# Norwegian Citizen Panel

## 2014, Third Wave

## Methodology report

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## BACKGROUND

This report describes the procedures involved in the recruitment of panel members and data collection in the third wave of The Norwegian Citizen Panel. Furthermore, the report discusses the representativity of the panel and how the weights were calculated.

The Norwegian Citizen Panel was established as a collaboration between several institutes 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.

## SOFTWARE SOLUTION

The surveys and the panel are administered through the web-based research software Confirmit. 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. The programming of the survey in Confirmit is done by ideas2evidence on behalf of The Norwegian Citizen Panel.

## THE FIRST AND SECOND WAVE

In the first wave of the Citizen Panel, recruitment to the panel and the first survey were conducted simultaneously. A national random sample of 24,942 individuals received a letter/postal notification with information about the project, and what to do if they were interested in participating. Those who were interested got the opportunity to a) fill out a survey, and b) register their e-mail address in order to become a member of the panel.

4,905 individuals answered the **survey** sufficiently such that their responses were included in the finished data set, for a recruitment rate of 19.7 percent. In total 4,870 respondents submitted their e-mail addresses, thereby leaving us with 4,870 **panel members** in the Norwegian Citizen Survey after the first wave - a panel recruitment rate of 19.5 percent.

In the second round of the Citizen Panel no additional recruitment was conducted. The survey was sent out to the respondents who registered their e-mail addresses in the first round, and thus agreed to become panel members. In the period between the first and second wave, a few respondents opted out of the panel. 4,863 panel members in total received the second wave survey. In total, the second wave survey received 3,372 responses - a response rate of 69.6 percent.

## PANEL RECRUITMENT AND DATA COLLECTION IN THE THIRD WAVE

This report will present and discuss results from the recruitment of, and data collection from, new panel members, as well as data collection from seasoned members of the panel. For practical purposes, we will present specific data/results and procedures tied to each of these groups separately.

Before the data collection period started, the survey went through comprehensive pilot testing targeting two different groups of respondents: a) an in-depth pilot test focusing on language and clarity of questions comprising ten master students, b) a broader pilot test comprising of 298 pupils attending upper secondary school, which allowed us to control that the technical solutions and programming in relation to the survey and the survey software were working properly.

The pilot testing was regarded as successful without any major revisions deemed necessary.

## RECRUITING A NEW SET OF PANEL MEMBERS

### DRAWING A SAMPLE

As in the first wave of data collection a gross sample of 25,000 people was selected to be contacted regarding participation in The Citizen Panel.

The sample was drawn from the "National Population Register" of Norway (NPR). This register encompasses everyone born in Norway as well as former and current inhabitants.

25,000 people over the age of 18 were randomly drawn from the register. The extracted information was a) last name, b) first name, c) address, d) gender, e) telephone number(s) (if available) and, f) age. The sample excluded individuals without a current home address in Norway.

After receiving the data, everyone over the age of 95 were excluded from the sample. This amounted to 72 respondents. Thereby leaving a net sample of 24,928 respondents before the recruitment process started.

### THE RECRUITMENT PROCESS

New panel members were recruited by post in two steps, combined with additional reminders sent out to potential panel members' cellphones via SMS, and telephone recruitment to a subset of the sample.

Firstly, everyone in the sample received a letter with the following information: a) a description of the project, b) The Citizen Panel's policy on privacy, and measures taken to protect the anonymity of the participants, c) the time-frame of this project, d) the participants' rights to opt out of the panel at any time in the future, and, if they decided to become a member of the panel, e) contact information to the people responsible for the project, f) a unique log-in ID and the web-address to the panel's web site, and g) that it would take an estimated 20 minutes to complete the survey.

The letter referred the prospective respondents to the Panel's web site, where they would be able to log in to the survey utilizing the unique ID-code supplied with each letter.

The letter was sent out on the 13th of October 2014.

Ten days later, October 23rd 2014, a reminder was sent out to the respondents that a) had not logged in to the survey at all, or b) had not completed the survey and also not provided their e-mail address. The respondents that had not completed the survey but had contributed their e-mail addresses received an e-mail reminder on October 31st.

The postal reminder was sent out as a post card. This post card encouraged the respondents to register as panel members and referred to the letter sent ten days prior. The post card included the same unique log-in ID that the respondents received in the letter.

Two new methods of recruitment were applied in the third wave: a) reminders sent out via SMS, and b) telephonic recruitment to a randomly drawn subset of the gross sample.

Part of the extracted information from the Population Register were respondents' phone numbers. In total, 75 percent of the respondents had at least one phone number linked to their name in the register. All respondents that had not accessed or completed the survey after receiving both a letter and a post card were sent a reminder to their mobile phones. The SMS reminder was sent out November 13th 2014.

In connection with the SMS-reminders there were some technical difficulties regarding the number of SMS-reminders. For that reason, the SMS-reminders were delayed by two days compared to the original schedule.

The last recruitment method in this wave was reaching out to individuals in the gross sample through a telephone call. The call-up service was procured from Respons Analyse AS. A random sample was drawn of 2,000 individuals that had yet to answer the survey and whose telephone number could be found in NPR. The goal was to get in contact with 1,000 respondents out of the 2,000 respondents in the subsample. In addition to reminding the respondents about the Panel, and encouraging them to participate, the individuals who declined to participate was asked about their reasons for not wanting to be a part of the Panel.

The different stages of the data collection are shown in figure 1, underneath.

**Figure 1: Modes of communication, new recruitment**
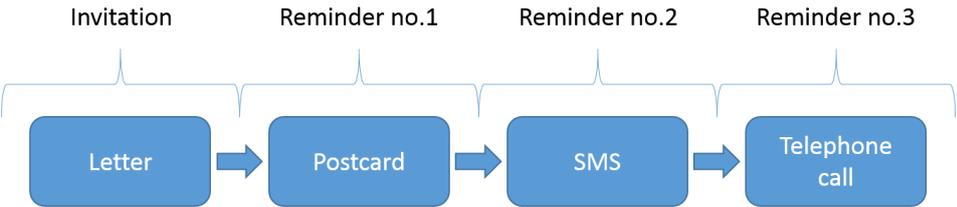


In order to maximize the response rate, an incentive in form of a lottery on a gift card on travel was included in the project. The value of the gift card was 25,000 NOK. In order to enter the lottery, the respondents were required to supply their e-mail address and become a member of the panel. This incentive was mentioned in all postal correspondence with the respondents, as well as in the telephoned reminders.

## RESULTS OF THE RECRUITMENT PROCESS - SURVEY RESPONDENTS AND PANEL MEMBERS

It is necessary to make a distinction between panel members and survey respondents. We define panel members as respondents who enter their e-mail address, regardless of whether they have completed the questionnaire or not. Survey respondents are defined as respondents who complete a large enough share of the questionnaire, regardless of whether they have entered their e-mail address or not.

Out of the 24,938 letters that were sent out, 543 were returned, and 91 respondents opted out. 25.5 percent (6,221) of the remaining 24,304 logged on and accessed the survey. 5,453 completed the questionnaire, and 768 individuals exited the questionnaire before completion, though 20 percent of these responses are kept as a part of the survey data. The remaining 611 incomplete responses are excluded from the survey, due to lack of data. In sum, after subtracting a few cases where the credentials of the respondent did not match the credentials of the invited, the third wave recruitment to the Norwegian Citizen Survey gave 5,588 new **survey respondents**. This gives a recruitment rate of 23 percent. Wave 3 therefore has a higher recruitment rate than wave 1. The difference is a result of the new methods of data collection, as will be discussed below.

97 percent of the respondents who completed the survey entered their e-mail address. Of the incomplete respondents, 43 percent entered their e-mail address. In sum, after subtracting respondents with mismatching credentials, 5,613 new **panel members** were recruited to the Norwegian Citizen Panel. This gives a panel recruitment rate of 23.1 percent.

Further discussions in this report about new recruits in wave 3 are based on data on survey respondents. However, since there is an almost perfect overlap between survey respondents and panel members, the descriptions are also valid for the panel members.

## RESPONSES BY METHOD OF DATA COLLECTION

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

|  | Response | Cumulative Response | Response Rate (%) | Cumulative Response Rate (%) |
|---|---|---|---|---|
| Invitation letter | 2,415 | 2,415 | 9.9 % | 9.9 % |
| Postcard | 2,275 | 4,690 | 9.4 % | 19.3 % |
| SMS | 773 | 5,479 | 3.2 % | 22.5 % |
| Telephone | 109 | 5,588 | 0.5 % | 23.0 % |

Table 1 summarizes the effects of the various stages of data collection. The invitation letter accumulated 2,415 responses. Reminder no. 1 accumulated almost as many as the first round, and the cumulative response rate was at this point at 19.3 percent. The results from the recruitment process in wave 1 are thus recreated in wave 3. The new methods of recruitment, especially the SMS-reminders used in reminder no. 2 adds an additional 3.7 percent, resulting in a cumulative response rate of 23 percent.

**Table 2: Responses in different stages of data collection distributed by age**

|  | Invitation letter | Postcard | SMS |
|---|---|---|---|
| 18-29 | 17 % | 16 % | 18 % |
| 30-59 | 54 % | 56 % | 60 % |
| >=60 | 29 % | 28 % | 22 % |

One of the motivations for using SMS-reminders was to increase the participation of young respondents. As documented in previous methodology reports,[1] young respondents are underrepresented in the panel. According to table 2, SMS-reminders do not seem to recruit a larger share of young respondents than other modes of contact.

One of the explanations is that only 68 percent of the younger respondents are listed with cell phone numbers in the gross sample, compared to 77 percent among the middle-aged, and 75 percent among the older in the sample. The reason for this is that young individuals often have their cell phone subscriptions registered in the name of their parents.

In the last mode of data collection, a randomly drawn subsample of 2,000 respondents was drawn. The call center made contact with 968 respondents. Of those who wanted to participate, 194 received invitations and log-in information by e-mail. 105 respondents wanted to participate, but did not want to receive an e-mail with log-in information. Out of the 195 and 105 individuals, 72 and 37 respectively are registered as respondents[2]. The remaining 669 respondents did not want to participate in the Norwegian Citizen Panel.

## REASONS FOR NOT PARTICIPATING

Encouraging respondents to participate by phone gives the opportunity to learn why people are not participating in the panel. All 669 respondents that did not want to participate were asked why. A large majority (70 percent) reported that they did not have the time to or interest in participating. Seven percent could not participate due to lack of equipment and/or knowledge of the internet, most of whom were above

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1 Høgestøl, Asle og Øivind Skjervheim (2013). Norwegian Citizen Panel 2013, first wave Methodology Report. Bergen: ideas2evidence.
Høgestøl, Asle og Øivind Skjervheim (2014). Norwegian Citizen Panel 2014, second wave Methodology Report. Bergen: ideas2evidence.

2 The reported number is, due to time limits, too low. The data extraction and documentation procedure had to start the day after the call center finalized their work. Stragglers are therefore not included in the reported number. The correct response rate of the contacted 968 is between 15-18 percent.

the age of 60.  At the same time, 228 individuals above the age of 60 reported other reasons for not participating in the panel. Not interested was the most frequent answer.

## COLLECTING DATA FROM THE FIRST WAVE PANEL MEMBERS

### THE DATA COLLECTION PROCESS

The following section details the data collection targeted at panel members recruited in the first wave. We will refer to this specific group as w01-respondents.

In the previous wave of the NCP (w02), all communication with the panel members was e-mail based. The invitation to the survey, as well as all of the reminders, were sent out via e-mail. In the third wave, new strategies were tried out. As in the last wave, w01-respondents were contacted via e-mail and invited to participate in the survey. This time, however, the first reminder was sent out by postcard instead of e-mail.

For the third reminder, w01-respondents with registered phone numbers received this on their mobile telephone via SMS. 52 percent of the net sample of w01-respondents had reported their phone number. Only the respondents without a telephone number known to us received an e-mail as their second reminder. The third reminder was sent via e-mail to all remaining respondents.

In addition, all panel members received a newsletter two weeks prior to the field period.

A graphical representation of the various stages of the data collection is shown in figure 2, below.

**Figure 2: Modes of communication, w01-respondents**
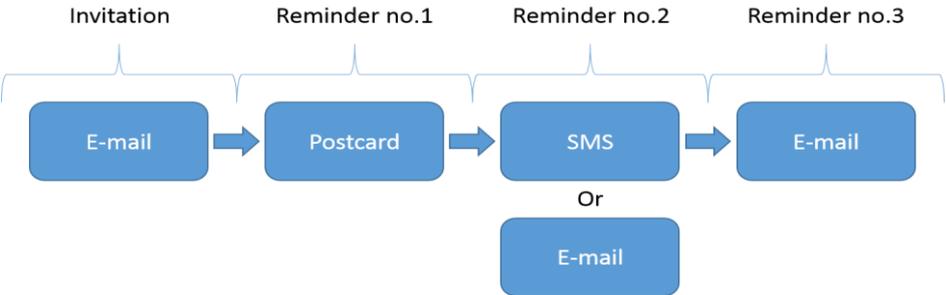


### FIELD PERIOD

4,833 panel members received an e-mail invitation to participate in wave 3 of the Norwegian Citizen Panel. 3,372 of these participated in wave 2 (69.7 percent). The remaining 30 percent of the net sample were therefore assumed to be less likely to answer in wave 3.

Table 3 summarizes the effects of the different stages of data collection. The invitational e-mail was sent out October 13th, and received 1,735 responses. Table 3 shows that panel members recruited in wave 1 tend to answer the survey right away. 920 respondents answered the survey the first day, and 45 percent of all respondents in wave 3 answered within the first three days. This pattern is different from the newly recruited, where respondents take more time to answer.

| | Response | Cumulative Response | Response Rate (%) | Cumulative Response Rate (%) |
|---|---|---|---|---|
| E-mail | 1,735 | 1,735 | 35.9 % | 35.9 % |
| Postcard | 667 | 2,402 | 13.8 % | 49.7 % |
| SMS/E-mail | 164 | 2,566 | 3.4 % | 53.1 % |
| E-mail | 361 | 2,927 | 7.5 % | 60.6 % |

The postcard resulted in 667 respondents, and the cumulative response rate reached 50 percent.

As a second reminder, the respondents received either a text message or an e-mail (the respondents who received the second reminder by e-mail consisted mostly of those who had not responded in wave 2, and were therefore less likely to answer). This generated 164 respondents. Compared to the last reminder (e-mail), which accumulated 361 responses, the second reminder accumulated a lower number of response than you would expect. There are different plausible explanations for this. Firstly, we experienced technical difficulties in the sending of text messages, where the respondents reminded on this platform received a duplicate text message. There is a possibility that this influenced their willingness to answer the survey. Secondly, compared to e-mail based reminders, text messages involves receiving reminders on one device (mobile phone), while most respondents answers on another device (computer). The text in the SMS also advised the respondents to answer on a computer. This two-staged process for answering can have influenced the response rate.

In total, 2,927 of the w01-respondents answered the survey, a cumulative response rate on 60.6 percent.

## NON-RESPONSE OF PANEL MEMBERS

Collecting data from the same respondents over time is an important attribute of the Norwegian Citizen Panel. After accounting for dropouts and the like, 88 percent of the w01-respondents in wave 3 have answered all three waves (table 4).  11.5 percent (341) of the w01-respondents in wave 3 answered the first wave, but not the second.

Table 4: Cross tabulation of respondents in wave 1, 2 and 3

| | | | | Respondents w03 | |
|---|---|---|---|---|---|
| | | | | No | Yes |
| Respondents w01 | Yes | w02- yes | 3,344 | 768 | 2,576 |
| | | w02 - no | 1,423 | 1,091 | 341 |
| | No | w02- yes | 13 | 8 | 5 |
| | | w02 - no | 43 | 39 | 5 |

This leaves 1,091 respondents that have not actively opted out, but have failed to answer on two consecutive waves. Their role as active panel members should therefore be carefully considered in the future.

In wave 3, we received responses from 77 percent of the 3,344 respondents who answered both of the first two waves. In comparison, 70 percent of those who answered the first wave also answered the second wave. The rate of non-response is therefore declining compared to the non-response between wave 1 and wave 2.

In summary, wave 3 collected 2,927 responses from the w01-respondents and 5,588 responses from newly recruited members. The total net sample of the third wave is thus 8,515. 8,248 completed the questionnaire, while 267 respondents left the questionnaire incomplete.

## PLATFORMS

For the third wave, 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. Relevant questions are documented in the codebook.

13 percent of all survey respondents that opened the questionnaire used a smart phone. 27 percent of the mobile users did not complete the questionnaire, and only 17 percent of those answered enough questions to be included in the dataset. Comparatively, on other devices only 8 percent of responses were incomplete, and of these 32 percent included sufficient information to be included in the dataset. In short, mobile users are more likely to leave the questionnaire before completion, and they also leave the questionnaire earlier than other users do.

## TIME USAGE

The average time for the respondents who completed the survey was 26 minutes. A challenge in measuring average time usage is that respondents may leave the questionnaire while still being logged on, and complete the survey later. This scenario creates an artificially high average for completing the survey. Therefore, only the 89 percent of the respondents who completed the survey within 60 minutes were included in the average.

Figure 3 shows that there is no substantial difference in time usage between the five randomized subsamples (U) of respondents.

**Figure 3: Time usage of survey respondents in wave 3**
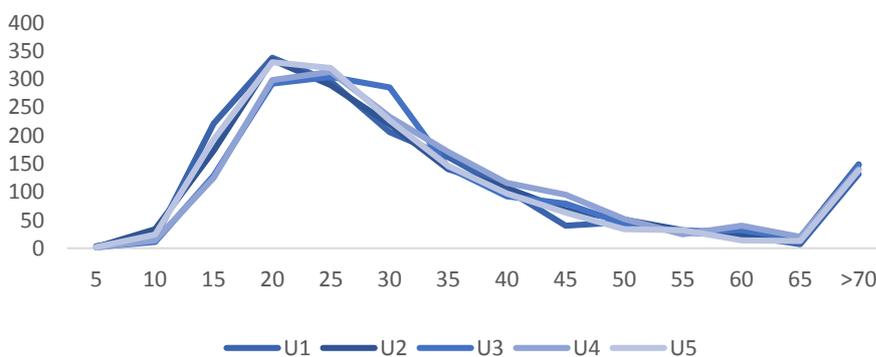


We expected that mobile users would use more time than others to complete the questionnaire because of the following reasons: a) grid questions are split into several pages, therefore increasing the amount of clicks, b) it is harder for the respondents to grasp the substance of longer questions, and c) more scrolling and navigating is necessary on a smart phone. Despite these factors, mobile users do not use more time completing the questionnaire than others. As other respondents, they average 26 minutes. This indicates that those who chose

to answer on smart phones are proficient smart phone users. Whether their responses systematically differentiate from other respondents' in any respect would be an interesting question for future research.

## REPRESENTATIVITY

This section describes the representativity of the survey respondents. In the third wave we have two distinct groups that collectively constitute the Citizen Panel, a) panel members recruited in the first wave, b) survey respondents recruited in the third wave.

In the following section, data on representativity for each of these groups will be presented both individually and combined. First, we will show how the representativity of the w01-respondents has developed from the first, via the second and to the third wave. Secondly, we will present the representativity of the panel members recruited in the third wave, and contrast this with the degree of representativity we got in the w01-recruitment.

Lastly, the general representativity of all survey respondents in the third wave combined will be presented and discussed.

### 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 – PANEL MEMBERS RECRUITED IN W01

As shown in table 4 above, the Norwegian Citizen Panel have a group of panel members that have answered each wave. This group is the large majority of the total number of responses in wave 2 and 3, and therefore the expectation was only small changes in terms of representativity from the second to the third wave, as shown in table 5.

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 3.

The underrepresentation of young respondents, especially young women, is stronger in wave 3 compared to wave 2. On the other hand, the share of older respondents in the panel has increased. This is because older people are more inclined to answer the surveys than the other age groups, once they are recruited.[3]

**Table 5: Distribution of age, gender and education in the population and the net sample of the first, second and third wave.**

| | | Population | | Net sample - w01 | | Net sample - w02 | | Net sample - w03 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Men | Women | Men | Women | Men | Women | Men | Women |
| No edu./elementary school | 18-29 years | 4.5 % | 3.6 % | 1.0 % | 1.5 % | 0.7 % | 1.2 % | 0.8 % | 1.0 % |
| Upper secondary education | | 4.0 % | 3.3 % | 4.9 % | 4.3 % | 3.8 % | 3.8 % | 3.5 % | 3.1 % |
| University/university college | | 1.9 % | 3.0 % | 2.7 % | 3.7 % | 2.4 % | 3.5 % | 2.3 % | 3.3 % |
| No edu./elementary school | 30-59 years | 6.4 % | 5.5 % | 2.2 % | 1.8 % | 1.9 % | 1.4 % | 1.8 % | 1.4 % |
| Upper secondary education | | 11.9 % | 9.2 % | 10.4 % | 8.3 % | 9.5 % | 7.9 % | 9.3 % | 7.6 % |
| University/university college | | 8.4 % | 10.7 % | 15.8 % | 18.7 % | 16.2 % | 19.4 % | 16.2 % | 19.5 % |
| No edu./elementary school | 60 and above | 3.4 % | 5.2 % | 2.2 % | 2.7 % | 2.3 % | 2.7 % | 2.5 % | 3.1 % |
| Upper secondary education | | 6.2 % | 7.0 % | 4.4 % | 3.2 % | 4.8 % | 3.5 % | 5.0 % | 3.7 % |
| University/university college | | 3.1 % | 2.6 % | 7.3 % | 5.2 % | 8.8 % | 6.2 % | 9.1 % | 6.8 % |

## REPRESENTATIVITY – PANEL MEMBERS RECRUITED IN W03

Table 6 compares the net samples of wave 1 and the net sample of the newly recruited in wave 3 to the population.

On a general note, bias in wave 3 appears on the same demographic variables as in wave 1. This is expected since the same sample procedure is utilized. Respondents with little or no education are underrepresented, independent of gender and age. Respondents with higher education are overrepresented, especially women and men above the age of 30.

The share of young and middle-aged men with upper secondary education is close to that of the population. Young females in this education group are overrepresented, and middle-aged women are underrepresented.

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3 Høgestøl, Asle og Øivind Skjervheim (2014). Norwegian Citizen Panel 2014, second wave Methodology Report. Bergen: ideas2evidence.

**Table 6: Combined distribution of age, gender and education in the population, the net sample of the first wave, and the net sample of new recruited in the third wave**

| | | Population | | Net sample - w01 | | Net sample - w03 (new) | |
|---|---|---|---|---|---|---|---|
| | | Men | Women | Men | Women | Men | Women |
| No edu./elementary school | 18-29 years | 4,5 % | 3,6 % | 1,0 % | 1,5 % | 1,1 % | 1,1 % |
| Upper secondary education | | 4,0 % | 3,3 % | 4,9 % | 4,3 % | 4,1 % | 3,8 % |
| University/university college | | 1,9 % | 3,0 % | 2,7 % | 3,7 % | 2,6 % | 3,9 % |
| No edu./elementary school | 30-59 years | 6,4 % | 5,5 % | 2,2 % | 1,8 % | 2,0 % | 1,6 % |
| Upper secondary education | | 11,9 % | 9,2 % | 10,4 % | 8,3 % | 10,4 % | 7,9 % |
| University/university college | | 8,4 % | 10,7 % | 15,8 % | 18,7 % | 14,5 % | 20,3 % |
| No edu./elementary school | 60 and above | 3,4 % | 5,2 % | 2,2 % | 2,7 % | 2,5 % | 2,8 % |
| Upper secondary education | | 6,2 % | 7,0 % | 4,4 % | 3,2 % | 4,4 % | 3,2 % |
| University/university college | | 3,1 % | 2,6 % | 7,3 % | 5,2 % | 8,1 % | 5,8 % |

## REPRESENTATIVITY NORWEGIAN CITIZEN PANEL

The sampling frame of the survey is made up of Norwegians above the age of 18, comprising a population of approximately 3.9 million individuals. From the age distribution presented in table 7 we see that 18-29 year olds are underrepresented in the net sample of the third wave. The age group 30-59 years is clearly overrepresented. The oldest age group, 60 years and above, is very close to its representation in the population.

**Table 7: Age distribution in the population and the net sample of the third wave**

| | 18-29 years | 30-59 years | 60 years and above |
|---|---|---|---|
| Population | 20.3 % | 51.9 % | 27.8 % |
| Net sample - w03 | 15.7 % | 56.3 % | 28.0 % |

New patterns emerge when adding gender in table 8; young men are underrepresented compared to their female counterparts. In the oldest age group females are underrepresented while men are over-represented. Lastly, the share of middle-aged men in the net sample of wave 3 is very close to that of the population, while the females are overrepresented.

**Table 8: Combined distribution of age and gender in the population and the net sample of the third 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 - w03 | 7.4 % | 8.3 % | 27.0 % | 29.3 % | 15.6 % | 12.4 % |

The inclusion of education level in table 9 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 particularly strong for young respondents. In addition, middle-aged respondents with little or no education are clearly underrepresented.

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

**Table 9: Combined distribution of age, gender and education in the population and the net sample of the third wave**

| | | Population | | Net sample - w03 | |
|---|---|---|---|---|---|
| | | Men | Women | Men | Women |
| No education/elementary school | 18-29 years | 4.6 % | 3.7 % | 1.0 % | 1.1 % |
| Upper secondary education | | 3.9 % | 3.2 % | 3.9 % | 3.6 % |
| University/university college | | 1.9 % | 3.1 % | 2.5 % | 3.7 % |
| No education/elementary school | 30-59 years | 6.6 % | 5.5 % | 1.9 % | 1.5 % |
| Upper secondary education | | 11.6 % | 8.8 % | 10.0 % | 7.8 % |
| University/university college | | 8.4 % | 10.8 % | 15.1 % | 20.0 % |
| No education/elementary school | 60 and above | 3.3 % | 5.1 % | 2.5 % | 2.9 % |
| Upper secondary education | | 6.3 % | 7.0 % | 4.6 % | 3.4 % |
| University/university college | | 3.2 % | 2.8 % | 8.4 % | 6.1 % |

When it comes to geography, (table 10) 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.[4]

**Table 10: Combined distribution of age, gender and geography in the population and the net sample of the third wave**

| | | Population | | Net sample - w03 | |
|---|---|---|---|---|---|
| | | Men | Women | Men | Women |
| Akershus/Oslo | 18-29 years | 2.5 % | 2.6 % | 2.0 % | 2.5 % |
| | 30-59 years | 6.7 % | 6.4 % | 7.3 % | 8.4 % |
| | 60 and above | 2.5 % | 3.0 % | 3.8 % | 3.6 % |
| Eastern Norway | 18-29 years | 2.5 % | 2.3 % | 1.5 % | 1.9 % |
| | 30-59 years | 6.9 % | 6.7 % | 6.2 % | 6.7 % |
| | 60 and above | 3.9 % | 4.5 % | 4.8 % | 3.3 % |
| Southern Norway | 18-29 years | 0.6 % | 0.6 % | 0.4 % | 0.3 % |
| | 30-59 years | 1.5 % | 1.4 % | 1.2 % | 1.7 % |
| | 60 and above | 0.7 % | 0.8 % | 0.7 % | 0.6 % |
| Western Norway | 18-29 years | 2.8 % | 2.7 % | 2.0 % | 2.3 % |
| | 30-59 years | 6.9 % | 6.4 % | 7.3 % | 7.6 % |
| | 60 and above | 3.3 % | 3.7 % | 3.9 % | 3.3 % |
| Trøndelag | 18-29 years | 1.0 % | 0.9 % | 0.8 % | 0.8 % |
| | 30-59 years | 2.2 % | 2.1 % | 2.5 % | 2.4 % |
| | 60 and above | 1.1 % | 1.3 % | 1.2 % | 1.0 % |
| Northern Norway | 18-29 years | 1.0 % | 0.9 % | 0.7 % | 0.6 % |
| | 30-59 years | 2.4 % | 2.3 % | 2.3 % | 2.3 % |
| | 60 and above | 1.4 % | 1.5 % | 1.3 % | 0.8 % |

4 A test with smaller geographical units shows that the counties of Sogn og Fjordane, Møre og Romsdal, Nord-Trøndelag, Finmark, Troms and Hedmark are especially underrepresented. While the counties Oslo, Akershus, Hordaland and Rogaland are clearly overrepresented. Most of the underrepresented counties are thus located in the periphery of Norway.

Young men and women in northern and southern Norway are especially 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 equals that of the population.

## WEIGHTING

To compensate for the observed biases, a set of weights has been calculated. 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.[5] This procedure returns values around 1, but above 0. Respondents belonging to a stratum which is underrepresented will receive a weight above 1 and respondents belonging to an overrepresented stratum will receive a weight below 1. The weights of the different strata are listed in table 14 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 Population Register. Information regarding the level of education is from the survey. Approximately 6.5 percent of the third wave net sample did not answer 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)

♦ **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 all statistical analyses, as this weight provides the most accurate compensation for the various sources of bias in the net sample. Table 11 shows the effects of weight 2 on the distribution of self-reported level of education in the net sample.

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5 The applied formula for weight $w_i$ for element $i$, in strata $h$ is: t

| | Sample - not weighted | Sample - weighted | Population | Difference between sample and population | Difference between weighted sample and population |
|---|---|---|---|---|---|
| No education/elementary school | 10.9 % | 28.3 % | 28.8 % | -17.9 % | -0.5 % |
| Upper secondary education | 33.3 % | 41.3 % | 41.0 % | -7.7 % | 0.3 % |
| University/university college | 55.8 % | 30.4 % | 30.2 % | 25.6 % | 0.2 % |

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.[6] Figure 5 displays the distribution of political interest, weighted and not weighted. Respondents who self-identify as politically interested (very interested and interested) exceed 50 percent in the not weighted distribution. 34 percent are somewhat interested, meaning that 12 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 48.5 percent. Those who report not being interested in politics make up 15.4 percent.

**Figure 3: Distribution of respondents' level of political interest not weighted and weighted (weight 2)**
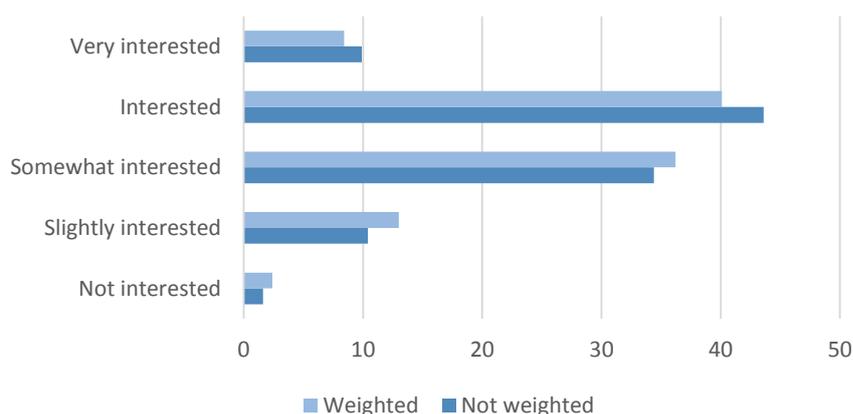


For further reading, we refer to the methodology report for wave 1 for the effects of weight 2 on self-reported party preference. Wave 1 fielded not long after the 2013 parliamentary election, and therefore the weighted results were compared to the election results. The weighted results on self-reported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

## SURVEY EXPERIMENTS

The third wave of the Citizen Panel Survey includes several survey experiments where different groups of respondents received questions with slightly different wordings. This was achieved 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 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.

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

**Table 12: Weights applied to different strata's (weight 2)**

| Region | Age | Education | Men | Women | Region | Age | Education | Men | Women |
|---|---|---|---|---|---|---|---|---|---|
| Oslo/Akershus | 18-29 years | No education/elementary school | 3.9 | 3.8 | Western Norway | 18-29 years | No education/elementary school | 5.6 | 3.2 |
| | | Upper secondary education | 1.0 | 0.8 | | | Upper secondary education | 1.0 | 0.9 |
| | | University/university college | 0.7 | 0.7 | | | University/university college | 0.8 | 0.8 |
| | 30-59 years | No education/elementary school | 3.8 | 3.8 | | 30-59 years | No education/elementary school | 4.5 | 3.7 |
| | | Upper secondary education | 1.2 | 1.0 | | | Upper secondary education | 1.0 | 1.1 |
| | | University/university college | 0.6 | 0.5 | | | University/university college | 0.5 | 0.5 |
| | 60 and above | No education/elementary school | 1.0 | 1.2 | | 60 and above | No education/elementary school | 1.5 | 1.6 |
| | | Upper secondary education | 1.2 | 1.7 | | | Upper secondary education | 1.3 | 2.0 |
| | | University/university college | 0.4 | 0.4 | | | University/university college | 0.4 | 0.4 |
| Eastern Norway | 18-29 years | No education/elementary school | 3.9 | 2.8 | Trøndelag | 18-29 years | No education/elementary school | 10.4 | 3.1 |
| | | Upper secondary education | 1.3 | 0.9 | | | Upper secondary education | 0.7 | 1.0 |
| | | University/university college | 1.0 | 1.0 | | | University/university college | 0.9 | 0.8 |
| | 30-59 years | No education/elementary school | 3.1 | 4.2 | | 30-59 years | No education/elementary school | 2.1 | 3.2 |
| | | Upper secondary education | 1.3 | 1.3 | | | Upper secondary education | 1.1 | 1.2 |
| | | University/university college | 0.6 | 0.6 | | | University/university college | 0.5 | 0.5 |
| | 60 and above | No education/elementary school | 1.3 | 2.1 | | 60 and above | No education/elementary school | 1.7 | 1.5 |
| | | Upper secondary education | 1.3 | 2.6 | | | Upper secondary education | 1.5 | 2.2 |
| | | University/university college | 0.4 | 0.4 | | | University/university college | 0.4 | 0.5 |
| Southern Norway | 18-29 years | No education/elementary school | 4.1 | 17.0 | Northern Norway | 18-29 years | No education/elementary school | 5.2 | 3.4 |
| | | Upper secondary education | 1.2 | 1.6 | | | Upper secondary education | 0.9 | 1.2 |
| | | University/university college | 0.9 | 1.3 | | | University/university college | 0.5 | 1.0 |
| | 30-59 years | No education/elementary school | 6.3 | 3.2 | | 30-59 years | No education/elementary school | 2.8 | 2.9 |
| | | Upper secondary education | 1.7 | 1.3 | | | Upper secondary education | 1.2 | 1.0 |
| | | University/university college | 0.7 | 0.5 | | | University/university college | 0.6 | 0.7 |
| | 60 and above | No education/elementary school | 1.5 | 2.3 | | 60 and above | No education/elementary school | 1.4 | 3.2 |
| | | Upper secondary education | 2.0 | 2.1 | | | Upper secondary education | 1.9 | 2.0 |
| | | University/university college | 0.4 | 0.7 | | | University/university college | 0.4 | 0.7 |