

Norwegian Panel of Public Administrators

2021, First Wave

Methodology report

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BACKGROUND

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

The Norwegian Panel of Public Administrators is an internet-based survey of public administrators. The panel includes administrators from ministries and their subordinate directorates and agencies¹.

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 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 handles practical implementation of the survey, and is responsible for recruiting participants, as well as sending and receiving surveys to and from respondents.

The first wave was fielded in late 2020 and throughout the winter of 2021. The wave was part of the November 2020 first wave of KODEM (Coordinated Online Panels for research on Democracy and Governance in Norway). KODEM is an infrastructure for coordinating digital panel surveys directed at four sub populations using NFP and affiliated panels at DIGSSCORE. While NJP and NFP had their first wave of data collection in 2020/21, NCP and PER were established panels, with preexisting infrastructure and panel members. 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.

Due to low response rates the data collection went on for a longer time period than planned. There were also issues with email deliverability, a more detailed account of which is given in the chapter on panel recruitment and data collection.

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

RANDOMIZATION PROCEDURES

NFP has an extensive use of randomization procedures. The context of each randomization procedure may vary², 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.

The randomization procedures are written in JavaScript. `Math.random()`³ is a key function, in combination with `Math.floor()`⁴. 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. However, since i.e. 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 Confirmit⁵:

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

³ Please see following resource (or other internet resources):https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Math/random

⁴ Please see following resource (or other internet resources):https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Math/floor

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

```

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 in Norwegian central government. Central government is understood as ministries (excluding political leadership) and their subordinate agencies (directorates and supervisory authorities). The target population excludes regional or local branches, or branches of the subordinate 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 22,968 in 2019⁶. 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 out of scope for the first wave.

PANEL RECRUITMENT AND DATA COLLECTION

Panel recruitment and data collection in the first wave of the NFP, can be divided into two different phases, a phase of “snowball recruitment”, followed by a phase of more individually targeted recruitment.

PHASE ONE – SNOWBALL RECRUITMENT

In the first phase, no list of employee emails was available, and invitational emails were sent to the organizations’ general contact emails (e.g. «post@agency.no»), leaving distribution to the employees up to the organization heads. This procedure is colloquially known as snowball recruitment.

In order to establish a point of contact for future data collection, respondents were asked to register their email address when filling out the questionnaire. Upon registration, a confirmation email was sent confirming their participation. The email addresses were also used for checking that the same person did not leave several survey responses.

This recruitment strategy yielded fewer responses than expected, due in large part to invitations not reaching the bureaucrats at all. In many cases, the email was stopped by HR or central leadership, giving the individual bureaucrats no option to participate. The project team were in close contact with many target organizations, urging them to authorize participation from their staff.

During phase one, 991 public administrators entered the survey, 378 of which filled out the questionnaire to completion. 43 more partially completed, and were counted as respondents, while 570 responses contained no

⁶Utviklingen i antall arbeidsforhold i stats- og sentralforvaltningen 2018-2019. DFØ-notat 2020:1. Dfo.no/filer/Fagområder/Rapporter/2020/DFØ-notat-2020-1-Utviklingen-i-antall-arbeidsforhold-i-stats-og-sentralforvaltningen-2018-2019.pdf

valuable information, and were discarded. As such, a total of 421 public administrators were recruited using the snowball method. The recruitment and data collection was put on hold mid-January 2021.

PHASE TWO – INDIVIDUAL ADDRESSES

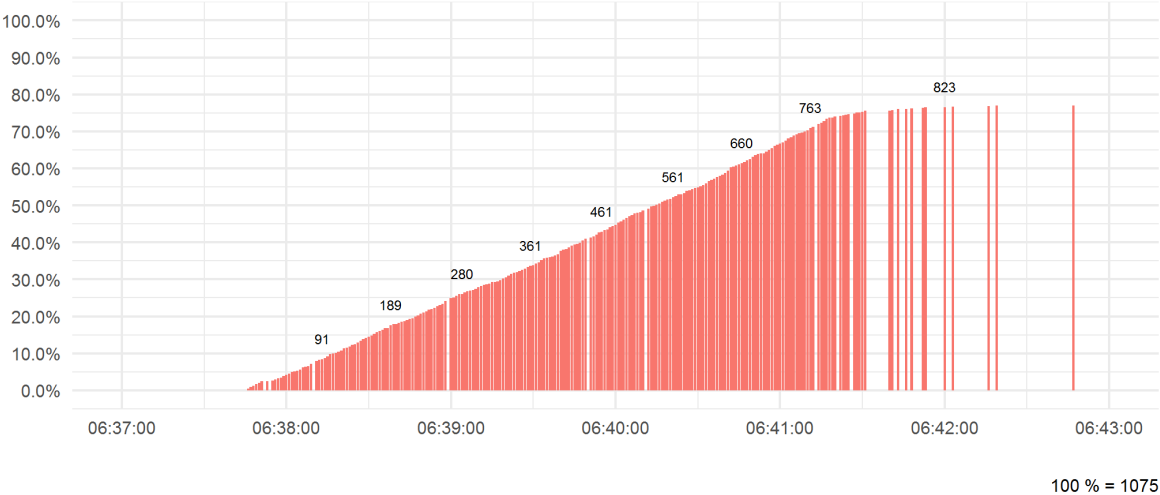
Following phase one, the project team collected personal email addresses for a subset of the bureaucrats, utilizing publicly available information, enabling direct, individual contact to each employee. Addresses were collected for a total of 9,715 public administrators, employed by 16 ministries and 30 subordinate agencies. Invitational e-mails were distributed on February 16th.

Due to invalid addresses and spam filter issues, 2,671 emails could not reach the recipient. An iterative approach was applied, where invalid addresses were substituted and dialogue with receiving organizations remedied some of these challenges. 71 percent of the personal emails were, however, successfully delivered. 80 respondents opted out from participation. In addition to the invitational email distributed on February 16th, one reminder email was distributed March 10th to all respondents who had not opened, or not completed the questionnaire. A final reminder was distributed March 23rd, to respondents who had opened the questionnaire but not completed.

Panel recruitment and the number of survey responses both increased substantially after sending personal emails. 1,726 respondents completed the questionnaire, and 2,504 opened it without finalizing the survey. In total, 1,858 public administrators were recruited to the panel through personal email invitation.

In surveys comparable to NFP, the number of complete responses is usually larger than the number of incomplete responses⁷. Furthermore, a majority of the incomplete responses are left by respondents briefly opening the questionnaire, before rejecting participation. While this type of behavior was also shown by some respondents in NFP, a new pattern of respondent interaction with the questionnaire was observed. Providing an example of this, one ministry alone accounted for 1,075 of the incomplete questionnaires. As shown in figure 1, the respondents opened the questionnaire almost immediately upon the invitational emails being dispatched from our server. We find this to be unlikely human behavior and hypothesize that it can be attributed to automated information security systems in some of the ministries.

Figure 1: Cumulative incomplete rate at ministry

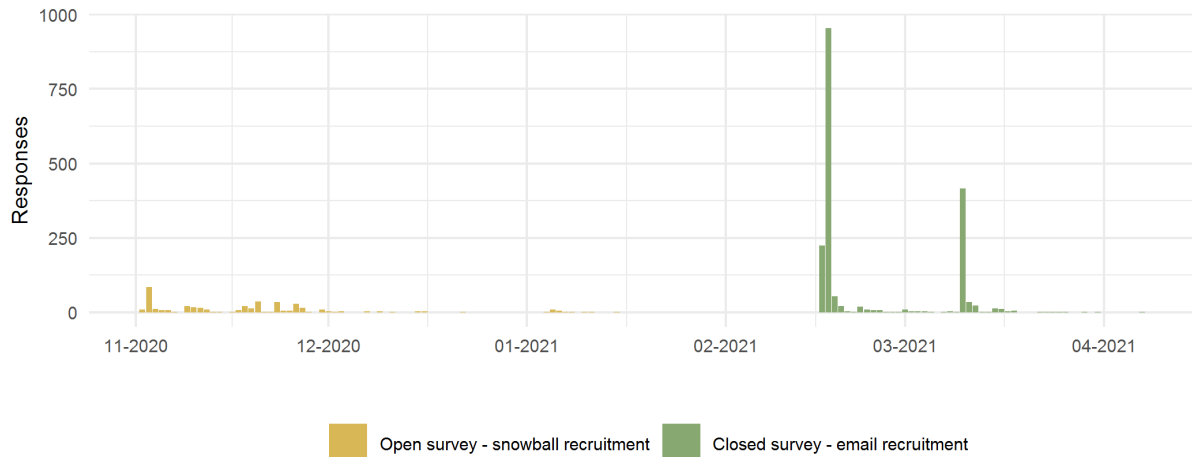


⁷ See *Norwegian Citizen Panel Twentieth Wave Methodology Report* (Skjervheim, Høgestøl, Bjørnebekk, Eikrem and Wettergreen, 2021) or earlier NCP methodology reports for examples of this.

OVERALL RECRUITMENT AND RESPONSES

The overall recruitment attempts of public administrators resulted in 2,279 survey responses and panel members. The data collection period ran from November 2020, to April 2021, as shown in figure 2.

Figure 2: Responses by date



n = 2279

Due to the combination of two different recruitment strategies, calculating an overall response rate is complicated. We attempted to recruit 9,715 by individual email invitations, and 19 percent responded. However, our address list does not make up the whole population of public administrators. As noted above, 22,968 persons were employed by central government in 2019. Therefore, roughly **10 percent** of public administrators in the central government participated in wave one of NFP.

PLATFORMS

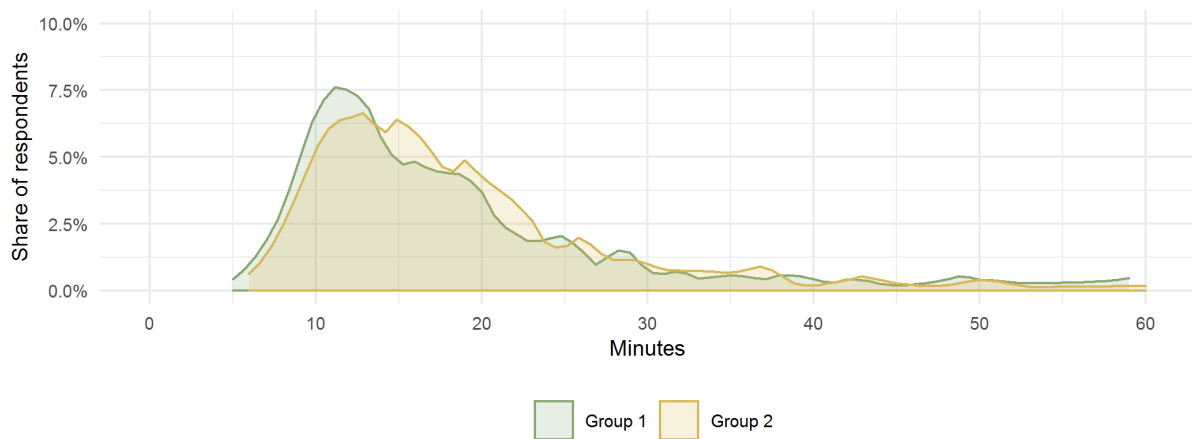
The questionnaire was prepared for data input via smart phones. 6.5 percent of survey respondents who entered the questionnaire, used a mobile phone. This is a much lower number than is observed in the Norwegian Citizen Panel (41 percent in wave 20). 52 percent of the mobile users left the questionnaire before giving enough responses to be classified as respondents, as compared to 55.3 percent for the non-mobile users.

TIME USAGE

In the survey invitation, the respondents were given an estimate of 10 to 15 minutes for filling out the questionnaire. When calculating average time actually 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 18.7 minutes (table 4).

The survey respondents were randomly assigned to one of two groups, each consisting primarily of survey questions that were also given to all four KODEM populations. Distributed response times are shown in figure 4.

Figure 3: Time usage of survey respondents in wave 1



n = 1207
Excluded: minutes > 60

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 3.

Table 3: Average time spent on questionnaire (minutes)

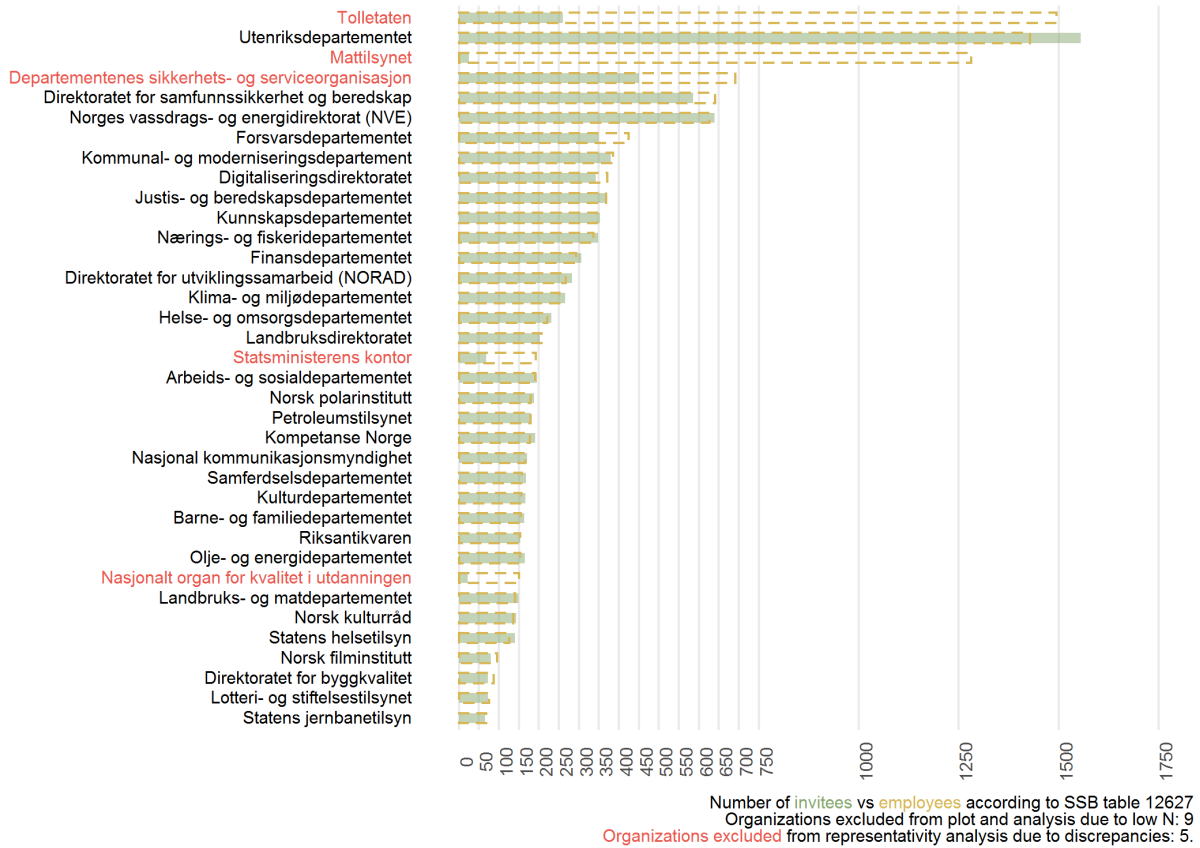
	All	Group 1	Group 2
All users	18.7	18.5	18.8
Non-mobile users	18.3	18.6	18.9
Mobile users	16.7	16.8	16.6

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 number of employees and 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) and Mattilsynet (Norwegian Food Safety Authority). Other organizations, exemplified by NOKUT (Norwegian Agency for Quality Assurance in Education) and Departementenes sikkerhets- og serviceorganisasjon (Norwegian Government Security and Service Organization) have unintended discrepancies due to email addresses not being available on the internet.

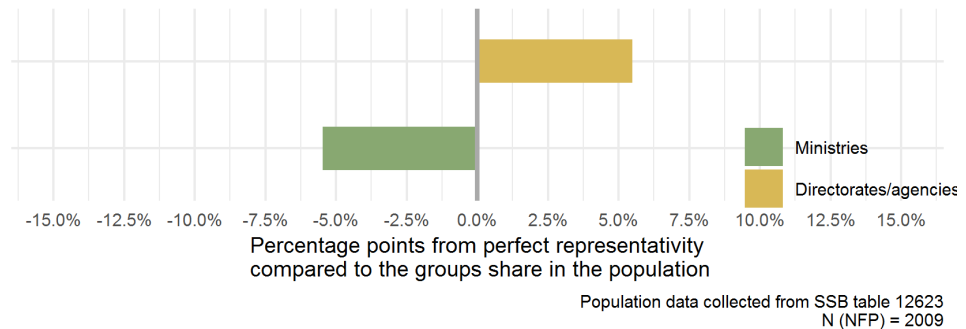
Figure 4: Invited compared to number of employees by organization



In the analyses following, we include only 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 5,014 employees at the ministry level and 3,558 employees at subordinate directories/agencies⁸. 58.5 percent of the target population were employed by ministries. In our net sample, 1,065 respondents (53 percent) were employed by ministries and 944 (47 percent) by directorates/agencies, making ministry employees 5.5 percentage points underrepresented (figure 6).

Figure 5: Representativity of administrative levels



⁸ According to SSB table 12623

Both administrative levels, ministries and subordinate directorates/agencies have an overrepresentation of respondents above 50 years of age (figure 7). Public administrators employed at ministries aged 50-61 years are especially overrepresented. As a result of this, both levels have an underrepresentation of respondents aged 40 years or less. However, the underrepresentation of younger respondents is slightly more prominent at the ministries. The youngest age groups are underrepresented by 9.5 and 7.9 percentage points, respectively.

Figure 6: Representativity of administrative level by age

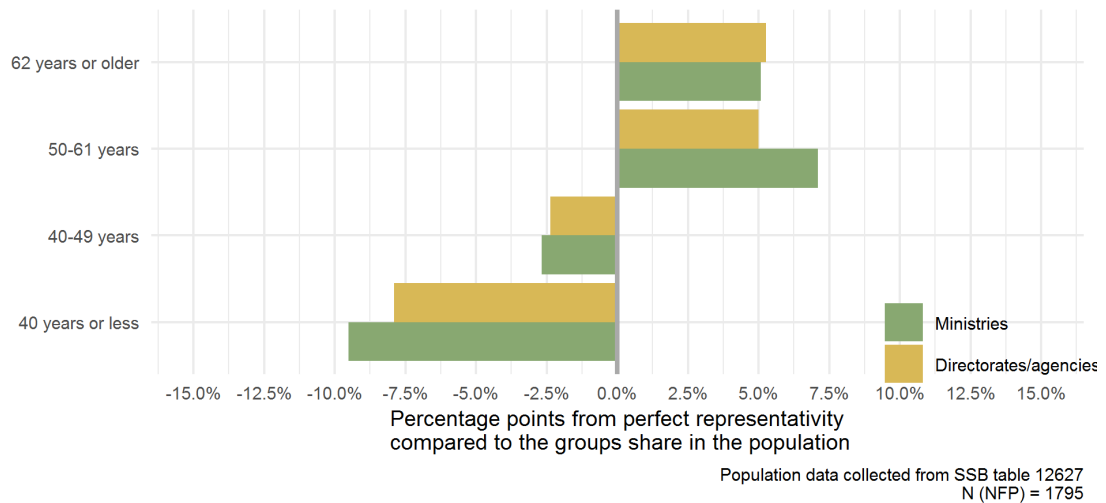
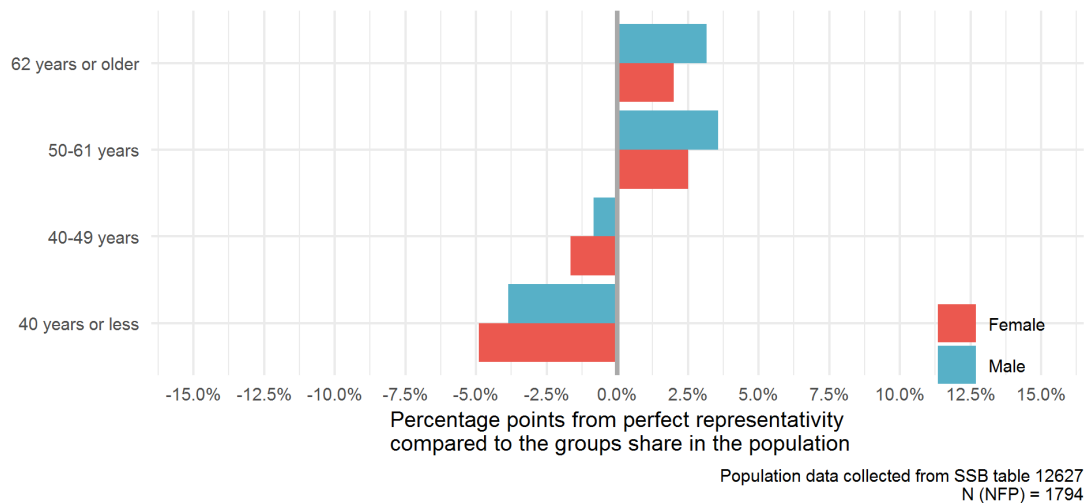


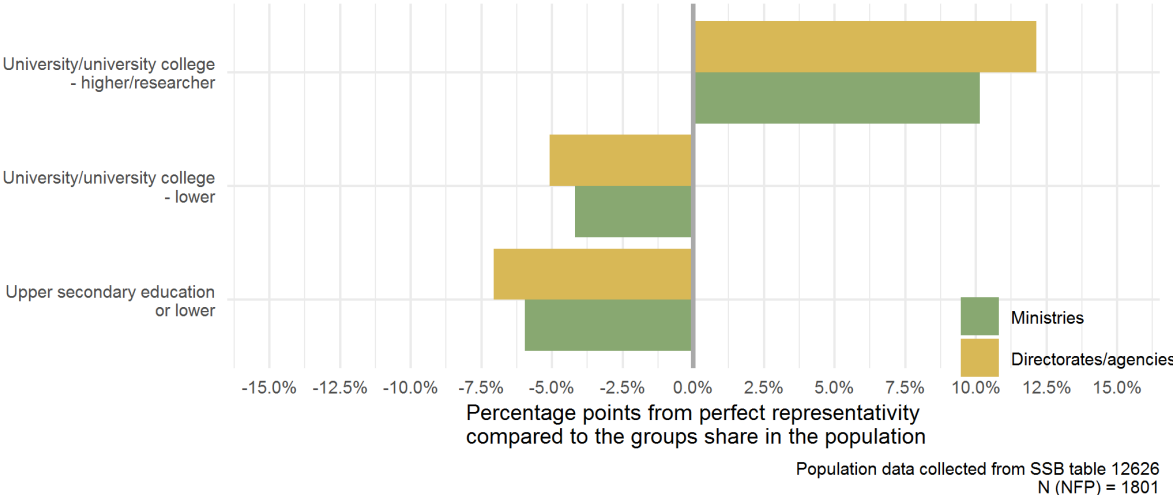
Figure 8 shows how the proportion of men and women in the panel compares to the proportion in the target population. There is a clear overrepresentation of respondents 50 years and above, regardless of gender. However, older male employees are more overrepresented than females. As we have already seen,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

Figure 7: Representativity of men and women by age



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 80 percent of public administrators at ministries in the target population, and 67 percent at directorates/agencies. In NFP, public administrators with the highest level of education is overrepresented by at both administrative levels.

Figure 8: Representativity of administrative level by education



Lastly, figure 10 compares the share of immigrants (themselves or minimum one of the parents born outside of Norway) in the target population compared to NFP. Evidently, public administrators with background as immigrants are overrepresented at both administrative levels, but most prominently among respondents employed at ministries. In the target population, 5 percent of staff at ministries have immigrant backgrounds. In NFP, that is true for 9.5 percent of the respondents. Subordinate directories/agencies have a higher share of immigrants, 10.5 percent, and is slightly overrepresented in the panel as they make up 11.4 percent in the panel.

Figure 9: Representativity of administrative level by share of immigrants

