Norwegian Panel of Public Administrators

2023, Third Wave

Methodology report

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NORSK FORVALTNINGSPANEL

IDEAS2EVIDENCE
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In this report we describe the procedures of data collection in the third 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.[1]

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 third wave was fielded in mid-February until mid-March 2023. The wave was part of the second wave of KODEM (Coordinated Online Panels for research on Democracy and Governance in Norway).[2] KODEM is the infrastructure for coordinating digital panel surveys directed at four sub populations using NFP and affiliated panels at DIGSSCORE. We provide separate methodology reports for each of the panels.

TECHNICAL ASPECTS OF THE SURVEY

SOFTWARE

The web-based research software Confirmit 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[3], but they all share some common characteristics that will be described in the following.

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[1] The term "agencies" includes what in Norwegian is called "tilsyn", "etat", "institutt" etc. Note that some directorates are called agencies in English.

[2] The first wave of KODEM was fielded in the winter of 2020/2021.

[3] Some examples: randomly allocate treatment value in experiments, randomize order of an answer list/array, order a sequence of questions by random.

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.

The randomization procedures are written in JavaScript. Math.random()[4] is a key function, in combination with Math.floor()[5]. 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 [6]:

```
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;
}
```

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[4] Please see following resource (or other internet resources): https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Math/random
[5] Please see following resource (or other internet resources): https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Math/floor
[6] Code collected from Mike Bostocks visualization: https://bost.ocks.org/mike/shuffle/

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 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, with a combined employee count of 22,167 in 2020.[7] 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 three waves.

PREVIOUS WAVES OF RECRUITMENT

Existing panel members were recruited in wave 1 or 2. Table 1 outlines a short summary of these previous recruitment efforts, in addition to the latest recruitment in wave 3. 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 3 follows in the next section.

Table 1: Information on recruitment

	Population size	Sample size	Mode	Contacts	Response Rate (%)
Recruitment 1 (wave 1)	≈23 000	≈23 000	Snowball recruitment by email and personal invitation by email	2	≈10 %
Recruitment 2 (wave 2)	≈23 000	≈7 700	Personal invitation by email	4	≈8 %
Recruitment 3 (wave 3)	≈22 000	≈9 000	Personal invitation by email	3	≈17 %

The data collection procedure of wave 3 mirrors that of wave 2, 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 both wave 2 and 3 a registration form was made available on the web,[8] but enrolment was very limited in both instances (discussed more in detail in the next section).

DATA COLLECTION

RECRUITING A NEW SET OF PANEL MEMBERS

The panel recruited new panel members in wave 3. This section gives a detailed description of the sample frame, recruitment process, and results of the recruitment effort.

THE RECRUITMENT PROCESS

In wave 3, personal invitations were sent by email to 9,060 public administrators. The addresses were collected by DIGSSCORE, largely from publicly available sources, such as the web page of ministries and agencies/directorates.

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.

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[7] *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

[8] https://uib.no/nfp

As previously mentioned, self-recruitment was possible through an online form. Registered e-mail addresses were periodically added to the list of respondents during fielding, and email invitations were distributed. Very few, only 13 individuals, opted in for participation in the panel, of which 9 answered the survey.

The recruitment pool for waves 1, 2 and 3 overlapped. While wave 2 reused the compiled list of contact information from wave 1, the list for wave 3 was compiled from scratch. This meant that new employees at organizations already represented in the panel could be contacted. Additionally, entirely new organizations were included on the list. 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.

While it is challenging to say exactly how many of the respondents were *re-invitees* from the previous waves, it is reasonable to assume that respondents who have previously ignored requests to participate would be less inclined to participate, compared to respondents not previously contacted.

Invitations were distributed on the 16th of February 2023.

In surveys comparable to NFP, the number of complete responses is usually greater than the number of incomplete responses.[9] In the previous two 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. We observe a similar pattern in wave 3, although to a lesser extent. In the end, 41 percent of respondents opened the questionnaire without further interaction. We assume a fair proportion of these incomplete responses stem from IT systems at various ministries and directorates automatically checking the link for malicious content.

The first reminders were distributed by email on the 6th of March. 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. A final reminder was distributed by email on the 10th of March.

Figure 1: E-mail delivery rate by wave, new recruits only
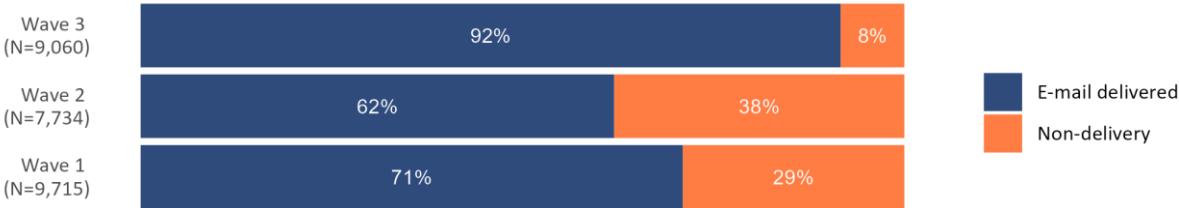
In the two previous waves, high rates of invalid e-mail addresses and issues with reaching some relevant ministries due to security settings at the receiving end hampered recruitment efforts. While not eliminated, issues with deliverability were far less pronounced in wave 3, illustrated by figure 1. This positive development can be attributed to at least two factors. First and foremost, the contact information compiled for wave 3 appears to have been of higher quality than previous lists. Secondly, communication between ideas2evidence, DIGSSCORE and key individuals at ministries and directorates leading up to fielding presumably led to increased awareness and helped legitimize the survey.

In part due to improved deliverability, this resulted in a satisfactory recruitment rate. This is discussed in more detail in the next section.

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[9] See *Norwegian Citizen Panel Twentieth Wave Methodology Report* (Skjervheim, Høgestøl, Bjørnebekk, Eikrem and Wettergreen, 2021) or earlier NCP methodology reports for examples of this.

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 9,090 invites that were distributed, 142 opted out. 1,445 public administrators completed the questionnaire, while 112 incomplete responses are kept as part of the survey data as these respondents completed a certain amount of the questionnaire before exiting.[10] 1,964 incomplete responses were excluded from the final data set due to lack of data, as discussed above.

In summary, recruitment in wave 3 resulted in 1,557 new survey respondents, a recruitment rate of 17.5 percent. This is higher than previous waves of NFP. An additional 40 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 17.6 percent.

Further discussions in this report, which concern new recruits in wave 3, 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[11] 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.[12] 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 f3_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 un-replicable.

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.

RESPONSES BY METHOD OF DATA COLLECTION

Table 2 summarizes the effect of the various stages of data collection. The initial invitation yielded 608 responses, while the first reminder yielded fewer responses. The final reminder, however, generated responses on par with

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[10] Technically, an additional 22 respondents completed the survey but were found to be duplicate responses and therefore discarded.

[11] A situation where a survey or data collection includes respondents or units that should not be part of the target population.

[12] 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.

the 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

	Response	Cumulative Responses	Response Rate	Cumulative Response Rate
Invitation (February 16th)	608	608	6.8 %	6.8 %
1st reminder (March 6th)	406	1014	4.6 %	11.4 %
2nd reminder (March 10th)	543	1557	6.1 %	17.5 %

RESPONSES OF EXISTING PANEL MEMBERS

Wave 3 of the NFP also included data collection from existing members of the panel, recruited in wave 1 and 2. Data collection among existing panel members was conducted in parallel with the recruitment of, and data collection among, new members. Two differences are of note, however: Existing panel members received an additional reminder on February 28th. Panel members registered with a personal cell phone number [13] also received an SMS text message instead of an email as their final reminder, while the rest received an email.

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[13] 1386 public administrators, comprising of 45 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
Invitation (February 16th)	581	581	19.3 %	19.3 %
1st reminder (February 28th)	377	958	12.5 %	31.8 %
2nd reminder (March 6th)	299	1257	9.9 %	41.7 %
3rd reminder – email (March 10th)	117	1374	3.9 %	45.6 %
3rd reminder – SMS (March 10th)	48	1422	1.6 %	47.2 %

Wave 3 was the first wave of NFP where SMS was deployed as a contact method. The SMS reminder yielded far fewer responses compared to the usual email reminder, underperforming by 2.3 percentage points. This contrasts with Norwegian Citizen Panel, where the equivalent SMS reminder usually yields more responses compared to email.[14]

Wave 3 resulted in a cumulative response rate of 47.2 percent, slightly lower than the 51.9 percent observed in wave 2.

RESPONSE OF EXISTING PANEL MEMBERS OVER TIME

**Figure 2: Wave-to-wave retention of existing panel members**
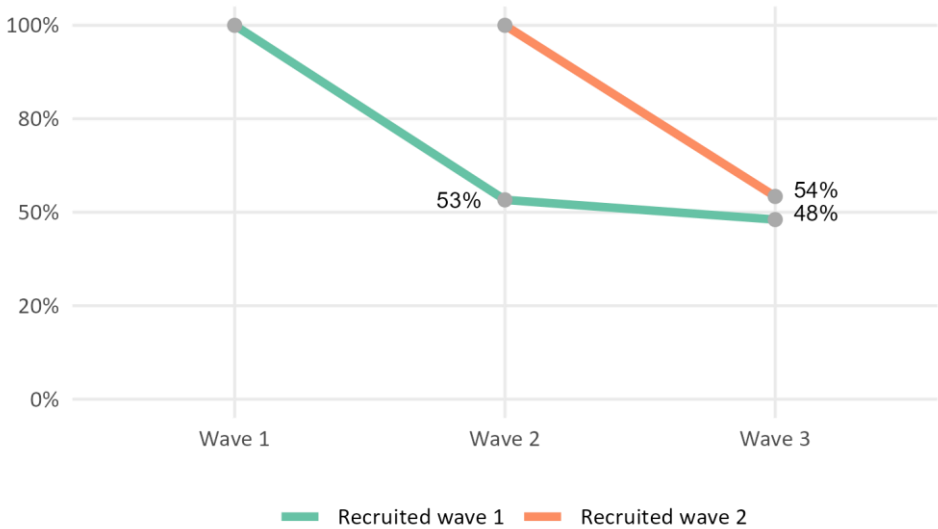
Wave-to-wave retention is a metric indicating how many respondents participated in each wave in relation to how many were initially recruited. Figure 2 shows that only 53 percent of the respondents recruited in the first wave participated in wave 2, and then 48 percent in wave 3. In other DIGSSCORE panels, such as The Panel of Elected Representatives, we observe a pattern where retention drops sharply in the wave following recruitment, before stabilizing and descending slowly in future waves. Going forward, we expect 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 2,979 survey responses and panel members. The data collection period ran from February 2023 to March 2023, as shown in figure 3.

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

Figure 3: Responses by date

n = 2979
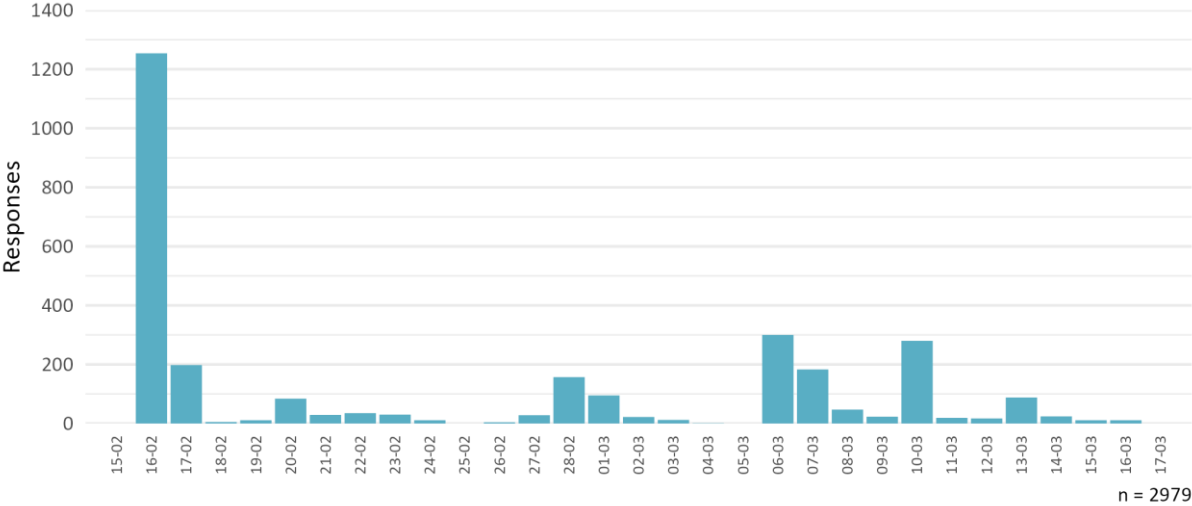
We attempted to reach 12,107 (new and existing panel members) by individual email invitations, and 25 percent responded. However, our address list does not make up the whole population of public administrators. As noted above, approximately 22,000 persons were employed by the central government in 2022. Therefore, roughly **14 percent** of public administrators in the central government participated in wave three of NFP.

PLATFORMS

The questionnaire was made accessible for data input via smart phones. 11.2 percent of survey respondents who completed the questionnaire used a mobile phone. 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 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 15.4 minutes (table 4).

The survey respondents were randomly assigned to one of two groups, answering separate sets of questions. Distribution of time usage is presented in figure 4.

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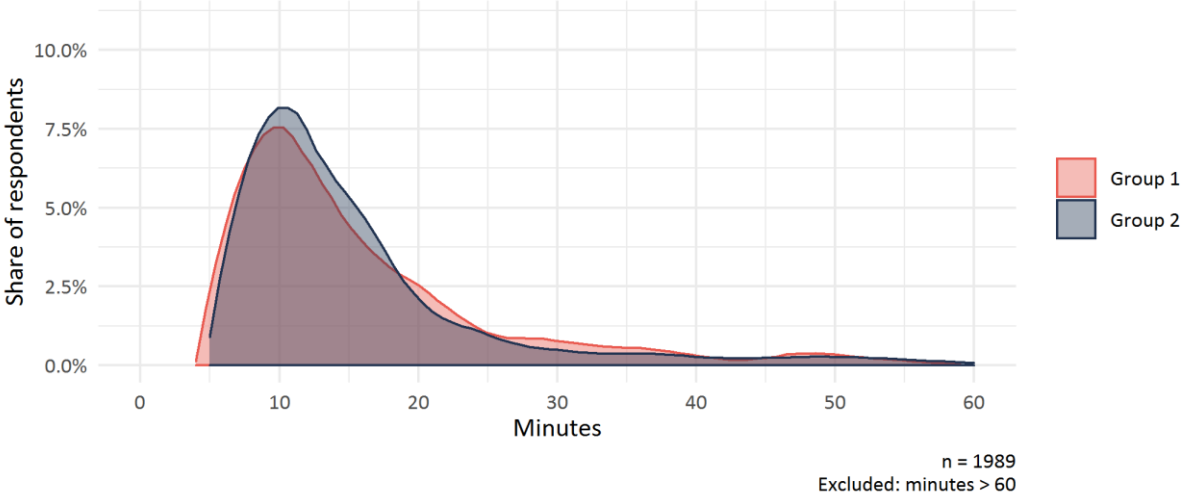
On average, mobile respondents spent less time than respondents using non-mobile devices. The difference between these groups is approximately the same as in the Norwegian Citizen Panel questionnaires, but an important difference is that the number of mobile users in NFP is significantly smaller. Therefore,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

Table 4: Average time spent on questionnaire (minutes)

	All	Group 1	Group 2
All users	15.4	15.6	15.2
Non-mobile users	15.5	15.7	15.4
Mobile users	14.4	14.7	14.1

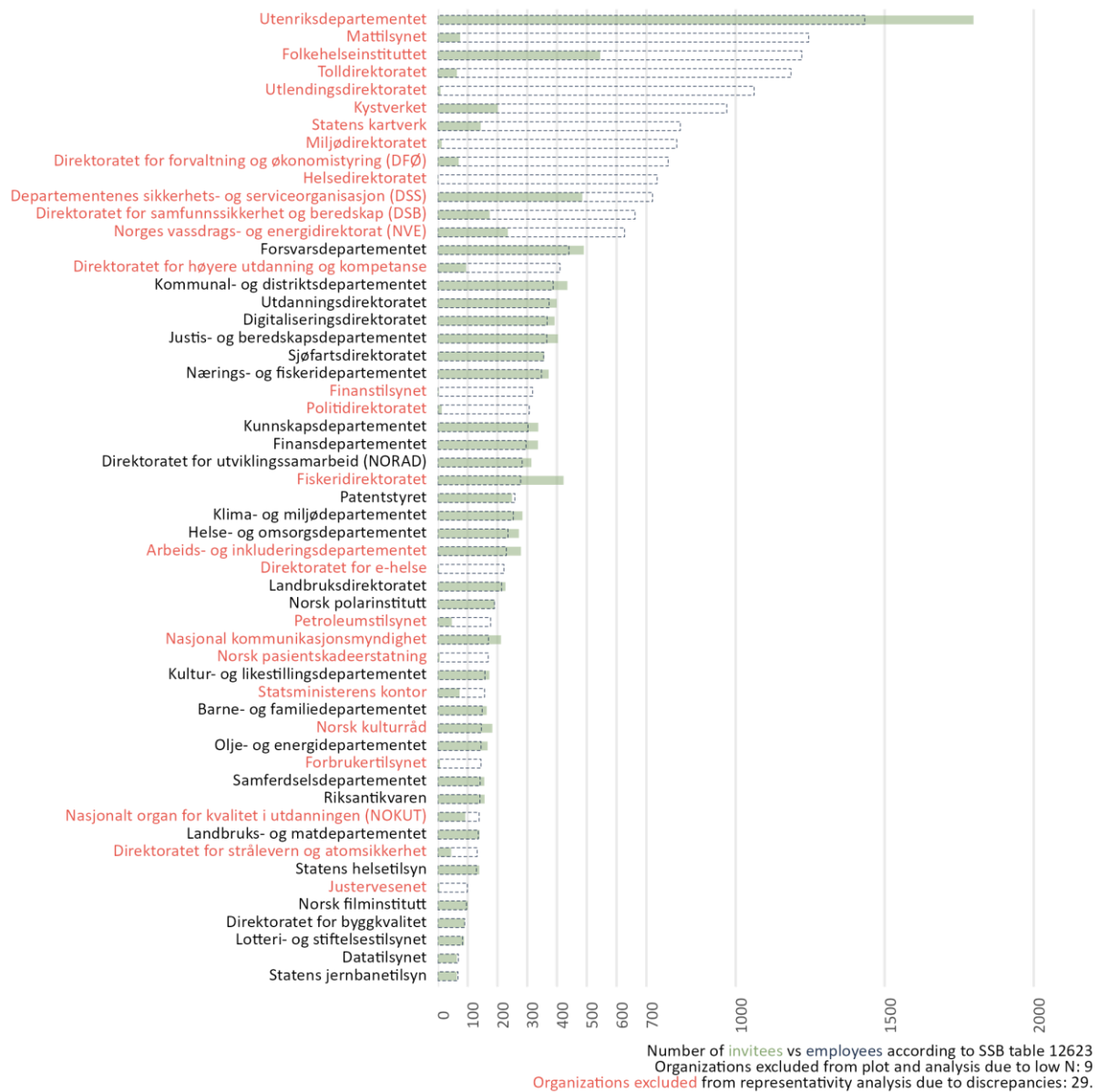## REPRESENTATIVITY

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 there are a few organizations with a large difference between the number of employees and the number of invitees. In some cases, the discrepancy was intended. Some organizations have extensive operational duties, and rather small administrative duties, and were intentionally not targeted for recruitment. This includes agencies such as Tolletaten (customs), Mattilsynet (Food Safety Authority), and Statens Vegvesen (Public Roads Administration). [15] Other organizations, exemplified by Helsedirektoratet (Directorate of Health), have unintended discrepancies due to email addresses not being readily available.

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[15] Statens Vegvesen is excluded from the figure due to legibility.

Figure 5: Invited compared to number of employees by organization

Number of invitees vs employees according to SSB table 12623
Organizations excluded from plot and analysis due to low N: 9
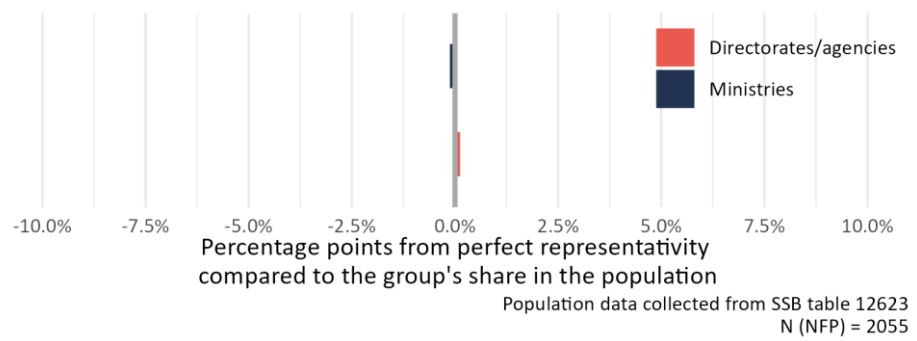Organizations excluded from representativity analysis due to discrepancies: 29.

In the following analyses, we only include organizations where our gross sample of central government employees matches the target population statistics published by Statistics Norway (figure 5). If the discrepancy is more than 20 percentage points, we exclude the organization when discussing representativity both from NFP data and population data. As such we can define 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 2,719 employees at subordinate directories/agencies. [16] 55.3 percent of the target population were employed by ministries, 44.7 in directorates/agencies. In our net sample, 1,140 respondents (55.1 percent) were employed by ministries and 929 (44.9 percent) by directorates/agencies. This means our sample is close to perfect representativity, as illustrated by figure 6.

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[16] According to SSB table 12623

Figure 6: Representativity of administrative levels

Percentage points from perfect representativity compared to the group's share in the population

Population data collected from SSB table 12623
N (NFP) = 2055

Both administrative levels, ministries and subordinate directorates/agencies have an overrepresentation of respondents above 50 years of age (figure 7). Public administrators employed at directories/agencies aged 62 years or older are especially overrepresented. As a result of this, both levels have an underrepresentation of respondents aged 40 years or less. Compared to wave 2, underrepresentation of younger respondents employed at ministries has decreased, while underrepresentation of younger respondents employed at directorates/agencies has increased.

Figure 7: Representativity of administrative level by age

Percentage points from perfect representativity compared to the groups share in the population

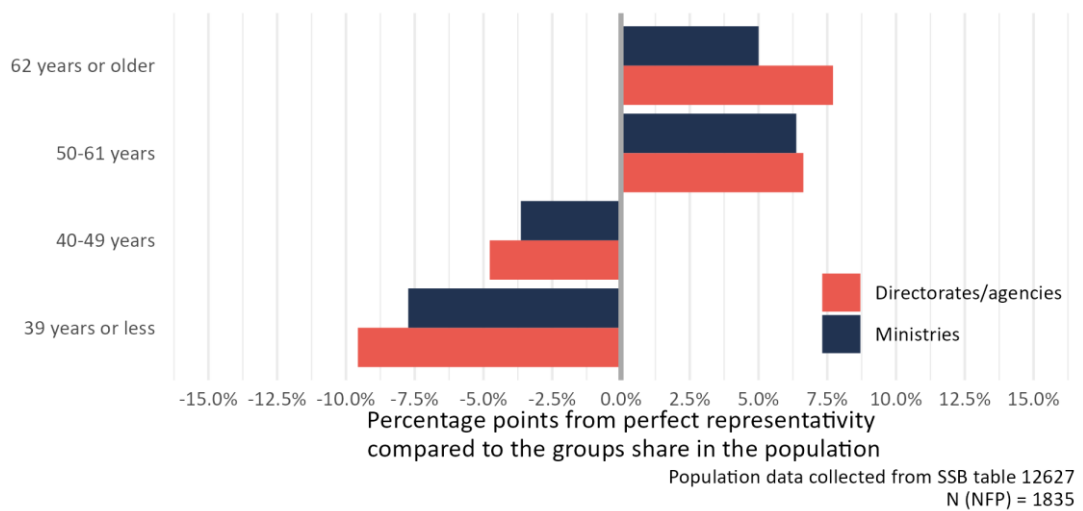Population data collected from SSB table 12627
N (NFP) = 1835

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

Percentage points from perfect representativity
compared to the groups share in the population
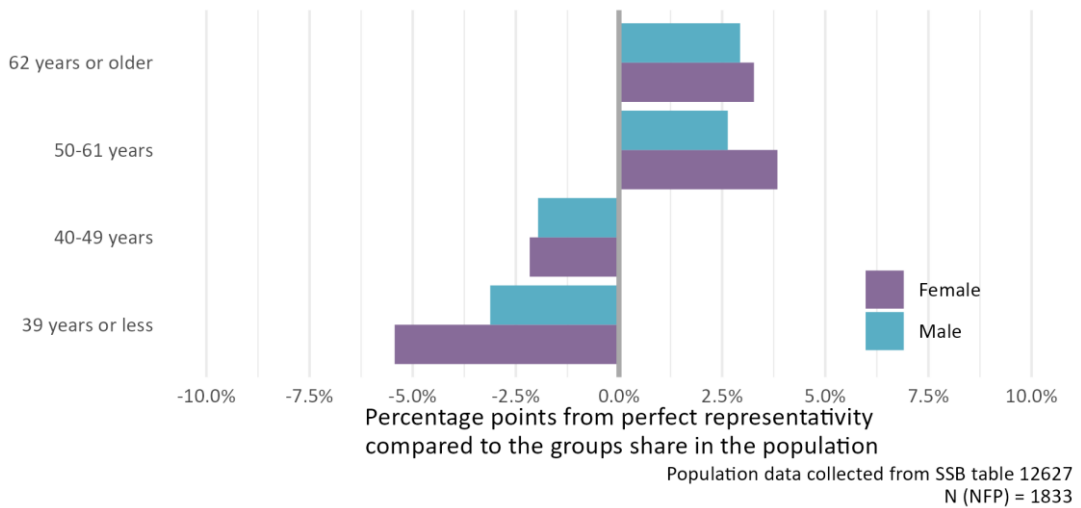
Lastly, we turn our focus to the level of education. As in all DIGSSCOREs panels, higher education levels are overrepresented among the respondents. However, the education level among public administrators is generally, and naturally, higher than among the general public. Most public administrators at 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 54 percent at directorates/agencies. In NFP, public administrators with the highest level of education are overrepresented by approximately 14 percent at both administrative levels.

Figure 9: Representativity of administrative level by education

Percentage points from perfect representativity
compared to the groups share in the population