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the Finland in the Digital Age -Survey**

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ABSTRACT

This report examines the *Finland in the Digital Age (Digitalisoituva Suomi)* research data. The data were gathered using two different procedures: a postal survey and an online panel. The postal survey was carried out by the unit of Economic Sociology at the University of Turku in the end of 2017 and the beginning of 2018. The online panel data was collected by Taloustutkimus Inc. in December 2017. The postal questionnaires were sent to a total of 8000 18–74-year-olds Finnish-speakers, who were selected using a simple random sampling technique from the Finnish Population Register Database. The respondents had an opportunity to answer either by mail or by filling out a similar form on the Internet. One reminder was sent to the survey respondents by mail. 2011 respondents answered by mail and 459 through the Internet. In total, 2470 Finns answered the questionnaire (30.9%). The online panel data includes 1254 responses. In total, the *Finland in the Digital Age* -data consists of 3724 respondents. This publication introduces descriptive findings and compares the results that were collected using various techniques. The publication is primarily intended as a guide for the users of the data.

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1 INTRODUCTION

The Internet has become an important tool for social participation, affording avenues for seeking information, entertainment and self-development, among other things (Davidson and Martellozzo 2012; Livingstone 2011; Merchant 2012). In addition, the importance of digitalization has increased significantly in working life and the labor market, having remarkable effects on the functioning of services and production (Nurvala 2015; Wellman and Haythornthwaite 2002). Finally, the Internet and digitalization have also raised new kinds of social problems, such as addictive use (Anderson, Steen, and Stavropoulos 2017), the formation of different types of hate communities (Keipi et al. 2016) and the rise of cybercrime (Yar 2013).

Although the social Internet has had a key role in the social order for over twenty years, we still know comparatively little about these issues at the population level. What is noteworthy here is that past research has often focused solely on Internet users (Borg and Smith 2018; Son and Kim 2008) or digital natives (Jones et al. 2010; Kirschner and De Bruyckere 2017) with relatively small samples (Hutter et al. 2013; Kormelink and Meijer 2014). What is missing is a holistic demographic analysis in terms of perceptions and attitudes concerning social phenomena of the digital world.

In this report, we present a new survey, namely *Finland in the Digital Age* (FDA) that was conducted to find the features of Finnish citizens' participation on social media and more widely on the Internet. The survey was carried out at the Unit of Economic Sociology during December 2017 and January 2018. Mainly, it was attached to the ongoing research projects "Political Bubbles and Media" and "Finland as an appearance society". One of the key objectives was to deepen the knowledge of these projects in terms of the Internet and social media environments. In addition, the data provide a comprehensive picture of Finnish citizens' digital skills over the period when there is high pressure to digitize services and production.

This report contains information on designing, collecting and finishing of the data. In addition, we present an extensive analysis of response bias and its impact on the representativeness of the data. We also show whether there were moderating effects regarding response mode and sampling method. Finally, we discuss the extent to which this kind of survey has the potential to represent the Internet users of different population groups. Tables with detailed frequency information, the original questionnaire form, and the list of variables with missing analysis are presented as attachments at the end of this report.

2 TECHNICAL OVERVIEW

2.1 Designing of the data collection

This survey was an experimental design to conduct a nationwide survey by mixing both sample and response methods. Non-response bias has become a crucial problem in the past couple of decades. What is worrying here is that the mixed mode of postal and online responses had not been a solution to this problem (Koivula, Räsänen, and Sarpila 2016). However, in such cases, we need adequate sample sizes to gather information on increasingly fragmented and individualized citizens. In order to do this cost-effectively, we decided to combine a relatively expensive survey method with the cheaper method.

The first part of survey was distributed by mail to a simple random sample of 8000 18–74-year-olds who live in Finland and speak Finnish. The initial sample was collected from a census panel of Finnish citizens. A total of 2470 Finns responded to this collection, which amounted to a 30.9% response rate as those who could not be reached were omitted from the sample.

We improved this data by collecting a sample of 1254 respondents aged 18–74 from an online panel of volunteer respondents administered by a market research company, namely Taloustutkimus Inc. Members of the online panel have been recruited both online and offline. The research was carried out during December 5–12, 2017. An invitation email was sent to the respondents on December 5 and a reminder was sent on December 8.

The final data from both data sources, namely the mail survey and online panel, included a total of 3724 respondents of which 66.3% are based on probability sampling and 33.7% are based on nonprobability sampling.

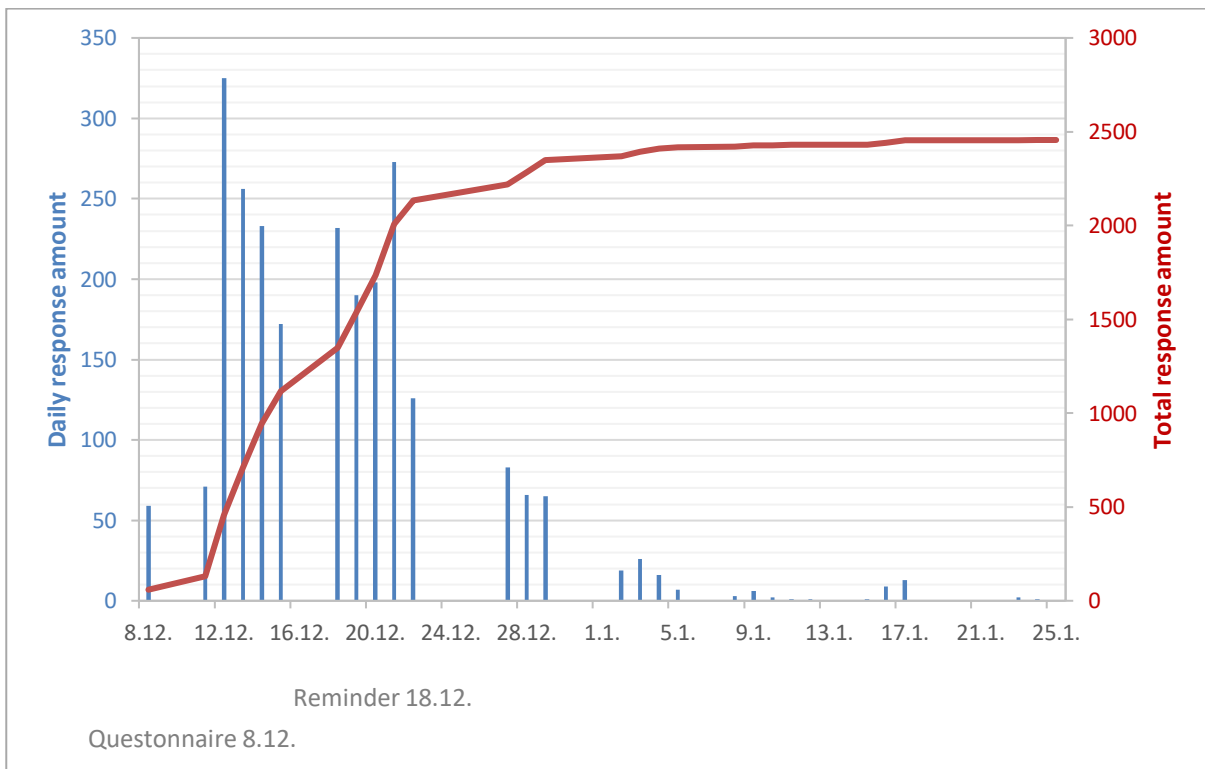
2.2 Collection procedure

The response rate and respondent loss of the survey have a significant effect on the generalizability of the results. The original sample of the FDA mail survey consisted of 8000 respondents. Of these, 13 were left unsuccessful for one reason or another, resulting in a final sample of 7987 people. Table 1 shows the formation of the final sample. The total number of returned forms was 2470 and thus the response rate is 30.9%.

Table 1 Mail survey sample and formation of the final sample.

Original mail survey sample	8000
Unreached respondents	13
Final sample	7987
Unanswered	5517
Returned empty	27
Final answer amount	2470

The response rate was somewhat lower than other surveys in recent years. For example, a survey that was implemented in 2017 (see Koivula et al. 2017) received a response rate of 41.5%, and the survey in question included two remainder letters instead of one as with the FDA. The first FDA-forms were delivered on December 8, 2018. Respondents were asked to return the questionnaire as soon as possible. On December 18, 2018, a new questionnaire letter was delivered which reminded potential participants to respond within 10 days. With the posting of the new form, the response activity increased slightly (see figure 1).

**Figure 1 Schedule and amount of returned questionnaires forms.**

2.3 Finishing the data

The questionnaire forms that were returned by mail were saved by the Economic Sociology unit at the University of Turku. Questions were coded in numerical order according to the questionnaire. For example, the first question concerning gender was named as variable q1, the second question about year of birth as q2 and so forth. If a single question type contained more than one subsection, the variables were separated by letters or numbers corresponding to a questionnaire (for example q11_a, q11_b or q28_1, q28_2 etc.).

Answers to open questions are stored in the same format as the respondent had written on the form. Variable categories and share of missing responses, with mail survey and online panel respondents separated, are shown in the variable list attached to this report (Appendix 2). Detailed question formats (translated from Finnish) are available in the original questionnaire (Appendix 3). Appendix 1 includes detailed frequencies of the tables 5–14.

By utilizing postcode (q3), we were able to form municipality code (q3_1), municipality group number (q3_2), sub-region numbers (q3_3), province numbers (q3_4), and NUTS 2 statistical regions of Finland (q3_5). Respondent's vocation was asked with an open question, "What is your vocation?" Later on, ISCO-08 codes will be added to the data according to the vocation answers.

Since the data does not fully correspond with the age and gender, media usage, and education distributions of the population, we created weight coefficient variables to balance the skewness. Variable weight1 is created to correct the skewness of gender and age distribution. Coefficients in question were created according to age groups in the table 2. Variable weight2 includes weight coefficient that balances the data's distortion of the social media usage and it is calculated for each age group in figure 12. Variable weight3 contains weight coefficient that balances the skewness of the distribution of education (see figure 7).

3 NON-RESPONSE BIAS ANALYSIS

3.1 Demographic representativeness of the sample

Table 2 Frequencies of age by gender in mail survey, online panel and population. The population information is from 2017 (Statistics Finland 2018).

Age group	Mail survey				Online panel				Population			
	Male		Female		Male		Female		Male		Female	
	N	%	N	%	N	%	N	%	N	%	N	%
18–24	66	5,8	128	9,7	30	4,2	44	8,2	229 860	11,6	218 110	11,1
25–29	62	5,5	81	6,2	36	5,0	45	8,4	182 223	9,2	172 102	8,8
30–34	61	5,4	79	6,0	65	9,0	63	11,8	181 676	9,2	170 593	8,7
35–39	67	5,9	75	5,7	39	5,4	30	5,6	180 761	9,1	169 737	8,6
40–44	57	5,0	66	5,0	73	10,2	31	5,8	170 871	8,6	161 943	8,2
45–49	76	6,7	74	5,6	81	11,3	45	8,4	166 331	8,4	161 558	8,2
50–54	96	8,5	118	9,0	72	10,0	47	8,8	185 887	9,4	183 869	9,4
55–59	131	11,6	150	11,4	73	10,2	40	7,5	181 216	9,2	183 582	9,3
60–64	159	14,0	168	12,8	97	13,5	71	13,3	179 220	9,1	188 012	9,6
65–69	214	18,9	227	17,3	76	10,6	64	12,0	178 082	9,0	191 919	9,8
70–74	143	12,6	148	11,3	77	10,7	55	10,3	143 498	7,2	164 019	8,3
Total	1132	100,0	1314	100,0	719	100,0	535	100,0	1979625	100,0	1965444	100,0

Table 3 Frequencies of age by gender in mail survey, online panel, total data, and population. The population information is from 2017 (Statistics Finland 2018).

Mail survey							Online panel						
	Male		Female		Total			Male		Female		Total	
Age group	N	%	N	%	N	%	Age group	N	%	N	%	N	%
18–24	66	2,7	128	5,2	194	7,9	18–24	30	2,4	44	3,5	74	5,9
25–29	62	2,5	81	3,3	143	5,8	25–29	36	2,9	45	3,6	81	6,5
30–34	61	2,5	79	3,2	140	5,7	30–34	65	5,2	63	5,0	128	10,2
35–39	67	2,7	75	3,1	142	5,8	35–39	39	3,1	30	2,4	69	5,5
40–44	57	2,3	66	2,7	123	5,0	40–44	73	5,8	31	2,5	104	8,3
45–49	76	3,1	74	3,0	150	6,1	45–49	81	6,5	45	3,6	126	10,0
50–54	96	3,9	118	4,8	214	8,7	50–54	72	5,7	47	3,7	119	9,5
55–59	131	5,4	150	6,1	281	11,5	55–59	73	5,8	40	3,2	113	9,0
60–64	159	6,5	168	6,9	327	13,4	60–64	97	7,7	71	5,7	168	13,4
65–69	214	8,7	227	9,3	441	18,0	65–69	76	6,1	64	5,1	140	11,2
70–74	143	5,8	148	6,1	291	11,9	70–74	77	6,1	55	4,4	132	10,5
Total	1132	46,3	1314	53,7	2446	100,0	Total	719	57,3	535	42,7	1254	100,0
Population							Total data						
	Male		Female		Total			Male		Female		Total	
Age group	N	%	N	%	N	%	Age group	N	%	N	%	N	%
18–24	229860	5,8	218110	5,5	447970	11,4	18–24	96	2,6	172	4,6	268	7,2
25–29	182223	4,6	172102	4,4	354325	9,0	25–29	98	2,6	126	3,4	224	6,1
30–34	181676	4,6	170593	4,3	352269	8,9	30–34	126	3,4	142	3,8	268	7,2
35–39	180761	4,6	169737	4,3	350498	8,9	35–39	106	2,9	105	2,8	211	5,7
40–44	170871	4,3	161943	4,1	332814	8,4	40–44	130	3,5	97	2,6	227	6,1
45–49	166331	4,2	161558	4,1	327889	8,3	45–49	157	4,2	119	3,2	276	7,5
50–54	185887	4,7	183869	4,7	369756	9,4	50–54	168	4,5	165	4,5	333	9,0
55–59	181216	4,6	183582	4,7	364798	9,2	55–59	204	5,5	190	5,1	394	10,6
60–64	179220	4,5	188012	4,8	367232	9,3	60–64	256	6,9	239	6,5	495	13,4
65–69	178082	4,5	191919	4,9	370001	9,4	65–69	290	7,8	291	7,9	581	15,7
70–74	143498	3,6	164019	4,2	307517	7,8	70–74	220	5,9	203	5,5	423	11,4
Total	1979625	50,2	1965444	49,8	3945069	100,0	Total	1851	50,0	1849	50,0	3700	100,0

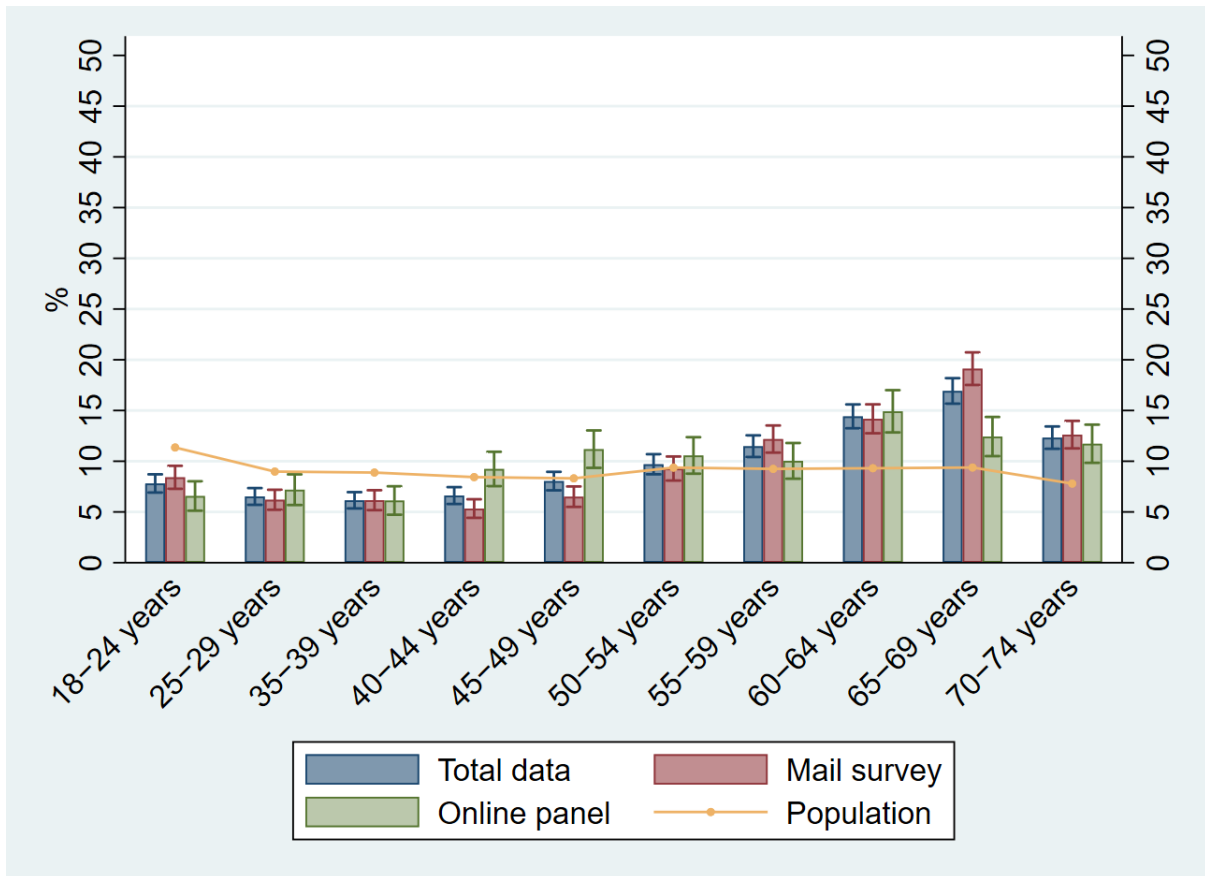


Figure 2 Distribution of age group in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2018).

- As tables 2 and 3 and figure 2 point out, young respondents are generally underrepresented in the research data, whereas older respondents are overrepresented.
- Age groups 18–24, 25–29 and 35–39 are clearly underrepresented in the data.
- Overall the age group 40–44 is underrepresented as well, but the online panel compensates for the shortage somewhat.
- All age groups between ages 60 and 74 are clearly overrepresented.
- The age group 65–69 is particularly strongly overrepresented, although the online panel compensates here as well.
- The mail survey included five respondents who answered with the option “other” as their gender. These respondents are not included in the tables 2 and 3 and figures 2, 3, and 4.

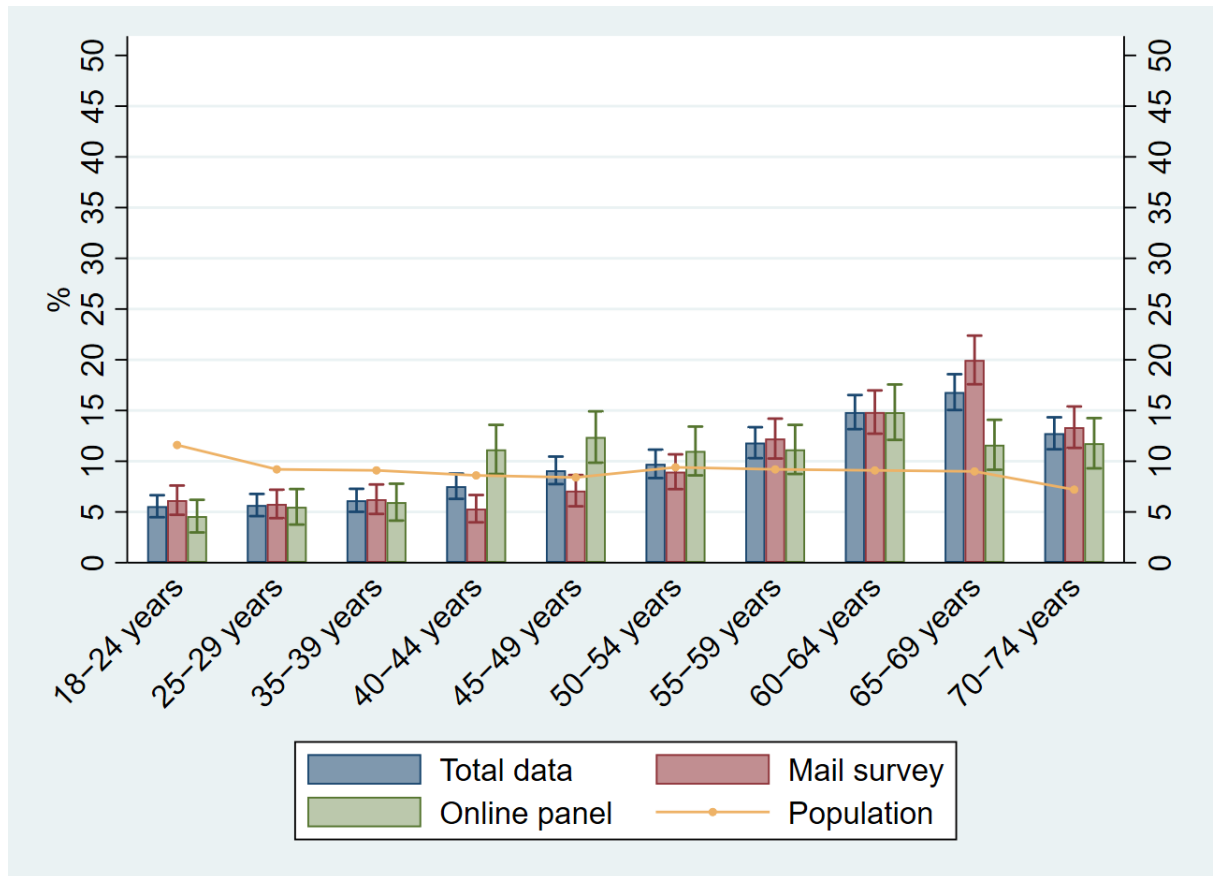


Figure 3 Distribution of men by age group in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2018).

- Figure 3 and tables 2 and 3 show that men among the age groups 18–24, 25–29, and 35–39 are clearly underrepresented, while 60–64 and older age groups are overrepresented.
- In terms of the group of 65–69 year old men, the online panel evens out the overrepresentation of respondents in the data, but does not fix the overrepresentation in the total data.

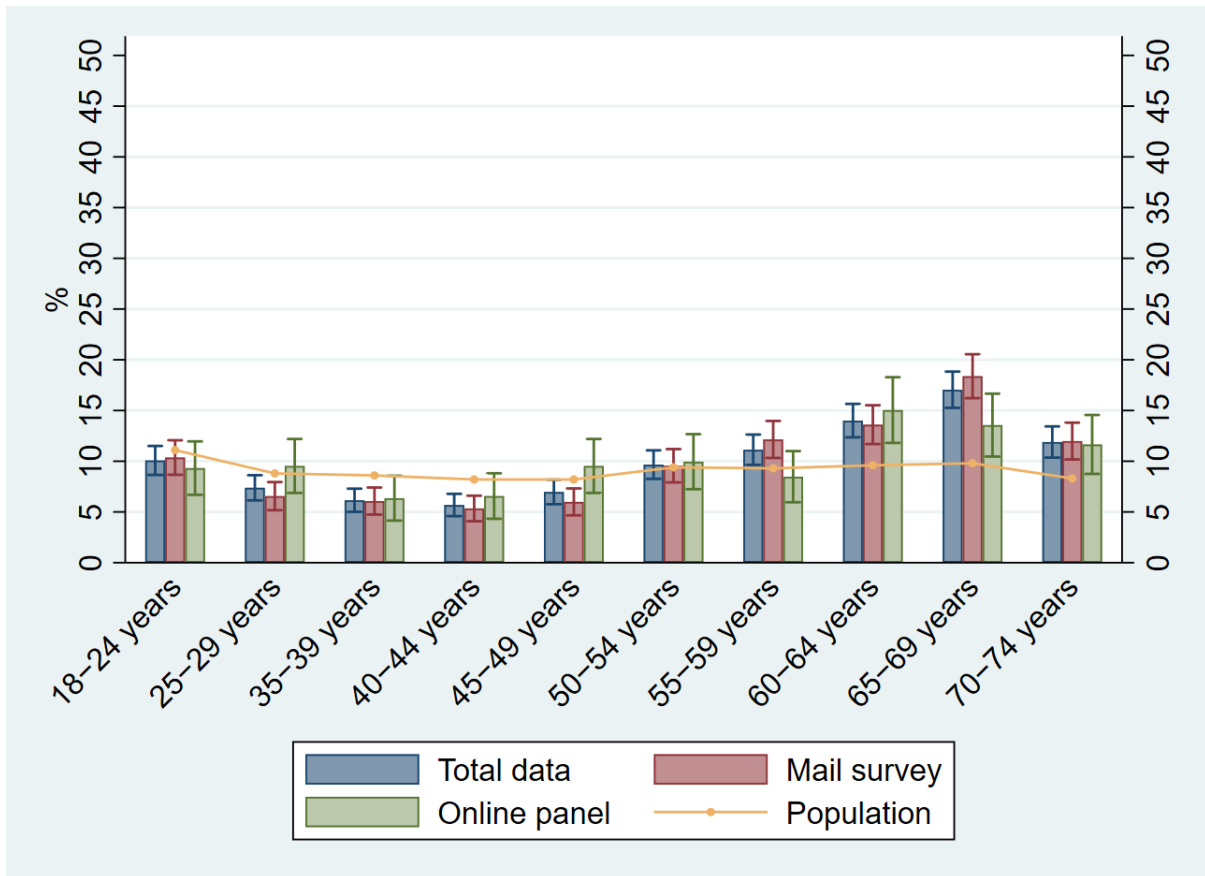


Figure 4 Distribution of women by age group in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2018).

- Figure 4 and tables 2 and 3 point out that, as with men, women are especially overrepresented among the age group 65–69, but also on groups 60–64 and 70–74 years.
- Particularly in the case of group of 65–69 year old women, the online panel somewhat smooths the overrepresentation of respondents.

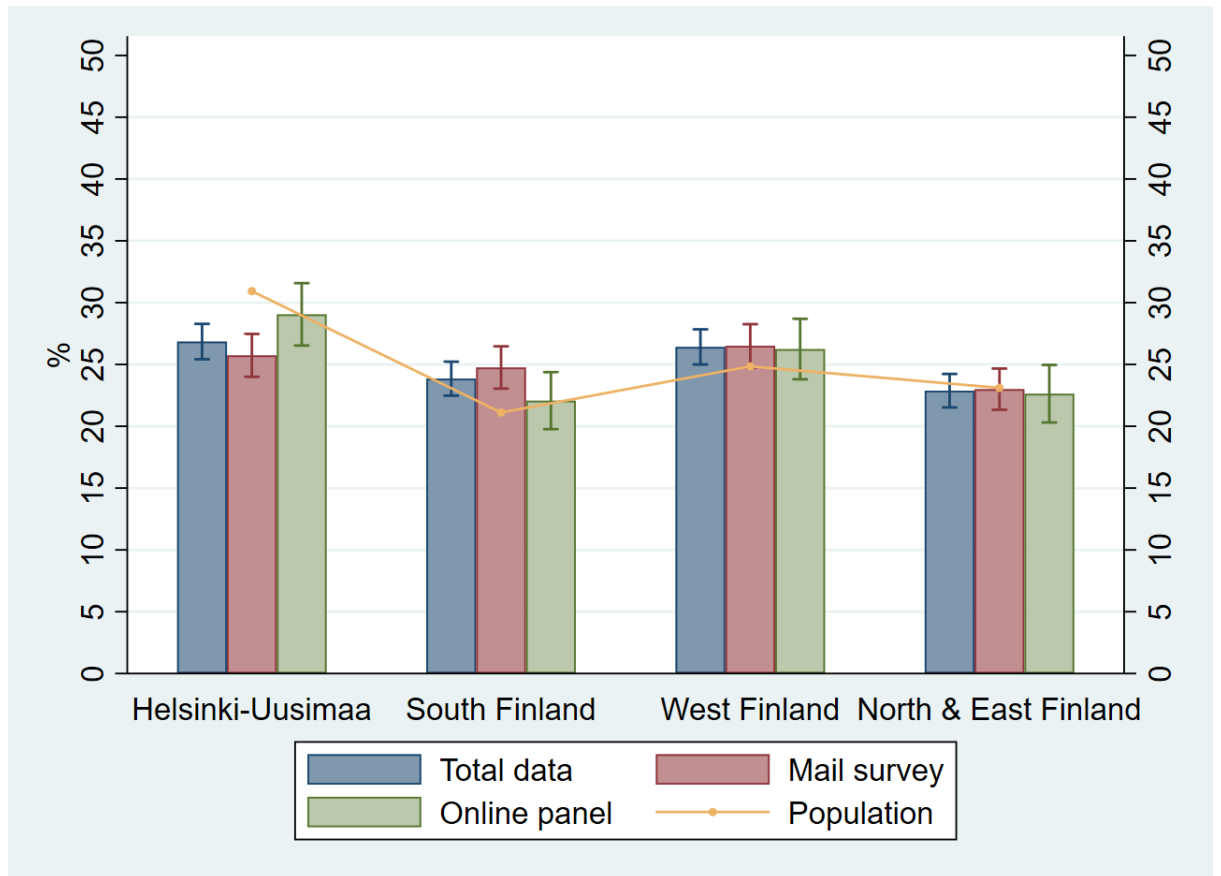


Figure 5 Distribution of NUTS 2 (large areas) statistical region in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2018).

- For the NUTS 2 areas (figure 5), the data corresponds relatively well with the population proportions.
- In total, the data proportion of the Helsinki-Uusimaa region is slightly underrepresented and South Finland is underrepresented, but the online panel evens out a little both distortions.
- West Finland seems slightly overrepresented in all data sources compared to the share of the population.
- The North & East Finland -area matches precisely with the proportion of population in the region.

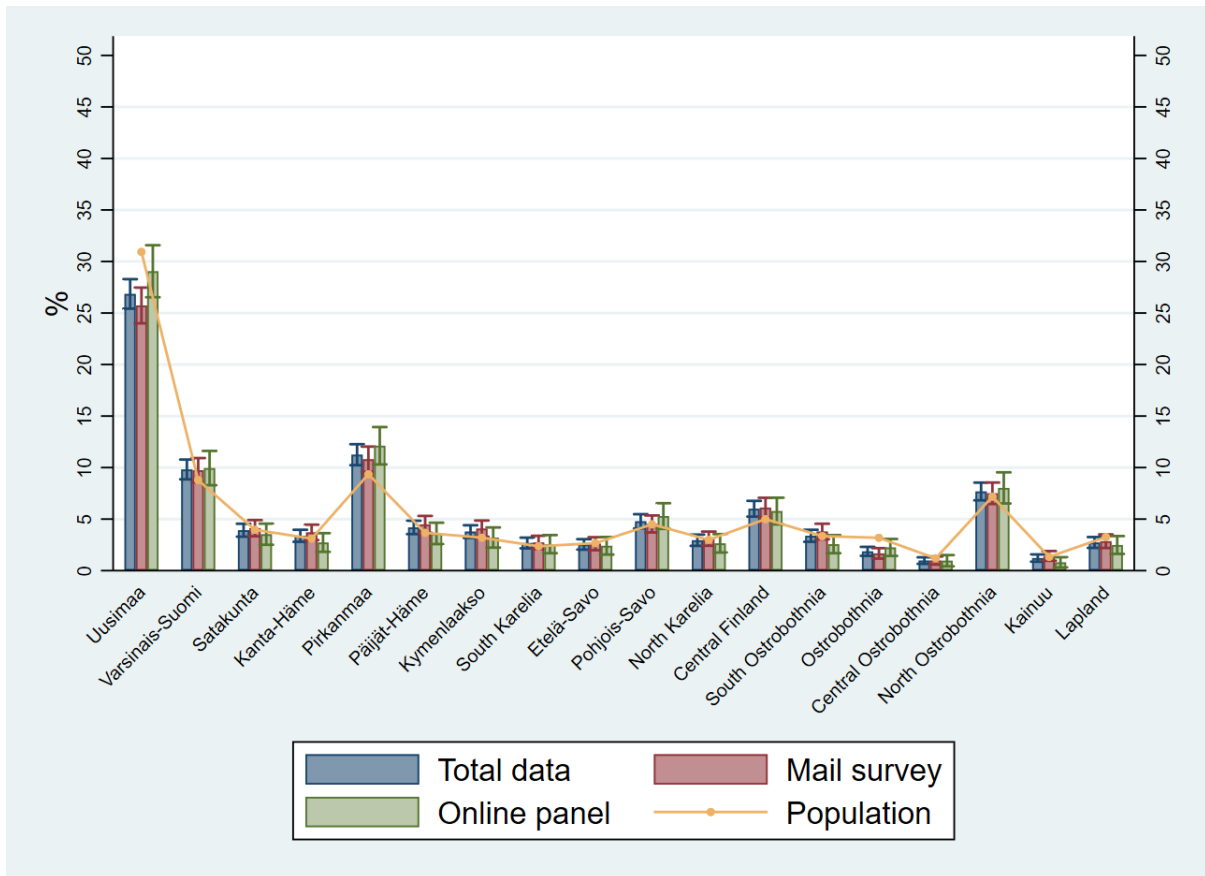


Figure 6 Distribution of province in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2018).

- Figure 6 shows that the distribution of data by province generally corresponds well with the population proportions.
- Within the Uusimaa region, the data is somewhat underrepresented, but the online panel compensates for the shortage a bit.
- The province of Pirkanmaa is slightly overrepresented within the data.

3.2 Socioeconomic representativeness of the sample

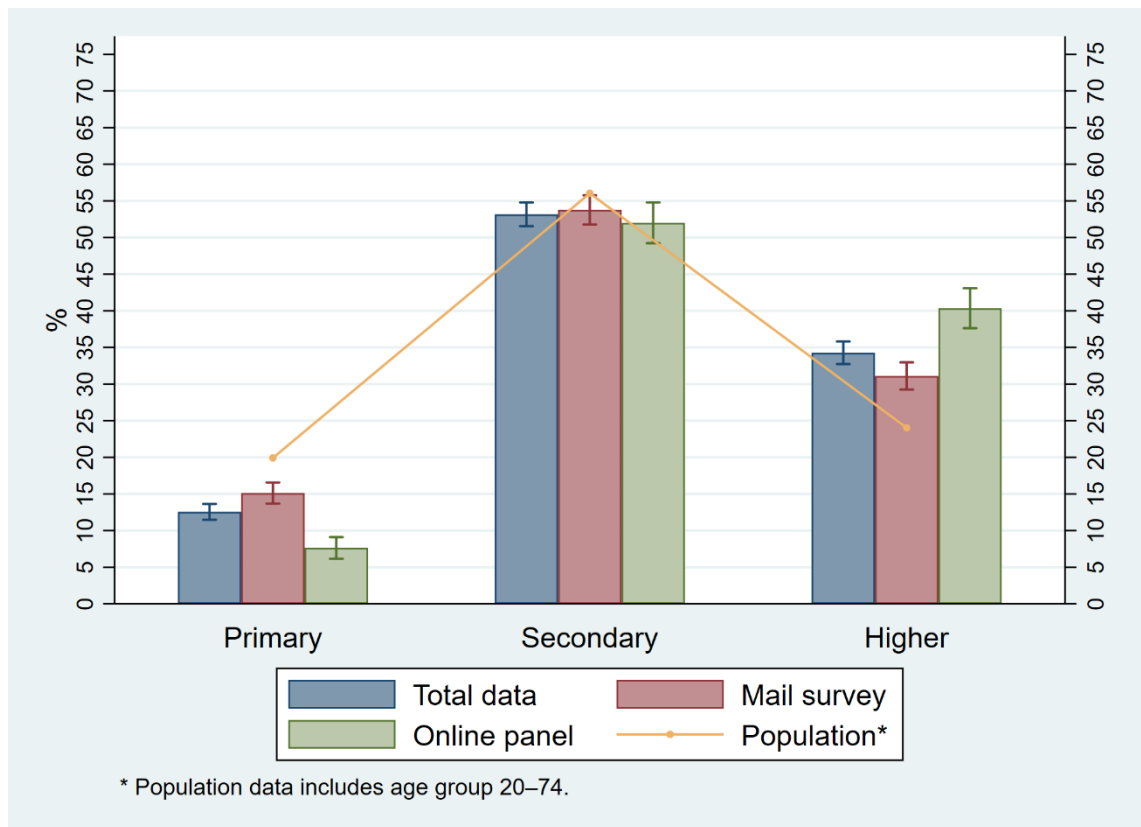


Figure 7 Distribution of education in total data, mail survey, online panel, and population. The population information is from 2016 (Statistics Finland 2018).

- As figure 7 demonstrates, when it comes to the more highly educated, both data sources are overrepresented. Especially online panel data includes high share of highly educated in relation to the population.
- The share of those with secondary education is relatively well represented within the data.
- The proportion of those with primary education is underrepresented, especially in the case of the online panel data.

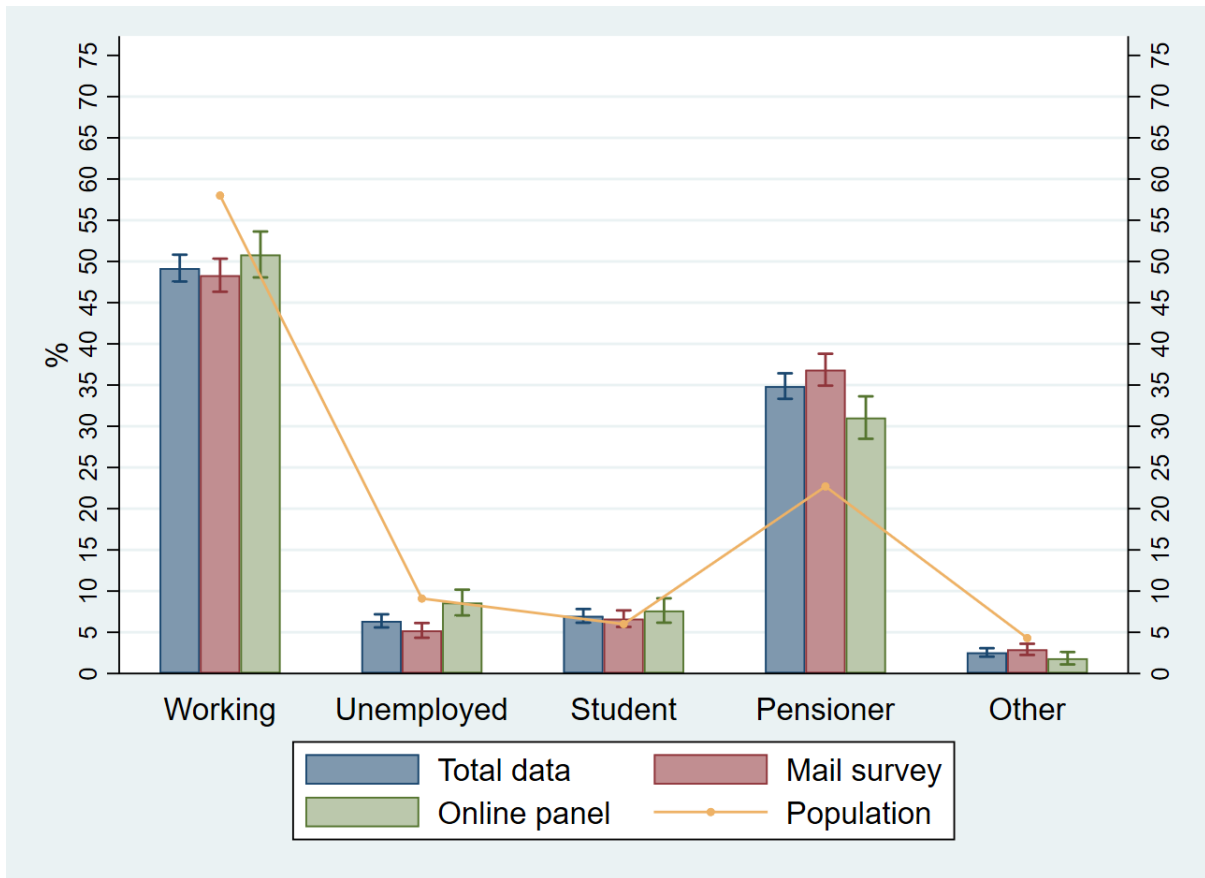


Figure 8 Distribution of main activity in total data, mail survey, online panel, and population. The population information is from 2016 (Statistics Finland 2018).

- Figure 8 indicates that students are relatively well represented in the data in relation to the share of the population.
- Unemployed are underrepresented, but the online panel balances the shortage to some extent.
- The main activity -category “working” is underrepresented in all data sources.
- Pensioners are clearly overrepresented, particularly in the mail survey data.

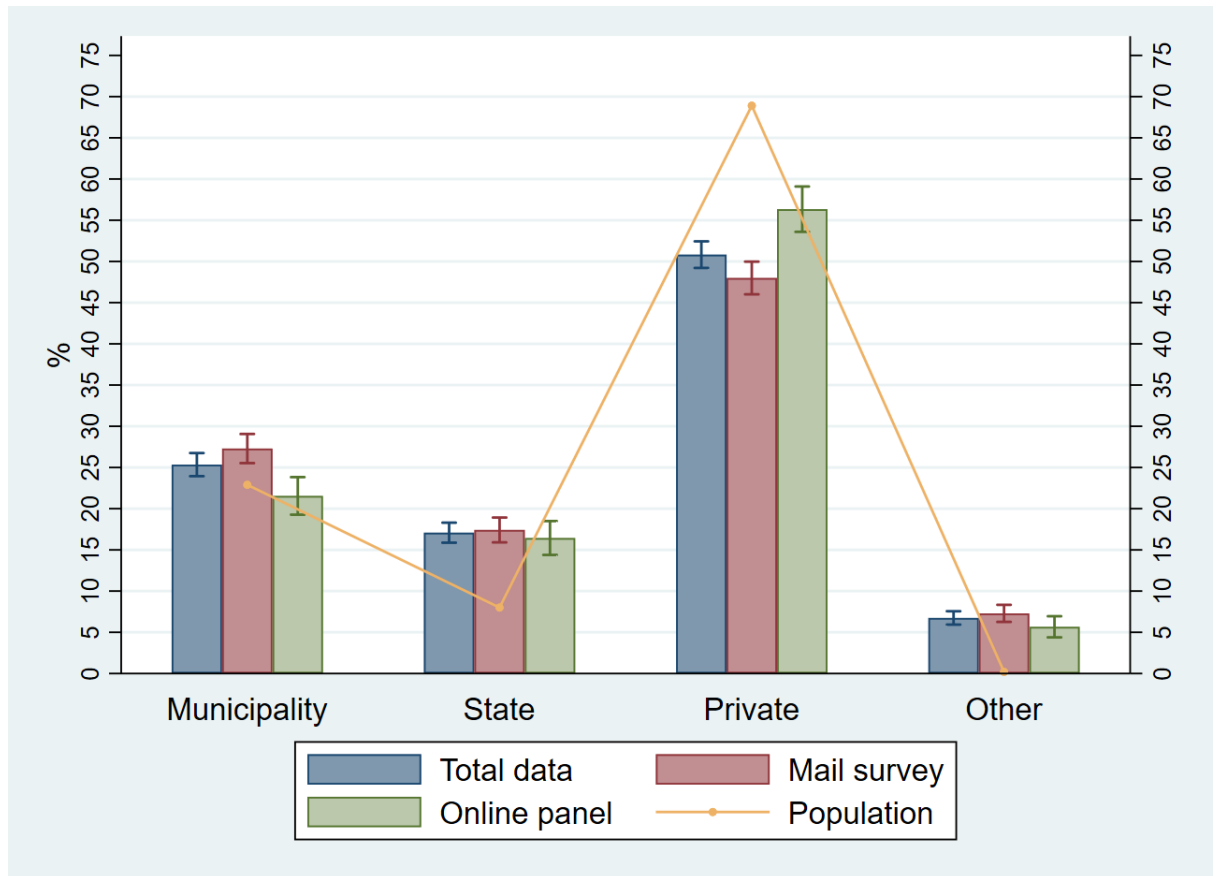


Figure 9 Distribution of employer sector in total data, mail survey, online panel, and population. The population information is from 2015 (Statistics Finland 2018).

- As figure 9 demonstrates, the employer sector “private” is clearly underrepresented in all data sources, although the online panel corresponds better with the population.
- Employer sectors “State” and “Other” are overrepresented in both data sources.
- In the case of municipality, the proportion in the online panel data is relatively close to the share of the population. However, as respondents working at a municipal employer are overrepresented in mail survey data, total data is slightly overrepresented as well.

3.3 Digital representativeness of the samples

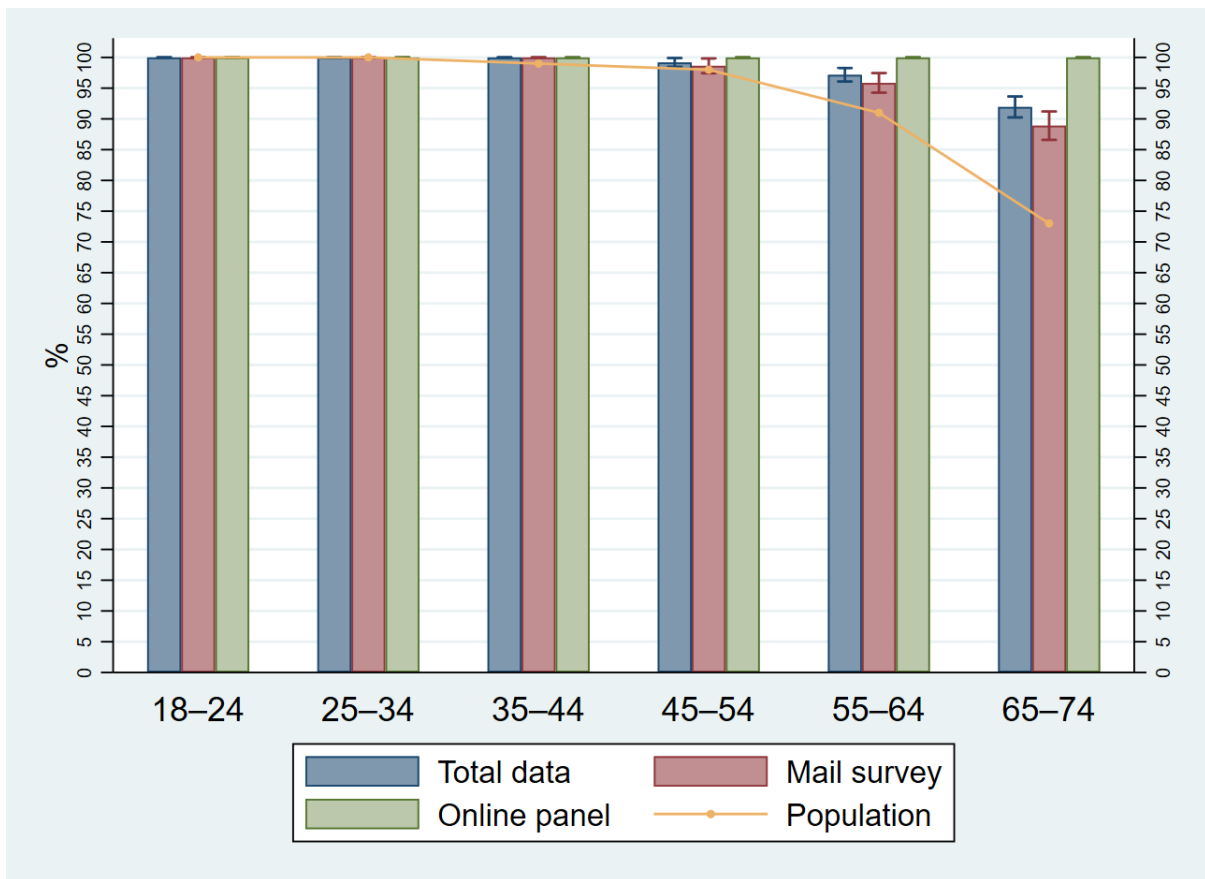


Figure 10 Distribution of internet usage by age group in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2017).

- When it comes to age groups younger than 55 years old, nearly everyone are using the Internet in both entire population and the data (figure 10). However, among age groups 55–64, and especially 65–74, Internet users are overrepresented.
- Naturally, the data among the age groups in question is particularly biased in the online panel data.

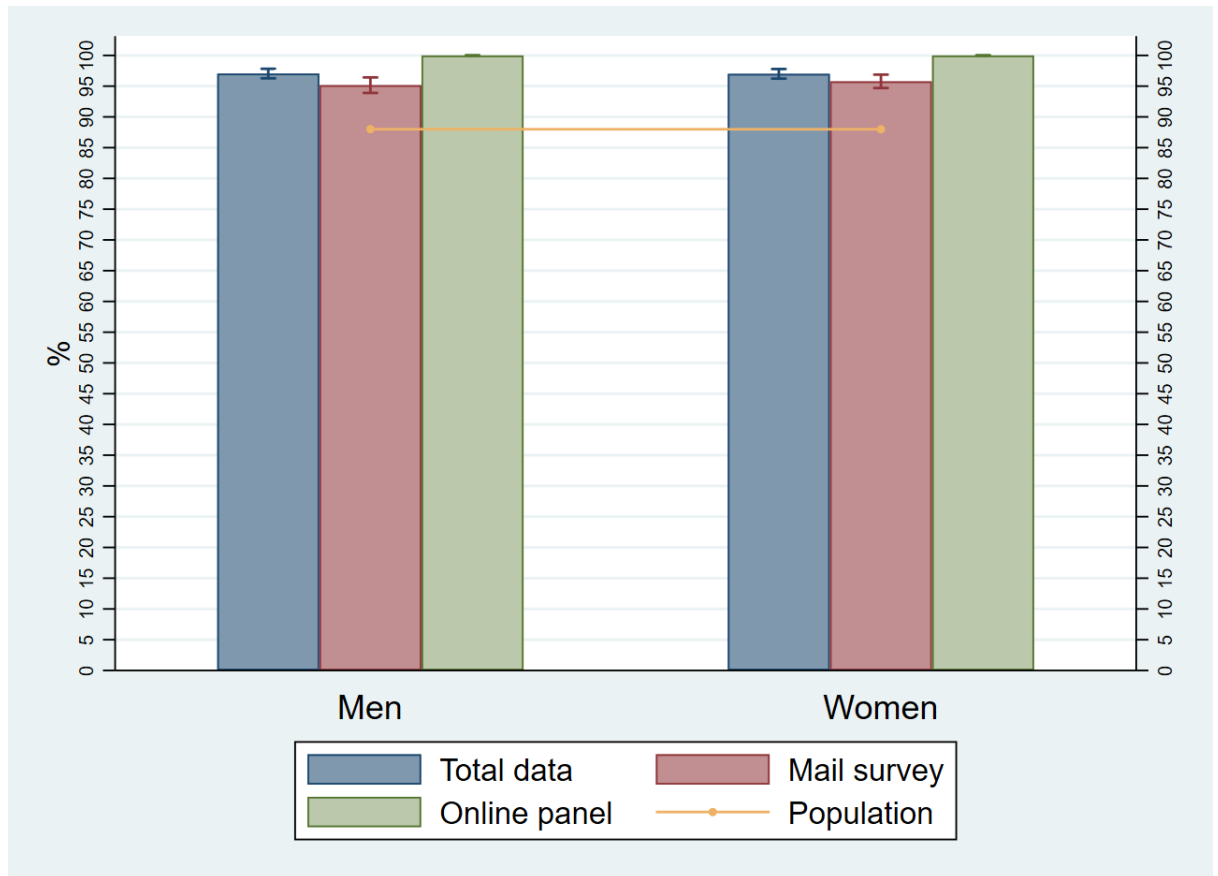


Figure 11 Distribution of internet usage by gender in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2017).

- Internet users are over represented within the data among both men and women. This is obviously the case especially with the online panel data (figure 11).

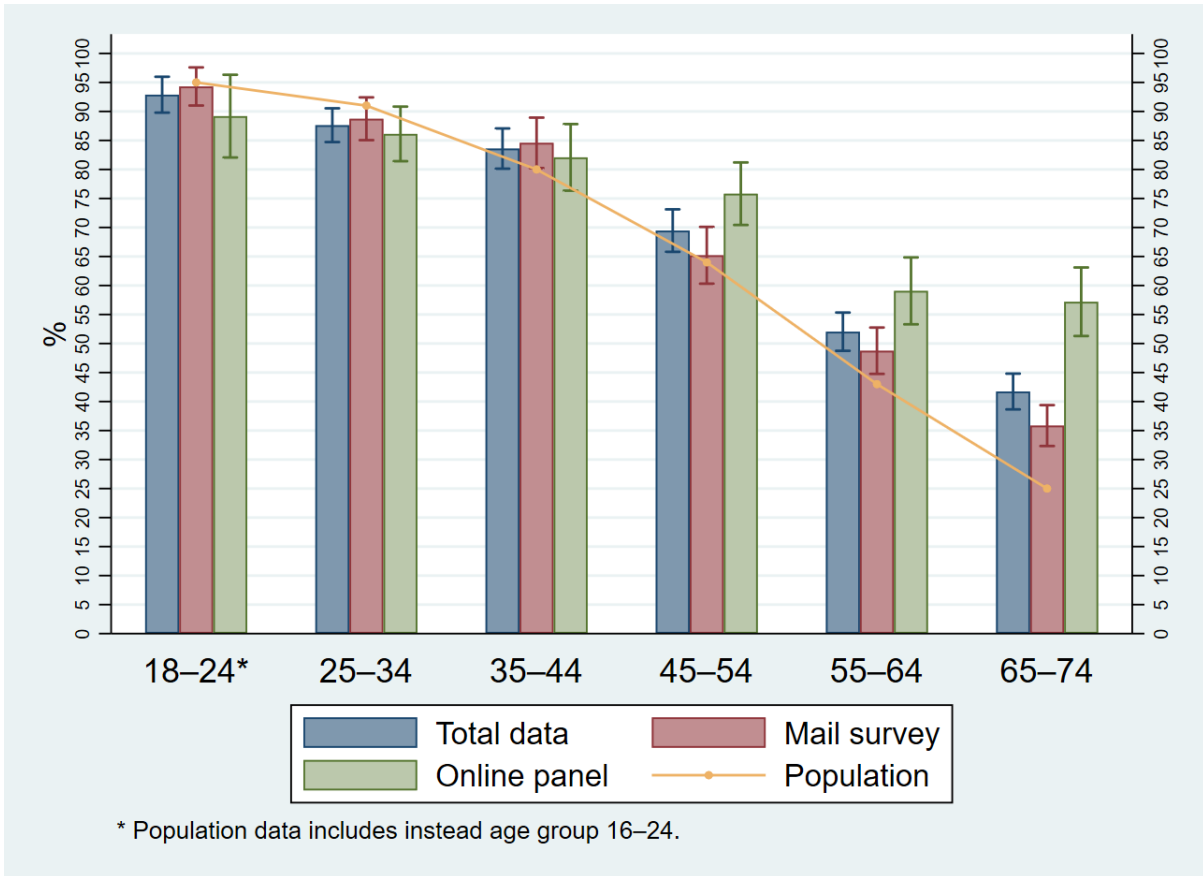


Figure 12 Distribution of social media usage by age group in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2017).

- Within the age groups 55–64 and especially 65–74, the data is overrepresented in terms of social media users, especially in the case of the online panel (figure 12).
- Younger age groups are better represented in the data.

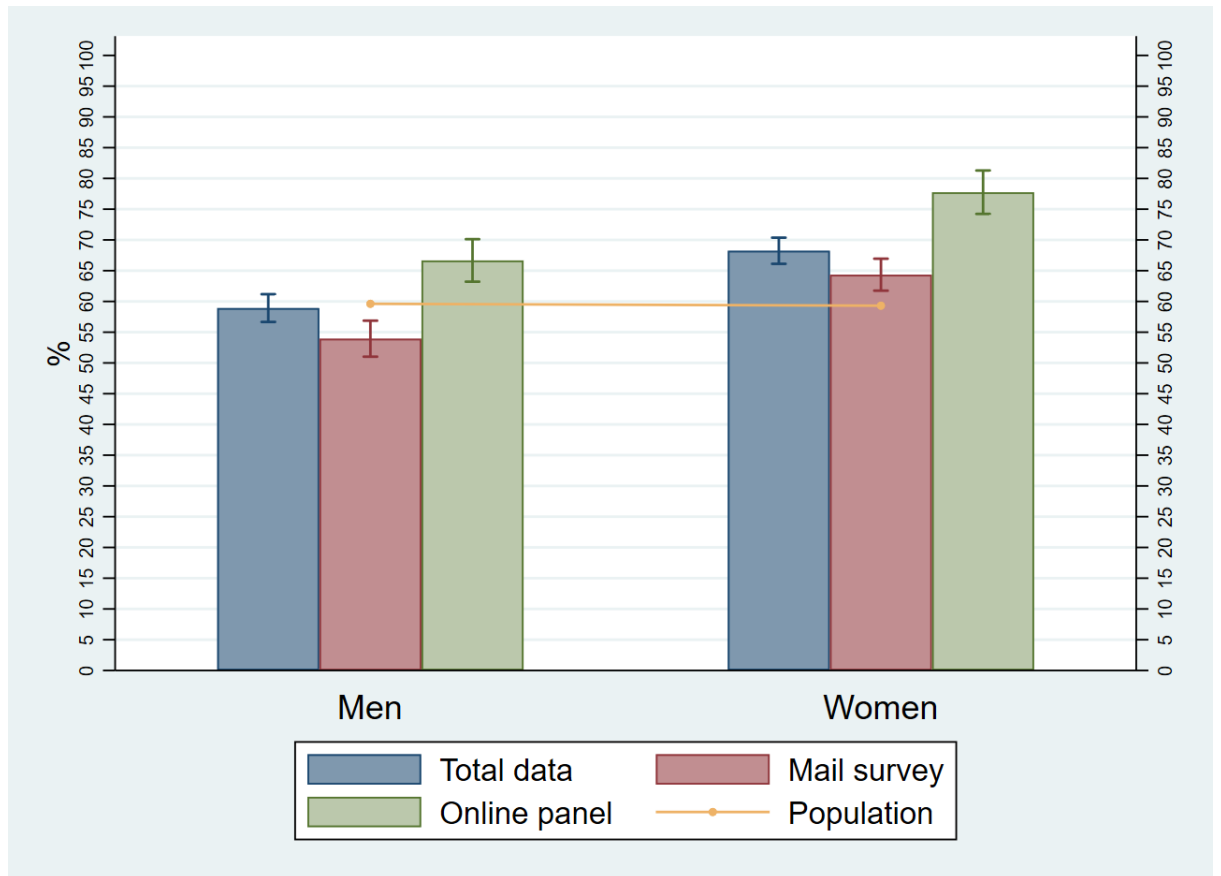


Figure 13 Distribution of social media usage by gender in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2017).

- As figure 13 points out, among men the total data matches very well with the population data. The mail survey and online panel balance each other in the case of men.
- Within women, social media users are generally overrepresented, particularly in terms of the online panel.

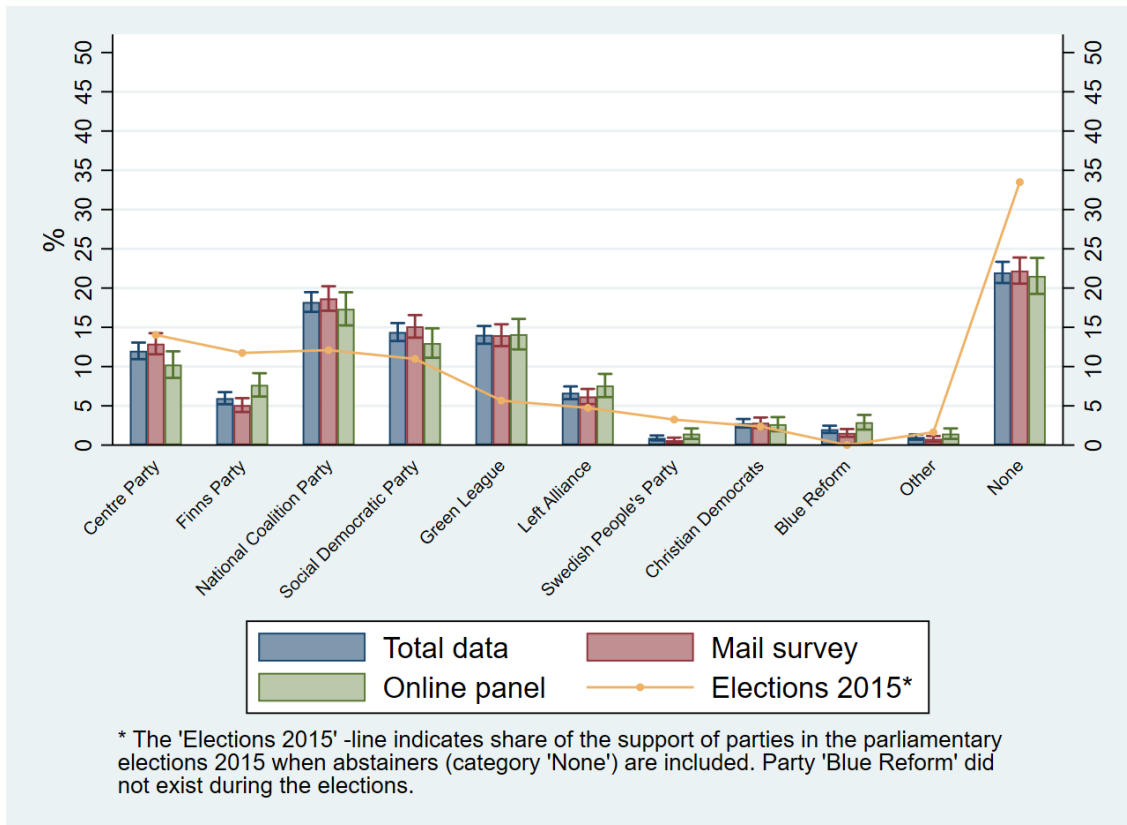


Figure 14 Distribution of respondents' most important party in total data, mail survey, online panel, and population and Finnish 2015 parliamentary elections results (Statistics Finland 2018).

- The distribution of respondents' party preference is difficult to evaluate as there is not a valid reference point.
- As figure 14 shows, if the distribution of party preference is compared to the results of parliamentary elections in 2015, the Finns Party's and Swedish People's Party's supporters are especially underrepresented in both data types, whereas supporters of the National Coalition Party, Social Democratic Party, and Green League are overrepresented.
- Newer political parties, namely the Finns Party, Left Alliance, and Blue reform are somewhat more visible in the online panel data, whereas the more traditional parties, Centre Party, Social Democratic Party, and National Coalition Party seem more popular in the mail survey data.
- The "Blue Reform" -party did not exist during the elections in 2015.

4 COMPARISON OF THE MAIL SURVEY AND ONLINE PANEL

In this chapter, we look at the representation of data with more qualitative questions. As the survey concerns digitalization and media, figures 15–19 below indicate how the mail survey and online panel data differ from each other when it comes to media usage. These figures enable the evaluation of the data's validity on broader measures than the demographic figures of the previous chapter.

Figure 19 especially points out that on certain questions the mail survey and online panel data differ considerably from each other. For instance, on the question of how interested the respondent is in science news, data sources differ significantly: online panel respondents are clearly more interested in science news.

In order to find more detailed information regarding the sample differences, we conducted multiple decomposition analyses by using the KHB-method (Karlson, Holm, and Breen 2012). The analyses indicated that approximately 20 percent of the differences between the samples were explained by disparate educational and age structures. In this respect, the post-stratification weighting for non-response bias may also correct the differences between the sample methods.

However, we need to keep mind that there were also other unobserved differences between the samples. This problem must be taken into account in future studies when data are generalized to the population and conclusions are drawn from the results.

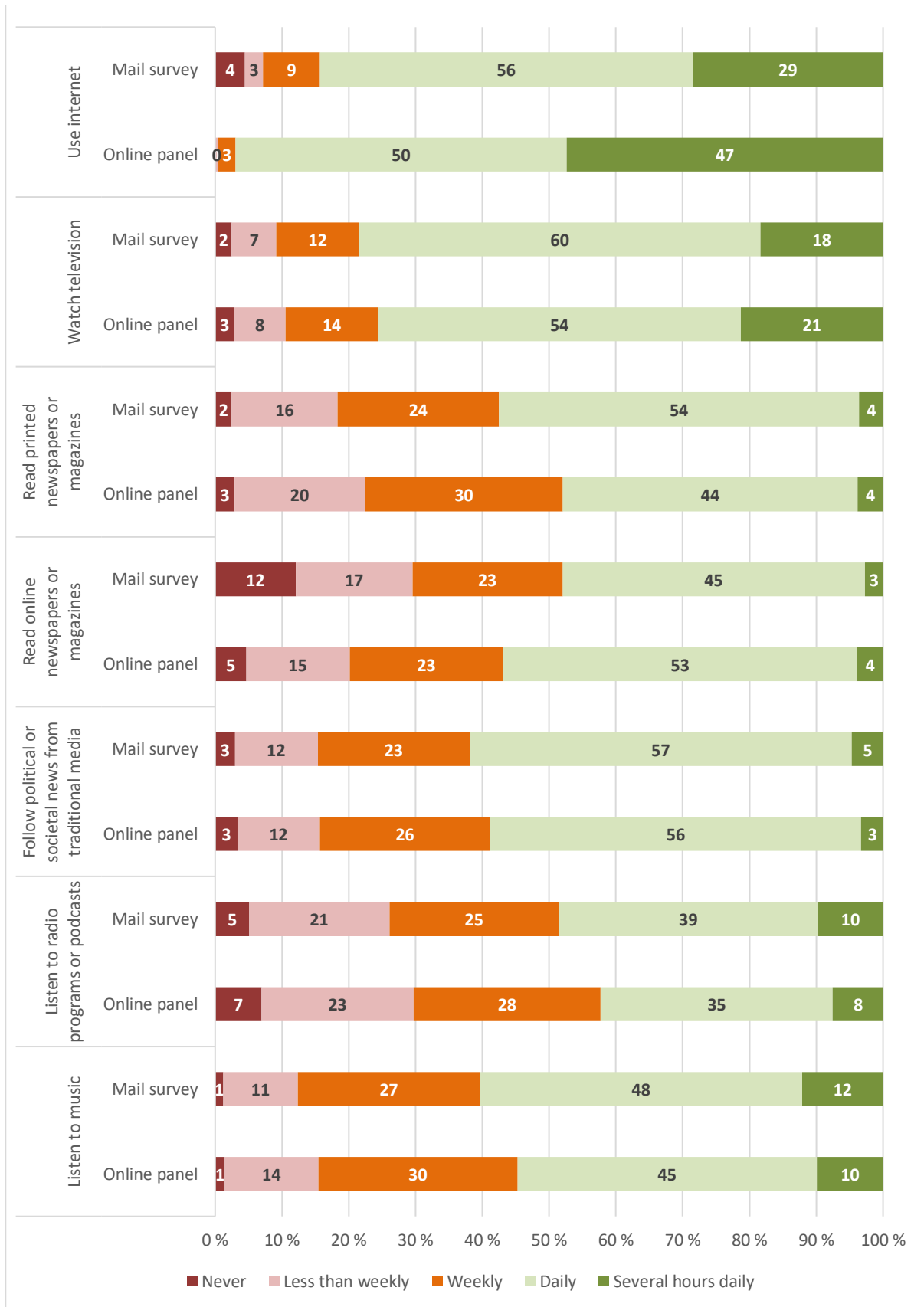


Figure 15 Distribution of answers to the question: “how often do you do the following?” in the mail survey and online panel.

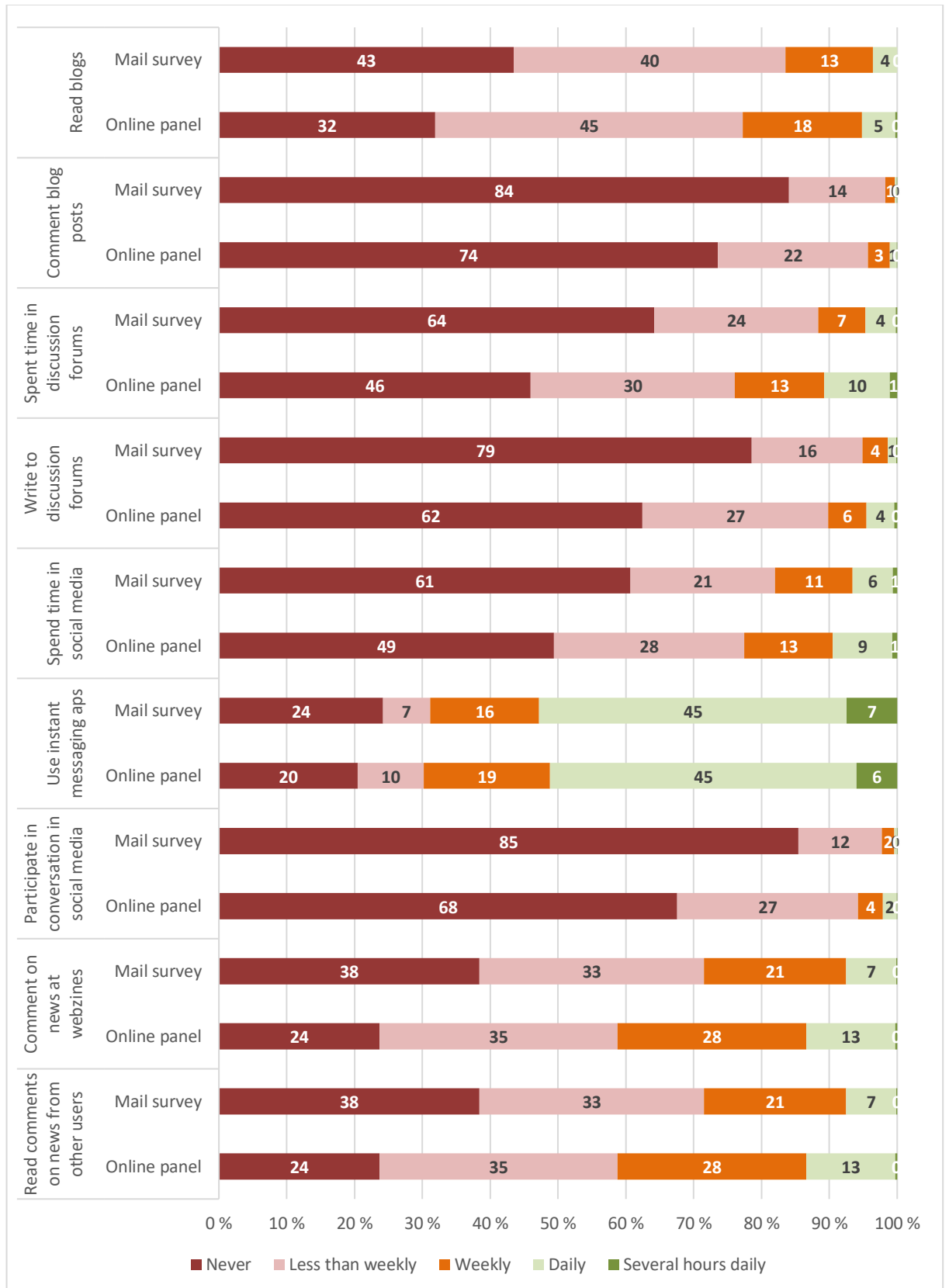


Figure 16 Distribution of answers to the question: “how often do you do the following?” in the mail survey and online panel.

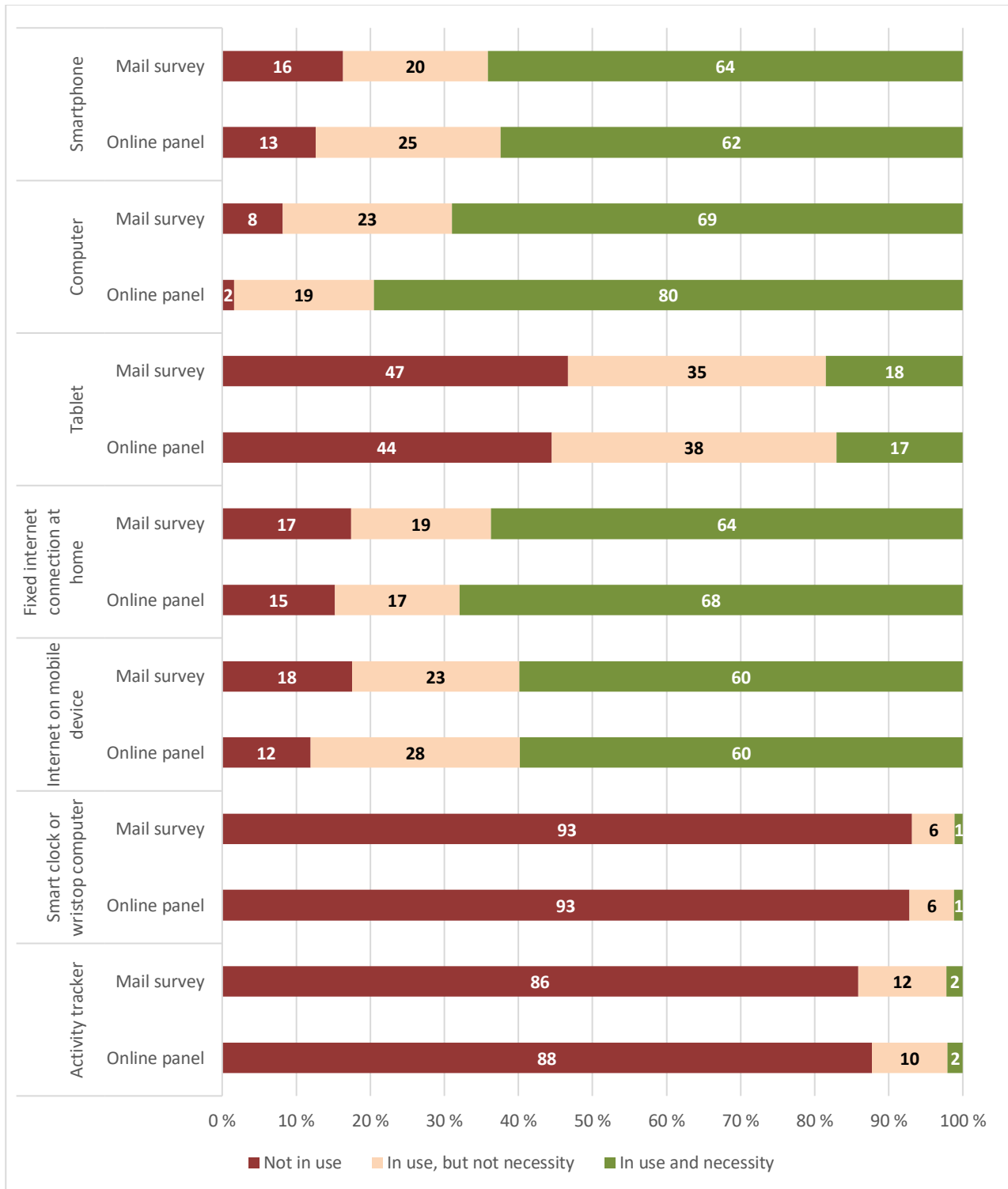


Figure 17 Distribution of answers to the question: “which of the following options best describes the importance of the following devices or services for your daily activities?” in the mail survey and online panel.

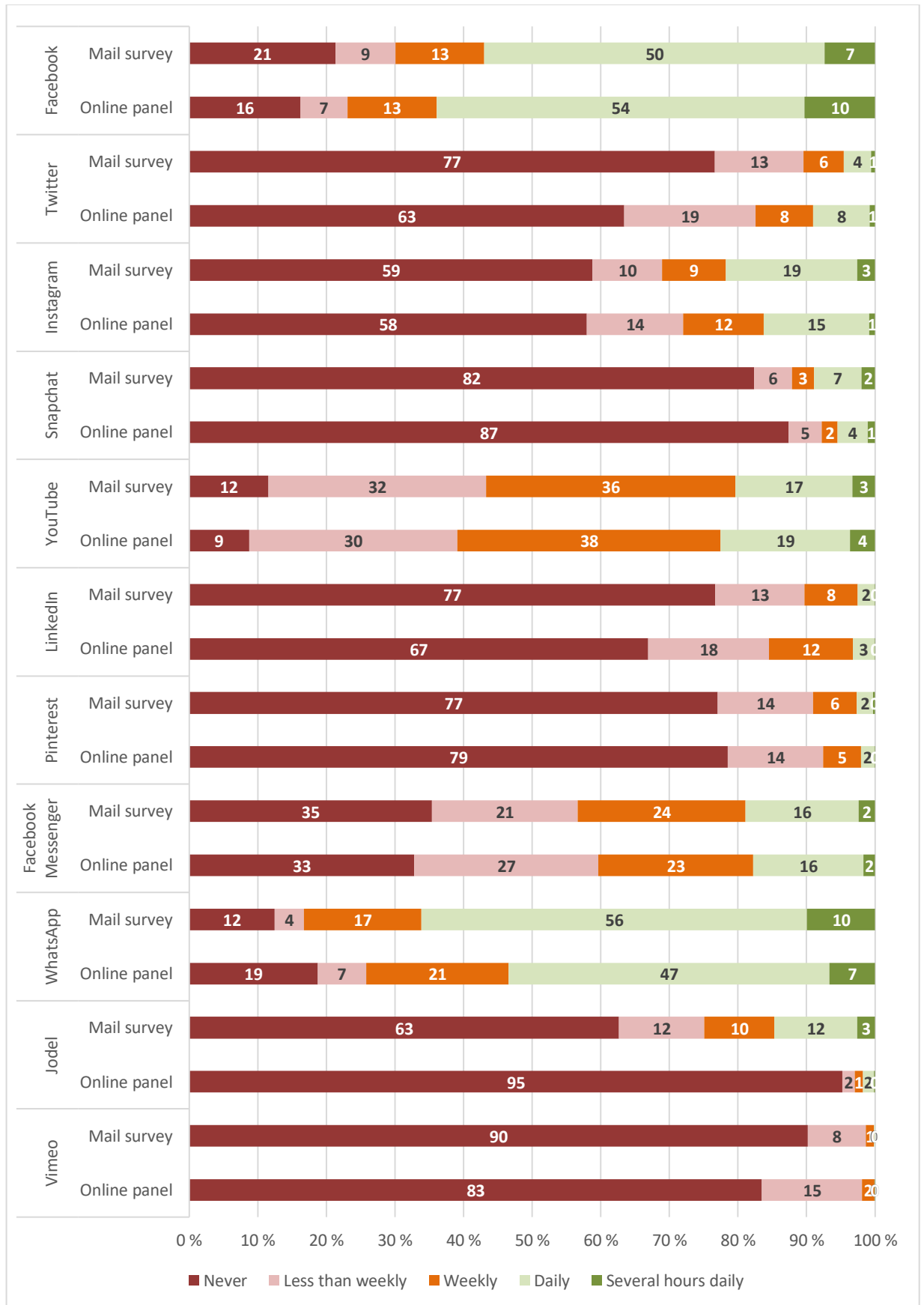


Figure 18 Distribution of answers to the question: “how often do you use the following social media services?” in the mail survey and online panel.

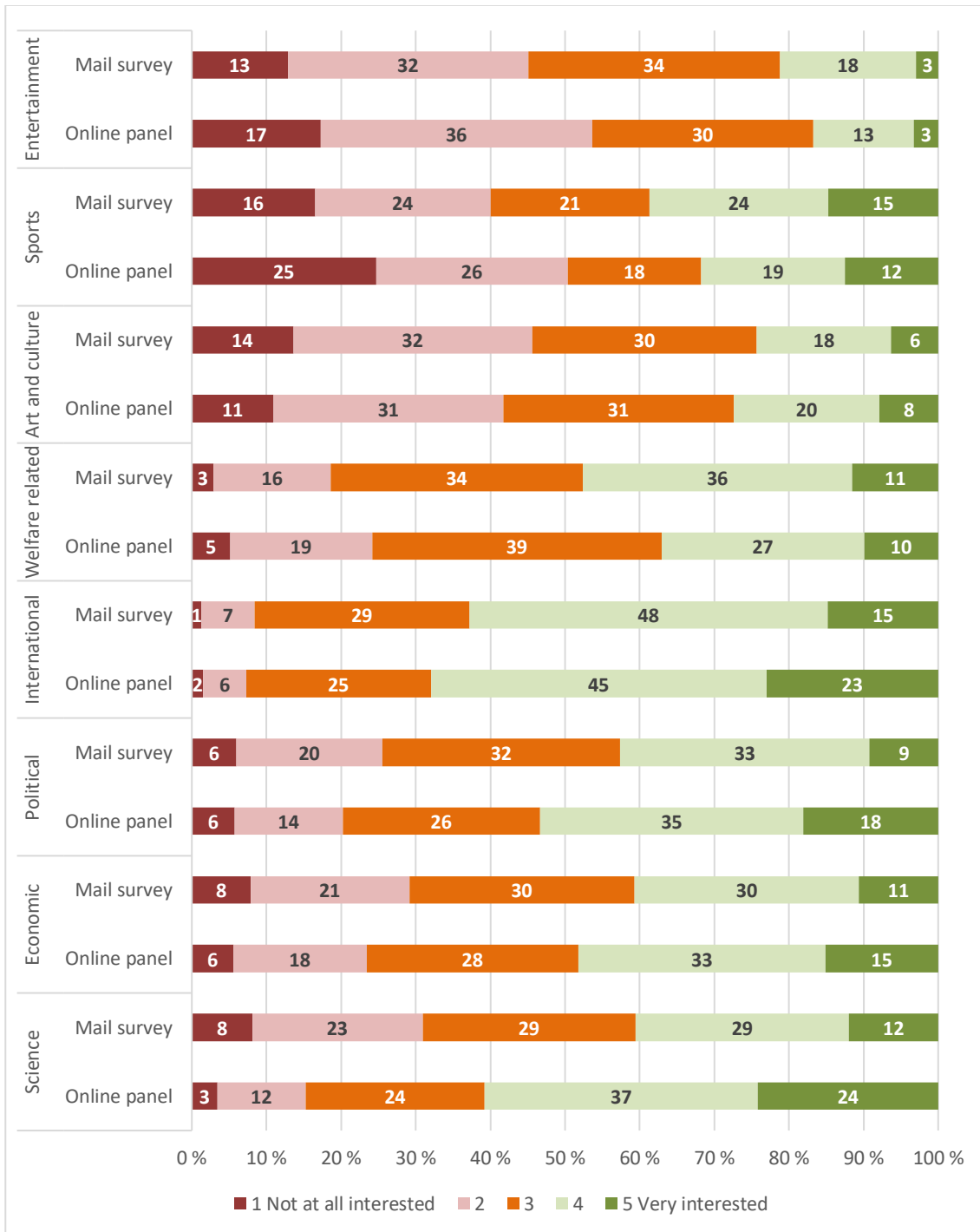


Figure 19 Distribution of answers to the question: “How interested are you in the following forms of news?” in the mail survey and online panel.

5 DISCUSSION

As a result of digital transformation and globalization, it has become increasingly challenging to do a conventional postal survey. The widespread use of the Internet has exacerbated the number of online, commercial and non-commercial surveys, which has inevitably affected response rates (Räsänen and Sarpila 2013).

On recent surveys, we have noticed that young men in particular miss out on contributing to research (see Koivula et al. 2017; Koivula, Räsänen, and Sarpila 2015, 2016). In order to improve the representativeness of surveys, scholars have encouraged social scientists to conduct survey research by utilizing various opportunities of the Internet (e.g. Dillman, Smyth, and Christian 2014; Farrell and Petersen 2010).

In the presented survey, we tackled this challenge by carrying out a survey with two different sampling methods. In our final data, about two-thirds of the respondents were reached with traditional probability sampling and the rest was reached on the quota sampled online panel. In this report, we compared these samples with different measurements.

The analysis indicates that the final data represent different population groups relatively well despite the low response rate of the postal survey. As a matter of fact, it was found that the quota sampled online survey reinforced representativeness of the postal survey in terms of demographic measures. In this respect, we may encourage social scientists to utilize online panels, especially in balancing the demographic compositions of traditional survey samples.

However, exploring the more qualitative questions – such as interest in different news types – reveals that on certain questions the data sources differ from each other significantly. To some extent, this variance was explained by differences in the demographic compositions of the samples. We recommend using post-stratification weights especially when it comes to making the population level estimations.

Nonetheless, a significant part of the difference could not be explained by equating demographic compositions across samples. In this respect, the differences in the samples are not due to the demographic selection of the respondents but rather to the qualitative selection.

Accordingly, it is important to evaluate the sample effect on a case-by-case basis, paying careful attention to the research problem and desired population target. In some cases, it may be reasonable to evaluate the sample effect by controlling it in the regression models.

In part, this is a challenge for the entirety of survey research. It is a well-known fact that survey researchers have begun to look primarily to so-called mixed mode approaches in order to have representative samples in collecting large-scale datasets (Dillman, Smyth, and Christian 2014; Hox, De Leeuw, and Zijlman 2015). However, according to our initial findings and previous research (Bethlehem 2010; Schonlau et al. 2009), it seems

that the selection bias is a significant problem manifested in attractive and inexpensive data collections.

As mentioned earlier, the survey method faces serious challenges related to the declining response rates. This report reveals differences between mail survey and online panel responses that are less related to demographic factors than personal preferences. However, it is not possible to straightforwardly state that, for instance, online panel data is skewed because of differences with mail survey answers. It is also possible that the online panel reached more of those respondents who do not typically participate in surveys.

Despite the aforementioned shortcomings, we believe that the data provides a valuable picture of the relationship between Finns and different aspects of digitalization, such as social media. We express our best wishes for the users of the data in research!

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APPENDIX 1 FREQUENCY TABLES

Table A1 Frequency of province in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2018).

Province	Population		Total data		Mail survey		Taloustutkimus -online survey	
	N	%	N	%	N	%	N	%
Uusimaa	1213717	30,9	993	26,9	631	25,7	362	29,1
Varsinais-Suomi	344472	8,8	363	9,8	239	9,7	124	10,0
Satakunta	155477	4	145	3,9	101	4,1	44	3,5
Kanta-Häme	122035	3,1	125	3,4	91	3,7	34	2,7
Pirkanmaa	367150	9,4	416	11,2	265	10,8	151	12,1
Päijät-Häme	143769	3,7	155	4,2	110	4,5	45	3,6
Kymenlaakso	125420	3,2	140	3,8	100	4,1	40	3,2
South Karelia	92813	2,4	99	2,7	67	2,7	32	2,6
Etelä-Savo	104605	2,7	94	2,5	64	2,6	30	2,4
Pohjois-Savo	176209	4,5	177	4,8	111	4,5	66	5,3
North Karelia	117349	3	109	2,9	76	3,1	33	2,6
Central Finland	196060	5	222	6,0	150	6,1	72	5,8
South Ostrobothnia	131377	3,3	125	3,4	93	3,8	32	2,6
Ostrobothnia	124998	3,2	69	1,9	41	1,7	28	2,2
Central Ostrobothnia	46741	1,2	36	1,0	24	1,0	12	1,0
North Ostrobothnia	281717	7,2	284	7,7	184	7,5	100	8,0
Kainuu	52381	1,3	45	1,2	35	1,4	10	0,8
Lapland	127776	3,3	101	2,7	70	2,9	31	2,5
Total	3924066	100	3698	100,0	2452	100,0	1246	100,0

Table A2 Frequency of education in total data, mail survey, online panel, and population. The population information is from 2016 and includes age group 20–74 (Statistics Finland 2018).

Education	Population		Total data		Mail survey		Taloustutkimus -online survey	
	N	%	N	%	N	%	N	%
Primary level education	759438	19,9	462	12,6	367	15,2	95	7,6
Secondary level education	2135171	56,0	1203	32,9	821	34,1	382	30,7
Higher level education	916005	24,0	1989	54,4	1222	50,7	767	61,7
Total	3 810 614	100,00	3 654	100,0	2 410	100	1 244	100,0

Table A3 Frequency of NUTS 2 statistical regions of Finland total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2018).

NUTS 2 statistical regions of Finland	Population		Total data		Mail survey		Taloustutkimus -online survey	
	N	%	N	%	N	%	N	%
Helsinki-Uusimaa	1 213 717	30,9	993	26,9	631	25,7	362	29,1
South Finland	828 509	21,1	882	23,9	607	24,8	275	22,1
West Finland	975 062	24,8	977	26,4	650	26,5	327	26,2
North & East Finland	906 778	23,1	846	22,9	564	23,0	282	22,6
Total	3 924 066	100,0	3698	100,0	2 452	100,0	1 246	100,0

Table A4 Frequency of main activity in total data, mail survey, online panel, and population. The population information is from 2016 (Statistics Finland 2018).

	Population		Total data		Mail survey		Taloustutkimus -online survey	
	N	%	N	%	N	%	N	%
Working	2275679	58,0	1787	49,2	1155	48,3	632	50,8
Unemployed	355364	9,1	232	6,4	125	5,2	107	8,6
Student	236335	6,0	254	7,0	159	6,7	95	7,6
Pensioner	889425	22,7	1267	34,9	881	36,9	386	31,1
Other	167454	4,3	93	2,6	70	2,9	23	1,9
Total	3924257	100,0	3633	100,0	2390	100,0	1243	100,0

Table A5 Frequency of employer sector in total data, mail survey, online panel, and population. The population information is from 2015 (Statistics Finland 2018).

	Population		Total data		Mail survey		Taloustutkimus -online survey	
	N	%	N	%	N	%	N	%
Municipality	516703	22,9	936	25,4	666	27,3	270	21,6
State	180275	8,0	631	17,1	425	17,4	206	16,4
Private	1555206	68,9	1877	50,8	1171	48,0	706	56,3
Other	4275	0,2	249	6,74	178	7,3	71	5,7
Total	2256459	100,0	3693	100,0	2440	100,0	1253	100,0

Table A6 Frequency of internet users by age group in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2017).

Share of internet users	Population		Total data		Mail survey		Taloustutkimus -online survey	
	N	%	N	%	N	%	N	%
16–24	N/A	100,0	268	100,0	194	100,0	74	100,0
25–34	N/A	100,0	492	100,0	283	100,0	209	100,0
35–44	N/A	99,0	436	100,0	265	100,0	171	100,0
45–54	N/A	98,0	610	99,2	365	98,6	245	100,0
55–64	N/A	91,0	884	97,2	604	95,7	280	100,0
65–74	N/A	73,0	981	91,9	712	87,5	269	100,0
Total	N/A	88,0	3671	97,0	2423	95,3	1248	100,0

Table A7 Frequency of internet users by gender in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2017).

Share of internet users	Population		Total data		Mail survey		Taloustutkimus -online survey	
	N	%	N	%	N	%	N	%
Gender								
Men	N/A	89	1831	97,1	1116	95,2	715	100,0
Women	N/A	87	1838	97,0	1305	95,8	533	100,0
Total	N/A	88	3669	97,0	2421	95,5	1248	100,0

Table A8 Frequency of social media users by age group in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2017).

Share of social media users	Population		Total data		Mail survey		Taloustutkimus -online survey	
	N	%	N	%	N	%	N	%
Age group								
16–24	N/A	95	267	92,9	193	94,3	74	89,2
25–34	N/A	91	493	87,6	284	88,7	209	86,1
35–44	N/A	80	439	83,6	266	84,6	173	82,1
45–54	N/A	64	609	69,5	365	65,2	244	75,8
55–64	N/A	43	884	52,0	603	48,8	281	59,1
65–74	N/A	25	985	41,7	714	35,9	271	57,2
Total	N/A	60	3677	63,7	2425	59,7	1252	71,4

Table A9 Frequency of social media users by gender in total data, mail survey, online panel, and population. The population information is from 2017 (Statistics Finland 2017).

Share of social media users	Population		Total data		Mail survey		Taloustutkimus -online survey	
	N	%	N	%	N	%	N	%
Gender								
Men	N/A	58	1833	58,9	1116	53,9	717	66,7
Women	N/A	61	1842	68,2	1307	64,3	535	77,8
Total	N/A	60	3675	63,6	2423	59,6	1252	71,4

Table A10 Frequency of respondents' most important party in total data, mail survey, and online panel, and Finnish 2015 parliamentary elections results (Statistics Finland 2018).

Perceived as most important party	Parliamentary elections 2015		Total data		Mail survey		Taloustutkimus -online survey	
	N	%	N	%	N	%	N	%
Centre Party	626218	14,0	436	12,0	309	12,9	127	10,3
Finns Party	524054	11,7	217	6,0	122	5,1	95	7,7
National Coalition Party	540212	12,1	662	18,2	447	18,7	215	17,4
Social Democratic Party of Finland	490102	11,0	523	14,4s	362	15,1	161	13,0
Green League	253102	5,7	510	14,0	335	14,0	175	14,1
Left Alliance	211702	4,7	242	6,7	148	6,2	94	7,6
Swedish People's Party of Finland	144802	3,2	33	0,9	15	0,6	18	1,5
Christian Democrats	105134	2,4	101	2,8	68	2,8	33	2,7
Blue Reform	-	-	73	2,0	37	1,5	36	2,9
Other Party	73133	1,6	37	1,0	19	0,8	18	1,5
Not any party/did not vote	1494874	33,5	799	22,0	532	22,2	267	21,5
Total	4463333	100,0	3633	100,0	2394	100,0	1239	100,0

APPENDIX 2 CODEBOOK

This section includes a codebook for all variables from the DF survey. In addition to variable information, we present descriptive statistics for each variable with missing values.

Variable	Question/Definition	Value and label	Mail survey, missing (%)	Online panel, missing (%)
aineisto	Data source	1 = Mail survey, paper questionnaire 2 = Mail survey, online questionnaire 3 = Taloustutkimus online panel		
aineisto2	Data source	1 = Mail survey (paper and online questionnaire) 2 = Taloustutkimus online panel		
q1	Gender	1 = Male 2 = Female 3 = Other	0,53	0
q2	Birth year		0,53	0
q3	Postal code		0,73	0,64
q3_1	Municipality code		0,73	0,64
q3_2	Municipality group number		0,73	0,64
q3_3	Sub-region number		0,73	0,64
q3_4	Province		0,73	0,64
q3_5	NUTS 2 region		0,73	0,64
q4	Are you in a relationship?	1 = Yes 2 = No	1,54	1,75
q5_a	Number of adults in the household		3,52	1,91
q5_b	Number of minors in the household		3	3,99

q6	What is your highest level of education achieved?	2,87	0,72
	1 = Primary school 2 = Vocational school 3 = Secondary school 4 = College 5 = Degree in applied sciences 6 = University degree 7 = Doctoral or licentiate degree 8 = Other		
q6_b	Other education reported by the respondent		
q7	Field of highest degree achieved?	35,1	19,38
q8	What is your main activity?	3,24	0,88
	1 = Salary work/on leave 2 = Entrepreneur 3 = Unemployed/seeking employment 4 = Retired 5 = Student 6 = Other, what		
q9	What is your vocation? Answer according to you primary activity (if entrepreneur, indicate field)	16,44	10,69
q10	What is your sector of employment?	18,14	8,53
q10_b	Other sector of employment reported by the respondent		

q11a - q11_s	How often do you do the following?			
	a) Use the Internet	1 = Never	1,46	0,48
	b) Watch television	2 = Less than weekly	1,09	0,16
	c) Read print media in the form of news or periodicals	3 = Weekly	2,71	0,16
	d) Read online news or periodicals	4 = Daily	2,67	0,56
	e) Follow political or societal news in traditional media (for example television, newspapers, radio)	5 = Many times per day	0,93	0,32
	f) Listen to radio programs or podcasts		1,42	0,4
	g) Listen to music		1,66	0,96
	h) Watch movies or television programs		1,21	0,48
	i) Watch sports		2,31	0,96
	j) Watch adult entertainment		1,9	0,8
	k) Read blogs		1,86	0,48
	l) Comment on blogs		1,54	0,16
	m) Spend time on chat forums		1,86	0,8
	n) Write in chat forums		1,62	0,4
	o) Spend time on social media platforms (Facebook, Twitter, etc)		1,38	0,16
	p) Participate in discussions on social media platforms		2,23	0,32
	q) Use instant messenger applications (WhatsApp, Facebook messenger, etc)		1,9	0,48
	r) Comment on news on online news sites		1,58	0,48
	s) Read the comments of others on news sites		1,34	0,24

q12_a - q12_h	How interested are you in the following forms of news?		
a) Entertainment news	1 = Not at all interested	1,54	0,4
b) Sports news	...	1,09	0,16
c) Arts and cultural news	5 = Very interested	2,06	0,48
d) News related to well being		1,74	0,4
e) International news		1,66	0,24
f) Political news		1,46	0,16
g) Economic news		1,21	0,24
h) Science news		1,24	0,24
q13_a - q13_g	Which of the following best describes the importance of the following devices in your daily life?		
a) Smartphone	1 = Do not use	1,17	0,08
b) Computer	2 = I use it, but not necessity	1,9	0,72
c) Tablet computer (Ipad, for example)	3 = I use it and it is necessity	2,83	0,48
d) Home internet connection (DSL, etc)		1,78	0,16
e) Internet on a mobile device		2,47	0,64
f) Smartwatch or wrist computer		1,7	0,24
g) Sports/activity tracker		1,74	0,16

q14_a - q14_n	To what extent do the following Internet activities describe you?			
	a) I know how to download and save files from the Internet (For example, pictures)	1= Not at all	8,06	0,16
	b) I know how to upload files to online platforms (For example, Facebook or Dropbox)	2 = Very little	8,06	0
	c) I know how to adjust my browser's privacy set-	3 = Somewhat	8,18	0,24
	d) I know how to connect devices to wireless Inter-	4 = Well	8,62	0,16
	e) It is easy for me to determine appropriate search terms when looking for something online	5 = Very well	8,14	0,24
	f) I can easily find my past Internet history		7,94	0,32
	g) I know how to use private browsing settings online (For example, in-		8,3	0,32
	h) I know how to delete my online browsing his-		7,98	0,64
	i) I know how to turn my location services on and		8,74	0,48
	j) I know how to edit existing images and video		7,89	0,16
	k) I know how copywrite limits the use of online		8,06	0,72
	l) I know what programs and files are save to down-		8,02	0,24
	m) I understand the costs of using mobile applica-		8,22	0,24
	n) I know how to download and install applications to my mobile device		8,1	0,4
q15_a - q15e	Have you used the following services?			
	a) Ruokakassi (food bag) - transfer service	1 = Never	7,25	0,32
	b) Airbnb	2 = Less than Weekly	7,53	0,32
	c) Wolt	3 = Weekly	7,57	0,48
	d) Foodora		7,37	0,48
	e) Uber		7,85	0,56

q16_a - q16_s	To what extent do you feel that the INTERNET is important in carrying out the following	1 = Not at all impor- tant	7,13	0,64
	a) Banking			
	b) Reservations/appoint- ments (Medical, for exam- ple)	2 = Not very impor- tant	7,61	0,72
	c) Keeping up with the news	3 = Somewhat impor- tant	8,3	0,72
	d) Research on health or sickness	4 = Quite important	7,49	0,32
	e) Research on goods and services	5 = Extremely impor- tant	7,53	0,16
	f) Purchasing services		7,53	0,24
	g) Purchasing travel and lodging services		7,65	0,32
	h) Clothing purchases		7,41	0,32
	i) Purchasing new pro- ducts		7,53	0,4
	j) Purchasing used pro- ducts		7,61	0,24
	k) Selling of personal products or services		7,69	0,32
	l) Keeping in contract with other people		7,45	0,4
	m) Playing games		7,77	0,56
	n) Listening to music		7,57	0,32
	o) Watching sports		8,14	0,96
	p) Watching movies or tel- evision programs		7,69	0,48
	q) Watching adult enter- tainment		7,69	0,48
	r) Consuming other art or culture		7,57	0,4
	s) Giving customer feed- back		7,41	0,4

q17_a - a17_e	What is your opinion on the following statements?			
	a) I want to use various Internet sources to search for information on subjects that I am interested in	1 = Completely disagree	7,53	0,8
	b) I always make sure that what I share on the Internet is trustworthy/accurate	...	8,1	0,08
	c) I prefer to search for information from sites where the writer's points of view are in line with my own	2 = Do not agree or disagree	7,89	0,32
	d) When searching for information online, I trust my friends on social media most	...	7,85	0,32
	e) Seeking out accurate/trustworthy information online requires significant effort	5 = Completely agree	7,61	0,16

18_a - 18_s	What do you think about the following statements? I use social media in order to...			
	a) receive completely new information	1 = Completely disagree	27,25	19,38
	b) receive more information on things I already know about	...	27,33	19,46
	c) get followers	3 = Do not disagree or agree	27,73	19,46
	d) share useful information with others	...	27,65	19,54
	e) express my societal opinions	5 = Completely agree	27,25	19,46
	f) comment on and share news		27,33	19,38
	g) participate in the activities of a particular online group		27,29	19,54
	h) affect the opinions of others		27,37	19,38
	i) participate in an activist group		27,69	19,38
	j) keep in touch with people I already know		27,13	19,38
	k) get to know new people		27,33	19,7
	l) tell others about my life and how I am doing		27,25	19,54
	m) network with other users		27,73	19,86
	n) entertain myself		27,25	19,7
	o) entertain my friends and acquaintances		27,49	19,7
	p) receive positive feedback		27,49	19,78
	q) receive economic benefit/income		27,49	19,54
	r) follow various celebrities		27,17	19,7
	s) follow political figures		27,25	19,78

19_a - 19_d	To what extent do the following describe your activity?	1 = Not at all		
	a) I know what is appropriate to share online	2 = Very little	27,17	19,46
	b) I know when it is appropriate to share online	3 = Somewhat	27,29	19,54
	c) I know with whom it is appropriate to share personal information online	4 = Well	27,49	19,46
	d) I know how to remove friends and followers from social networking services	5 = Very well	27,49	19,54
20_a - 20_f	To what extent do the following describe your social media activity?	1 = Not at all	27,65	19,54
	a) I belong to social media communities or groups that are an important part of me			
	b) I belong to social media communities or groups that I am proud of	...	27,57	19,38
	c) In my experience, other people on social media share my point of view	7 = Completely	27,81	19,54
	d) On social media, I interact only with people with whom I share similar interests		27,69	19,54
	e) I trust information that is shared with me on social media		27,89	19,3
	f) I interact exclusively with people who are like me on social media		27,73	19,54

21_a - 21_i	What do you think of the following statements?			
	a)) I have hidden content that conflicts with my points of view on social media	1 = Completely disagree	28,06	19,46
	b) I purposefully share material on social media that I believe will provoke others	...	28,06	19,3
	c) I do not “like” others’ posts if I do not agree with them	3 = Do not disagree or agree	28,34	19,46
	d) I very often “like” other users’ posts in order to show support and empathy	...	28,14	19,46
	e) The fear of offending others limits my posting of my opinions on social media	5 = Completely agree	28,1	19,46
	f) I try to give others on social media an improved image of who I am		28,22	19,54
	g) I have hidden or removed annoying or bothersome users on social media		28,26	19,62
	h) I comments on others’ posts on social media even when I disagree with them		28,18	19,38
	i) I avoid sharing content on social media that I feel could lead to disputes		28,18	19,54
22_a - 22_e	How often...			
	a) do you have difficulty in stopping social media use?	1 = Never	27,69	19,38
	b) have other people said you should use social media less?	2 = Less than weekly	27,89	19,3
	c) Have you left important work, school or family related things undone due to social media use?	3 = Weekly	27,85	19,38
	d) do you use social media to alleviate feeling bad or stress?	4 = Daily	27,89	19,3
	e) do you plan your social media use beforehand?		27,89	19,62

23_a - 23_k	How often do you use the following social media services?			
	a) Facebook	1 = Never	27,85	19,7
	b) Twitter	2 = Less than weekly	28,58	19,54
	c) Instagram	3 = Weekly	28,91	19,62
	d) Snapchat	4 = Daily	29,23	19,94
	e) YouTube	5 = Many hours per day	28,14	19,62
	f) LinkedIn		28,79	19,54
	g) Pinterest		28,95	19,86
	h) Facebook Messenger		28,66	19,78
	i) WhatsApp		27,85	19,86
	j) Jodel		28,79	19,62
	k) Vimeo		28,79	19,86
	q24 - q24g	If you use the following social media services, how many friends or followers do you have?		
a) Facebook		1 = Never	49,55	35,96
b) Twitter		2 = Less than weekly	89,51	59,89
c) Instagram		3 = Weekly	76,03	56,06
d) Snapchat		4 = Daily	87,69	63,56
e) LinkedIn		5 = Many hours per day	87,49	58,05
f) Pinterest			92,11	65,07
g) Other platforms altogether			90,61	63,32

q25_a - q25_n	How often do you do the following?			
	a) Share your own created content (status updates, pictures or videos) on social media	1 = Never	28,56	19,22
	b) Share content created or shared by others on social media	2 = Less than weekly	28,5	19,22
	c) Send confidential or sensitive messages on messaging applications	3 = Weekly	28,56	19,22
	d) Use social media while also watching television programs	4 = Daily	28,58	19,22
	e) Keep up to date on societal and political discussions on social media		28,95	19,22
	f) Produce social or political content on social media		28,54	19,22
	g) Share political or civic content created by others on social media		28,3	19,22
	h) Participate in civic or political discussion on social media		28,26	19,22
	i) Update a diet diary online		28,34	19,22
	j) Participate in online discussion concerning weight loss		28,42	19,22
	k) Watch exercise videos online		28,38	19,22
	l) Read blogs having to do with health or exercise		28,38	19,22
	m) Read blogs having to do with beauty or fashion		28,5	19,22
	n) Use online dating services		28,46	19,22

q26_a - q26_i	What do you think to the following statements?			
	a) I am interested in social media posts with which I disagree	1 = Completely disagree	28,22	19,7
	b) I feel that others are trying to affect my opinions through social media	...	28,26	19,54
	c) I am concerned that people I interact with will publicise content from my personal messages without my consent	3 = Do not disagree or agree	28,5	19,62
	d) I can trust that social media platforms such as Facebook will not publicise my personal messages	...	28,62	19,54
	e) Hate speech makes me think twice about participating in social media discussions	5 = Completely agree	28,58	19,54
	f) Social media sometimes creates appearance related worries in me		28,46	19,7
	g) Social media sometimes makes me feel like I need to lose weight		28,58	19,54
	h) Social media sometimes makes me feel like I need to be more muscular		28,34	19,62
	i) Social media sometimes makes me feel like I need to work harder on my appearance		28,38	19,54

27_a - 27_n	What do you think about the following statements?			
	a) Social media has made interactions between different population groups possible better than before	1 = Completely disagree	2,59	0,4
	b) Social media has brought equality to various population groups in terms of civic activity	...	2,63	0,56
	c) Social media has increased citizens' political	3 = Do not disagree or agree	2,96	0,72
	d) Users can freely express their opinions on social	...	3,32	0,64
	e) Harmful information of commercial actors are purposefully spread on social media	5 = Completely agree	3,12	0,72
	f) Social media has improved the level of influence of consumers		2,96	0,88
	g) Social media discussions should be more monitored due to hateful and attacking tendencies		3,04	0,56
	h) I am concerned with the spread of fake news on social media		2,63	0,64
	i) Algorithms direct users' access to information too much online		6,76	0,8
	j) It is alright to comment on other users' appearance on social media if the comment is positive		3,12	1,04
	k) It is alright to comment on the appearance of public figures on social media		2,96	0,72
	l) It is alright to comment on another person's appearance on social media if it has to do with attire rather than physical traits.		2,71	0,8
	m) It is alright to comment on another person's appearance on social media if that person is not aware		3,08	0,96
	n) Commenting on another person's appearance is not acceptable in any circum-		2,83	1,12

28_1 - 28_20	Listed below are the most common forms of civic participation.			
	1. Voted in parliamentary elections	0 = No	1,09	0,85
	2. Voted in municipal elections	1 = Yes	1,01	0
	3. Voted in E.U. elections		1,42	0
	4. Been an electoral candi-		0,81	0
	5. Participated in a na-		0,81	0
	tional panel			
	6. Participated in a public demonstration		0,85	0
	7. Boycotted products or companies for political, ethical or environmental		0,81	0
	8. Purchased products for political, ethical or envi-			
	ronmental reasons		0,89	0
	9. Been active in the activ-			
	ities of the Church or an-		0,85	0
	other religious community			
	10. Participated in a sports or exercise club		0,85	0
	11. Donated money to		0,85	0
	12. Acted as a volunteer		0,93	0
	13. Participated in a local community group meeting		0,77	0
	14. Contacted a politician		0,81	0
	15. Participated in illegal civic or political activity		0,81	0
	16. Written an online re-			
	view of a product or ser-		0,81	0
	17. Participated in profes-			
	sional position of trust		0,81	0
	18. Been a member of a political party		0,81	0
	19. Been active in an NGO		0,85	0
	20. Been active in a stu-			
	dent association		0,85	0

q29	<p>Which of the following political parties is most important to you? Select one.</p>	<ol style="list-style-type: none"> 1. Centre Party 2. Finns Party 3. NCP 4. SDP 5. Green League 6. Left Alliance 7. RKP 8. Christian Democ- rate 9. Blue Reform 10. Other, which? 11. None 	3,08	1,2
q29_2	Other party (see q29)			
q30	<p>There is often talk of the left and right in addition to liberal and conservative values. Where would you place yourself along the following scale? (0–10)</p>	0 = left – 10 = right	8,83	5,66
q30_b	<p>There is often talk of the left and right in addition to liberal and conservative values. Where would you place yourself along the following scale? (0–10)</p>	0 = liberal – 10 = conservative	12,39	6,62

q31_a - q31_o	How do you relate to the following?			
	a) The right to have an abortion	0 = Very negatively	1,13	1,04
	b) Protecting Christian values	...	1,26	0,48
	c) Placing economic policy ahead of environmental policy	10 = Very positively	1,78	0,56
	d) Increasing immigration		1,26	0,48
	e) Same-sex marriage		1,78	0,72
	f) Increasing the military budget		1,54	0,48
	g) The diminishing importance of the nuclear family		1,98	0,88
	h) Protecting patriotism		1,82	0,48
	i) Cuts to social security		2,11	0,48
	j) Dismantling of the current welfare society		1,7	0,56
	k) Outsourcing public services		2,15	0,64
	l) Depopulation of rural areas		1,5	1,12
	m) Regional concentration of welfare services		1,58	1,04
	n) Deregulating store hours of operation		1,38	0,56
	o) Deregulating the sale of alcohol		1,01	0,72
q32_a - q32_m	How trustworthy do you consider the following?			
	a) Parliament	0 = Not trustworthy at all	1,46	0,72
	b) The Finnish justice system	...	1,05	0,56
	c) Police	5 = Very trustworthy	1,7	0,88
	d) Politicians		1,46	0,48
	e) Political parties		1,54	0,8
	f) European parliament		1,9	0,56
	g) Traditional news media (e.g. Yle, HS)		1,34	0,56
	h) Tabloid journalism (e.g. Iltalehti)		1,66	1,04
	i) Alternative media (e.g. MV-lehti)		4,45	0,64
	j) Google		3,4	0,48
	k) Facebook		4,62	0,48
	l) Apple		5,87	0,48
	m) Amazon		7,21	1,12

33_a - 33_f	To what extent...			
	a) do you have friends and acquaintances compared to others your age	1 = Not at all	1,01	0,4
	b) do you have friends and acquaintances on social media	...	2,51	0,4
	c) do you trust your friends and acquaintances on social media	5 = Very much	4,78	0,56
	d) are you in contact with your friends and acquaintances on social media		3,4	0,8
	e) are you in contact with strangers on social media		3,6	0,64
	f) does social media help your feelings of loneliness		4,05	0,96
q34	Are you lonely?	1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = Always	3,32	0,72
q35_a - q35_g	Please answer the following questions that apply to you with yes or no			
	a) Have you been targeted by threat or attack on social media?	1 = Yes	2,39	0,4
	b) Have you been falsely accused online?	2 = No	2,55	0,56
	c) Have you been falsely accused in print?		2,02	0,48
	d) Has your online account been stolen or a new account made with your name without your permission?		2,63	0,56
	e) Have you been targeted with hateful or degrading material on the Internet?		2,75	0,4
	f) Have you experienced sexual harassment social media?		2,87	0,72
	g) During the past 3 months, have you seen hateful or degrading writing or speech online inappropriately attacking individuals or groups?		3,78	0,64

q36_a - q36_i	How would you rate the following on a scale from 0–10?			
	a) Your financial situation (0 very bad – 10 very good)	0 = very bad – 10 = very good	0,65	0,72
	b) Your prospects for the future (0 very bad – 10 very good)	0 = very bad – 10 = very good	0,81	0,88
	c) Your happiness (0 very unhappy – 10 very happy)	0 = very unhappy – 10 = very happy	0,65	0,72
	d) Your satisfaction of your life (0 Very unsatisfied – 10 very satisfied)	0 = Very unsatisfied – 10 = very satisfied	0,85	0,72
	e) Your trust in people in general (0 you can never be too careful – 10 most people are trustworthy)	0 = you can never be too careful – 10 = most people are trustworthy	0,77	0,56
	f) Your health (0 very poor – 10 very good)	0 = very poor – 10 = very good	0,53	0,8
	g) Your self esteem (0 very poor – 10 very strong)	0 = very poor – 10 = very strong	0,93	0,8
	h) Your understanding of social issues (0 very poor – 10 very good)	0 = very poor – 10 = very good	0,65	0,56
	i) Your interest in politics (0 very little – 10 very interested)	0 = very little – 10 = every interested	0,65	0,8
q37_a - q37_e	How content are you with your...			
	a) face	1= Not content at all	1,13	0,4
	b) weight	...	1,01	0,48
	c) height	3 = Somewhat content	1,38	0,4
	d) body	...	1,38	0,4
	e) overall appearance	5 = Very content	1,09	0,64
q38	In adding all household income (including social, retirement, and other benefits), what is your household's total income after taxes per month? If you do not remember exact amounts, make the closest possible estimation.	€/month	4,86	8,29

weight1	Weight coefficient of age and gender
weight2	Weight coefficient of social media usage
weight3	Weight coefficient of education

APPENDIX 3 ORIGINAL FINLAND IN THE DIGITAL AGE -QUESTIONNAIRE FORM

Finland in the Digital Age

Please circle the most appropriate option or write it in the space provided.

I Background information

1. Are you? 1 Male 2 Female 3 Other

2. What is your birth year? _____

3. What is your postal code? _____

4. Are you in a relationship? 1 Yes 2 No

5. a) Adults living in your household _

b) Minors living in your household _____

6. What is your highest level of education achieved?

1. Primary school
2. Vocational school
3. Secondary school
4. College
5. Degree in applied sciences
6. University degree
7. Doctoral or licentiate degree
8. Other, what? _____

7. Field of highest degree achieved?

(For example, technical or scientific)

8. What is your main activity?

1. Salary work/on leave
2. Entrepreneur
3. Unemployed/seeking employment
4. Retired
5. Student
6. Other, what? _____

If you are not working at the moment, answer questions 9 and 10 according to your most recent work experience

9. What is your vocation? Answer according to your primary activity (if entrepreneur, indicate field)

10. What is your sector of employment?

1. Municipality
2. Government
3. Private company
4. Organisation
5. Other: _____

II Median käyttö

11. How often do you do the following?

1) Never 2) Less than weekly 3) Weekly 4) Daily 5) Many times per day

a) Use the Internet	1	2	3	4	5
b) Watch television	1	2	3	4	5
c) Read print media in the form of news or periodicals	1	2	3	4	5
d) Read online news or periodicals	1	2	3	4	5
e) Follow political or societal news in traditional media (for example television, newspapers, radio)	1	2	3	4	5
f) Listen to radio programs or podcasts	1	2	3	4	5
g) Listen to music	1	2	3	4	5
h) Watch movies or television programs	1	2	3	4	5
i) Watch sports	1	2	3	4	5
j) Watch adult entertainment	1	2	3	4	5
k) Read blogs	1	2	3	4	5
l) Comment on blogs	1	2	3	4	5
m) Spend time on chat forums	1	2	3	4	5
n) Write in chat forums	1	2	3	4	5
o) Spend time on social media platforms (Facebook, Twitter, etc)	1	2	3	4	5
p) Participate in discussions on social media platforms	1	2	3	4	5
q) Use instant messenger applications (WhatsApp, Facebook messenger, etc)	1	2	3	4	5
r) Comment on news on online news sites	1	2	3	4	5
s) Read the comments of others on news sites	1	2	3	4	5

12. How interested are you in the following forms of news?	Not at all interested				Very interested
a) Entertainment news	1	2	3	4	5
b) Sports news	1	2	3	4	5
c) Arts and cultural news	1	2	3	4	5
d) News related to well being	1	2	3	4	5
e) International news	1	2	3	4	5
f) Political news	1	2	3	4	5
g) Economic news	1	2	3	4	5
h) Scientific news	1	2	3	4	5

13. Which of the following best describes the importance of the following devices in your daily life?	Do not use	I use it, but not necessity	I use it and it is necessity
a) Smartphone	1	2	3
b) Computer	1	2	3
c) Tablet computer (Ipad, for example)	1	2	3
d) Home internet connection (DSL, etc)	1	2	3
e) Internet on a mobile device	1	2	3
f) Smartwatch or wrist computer	1	2	3
g) Sports/activity tracker	1	2	3

Note: If you do not use the Internet, please skip to question 27.

14. To what extent do the following Internet activities describe you?	Not at all	Very little	Some what	Well	Very well
a) I know how to download and save files from the Internet (For example, pictures)	1	2	3	4	5
b) I know how to upload files to online platforms (For example, Facebook or Dropbox)	1	2	3	4	5
c) I know how to adjust my browser's privacy settings	1	2	3	4	5
d) I know how to connect devices to wireless Internet	1	2	3	4	5
e) It is easy for me to determine appropriate search terms when looking for something online	1	2	3	4	5
f) I can easily find my past Internet history	1	2	3	4	5
g) I know how to use private browsing settings online (For example, incognito mode)	1	2	3	4	5
h) I know how to delete my online browsing history	1	2	3	4	5
i) I know how to turn my location services on and off	1	2	3	4	5
j) I know how to edit existing images and video	1	2	3	4	5
k) I know how copywrite limits the use of online content	1	2	3	4	5
l) I know what programs and files are save to download	1	2	3	4	5
m) I understand the costs of using mobile applications	1	2	3	4	5
n) I know how to download and install applications to my mobile device	1	2	3	4	5

15. Have you used the following services?

	Never	Less than Weekly	Weekly
a) Ruokakassi-kuljetuspalvelu	1	2	3
b) Airbnb	1	2	3
c) Wolt	1	2	3
d) Foodora	1	2	3
e) Uber	1	2	3

16. To what extent do you feel that the INTERNET is important in carrying out the following

	Not at all important	Not very important	Somewhat important	Quite important	Extremely important
a) Banking	1	2	3	4	5
b) Reservations/appointments (Medical, for example)	1	2	3	4	5
c) Keeping up with the news	1	2	3	4	5
d) Research on health or sickness	1	2	3	4	5
e) Research on goods and services	1	2	3	4	5
f) Purchasing services	1	2	3	4	5
g) Purchasing travel and lodging services	1	2	3	4	5
h) Clothing purchases	1	2	3	4	5
i) Purchasing new products	1	2	3	4	5
j) Purchasing used products	1	2	3	4	5
k) Selling of personal products or services	1	2	3	4	5
l) Keeping in contract with other people	1	2	3	4	5
m) Playing games	1	2	3	4	5
n) Listening to music	1	2	3	4	5
o) Watching sports	1	2	3	4	5
p) Watching movies or television programs	1	2	3	4	5
q) Watching adult entertainment	1	2	3	4	5
r) Consuming other art or culture	1	2	3	4	5
s) Giving customer feedback	1	2	3	4	5

17. What is your opinion on the following statements?

	Completely disagree		Do not agree or disagree		Completely agree
a) I want to use various Internet sources to search for information on subjects that I am interested in	1	2	3	4	5
b) I always make sure that what I share on the Internet is trustworthy/accurate	1	2	3	4	5
c) I prefer to search for information from sites where the writer's points of view are in line with my own	1	2	3	4	5
d) When searching for information online, I trust my friends on social media most	1	2	3	4	5
e) Seeking out accurate/trustworthy information online requires significant effort	1	2	3	4	5

Note: If you do not use social media at all, please skip to question 27. By social media we mean social networking sites (for example Facebook, Twitter), instant messaging applications (WhatsApp), discussion forums and blogs

18. What do you think about the following statements? I use social media in order to...	Compl etely disagr ee	2	3	4	5	Do not disagree or agree	Compl etely agree
a) receive completely new information	1	2	3	4	5		
b) receive more information on things I already know about	1	2	3	4	5		
c) get followers	1	2	3	4	5		
d) share useful information with others	1	2	3	4	5		
e) express my societal opinions	1	2	3	4	5		
f) comment on and share news	1	2	3	4	5		
g) participate in the activities of a particular online group	1	2	3	4	5		
h) affect the opinions of others	1	2	3	4	5		
i) participate in an activist group	1	2	3	4	5		
j) keep in touch with people I already know	1	2	3	4	5		
k) get to know new people	1	2	3	4	5		
l) tell others about my life and how I am doing	1	2	3	4	5		
m) network with other users	1	2	3	4	5		
n) entertain myself	1	2	3	4	5		
o) entertain my friends and acquaintances	1	2	3	4	5		
p) receive positive feedback	1	2	3	4	5		
q) receive economic benefit/income	1	2	3	4	5		
r) follow various celebrities	1	2	3	4	5		
s) follow political figures	1	2	3	4	5		

19. to what extent do the following describe your activity?	Not at all	Very little	Some what	Well	Very well
a) I know what is appropriate to share online	1	2	3	4	5
b) I know when it is appropriate to share online	1	2	3	4	5
c) I know with whom it is appropriate to share personal information online	1	2	3	4	5
d) I know how to remove friends and followers from social networking services	1	2	3	4	5

20. To what extent do the following describe your social media activity?	Not at all	1	2	3	4	5	6	7	Compl etely
a) I belong to social media communities or groups that are an important part of me	1	2	3	4	5	6	7		
b) I belong to social media communities or groups that I am proud of	1	2	3	4	5	6	7		
c) In my experience, other people on social media share my point of view	1	2	3	4	5	6	7		
d) On social media, I interact only with people with whom I share similar interests	1	2	3	4	5	6	7		
e) I trust information that is shared with me on social media	1	2	3	4	5	6	7		
f) I interact exclusively with people who are like me on social media	1	2	3	4	5	6	7		

21. What do you think of the following statements?	Completely disagree	1	2	3	4	5	Completely agree
a) I have hidden content that conflicts with my points of view on social media	1	2	3	4	5		
b) I purposefully share material on social media that I believe will provoke others	1	2	3	4	5		
c) I do not "like" others' posts if I do not agree with them	1	2	3	4	5		
d) I very often "like" other users' posts in order to show support and empathy	1	2	3	4	5		
e) The fear of offending others limits my posting of my opinions on social media	1	2	3	4	5		
f) I try to give others on social media an improved image of who I am	1	2	3	4	5		
g) I have hidden or removed annoying or bothersome users on social media	1	2	3	4	5		
h) I comment on others' posts on social media even when I disagree with them	1	2	3	4	5		
i) I avoid sharing content on social media that I feel could lead to disputes	1	2	3	4	5		

22. How often...

1) Never 2) Less than weekly 3) Weekly 4) Daily

a) do you have difficulty in stopping social media use?	1	2	3	4
b) have other people said you should use social media less?	1	2	3	4
c) Have you left important work, school or family related things undone due to social media use?	1	2	3	4
d) do you use social media to alleviate feeling bad or stress?	1	2	3	4
e) do you plan your social media use beforehand?	1	2	3	4

23. How often do you use the following social media services?

1) Never 2) Less than weekly 3) Weekly 4) Daily 5) Many hours per day

a) Facebook	1	2	3	4	5
b) Twitter	1	2	3	4	5
c) Instagram	1	2	3	4	5
d) Snapchat	1	2	3	4	5
e) YouTube	1	2	3	4	5
f) LinkedIn	1	2	3	4	5
g) Pinterest	1	2	3	4	5
h) Facebook Messenger	1	2	3	4	5
i) WhatsApp	1	2	3	4	5
j) Jodel	1	2	3	4	5
k) Vimeo	1	2	3	4	5

24. If you use the following social media services, how many friends or followers do you have?

Facebook _____ Twitter _____ Instagram _____ Snapchat _____ LinkedIn _____ Pinterest _____
Other platforms altogether _____

25. How often do you do the following?

1) *Never* 2) *Less than weekly* 3) *Weekly* 4) *Daily*

a) Share your own created content (status updates, pictures or videos) on social media	1	2	3	4
b) Share content created or shared by others on social media	1	2	3	4
c) Send confidential or sensitive messages on messaging applications	1	2	3	4
d) Use social media while also watching television programs	1	2	3	4
e) Keep up to date on societal and political discussions on social media	1	2	3	4
f) Produce societal or political content on social media	1	2	3	4
g) Share political or societal content created by others on social media	1	2	3	4
h) Participate in societal or political discussion on social media	1	2	3	4
i) Update a diet diary online	1	2	3	4
j) Participate in online discussion concerning weight loss	1	2	3	4
k) Watch exercise videos online	1	2	3	4
l) Read blogs having to do with health or exercise	1	2	3	4
m) Read blogs having to do with beauty or fashion	1	2	3	4
n) Use online dating services	1	2	3	4

26. What do you think to the following statements?

	Compl etely disagr ee		Do not agree or disagree		Compl etely agree
a) I am interested in social media posts with which I disagree	1	2	3	4	5
b) I feel that others are trying to affect my opinions through social media	1	2	3	4	5
c) I am concerned that people I interact with will publicise content from my personal messages without my consent	1	2	3	4	5
d) I can trust that social media platforms such as Facebook will not publicise my personal messages	1	2	3	4	5
e) Hate speech makes me think twice about participating in social media discussions	1	2	3	4	5
f) Social media sometimes creates appearance related worries in me	1	2	3	4	5
g) Social media sometimes makes me feel like I need to lose weight	1	2	3	4	5
h) Social media sometimes makes me feel like I need to be more muscular	1	2	3	4	5
i) Social media sometimes makes me feel like I need to work harder on my appearance	1	2	3	4	5

III Social values and participation

27. What do you think about the following statements?	Compl etely disagr ee	2	3	4	Complet ely agree
a) Social media has made interactions between different population groups possible better than before	1	2	3	4	5
b) Social media has brought equality to various population groups in terms of civic activity	1	2	3	4	5
c) Social media has increased citizens' political awareness	1	2	3	4	5
d) Users can freely express their opinions on social media	1	2	3	4	5
e) Harmful information of commercial actors are purposefully spread on social media	1	2	3	4	5
f) Social media has improved the level of influence of consumers	1	2	3	4	5
g) Social media discussions should be more monitored due to hateful and attacking tendencies	1	2	3	4	5
h) I am concerned with the spread of fake news on social media	1	2	3	4	5
i) Algorithms direct users' access to information too much online	1	2	3	4	5
j) It is alright to comment on other users' appearance on social media if the comment is positive	1	2	3	4	5
k) It is alright to comment on the appearance of public figures on social media	1	2	3	4	5
l) It is alright to comment on another person's appearance on social media if it has to do with attire rather than physical traits.	1	2	3	4	5
m) It is alright to comment on another person's appearance on social media if that person is not aware of the comment	1	2	3	4	5
n) Commenting on another person's appearance is not acceptable in any circumstance	1	2	3	4	5

28. Listed below are the most common forms of civic participation. Please circle all options that you have done in the past five (5) years.

- | | |
|------------------------------------------------------------------------------------|---------------------------------------------------------|
| 1. Voted in parliamentary elections | 11. Donated money to charity |
| 2. Voted in municipal elections | 12. Acted as a volunteer |
| 3. Voted in E.U. elections | 13. Participated in a local community group meeting |
| 4. Been an electoral candidate | 14. Contacted a politician |
| 5. Participated in a national panel | 15. Participated in illegal civic or political activity |
| 6. Participated in a public demonstration | 16. Written an online review of a product or service |
| 7. Boycotted products or companies for political, ethical or environmental reasons | 17. Participated in professional position of trust |
| 8. Purchased products for political, ethical or environmental reasons | 18. Been a member of a political party |
| 9. Been active in the activities of the Church or another religious community | 19. Been active in an NGO |
| 10. Participated in a sports or exercise club | 20. Been active in a student association |

29. Which of the following political parties is most important to you? Select one.

- | | | |
|-----------|-----------------------|-------------------------|
| 1. Centre | 5. Green League | 9. Blue Reform |
| 2. Finns' | 6. Left Alliance | 10. Other, which? _____ |
| 3. NCP | 7. RKP | 11. None |
| 4. SDP | 8. Christian Democate | |

30. There is often talk of the left and right in addition to liberal and conservative values.

Where would you place yourself along the following scale?

Left												Right
	0	1	2	3	4	5	6	7	8	9	10	
Liberal												Conservative
	0	1	2	3	4	5	6	7	8	9	10	

31. How do you relate to the following?

	Very negativel y										Very positively											
	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
a) The right to have an abortion	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
b) Protecting Christian values	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
c) Placing economic polityy ahead of environmental policy	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
d) Increasing immigration	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
e) Same-sex marriage	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
f) Increasing the military budget	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
g) The diminishing importance of the nuclear family	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
h) Protecting patriotism	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
i) Cuts to social security	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
j) Dismantling of the current welfare society	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
k) Outsourcing public services	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
l) Depopulation of rural areas	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
m) Regional concentration of welfare services	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
n) Deregulating store hours of operation	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
o) Deregulating the sale of alcohol	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10

32. How trustworthy do you consider the following?

	Not trustworthy at all					Very trustworthy				
	1	2	3	4	5	1	2	3	4	5
a) Parliament	1	2	3	4	5	1	2	3	4	5
b) The Finnish justice system	1	2	3	4	5	1	2	3	4	5
c) Police	1	2	3	4	5	1	2	3	4	5
d) Politicians	1	2	3	4	5	1	2	3	4	5
e) Political parties	1	2	3	4	5	1	2	3	4	5
f) European parliament	1	2	3	4	5	1	2	3	4	5
g) Traditional news media (e.g. Yle, HS)	1	2	3	4	5	1	2	3	4	5
h) Tabloid journalism (e.g. Iltalehti)	1	2	3	4	5	1	2	3	4	5
i) Alternative media (e.g. MV-lehti)	1	2	3	4	5	1	2	3	4	5
j) Google	1	2	3	4	5	1	2	3	4	5
k) Facebook	1	2	3	4	5	1	2	3	4	5
l) Apple	1	2	3	4	5	1	2	3	4	5
m) Amazon	1	2	3	4	5	1	2	3	4	5

IV Social relationships and well being

33. To what extent...

	None					Very much
	1	2	3	4	5	
a) do you have friends and acquaintances compared to others your age	1	2	3	4	5	
b) do you have friends and acquaintances on social media	1	2	3	4	5	
c) do you trust your friends and acquaintances on social media	1	2	3	4	5	
d) are you in contact with your friends and acquaintances on social media	1	2	3	4	5	
e) are you in contact with strangers on social media	1	2	3	4	5	
f) does social media help your feelings of loneliness	1	2	3	4	5	

34. Are you lonely?

	Never	Rarely	Sometimes	Often	Alwa ys
	1	2	3	4	5

35. Please answer the following questions that apply to you with yes or no

a) Have you been targeted by threat or attack on social media?	Yes	No
b) Have you been falsely accused online?	Yes	No
c) Have you been falsely accused in print?	Yes	No
d) Has your online account been stolen or a new account made with your name without your permission?	Yes	No
e) Onko sinuun kohdistettu vihamielistä tai halventavaa materiaalia internetissä? Have you been targeted with hateful or degrading material on the Internet?	Yes	No
f) Have you experienced sexual harassment social media?	Yes	No
g) During the past 3 months, have you seen hateful or degrading writing or speech online inappropriately attacking individuals or groups?	Yes	No

36. How would you rate the following on a scale from 0-10?

a) Your financial situation (0 very bad – 10 very good)	0	1	2	3	4	5	6	7	8	9	10
b) Your prospects for the future (0 very bad – 10 very good)	0	1	2	3	4	5	6	7	8	9	10
c) Your happiness (0 very unhappy – 10 very happy)	0	1	2	3	4	5	6	7	8	9	10
d) Your satisfaction of your life (0 Very unsatisfied – 10 very satisfied)	0	1	2	3	4	5	6	7	8	9	10
e) Your trust in people in general (0 you can never be too careful – 10 most people are trustworthy)	0	1	2	3	4	5	6	7	8	9	10
f) Your health (0 very poor – 10 very good)	0	1	2	3	4	5	6	7	8	9	10
g) Your self esteem (0 very poor – 10 very strong)	0	1	2	3	4	5	6	7	8	9	10
h) Your understanding of societal issues (0 very poor – 10 very good)	0	1	2	3	4	5	6	7	8	9	10
i) Your interest in politics (0 very little – 10 very interested)	0	1	2	3	4	5	6	7	8	9	10

37. How content are you with your...

	Not content at all		Somewhat content		Very content
a) face	1	2	3	4	5
b) weight	1	2	3	4	5
c) height	1	2	3	4	5
d) body	1	2	3	4	5
e) overall appearance	1	2	3	4	5

38. In adding all household income (including social, retirement, and other benefits), what is your household's total income after taxes per month? If you do not remember exact amounts, make the closest possible estimation.

_____ €/month

Please use the space below to add any additional information to your answers or anything else you wish to share:

Thank you for your participation! Please return the filled form in the prepaid envelope to University of Turku