weighted sample and population
No education/elementary school	10.2 %	28.7 %	28.8 %	-18.6 %	-0.1 %
Upper secondary education	31.5 %	41.0 %	41.0 %	-9.5 %	0.0 %
University/university college	58.2 %	30.2 %	30.2 %	28.0 %	0.0 %

Furthermore, literature on surveys has shown that individuals who are interested in politics are more likely to participate in surveys than individuals who are not. This especially holds true for surveys with politics as a topic.<sup>4</sup> Figure 2 (below) displays the distribution of political interest, weighted and not weighted. Respondents who self-identify as politically interested (very interested and interested) equals to 58 percent in the not weighted distribution. Thirty-two percent are somewhat interested, meaning that 10 percent of the respondents report being slightly or not interested in politics. In the weighted statistics, the share of respondents who self-identify as being politically interested reaches 52 percent. Those who report not being interested in politics make up 13 percent.

Figure 2 show that the not weighted and weighted distributions of political interest are more skewed in the fourth wave than in the third wave. The reason being that politically interested respondents are more loyal panel members, as shown in table 10 below.

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4 Groves, Robert M., Stanley Presser and Sarah Dipko (2004): "The Role of Topic Interest in Survey Participation Decisions". *Public Opinion Quarterly*. Vol. 68, No. 1:2-31

Figure 2: Distribution of respondents' level of political interest not weighted and weighted (weight 2)

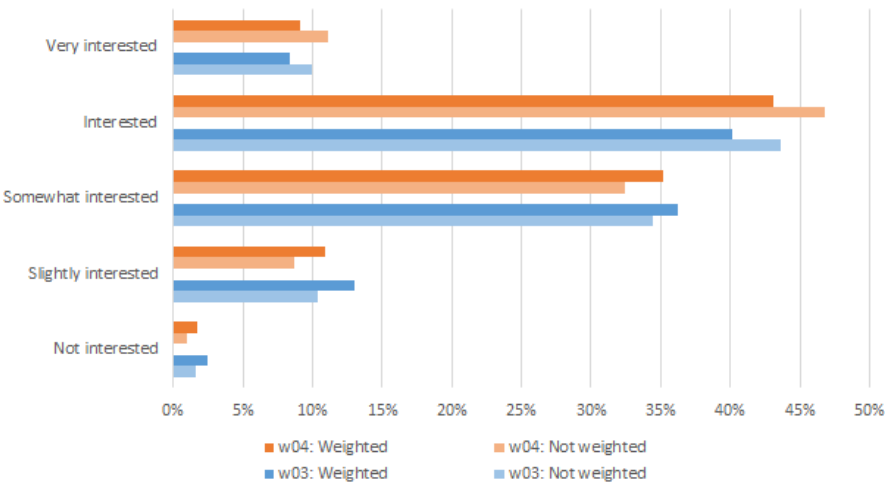


Table 10: Panel members recruited in wave 3. Response rate in fourth wave by level of political interest.

	Response rate
Very interested	77 %
Interested	74 %
Somewhat interested	65 %
Slightly interested	57 %
Not interested	43 %

For further reading, we refer to the methodology report from the first wave for the effects of weight 2 on self-reported party preference. Wave 1 fielded not long after the 2013 parliamentary election, and therefore the weighted results were compared to the election results. The weighted results on self-reported party preference came close to the election results.

We also recommend the methodology report from the third wave. The third wave report provides a comprehensive discussion on the demographic composition of the panel. It also discusses how the composition has changed over time.

## SURVEY EXPERIMENTS

All waves of the Citizen Panel Survey includes several survey experiments where different groups of respondents received questions with slightly different wordings. We have achieved this by randomly assigning respondents to groups during the data collection process. In addition, there is also a more permanent split of the respondents into two or more groups. To reduce the overall time required to answer the survey, some sections of the questionnaire were only presented to one of these groups. For both of these reasons, the number of respondents who have answered a single question might be substantially less than the total number of respondents. See the detailed data documentation for further information about this.

APPENDIX

Table 11: Weights applied to different strata (weight 2)

			Men	Women				Men	Women
Oslo/Akershus	18-29 years	No education/elementary school	4.78	3.96	Western Norway	18-29 years	No education/elementary school	5.96	3.82
		Upper secondary education	1.34	0.83			Upper secondary education	1.11	0.97
		University/university college	0.75	0.74			University/university college	0.87	0.91
	30-59 years	No education/elementary school	4.56	4.69		30-59 years	No education/elementary school	3.98	3.53
		Upper secondary education	1.14	1.13			Upper secondary education	1.11	1.10
		University/university college	0.57	0.47			University/university college	0.49	0.53
	60 and above	No education/elementary school	0.98	1.12		60 and above	No education/elementary school	1.20	1.98
		Upper secondary education	1.21	1.73			Upper secondary education	1.33	1.92
		University/university college	0.35	0.36			University/university college	0.35	0.40
Eastern Norway	18-29 years	No education/elementary school	4.86	3.37	Trøndelag	18-29 years	No education/elementary school	7.83	3.07
		Upper secondary education	1.49	1.05			Upper secondary education	0.81	1.33
		University/university college	1.00	0.95			University/university college	0.72	0.90
	30-59 years	No education/elementary school	4.11	4.90		30-59 years	No education/elementary school	2.59	3.41
		Upper secondary education	1.36	1.25			Upper secondary education	1.05	1.38
		University/university college	0.55	0.57			University/university college	0.52	0.54
	60 and above	No education/elementary school	1.26	1.96		60 and above	No education/elementary school	1.45	1.54
		Upper secondary education	1.11	2.56			Upper secondary education	1.68	2.04
		University/university college	0.31	0.40			University/university college	0.35	0.45
Southern Norway	18-29 years	No education/elementary school	7.76	12.75	Northern Norway	18-29 years	No education/elementary school	7.74	4.64
		Upper secondary education	1.85	1.32			Upper secondary education	1.65	1.58
		University/university college	0.77	1.48			University/university college	0.48	1.06
	30-59 years	No education/elementary school	6.33	3.84		30-59 years	No education/elementary school	2.84	3.86
		Upper secondary education	1.61	1.11			Upper secondary education	1.18	1.22
		University/university college	0.64	0.44			University/university college	0.54	0.68
	60 and above	No education/elementary school	1.72	2.20		60 and above	No education/elementary school	1.58	3.21
		Upper secondary education	2.56	2.57			Upper secondary education	1.73	2.36
		University/university college	0.47	0.52			University/university college	0.40	0.59