

# Norwegian Panel of Public Administrators

2023, Fourth Wave  
Methodology report

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## BACKGROUND

In this report we describe the procedures of data collection in the fourth wave of The Norwegian Panel of Public Administrators. Furthermore, we describe technical aspects of data collection as well as the representativity of survey respondents, as compared with the population.

The Norwegian Panel of Public Administrators is an internet-based survey of public administrators. The panel includes administrators from ministries and their underlying directorates and agencies.<sup>1</sup>

The Norwegian Panel of Public Administrators (NFP) is a collaboration between the University of Bergen (UiB), the University of Oslo (UiO), the University of Agder (UiA), The Arctic University of Tromsø (UiT), the Norwegian University of Technology and Science (NTNU), the Institute for Social Research (ISF) and the Norwegian Research Centre (NORCE). UiB is the data controller on behalf of the other institutions. NFP is a part of the Digital Social Science Core Facility (DIGSSCORE) at UiB. The panel is affiliated with the Norwegian Citizen Panel (NCP), The Norwegian Panel of Elected Representatives (PER), and the Norwegian Panel of Journalists (NJP). ideas2evidence is responsible for the implementation of the survey, including recruiting participants and distributing surveys to respondents.

The fourth wave was fielded in mid-November until early December 2023.

## TECHNICAL ASPECTS OF THE SURVEY

### SOFTWARE

The web-based research software Confirmit (now part of the company Forsta) is used to administer the surveys and the panel. Confirmit is a "Software-as-a-Service" solution, where all software runs on Confirmit's continuously monitored servers, and where survey respondents and developers interact with the system through various web-based interfaces. The software 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 is responsible for the programming of the survey on behalf of The Norwegian Panel of Public Administrators.

### PILOT AND OVERALL ASSESSMENT

The survey went through extensive small-N pilot testing before data collection. The pilot testing was done in collaboration between ideas2evidence and the involved researchers. Testing was regarded as success, and no major technical revisions were deemed necessary.

### RANDOMIZATION PROCEDURES

NFP has an extensive use of randomization procedures. The context of each randomization procedure may vary<sup>2</sup>, but they all share some common characteristics that will be described in the following.

All randomization procedures are executed live in the questionnaire. This means that the randomization takes place while the respondent is filling in the questionnaire, as opposed to pre-defined randomizations. Randomizations are mutually independent, unless the documentation states otherwise.

<sup>1</sup> The term "agencies" includes what in Norwegian is called "tilsyn", "etat", "institutt" etc. Note that some directorates are called agencies in English.

<sup>2</sup> Some examples: randomly allocate treatment value in experiments, randomize order of an answer list/array, order a sequence of questions by random.

The randomization procedures are written in JavaScript. `Math.random()`<sup>3</sup> is a key function, in combination with `Math.floor()`<sup>4</sup>. These functions are used to achieve the following:

- Randomly select one value from a vector of values
- Randomly shuffle the contents of an array

The first procedure is typically used to determine a random sub-sample of respondents to i.e. a control group. Say, for example, we wish to create two groups of respondents: group 1 and group 2. All respondents are randomly assigned the value 1 or 2, where each randomization is independent. When N is sufficiently large, the two groups will be of equal size (50/50).

Here is an example of the JavaScript code executed in Confirmit:

```
var form = f("x1");
if(!form.toBoolean()) // If no previous randomization on x1
{
    var precodes = x1.domainValues(); // Copies the length of x1
    var randomNumber : float = Math.random() * precodes.length;
    var randomIndex : int = Math.floor(randomNumber);
    var code = precodes[randomIndex];
    form.set(code);
}
```

The second procedure is typically used when defining the order of an answer list as random. This can be useful, for example, when asking for the respondent's party preference or in a list experiment. Since, for example, a party cannot be listed twice, the procedure must take into account that the array of parties is reduced by 1 for each randomization.

Here is an example of the JavaScript code executed in Confirmit<sup>5</sup>:

```
Function shuffle(array) {
    var currentIndex = array.length, temporaryValue, randomIndex;
    // While there remain elements to shuffle...
    while (0 !== currentIndex) {
        // Pick a remaining element...
        randomIndex = Math.floor(Math.random() * currentIndex);
        currentIndex -= 1;

        // And swap it with the current element.
        temporaryValue = array[currentIndex];
        array[currentIndex] = array[randomIndex];
        array[randomIndex] = temporaryValue;
    }
    return array;
}
```

## THE POPULATION

The target population was employees of the Norwegian central government. Central government is understood as ministries (excluding political leadership) and their underlying agencies (directorates and supervisory

<sup>3</sup> Please see following resource (or other internet resources): [https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global\\_Objects/Math/random](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Math/random)

<sup>4</sup> Please see following resource (or other internet resources): [https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global\\_Objects/Math/floor](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Math/floor)

<sup>5</sup> Code collected from Mike Bostocks visualization: <https://bost.ocks.org/mike/shuffle/>

authorities). The target population excludes regional or local branches, or branches of the underlying organization with extensive operational rather than administrative duties. According to the Norwegian Agency for Public and Financial Management, the central government consists of 86 entities, 16 of which are ministries, which had a combined employee count of 22,167 in 2020.<sup>6</sup><sup>7</sup> While the long-term goal of the panel is to recruit bureaucrats/public administrators from all governmental levels (municipal, regional, and state), this was determined to be out of scope for the first four waves.

## PREVIOUS WAVES OF RECRUITMENT

Existing panel members were recruited in wave 1 through 4. Table 1 outlines a short summary of these previous recruitment efforts, in addition to the latest recruitment in wave 4. Note that there are some differences between the recruitment processes. For a detailed description of each recruitment process, please refer to the respective methodology reports. A detailed description of the recruitment in wave 4 follows in the next section.

Table 1: Information on recruitment

	Population size	Gross sample	Gross adjusted	Net recruited	Mode	Contacts	Response Rate <sup>8</sup>
Recruitment 1 (wave 1)	≈23 000	≈23 000	-	2279	Snowball method, personal email	2	≈10 %
Recruitment 2 (wave 2)	≈23 000	7 734	7 658	603		4	7.9 %
Recruitment 3 (wave 3)	≈22 000	9 090	8 948	1 557	Personal email, opt-in form	3	17.5 %
Recruitment 4 (wave 4)	≈22 000	426	419	153		3	36.5 %

The data collection procedure of wave 4 mirrors that of the previous two waves, employing a mode of recruitment by personal invitation via email. Generally speaking, recruitment was limited by the number of e-mail addresses collected by DIGSSCORE. In wave 4 in particular, the gross sample was very small, comprising of less than 430 individuals overall.

In wave 2, 3 and 4 a registration form was made available on the web, allowing for self-recruitment.<sup>9</sup> Enrolment through this form has generally been limited, contributing to only a fraction of the overall number recruited. Due to a lack of available contact information, the online registration form proved more valuable in wave 4.

## DATA COLLECTION

### RECRUITING A NEW SET OF PANEL MEMBERS

The panel recruited new panel members in wave 4. This section gives a detailed description of the sample frame, recruitment process, and results of the recruitment effort.

### THE RECRUITMENT PROCESS

For this particular recruitment effort, engaging employees at directorates currently not participating in the panel was a central objective. In other words, unlike previous waves, the scope was targeted at organizations that as a whole has escaped previous recruitment efforts. This also meant that the recruitment pool for the most part did not overlap with the pool in the previous three waves. While the scope was limited by design, the recruitment

<sup>6</sup> Utviklingen i antall arbeidsforhold i stats- og sentralforvaltning 2019-2020. DFØ-notat 2021:02. <https://dfo.no/rapporter/utviklingen-i-antall-arbeidsforhold-i-stats-og-sentralforvaltningen-2019-2020>

<sup>7</sup> In 2023 there were actually 72 entities, but employee data for this period was found lacking. Organisering av virksomheter og ansatte i staten. DFØ. <https://dfo.no/nokkeltall-og-statistikk/organisering-av-virksomheter-og-ansatte-i-staten>

<sup>8</sup> Based on net recruited / adjusted gross sample (opt-out excluded).

<sup>9</sup> Registration form made available at the NFP home page: <https://uib.no/nfp>

pool ended up being far smaller than intended due to lack of access to contact information, stemming from a reluctance on the part of the organizations in providing such information.

In wave 4, personal invitations were sent by email to 426 public administrators. In this wave in particular, majority of the addresses (351) belonged to a single directorate, who delivered the contact information directly to DIGSSCORE. The remaining 75 were submitted through the previously mentioned online registration form, mainly comprising of employees from two different directorates. Out of the 75 who opted-in, 63 answered the survey.

Employees at ministries were not attempted recruited in wave 4.

The invitation emails contained relevant information, such as a description of the project, the privacy policy and contact information for relevant parties involved in the project. A link to participate in the survey was included in the email. At the very end of the email, a link to deregister from participation was also provided.

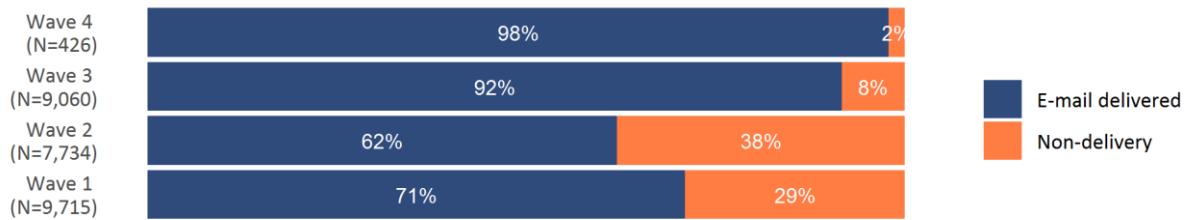
As usual, prior to survey deployment, the quality of the list was controlled, and any apparent errors were corrected. Contact information was compared with the panel database and any existing panel member who could be identified as a duplicate was removed from the (new) list of respondents.

Invitations were distributed on the 13<sup>th</sup> of November 2023.

In surveys comparable to NFP, the number of complete responses is usually greater than the number of incomplete responses.<sup>10</sup> In the previous three waves of NFP, we observed an unusually high rate of incomplete responses, a majority of which are seemingly left by respondents briefly opening the questionnaire, before rejecting participation. As stated in previous panel reports, we attributed this to IT systems at various ministries and directorates automatically checking links for malicious content. We find little evidence for such a pattern in wave 4, however. In the end, only 5 percent of new respondents (13 percent overall) opened the questionnaire without further interaction.

The first reminders were distributed by email on the 20<sup>th</sup> of November. They were sent to respondents who either had not accessed the link in the initial invitation or had started the questionnaire without completion. Respondents were encouraged to join the panel. The final reminder was distributed on the 29<sup>th</sup> of November.

**Figure 1: E-mail delivery rate by wave, new recruits only**



In the first two waves, high rates of invalid e-mail addresses and issues with reaching some relevant ministries due to security settings at the receiving end hampered recruitment efforts. Issues with deliverability were far less pronounced in wave 3 and 4, as illustrated by figure 1. This positive development can be mostly attributed to lists of contact information being of higher quality compared to previous waves.

<sup>10</sup> See *Norwegian Citizen Panel Twentieth Wave Methodology Report* (Skjervheim, Høgestøl, Bjørnebekk, Eikrem and Wettergreen, 2021) or earlier NCP methodology reports for examples of this.

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## 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 register their e-mail address, regardless of whether they have completed the questionnaire or not. Survey respondents are respondents who have completed a certain share of the questionnaire, regardless of whether they have entered their e-mail address or not.

Of the 426 invites that were distributed, 7 opted out, resulting in an adjusted gross sample of 419. 131 public administrators completed the questionnaire, while 22 incomplete responses are kept as part of the survey data as these respondents completed a certain amount of the questionnaire before exiting. 26 incomplete responses were excluded from the final data set due to lack of data.

In summary, recruitment in wave 4 resulted in 153 new survey respondents, a recruitment rate of 36.5 percent. This is higher than previous waves of NFP, although arguably less impressive when considering the meager recruitment pool. An additional 3 public administrators are recruited as panel members as they left a valid response in leaving their personal e-mail address or changing the current one, resulting in a panel recruitment rate of 37.2 percent.

Further discussions in this report, which concern new recruits in wave 4, are based on survey respondents.

### Excluded respondents after wave 4

Due to the recruitment strategies utilized in this panel (e.g., self-recruitment) a certain amount of over-coverage<sup>11</sup> was to be expected. Steps to identify and exclude these participants were made from wave 4 and onwards by the researchers at DIGSSCORE.

The exclusion criteria sought to identify respondents not currently working as a public administrator in the central government (i.e., ministries, directorates, and supervisory authorities).

Exclusion criteria were defined as confirming either of these conditions:

- Not working in the central government administration (e.g., instead working in local authorities, in a local branch, purely operational activities, or in the Norwegian Government Security and Service Organization (DSS)).
- Working in public administration, but not a public administrator (e.g., as a politician or external consultant).
- Departed from their position in the central government administration since recruitment (i.e., switched workplace, retired, or for other reason left their position).

Exclusions were identified based on the respondents' answers on certain categorical or open text questions, indicating that they did not fit the criteria of the intended target population.<sup>12</sup> All respondents identified not fit the criteria were removed from the mailing list and not re-invited after wave 4. They are also given the value "0" in the variable f4\_tvcpa so that researchers may exclude them in their analyses. This addition of an exclusion variable was made as a preferred alternative to removing these respondents from the dataset, which would have made already conducted analyses unreplicable.

Note that respondents were not given "0" on this variable in waves *earlier* than the wave where the relevant exclusion criterion is fulfilled. This is because respondents may have fit into the target population in previous waves, but later retired or switched jobs.

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## RESPONSES BY METHOD OF DATA COLLECTION

Table 2 summarizes the effect of the various stages of data collection. The initial invitation yielded 55 responses, while the first reminder yielded slightly fewer. The final reminder generated responses almost on par with the

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<sup>11</sup> A situation where a survey or data collection includes respondents or units that should not be part of the target population.

<sup>12</sup> Specifically, responses in the following variables were evaluated: f1\_paale, f2\_paale, f3\_patas\_11\_other, f3\_paale\_4\_other, f3\_pawor\_3\_other, f3\_pawor\_2\_other, f4\_paale2\_999\_other, f4\_patas\_13\_other and f4\_avslutt.

initial invitation. While textually very similar to the previous reminder, the last reminder made it clear already in the email subject field that this was the last chance to respond, perhaps giving the respondents a sense of urgency.

**Table 2: Number of responses and response rates for the new survey respondents by various stages of data collection<sup>13</sup>**

	Response	Cumulative Responses	Response Rate	Cumulative Response Rate
<b>Invitation (November 13<sup>th</sup>)</b>	55	55	13.1 %	13.1 %
<b>1<sup>st</sup> reminder (November 20<sup>th</sup>)</b>	47	102	11.2 %	24.3 %
<b>2<sup>nd</sup> reminder (November 29<sup>th</sup>)</b>	51	153	12.2 %	36.5 %

## RESPONSES OF EXISTING PANEL MEMBERS

Wave 4 of the NFP also included data collection from existing members of the panel, recruited in wave 1, 2, and 3. Data collection among existing panel members was conducted in parallel with the recruitment of, and data collection among, new members. Existing panel members received an additional reminder on November 24<sup>th</sup>. Panel members registered with a personal cell phone number<sup>14</sup> also received an SMS text message instead of an email as their final reminder, while the rest received an email.

Of the 4,486 invites that were distributed to existing panel members, 68 opted out. 1,803 respondents completed the questionnaire, while 250 incomplete responses are kept as part of the survey data as these respondents completed a certain amount of the questionnaire before exiting. 428 incomplete responses were excluded from the final data set due to lack of data.

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<sup>13</sup> 14 (new) respondents received 4 emails, but for simplicity this is omitted from the table. These 14 opted in via the online registration form prior to fielding. Due to their active engagement, these respondents were eligible to receive an additional reminder (distributed November 24<sup>th</sup>).

<sup>14</sup> 2538 public administrators, comprising of 57 percent of the existing panel members, were registered with a cell phone number prior to fielding.

**Table 3: Number of responses and response rates for existing panel members by various stages of data collection**

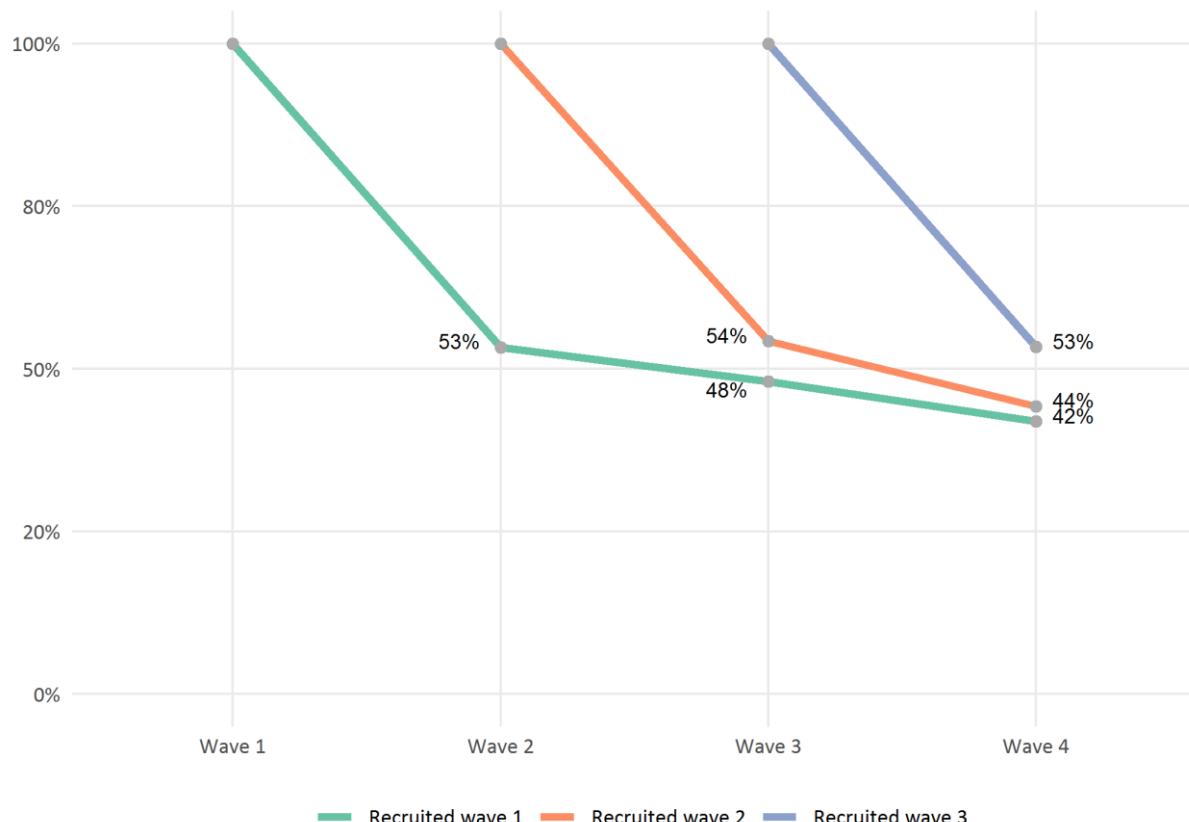
	Response	Cumulative Responses	Response Rate	Cumulative Response Rate
<b>Invitation (November 13<sup>th</sup>)</b>	727	727	16.5 %	16.5 %
<b>1<sup>st</sup> reminder (November 20<sup>th</sup>)</b>	549	1276	12.4 %	28.9 %
<b>2<sup>nd</sup> reminder (November 24<sup>th</sup>)</b>	343	1619	7.8 %	36.7 %
<b>3<sup>rd</sup> reminder (November 29<sup>th</sup>)</b>	334	1953	7.6 %	44.3 %
<b>3<sup>rd</sup> reminder – SMS (November 29<sup>th</sup>)</b>	100	2053	2.3 %	46.6 %

Wave 4 was the second wave of NFP where SMS was deployed as a contact method. The SMS reminder again yielded far fewer responses compared to the usual email reminder, underperforming by 5.3 percentage points. This contrasts with Norwegian Citizen Panel, where the equivalent SMS reminder usually yields more responses compared to email.<sup>15</sup>

Wave 4 resulted in a cumulative response rate of 46.6 percent, slightly lower than the 47.2 percent observed in wave 3.

#### RESPONSE OF EXISTING PANEL MEMBERS OVER TIME

**Figure 2: Wave-to-wave retention of existing panel members**



Wave-to-wave retention is a metric indicating how many respondents participated in each wave in relation to how many were initially recruited. Figure 2 shows that only 53 percent of the respondents recruited in the first wave participated in wave 2, and now only 42 percent remain in wave 4. A similar trend can be seen for those recruited in wave 2 and 3. In other DIGSSCORE panels, such as The Panel of Elected Representatives, we observe

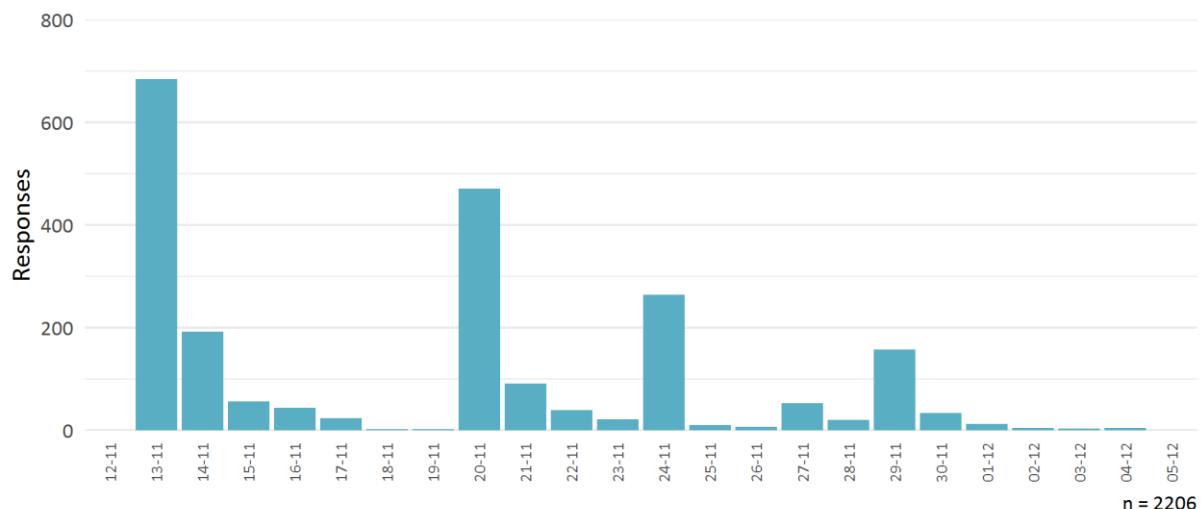
<sup>15</sup> In wave 25 of the NCP, SMS yielded 1.6 percentage points higher response rate compared to email. See *Norwegian Citizen Panel 25<sup>th</sup> Wave Methodology Report* (Skjervheim, Bjørnebekk, Wettergreen and Grendal, 2022) for more information.

a pattern where retention drops sharply in the wave following recruitment, before stabilizing and descending slowly in future waves. We are starting to see the same pattern materialize for NFP participants.

## OVERALL RECRUITMENT AND RESPONSES

The overall recruitment attempts and data collection among public administrators resulted in 2,206 survey responses and panel members. The data collection period ran from November 2023 to December 2023, as shown in figure 3.

Figure 3: Responses by date



We attempted to reach 4,912 (new and existing panel members) by individual email invitations, and 45 percent responded. However, our address list does not make up the whole population of public administrators. As noted above, approximately 22,000 persons were employed by the central government in 2020. Therefore, roughly **10 percent** of public administrators in the central government participated in wave four of NFP.

## PLATFORMS

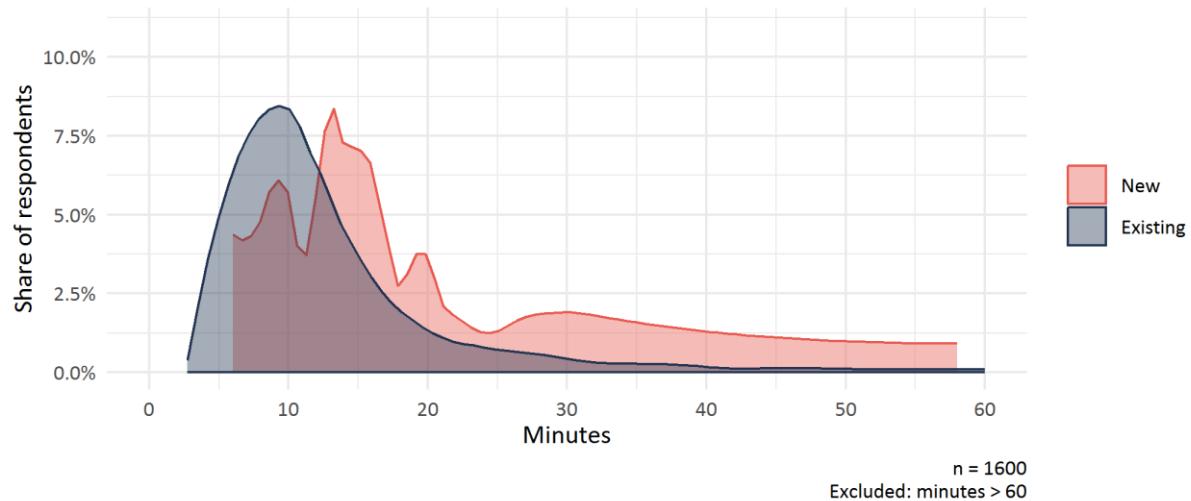
The questionnaire was made accessible for data input via mobile devices. 8.9 percent of survey respondents who completed the questionnaire used a mobile device. This is a much lower number than is observed for the Norwegian Citizen Panel (48 percent in wave 25), and for the Panel of Elected Representatives (28 percent in wave 8). The low share of respondents using mobile devices is not surprising however, as much of the contact information is comprised of work e-mails and the panel is directed to respondents in their function as employees in the state administration.

## TIME USAGE

In the survey invitation, the respondents were presented with an estimated time of 10-15 minutes for filling out the questionnaire. When calculating average time spent, we account for respondents leaving the questionnaire open to complete the survey later. This idle time causes an artificially high average for completing the survey. To reduce noise in the data, respondents using more than 60 minutes are excluded from the calculation. Doing so results in an average response time of 13.0 minutes (table 4).

Newly recruited survey respondents were given an expanded set of questions to answer compared to the existing panel members. Distribution of time usage is presented in figure 4.

**Figure 4: Time usage of survey respondents**



On average, mobile device respondents spent less time than respondents using non-mobile devices. The difference between these groups is approximately the same as in the Norwegian Citizen Panel questionnaires, but an important difference is that the number of mobile device users in NFP is significantly smaller. Therefore, less emphasis should be put on the time difference in table 4.

**Table 4: Average time spent on questionnaire (minutes)**

	All	New	Existing
All users	13.0	15.1	12.9
Non-mobile users	13.0	15.1	12.8
Mobile device users	13.8	14.8	13.7

## REPRESENTATIVITY

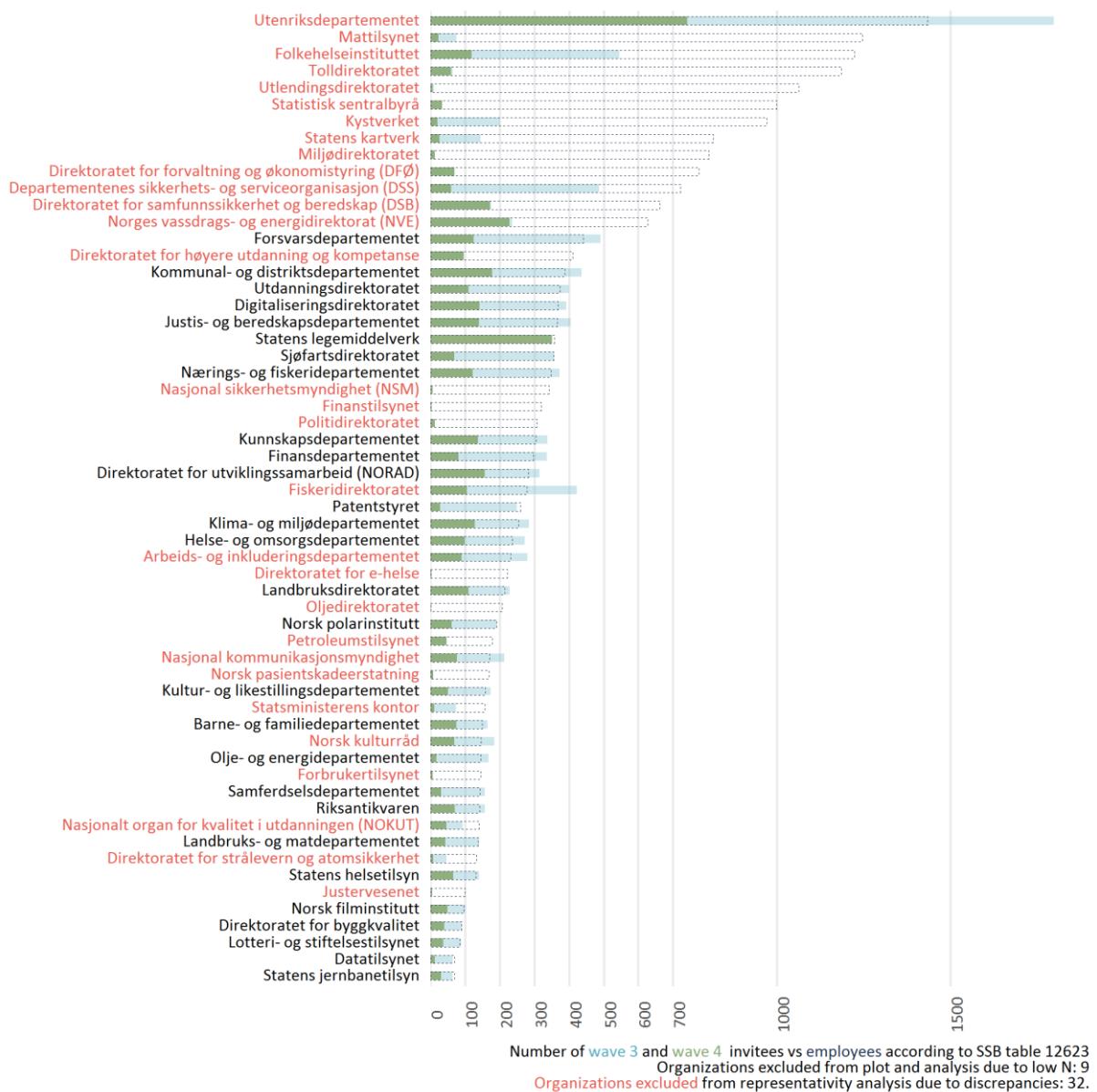
In this section, we examine how well different demographics are represented in the panel, compared to their representation in the panel population (as defined in the chapter “The Population”).

The gross sample of invited public administrators does not perfectly mirror the target population. In figure 5, we see that most organizations have a large difference between the number of employees and the number of invitees in both wave 3 and 4.<sup>16</sup> In some cases, the discrepancy was intended. Some organizations have extensive operational duties, and rather small administrative duties, and are intentionally not targeted for recruitment. This includes agencies such as Tolltaten (customs), Mattilsynet (Food Safety Authority), and Statens Vegvesen (Public Roads Administration).<sup>17</sup> Other organizations, exemplified by Helsedirektoratet (Directorate of Health), have unintended discrepancies due to email addresses not being readily available.

<sup>16</sup> Due to limited recruitment in wave 4, the vast majority of invitees were existing panel members. As such, when comparing the number of invitees versus number of employees by organization, we include both the number of invites from wave 4 and wave 3.

<sup>17</sup> Statens Vegvesen and Bufdir (Norwegian Directorate for Children, Youth and Family Affairs) is excluded from figure 5 due to legibility.

**Figure 5: Invited compared to number of employees by organization**



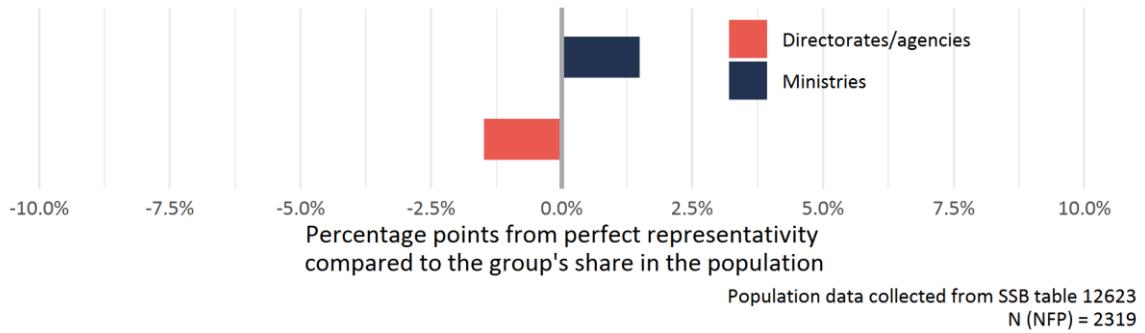
In the following analyses, we only included organizations where our gross sample of central government employees (in wave 3 and 4) matched the target population statistics published by Statistics Norway (figure 5). If the discrepancy was more than 20 percentage points, we exclude the organization when discussing representativity both from NFP data and population data. As such we defined the following exclusion criteria: 1) unintentional discrepancy between our gross sample and the population, 2) intentional discrepancy between gross sample and population due to extensive operational capacities in the organization, 3) low number of responses.

After applying the exclusion criteria, the target population has 3,358 employees at the ministry level and 3,075 employees at subordinate directorates/agencies.<sup>18</sup> 52.2 percent of the target population were employed by ministries, 47.8 in directorates/agencies. In our net sample, 1,245 respondents (53.7 percent) were employed by ministries and 1,074 (46.3 percent) by directorates/agencies. Due to expected drop off since wave 3, we observe

<sup>18</sup> According to SSB table 12623.

a general increase in skewedness, away from perfect representativity. Ministries are now slightly overrepresented, as illustrated by figure 6.

**Figure 6: Representativity of administrative levels**



Both administrative levels, ministries and subordinate directorates/agencies have an overrepresentation of respondents above 50 years of age (figure 7). As a result of this, both levels have an underrepresentation of respondents aged 40 years or less.

**Figure 7: Representativity of administrative level by age**

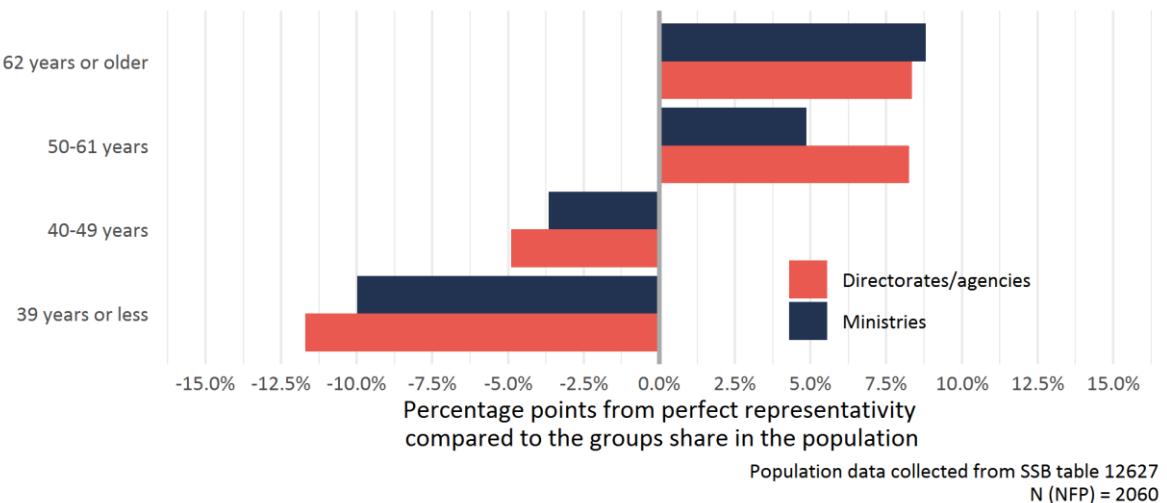
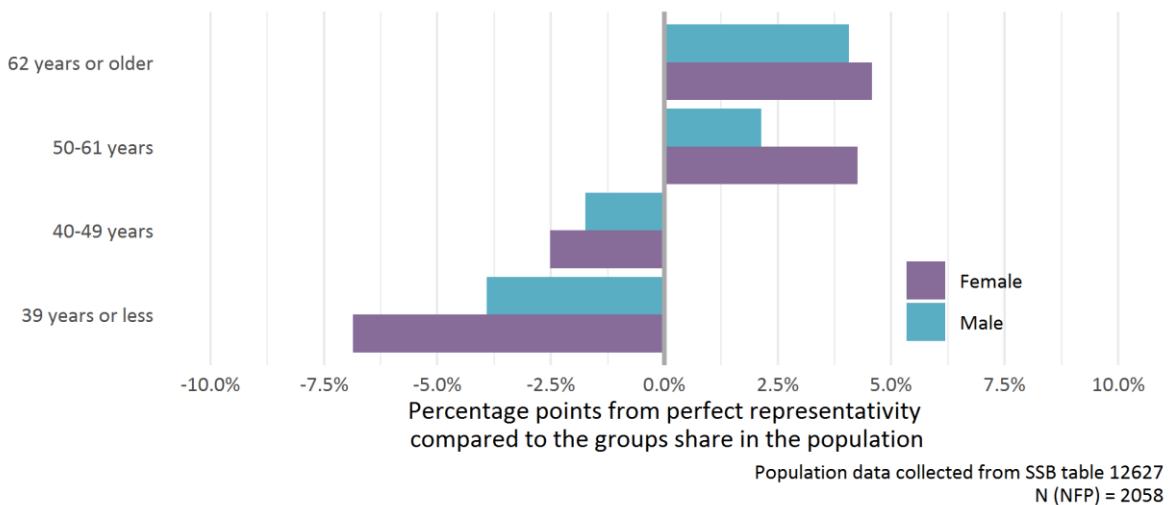


Figure 8 shows how the proportion of men and women in the panel compares to the proportion in the target population. There is a clear overrepresentation of respondents 50 years and above, regardless of gender. As we have already seen, younger employees are underrepresented. Female employees are more underrepresented than their male colleagues.

**Figure 8: Representativity of men and women by age**



Lastly, we turn our focus to the level of education. As in all DIGSSCORE panels, higher education levels are overrepresented among the respondents. However, the education level among public administrators is generally, and naturally, higher than among the general public. Most public administrators at ministries and directorates/agencies have university/university college education of more than four years. This is true for 74 percent of public administrators at ministries in the target population, and 56 percent at directorates/agencies. In NFP, public administrators with the highest level of education are overrepresented by approximately 14 percent at ministries, and almost 13 percent at agencies/directorates.

**Figure 9: Representativity of administrative level by education**

