



Public values concerning digital technologies

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'Making the hidden visible: Co-designing for public values in standards-making and governance' (IN-SIGHT) in collaboration with I&O Research

Colofon

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Cite as Driessen, M., van de Koppel, M., Hollander, D., Milan, S., de Vos, J., & ten Oever, N. (2024). *Public values concerning digital technologies*. Amsterdam.

This research is supported by Dutch Research Council (NWO) through the Responsible Innovation research project (grant MVI.19.032).

February 2024



Preface

Making the hidden visible: Co-designing for public values in standards-making and governance (IN-SIGHT)

While deeply woven into our everyday life, digital infrastructure—from network switches to public administration databases—is typically invisible to users. The process of standard-making, in particular, remains a blind spot.

Standardization describes and uniforms a set of criteria, often of a technical nature, the associated practices and methods enabling the interoperability of networks and datasets. Standards thus mediate societal life, thus our ability to enact our citizenship and enjoy human rights in the digital age. Straddling computer science, sociology, law, and media studies, this project investigates standard-making in relation to democratic values and practices. It asks how the public sphere is governed today through the standardization of the digital and how to support societal values in the creation of standards. Specifically, it looks at standard-making as a socio-technical practice, analyzing technology development and implementation, the related governance arrangements and legal aspects, in the development and implementation of 5th generation (5G) cellular mobile communication and identity management standards. In so doing, the project contributes to illuminating the “wiring” of values (or lack thereof) into technical standards, the relation and the balance of power between a variety of public (e.g., states) and private actors (e.g., the industry, consumers), informal lawmaking and multistakeholder governance mechanisms.

The project is led by Stefania Milan, Professor of Critical Data Studies, and Paul Groth, Professor of Algorithmic Data Science (University of Amsterdam). Team: Xue Li (Effy) (PhD Student), Martin Trans (Project Manager/Researcher), Niels ten Oever (Postdoctoral Fellow 2020-2023), Mando Rachovitsa (Researcher, 2020-2023), Jeroen de Vos (Project Manager/Researcher, 2020-2023), Madelon Hulsebos (Researcher, 2023).

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Main findings

The aim of this study is to provide a representative overview of how Dutch people think about digital technologies and standardisation, and their own role in how these are created. It seeks to provide insight into what Dutch people find important when it comes to digital technologies, as well as into the extent to which they feel involved in the development of digital technologies and the standards with which these technologies must comply.

This study arises from the ‘IN-SIGHT’ scientific research project by researchers from the University of Amsterdam, which focuses on the role that public values play in digital technology (and the development thereof). The survey was carried out among 2,154 Dutch people from the I&O Research Panel and is representative of the Dutch population (18+).

Positivity about the role of digital technology, but also widely shared concerns

Most Dutch people like using digital technologies (70%), one in eight people prefer to use them ‘as little as possible’ (14%). In addition, most people feel they have a lot of knowledge about digital technologies (55%), while a quarter (25%) of them say they have little knowledge.

Almost no one said that they have ‘no concerns whatsoever’ about the role that digital technologies play in society (2%). One in ten people have few concerns while over half have (a lot of) concerns. Dutch people are most likely to have concerns about privacy and security (‘cyberattacks and cybercrime’, 71%; ‘use of personal data and information by companies’, 57%). The Dutch are less concerned about the accessibility of the online world (37%), unequal treatment of vulnerable groups (19%) or not having a say in the development of digital technologies (9%).

Hence most people have concerns about digital technologies to varying degrees. But do they feel that they can also do something about these concerns? Do they perceive possible avenues for remedial action?

Agency: can you make informed choices and express your concerns?

Most Dutch people (60%) do not know where they can express their concerns about digital technologies. Approximately half of the population feel they are able to make well-informed choices on which digital technologies they want to use. A quarter (24%) of people does not feel that way.

After compiling the answers to questions related to agency, the results are classified into *above-average* (46%) or *below-average* (49%) when it comes to agency in the field of digital technology: people with a higher degree of agency are more likely say that they know where they can express their concerns and that they are capable of making informed choices. Dutch people who have less agency find digital technologies less important in their personal and professional lives. We also see that this group wants to minimise their use of digital technologies. In addition, it is relatively common for them to be young (18 to 24 years), female and highly educated. They are also more likely to regard themselves as having little knowledge of digital technologies.

People with low agency are more likely to have concerns

Dutch people who have less agency when it comes to digital technologies are slightly more likely to be concerned about digital technologies (58%) than people with greater agency (49%). They are generally concerned about the same things, namely privacy and cybersecurity.

Approximately four in ten Dutch people - with differing degrees of agency - say that they sometimes do not use digital technologies because they are concerned about ethical aspects, safety, privacy or similar matters. For example, not using social media for privacy reasons.

Safety and privacy perceived as main values in the design of digital technology

Dutch people are primarily concerned about the safety and privacy of digital technologies. This is in keeping with the values that people find most important in relation to their design: they most strongly agree with the statements '*Technologies should be safe and secure. All users, from childhood to old age, should be safe and protected*' (68%) and '*Privacy and data protection should be core design principles*' (57%). This is generally the same among people with a higher or a lower level of agency.

Besides safety and privacy, people also attach most significance to **liability**¹ (41%) and **autonomy** (31%). These are followed by **responsibility** and **justice**, which were selected by approximately a quarter of all respondents. Dutch people find **sustainability** (11%) and **trust** (8%) the least important factors in the design of digital technologies.

However, more so than other groups, sustainability is deemed more important by young people, people who are highly educated and people who vote for progressive left-wing parties. Relatively speaking, people who have only completed secondary and senior secondary education attach a lot of importance to 'justice'.

Four in ten Dutch people believe that not enough attention is given to human rights when designing and producing digital technologies. The same proportion believe that digital technologies can be discriminatory. Quite a large group of people do not know how things stand in terms of discrimination (18%) and human rights (25%), or have a 'neutral view' on these matters (both 20%). People who vote for progressive left-wing parties (SP, Partij voor de Dieren, Partij van de Arbeid, GroenLinks) are more likely than right-wing voters to think that not enough attention is being paid to human rights and discrimination.

Half of all Dutch people have not heard of standardisation processes

Many of the things that we use are compliant with standards. These standards are agreements about the criteria that products or services must meet. Technological tools and services also have to comply with standards. For example, there are standards for how USB cables work and for the voltage and design of power sockets.

Half of all Dutch people are completely unfamiliar with such technological standardisation processes. 59 percent of people with a low sense of agency are unfamiliar with these processes, while this is 39 percent for people with a high sense of agency.

In particular, people who encounter a lot of standards in their daily lives know how standardisation processes work: 31 percent of people that work 'a lot' with standards say that they know how they work. This is only 4 percent among people who never encounter standards in their day-to-day work.

¹ The full set of statements that reflect these values, as presented to respondents, can be found in Chapter 2 (Table 2.6).

'The public has little influence on the development of technological standards'

Most Dutch people think that the public (citizens) has little influence on the development of technological standards (63%). Furthermore, people with a high sense of agency often think that the public has little or no influence (57%) on the development of technological standards (this is no less than 70% percent among people who have less agency). The same goes for people who have personal knowledge about how technological standardisation works: although they are more likely to attribute influence than people who do not possess such personal knowledge, a majority (ca. 6 in 10) think that the public has no influence whatsoever on standardisation.

On balance, Dutch people would prefer the public to have more influence, rather than less influence, on the development of technological standards: 47 percent would prefer to see the public having (slightly) more influence, compared to 10 percent who would prefer to see less influence. This applies to people who have either high or low agency, as well as to enthusiastic and critical users of digital technologies. We did not find any significant differences between these groups.

Most people take measures to protect their privacy (online)

Nine in ten Dutch people say that they take measures to protect their privacy online. Most of them (68%) take multiple measures. Over four in ten say that they occasionally change their passwords, delete or refuse cookies, or do not use public Wi-Fi networks. People with high agency change their passwords slightly more often, are slightly more likely to use a VPN, and delete their cookies more often.

Two types of technology examined more closely: 5G networks and DigiD

Based on random allocation (split-run method), respondents were asked questions about one of the two case studies: 5G mobile networks or digital identification technology (DigiD).

Most people are positive about these technologies, although they are more positive about DigiD (82% think that it is 'good that it exists') than they are about 5G (53%). However, there are also concerns about DigiD: 24 percent think that DigiD presents a risk to their privacy (67% do not think so). When it comes to 5G, 17 percent believe that 5G networks present a risk to their health (62% do not believe this).

'Citizens also have little influence on the development of DigiD and 5G'

Dutch people expect the development of DigiD and 5G to be influenced by different parties: for 5G, people mainly point to tech companies (71%); for DigiD, to central governments (76%). Central government is likely deemed to play a key role in DigiD – and much less so in 5G networks – due to the fact that DigiD is a government service. The public is not deemed to have a significant influence on both technologies (5G, 6% and DigiD, 7%).

1 Introduction

1.1 Background

Digital technologies – digital tools and services – are playing an increasingly key role within society. Almost every aspect of our daily lives involves the use of digital technologies in one way or another. This means we also encounter standards (sometimes without realising it), which are agreements about the criteria that our products and services must meet.

With the ‘IN-SIGHT’ project, researchers from the University of Amsterdam are investigating public values concerning digital technologies and standardisation processes. As part of this study, I&O Research conducted a survey among Dutch people in the summer of 2023.

1.2 Objective

The aim of the study is to provide a representative overview of how Dutch people think about digital technologies and standardisation, and their own role in how they are created. It seeks to provide insight into what Dutch people find important when it comes to digital technologies as well as into the extent to which they feel involved in the development of digital technologies and the standards with which these technologies must comply.

Research questions

Two research questions underlie this report:

- How do Dutch people think about the role that digital technologies play within society?
- How much agency do Dutch people have when it comes to the use and realisation of digital technologies?

The following sub-questions were compiled in order to answer these research questions:

- Are Dutch people concerned about the role that digital technologies play within society?
- What are their concerns?
- How are these concerns reflected in behaviour?
- How much agency do Dutch people have with regard to digital technologies?
- Are there differences between the types of digital technologies?
- How familiar are Dutch people with the role played by technological standardisation?
- To what extent should the public have an influence on the development of technological standards?

1.3 Explanation about study

The study entailed conducting a survey among Dutch people. The online questionnaire was conducted in Dutch and distributed among the I&O Research panel and could be completed between 21 July and 10 August 2023.

The questionnaire was developed by the researchers from the University of Amsterdam in correspondence with researchers from I&O Research. The questionnaire asked respondents about the personal relevance of digital technologies in their lives, how they would rate their level of knowledge in this area, and their values and concerns when it comes to technology. The second block of questions focused on behaviour relating to digital technologies. This was followed by several questions about two case studies: 5G networks and DigiD.

These questions were presented on a split-run basis, which means that half of the respondents – allocated randomly – received questions about 5G while the other half received questions about DigiD. The questionnaire ended for all respondents with a few questions about technological standardisation.

Response rate and weighting

In total, 4,191 members of the I&O Research panel received an invitation. After approximately one week, a reminder e-mail was sent to groups that were still relatively underrepresented. A second, targeted reminder e-mail was sent at the start of August. In the end, the questionnaire was completed by 2,154 panel members. This is a response rate of 51 percent.

The results of the survey were weighted based on age, gender, level of education, region and voting behaviour in the elections for the Dutch House of Representatives in 2021. Weighting was carried out based on the guidelines in the Golden Standard (Statistics Netherlands, CBS). This means the results of the study are representative of the Dutch voting population when it comes to the aforementioned background characteristics.

NB Because the questionnaire was completed online, people who possess fewer digital skills are – if not explained by background characteristics like age – likely underrepresented. As a result, there is a good chance that the results of this study somewhat overestimate the knowledge and use of digital technologies.

Reliability

In this study, we have assumed a reliability of 95 percent. As far as the main findings are concerned, there is an inaccuracy margin of around 1 or 2 percent. Where percentages do not add up to 100 percent, this can be attributed to the rounding off process.

1.4 Reader's guide

In this report, we have – wherever substantially and statistically significant – identified the differences between various groups, for example, based on age, level of education and voting behaviour during the last election for the Dutch House of Representatives (March 2021). One of the main comparisons involves people with a higher and lower degree of ‘agency’ (agency) when it comes to digital technologies. Here, agency means the extent to which someone perceives possible avenues for remedial action – for example, the feeling that they can raise their concerns. Paragraph 2.2 explains how people were categorised as above-average and below-average in terms of agency. Within the report, we always examine whether people with higher and lower agency have different ideas, wishes and behaviour when it comes to digital technologies.

Structure of the report

Chapter 2 is about the role that digital technologies play in people's everyday lives. We discuss how much and how often people like using digital technologies, which concerns they have about this theme, and to what extent Dutch people feel they can do something about these concerns (agency). Knowledge, values and behaviour relating to digital technologies are also addressed.

Chapter 3 handles the two case studies (5G and DigiD). We discuss to what extent there are differences in knowledge of, and opinions about, these digital technologies.

The last chapter discusses to what extent Dutch people are familiar with standardisation processes – establishing agreements about the criteria that must be met by digital tools and services. In addition, it focuses on the influence that the public think they have, and would like to have, in terms of the creation of standards.

Digital technology in our lives

This chapter discusses the role that digital technologies play in the lives of Dutch people. It addresses the importance of digital technologies in people's daily lives, and how people rate their personal knowledge concerning these technologies. We also discuss the concerns that people have about the role that these technologies play in today's society.

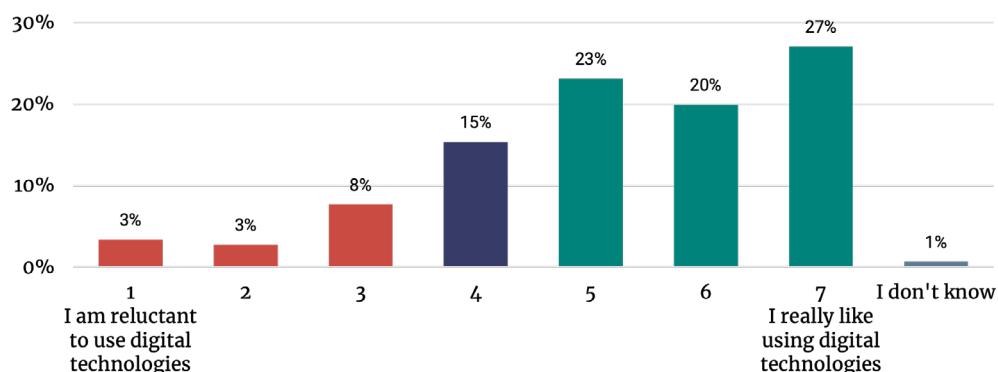
2.1 Personal relevance

Sizeable majority like using digital technologies

We presented the following statement to respondents: "Some people like using digital technologies in their day-to-day lives. Others only do this when absolutely necessary." The vast majority of respondents identified with the first group: 70 percent say that they are more likely to 'really like' using digital technologies (5 to 7 on the 7-point scale) than 'being reluctant to use digital technologies' (1 to 3, 14%). Fifteen percent choose the middle ground and decides to neither like using digital technology nor use it as little as possible.

*Figure 2.1 – Where would you place yourself on the spectrum, if 1 meant that you are reluctant to use digital technologies and 7 meant that you really like to use digital technologies?**

Basis: whole sample (n = 2,154).



* The following mouse-over explanation was shown for the question: "In this case, digital technology refers to digital tools (e.g. smartphones, navigation systems) and services (e.g. DigiD or WhatsApp) for daily use."

Young people prefer to use digital technologies more than the elderly

The most enthusiastic users of digital technologies can be found in the age categories 18 to 24 and 25 to 34 years. In these groups, 86 and 82 percent respectively like to use digital technologies, with an average score of 5.6 on the 7-point scale. The older the people are, the less likely they are to say that they 'really like' using digital technologies. Nonetheless, over half of the people under 65 years also 'really like' using digital technologies (57%). A quarter of them are reluctant to (average: 14%).

Figure 2.2 – Where would you place yourself on the spectrum, if 1 meant that you would prefer to use no digital technologies and 7 meant that you would like to use digital technologies?

Based on age. Basis: whole sample (n = 2,154).



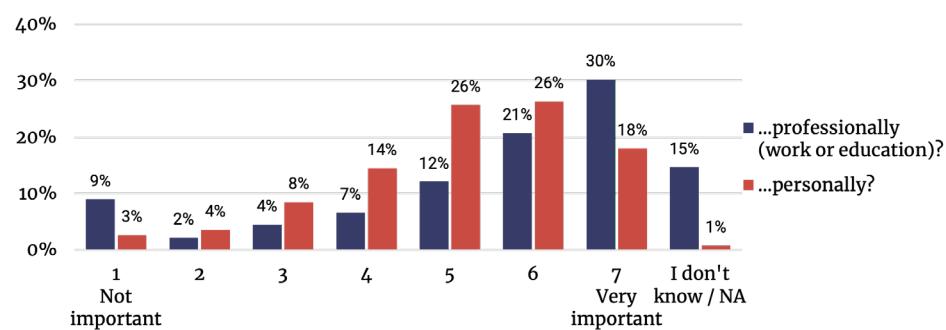
People who have completed higher education use digital technologies (79%) more than people who have only completed senior secondary (70%) and secondary education (56%). This also applies to men in comparison to women (75% vs 66%).

Digital technologies more important in personal life than on professional front

Most Dutch people find digital technologies important in their personal and/or professional lives. In their personal lives, 70 percent find digital technologies (very) important. From a professional perspective, this proportion is slightly smaller (63%) on average. However, for their professional lives, 30 percent opt for the highest possible answer, namely 'very important' (7 out of 7). For approximately one in seven Dutch people, digital technology is relatively unimportant in their personal (15%) or professional lives (16%).

Figure 2.3 – How important are digital technologies for you...*

Basis: whole sample (n = 2,154).



* The following mouse-over explanation was shown for the question: "In this case, digital technology refers to digital tools (e.g. smartphones, navigation systems) and services (e.g. DigiD or WhatsApp) for daily use."

The younger people are, the more likely they are to find digital technologies important – at both personal and professional level. However, Dutch people between 18 and 24 years and between 25 and 34 years barely differ from each other on this front.

People who have completed higher education are much more likely to find digital technologies important in their professional lives (80%) than people who have only completed senior secondary (64%) and secondary (35%) education. There are also differences based on education level when it comes to people's personal lives, but they are not as significant as at professional level: 77 percent of people who have completed higher education tend to find technologies

important rather than unimportant for their personal lives, compared to 70 percent of people who have only completed senior secondary education and 59 percent of people who completed secondary education.

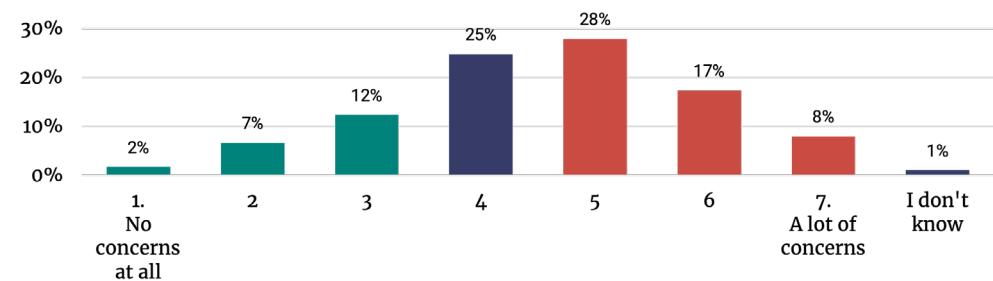
2.2 Concerns and agency

A majority of people are concerned about digital technologies

Dutch people are more likely to be concerned, rather than having no concerns at all, about the role that digital technologies play in society. On a 7-point scale, where 7 means they have 'a lot of concerns' and 1 means that they have 'no concerns at all', the Dutch population has an average score of 4.6. Slightly more than half (53%) tend to have a lot of concerns compared to no concerns at all. Approximately one in five people (21%) tend to have 'no concerns'.

Figure 2.4 – How concerned are you about the role that digital technologies play in our society? Where would you place yourself on the spectrum, if 1 means you have no concerns at all and 7 means that you have a lot of concerns?

Basis: whole sample (n = 2,154).



The elderly and people with a lower level of education have more concerns

Concerns about the role that digital technologies play in society are mainly found in groups where digital technologies play a less important role, relatively speaking. Older age groups are more likely to have a lot of concerns. For instance, 62 percent of people over 65 years are more likely to have a lot of concerns (5 to 7 on the scale) than no concerns (1 to 3 on the scale), while this applies to 40 percent among people between 18 and 34 years. People who only completed secondary education are also more likely to say they have concerns (59%) than people who completed senior secondary (56%) and higher (47%) education.

Table 2.1 – How concerned are you about the role that digital technologies play in our society? Where would you place yourself on the spectrum, if 1 means you have no concerns at all and 7 means that you have a lot of concerns?

Based on age and level of education. Basis: whole sample (n = 2,154).

7-Point scale	Total	Age					Education		
		18-24	25-34	35-49	50-64	65+	Sec.	Senior sec.	Higher
No concerns (1-3)	21%	31%	29%	22%	18%	15%	15%	18%	29%
4	25%	29%	31%	23%	24%	21%	24%	26%	24%
Many concerns (5-7)	53%	40%	40%	52%	58%	62%	59%	56%	47%
Don't know	1%	1%	1%	3%	0%	2%	3%	1%	0%

Most Dutch people do not know where they can express concerns about digital technologies

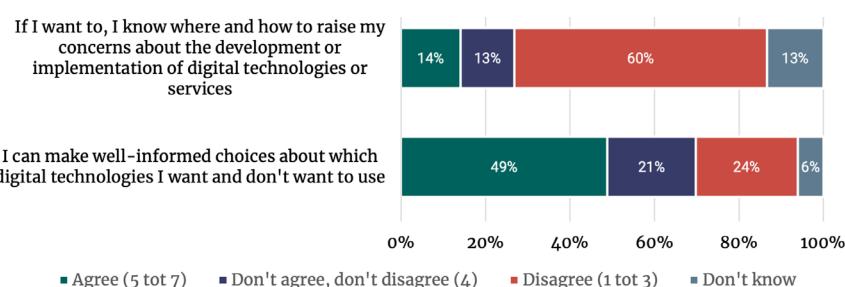
Therefore, most Dutch people have, to varying degrees, concerns about the role that digital technologies play within society. So the follow-up question is: can they do anything with these concerns? To what extent do people feel that they can take action when it comes to digital technologies? We presented two statements to respondents about their agency (agency) when it comes to digital technologies.

Most people do not know where they can express concerns about digital technologies. Sixty percent of people disagree with the statement 'If I want to, I know where and how to raise my concerns about the development or implementation of digital technologies or services'. One in seven people agrees with the statement, 2.8 was the average score on the 7-point scale (1 'completely disagree', 7 'completely agree').

We see a lightly more positive picture when it comes to making informed choices about people's personal use of digital technologies. Half of the people (49%) agree with the statement 'I can make well-informed choices about which digital technologies I want and don't want to use'. A quarter (24%) of people do not feel that way. One in five people place themselves exactly in the middle of the scale, and neither agrees nor disagrees with the statement. The average is 4.5 out of 7.

Figure 2.5 – To what extent do you agree or disagree with the following statements?

Basis: whole sample (n = 2,154).



Young people relatively often don't know where to express their concerns...

Table 2.2 shows the statement about being able to express concerns, broken down by age, education and gender. Younger Dutch people are more likely than average to not know where they can express any concerns (69% among people between 18 and 24 years and 66% among people between 25 and 34 years). This only applies to half of the people above 65 years. Dutch people who have completed higher education are also more likely to not know (68%) than people who have only completed senior secondary and secondary education (50% and 57% respectively). This does not mean that people who have only completed secondary and senior secondary education are more likely to know where they can go with their concerns: they also fail to answer this statement relatively often.

Table 2.2 – Agency statement 1: 'I know where I can express my concerns about the development or introduction of digital technologies, should I wish to do so'

Based on age, gender and education. Basis: whole sample (n = 2,154).

Scale	Total	Age					Education			Gender	
		18-24	25-34	35-49	50-64	65+	Sec.	Senior sec.	Higher	M	F
Disagree (1-3)	60%	69%	66%	63%	58%	52%	50%	57%	68%	59%	61%
Neutral (4)	13%	9%	15%	12%	13%	12%	12%	13%	13%	15%	11%
Agree (5-7)	14%	15%	10%	12%	16%	16%	16%	14%	12%	17%	11%
Don't know	13%	7%	9%	13%	13%	20%	21%	15%	7%	9%	18%

...but are more likely to find their personal choices well-informed

We also see several differences between Dutch people when it comes to the second statement about agency. For instance, young people (18 to 24 years) relatively often think that they are able to make well-informed choices about the digital technologies they do and do not want to use. This percentage fluctuates between 49 and 53 percent among older age groups. Relatively few people who have only completed secondary education have the impression that they can make well-founded decisions about their use of digital technologies (40%). Half of the Dutch people who have completed senior secondary and higher education believe they are capable of making such decisions. Men (54%) are also more likely to think this than women (44%).

Table 2.3 – Statement 2 agency: 'I can make well-informed choices about which digital technologies I want and don't want to use.' Differentiated by age, gender and education.

Based on age, gender and education. Basis: whole sample (n = 2,154).

Scale	Total	Age					Education			Gender	
		18-24	Sec.	Senior sec.	Sec.	Senior sec.	Sec.	Senior sec.	Higher	M	F
Disagree (1-3)	24%	15%	24%	22%	23%	24%	26%	21%	27%	22%	26%
Neutral (4)	21%	25%	21%	20%	22%	21%	22%	23%	19%	20%	22%
Agree (5-7)	49%	60%	52%	53%	49%	49%	40%	51%	52%	54%	44%
Don't know	6%	1%	3%	4%	7%	6%	13%	6%	2%	4%	8%

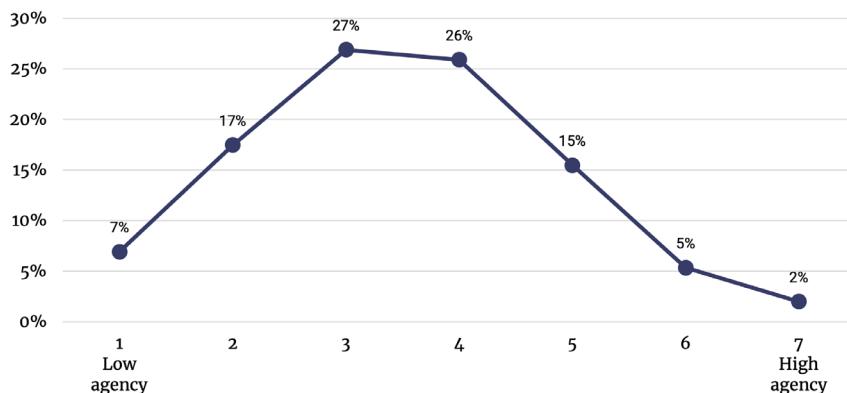
Level of agency

We have combined the two statements to create a single scale for agency.² 3.7 is the average score of Dutch people on this scale. Figure 2.6 shows that people are more likely to rank themselves as relatively low in terms of agency (score 1 to 3, 51%) than they are to rank themselves as relatively high (score 5 to 7, 22%).

² This scale shows the average of a respondent's answers to the two statements, both measured on a 7-point scale.

Figure 2.6 – Combined scale for agency

Basis: whole sample, without respondents that answered 'don't know' for statements about agency (n = 2,036).



Lower sense of agency among young people, women and higher educated people

Throughout the rest of this report, we will use the combined agency scale to make a distinction between two groups: people with below-average and above-average agency when it comes to digital technologies.

Dutch people with a below-average sense of agency are relatively often young (18 to 24 years), women or higher educated (see Table 2.4). Low agency is also more common among people who do not like using digital technologies.

Table 2.4 – Level of agency, based on age, gender and level of education

Basis: whole sample (n = 2,154).

Agency	Total	Age					Gender		Education		
		18-24	25-34	35-49	50-64	65+	M	F	Sec.	Senior sec.	Higher
Below-average	49%	61%	47%	50%	47%	48%	46%	51%	45%	46%	54%
Above-average	46%	38%	50%	47%	47%	44%	50%	42%	44%	49%	44%

Within the 18 to 24 years age group, six in ten people have a below-average level of agency. This is approximately half in the other age groups. Women are also more likely to feel below-average in terms of agency than men (51% vs 46%); men are actually more likely to feel above-average for agency (50% vs 42%). In addition, people who have completed higher education are more likely to feel below-average for agency (54%) than people who have only completed secondary (45%) and senior secondary (45%) education.

People who prefer to use digital technologies as little as possible, are more likely to have a below-average sense of agency (57%) than people who tend to really like using digital technologies (46%).

Cybercrime is the biggest concern

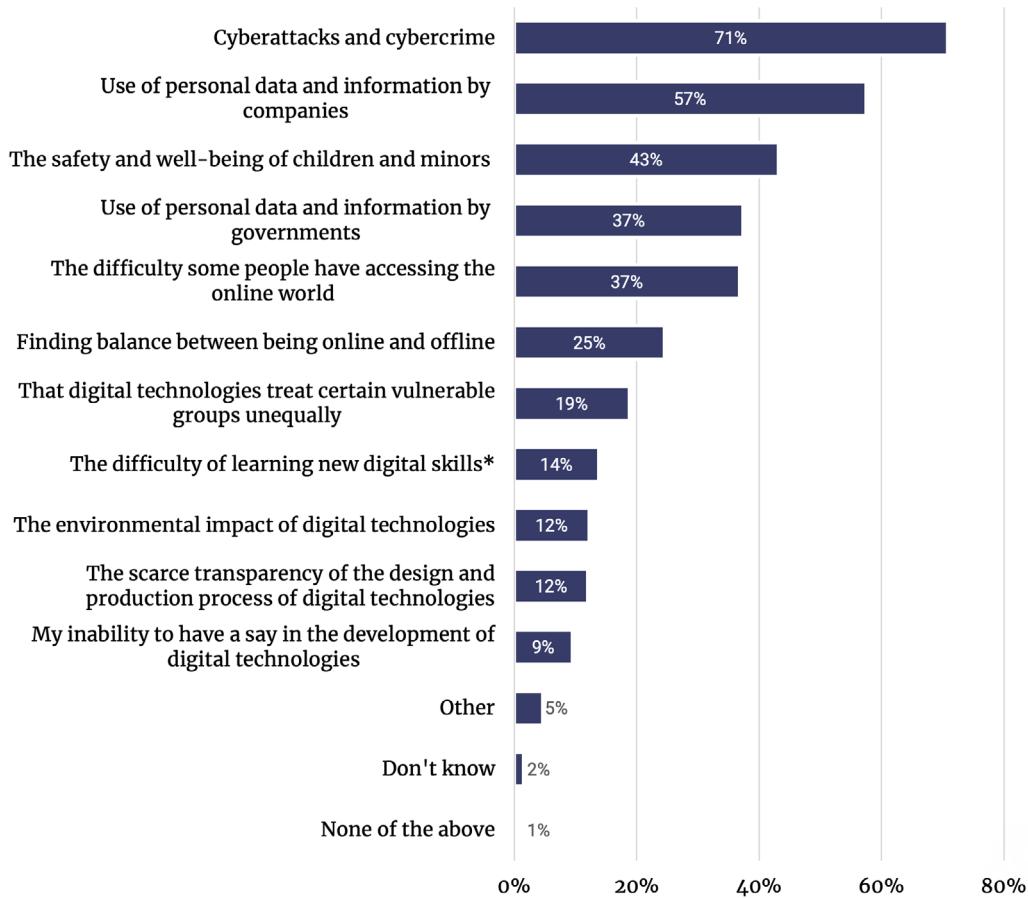
If respondents say that they have certain concerns about the role of digital technologies in society (see Figure 2.4), we asked them what gave them the biggest cause for concern.

Cyberattacks and cybercrime are the most commonly mentioned concerns: seven in ten people say that they have (the most) concerns on this front. The use of personal data and information by

companies is also a concern for over half of the respondents (57%). This is followed by the safety and well-being of children and minors (43%), the use of personal data and information by governments (37%) and the fact that it is difficult for some people to access the online world (37%).

Figure 2.7 – What is your biggest concern when it comes to the role that digital technologies play in our society?

Maximum 4 answers possible. Basis: has (some) concerns about the role of digital technologies (n = 2,101).



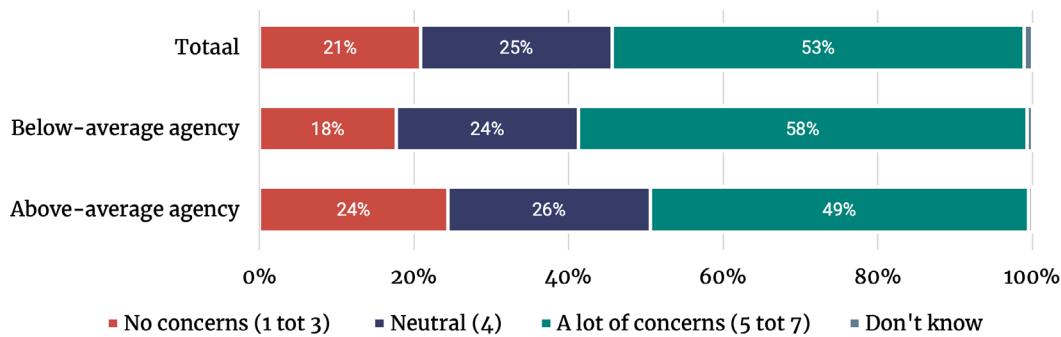
* The complete response option was: "How difficult it is to learn new digital skills in order to actively participate in society".

Dutch people with low agency are more likely to have concerns

We saw that half of all Dutch people (53%) tend to have a lot of concerns, rather than few concerns, about the role that digital technologies play in society (see Figure 2.4). However, these concerns are more common in people who score below-average for agency (58%) than people who score above-average for agency (49%) when it comes to digital technologies.

Figure 2.8 – How concerned are you about the role that digital technologies play in our society? Where would you place yourself on the spectrum, if 1 means you have no concerns at all and 7 means that you have a lot of concerns?

Basis: whole sample (n = 2,154).



The concerns of people with a below and above-average sense of agency are almost identical. The biggest differences can be witnessed in the level of education. For instance, people who have completed higher education are more likely to be concerned about the environmental impact of digital technologies, and finding a good balance between their online and offline lives. People who have only completed secondary education are more likely to have concerns about the use of information and personal details by governments, about how difficult it is to learn new digital skills, and the fact that it is difficult for some people to access the online world.

Table 2.5 – What is your biggest concern when it comes to the role that digital technologies play in our society?

Based on age, gender, education and agency. Maximum 4 answers possible. Basis: has (some) concerns about the role of digital technologies (n = 2,101).

	Total	Age					Gender		Education			Agency	
		18- 24	25- 34	35- 49	50- 64	65+	M	F	Sec.	Senior sec.	Higher	Below aver.	Above aver.
	%	%	%	%	%	%	%	%	%	%	%	%	%
Companies' use of info	57	50	59	49	61	60	58	57	57	57	58	60	56
Governments' use of info	37	36	32	33	40	41	38	36	44	41	29	41	35
Cybercrime	71	56	63	73	77	70	71	71	67	72	72	73	70
Child safety	43	55	51	49	36	39	38	48	40	46	42	43	44
Environmental impact	12	18	16	13	11	9	12	12	6	9	20	13	12
New skills	14	9	7	7	16	23	11	17	21	12	12	15	11
No say	9	13	10	7	9	10	10	9	12	10	8	11	8
Limited transparency	12	11	12	13	13	11	16	8	8	11	15	12	13
Difficult access	37	24	25	29	43	47	34	40	44	37	32	37	36
Balance <u>online-offline</u>	25	42	39	37	15	11	23	26	13	25	30	26	24
Unequal treatment	19	19	15	15	19	24	19	18	20	17	21	20	19
Other	5	2	3	6	7	3	6	3	3	3	8	3	6
None of above	1	1	1	0	0	1	1	0	1	1	0	0	1
Don't know	2	1	2	2	1	2	2	1	3	1	1	1	2

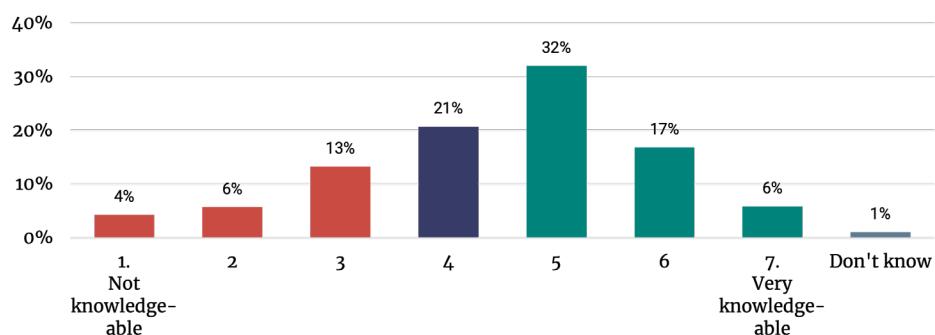
2.3 Knowledge

Majority of Dutch people think they possess a lot of digital knowledge

Slightly more than half of all Dutch people (55%) feel that they have a lot of knowledge about digital technologies – they rank themselves as a 5, 6 or 7 on the 7-point scale. A quarter of Dutch people think that they possess little digital knowledge. One in five people think they have an average level of knowledge.

Figure 2.9 – How much knowledge do you think you possess when it comes to digital technologies?*

Basis: whole sample (n = 2,154).

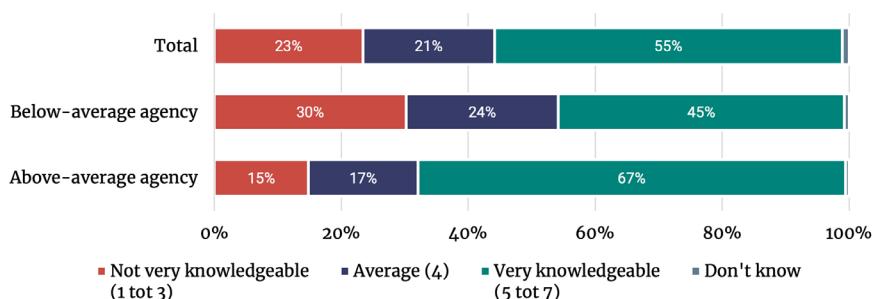


* The following mouse-over explanation was shown for the question: "In this case, digital technology refers to digital tools (e.g. smartphones, navigation systems) and services (e.g. DigiD or WhatsApp) for daily use."

There are clear differences in agency with regard to digital technologies. In the group with above-average agency, two thirds say they have a lot of knowledge concerning digital technologies, while this is slightly less than half (45%) in group with a higher sense of agency.

Figure 2.10 – How much knowledge do you think you possess when it comes to digital technologies?

Based on agency. Basis: whole sample (n = 2,154).



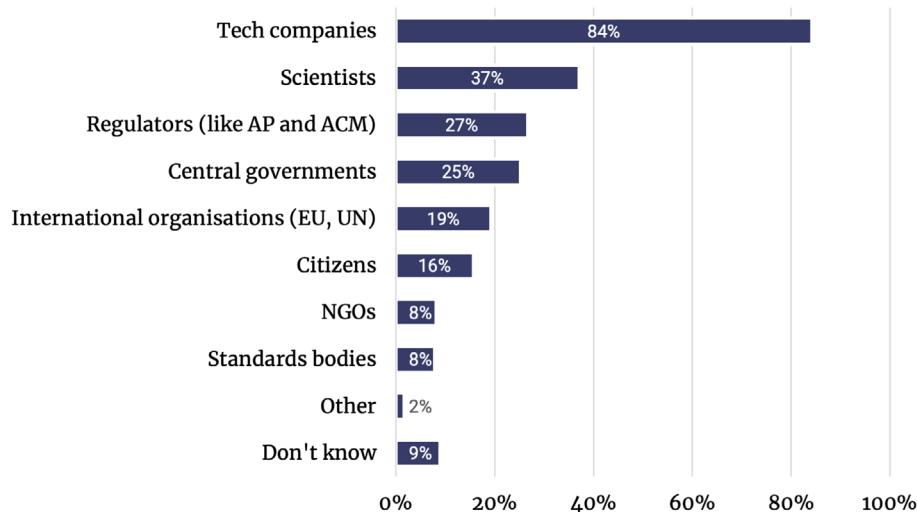
'Tech companies have the biggest influence on the development of digital technologies'

De meeste Nederlanders (84%) denken dat techbedrijven de meeste invloed hebben op de ontwikkeling van digitale technologieën. Most Dutch people (84%) think that tech companies have the biggest influence on the development of digital technologies. They are followed by scientists (37%), regulatory bodies (27%) and central governments (25%), to whom influence is attributed by a lot fewer people. The public, with 16 percent, is also ranked relatively low.

Two percent say that 'another' party had influence. This relates to various players, including banks and the Ministry of Defence.

Figure 2.11 – In your opinion, which of these three have the biggest influence on the development of digital technologies?*

Basis: whole sample (n = 2,154).



* The following mouse-over explanation was shown for the question: "Standards bodies are organisations that develop standards and guidelines for all kinds of products and services. For example, for the construction, electricity and mobility sectors."

People who think they have a lot of knowledge about digital technologies are more likely to attribute the most influence to tech companies (92%) than average (84%). They are also slightly more likely (42%) than people with - in their own opinion - a lower level of knowledge (33%) to think that scientists have the biggest influence. We see few differences when it comes to agency. However, the group that has above-average agency is more likely (42%) than group with below-average agency (34%) to think that scientists have the biggest impact.

2.4 Familiarity with the Royal Netherlands Standardization Institute (NEN)

We used a split-run method to assess to what extent Dutch people are familiar with NEN, the Royal Netherlands Standardization Institute. Respondents were randomly divided into two groups via a split-run. Half of them were asked the question 'Have you heard of an institute called NEN?' without further explanation. The other half received the question with a brief explanation, which was formulated as follows: "NEN stands for the Royal Netherlands Standardization Institute. This institute develops sector-wide norms for the construction, electricity and mobility sectors, amongst others. Have you ever heard of NEN?" This allows us to examine whether offering a 'prompt' has an influence on people's familiarity with the institute.

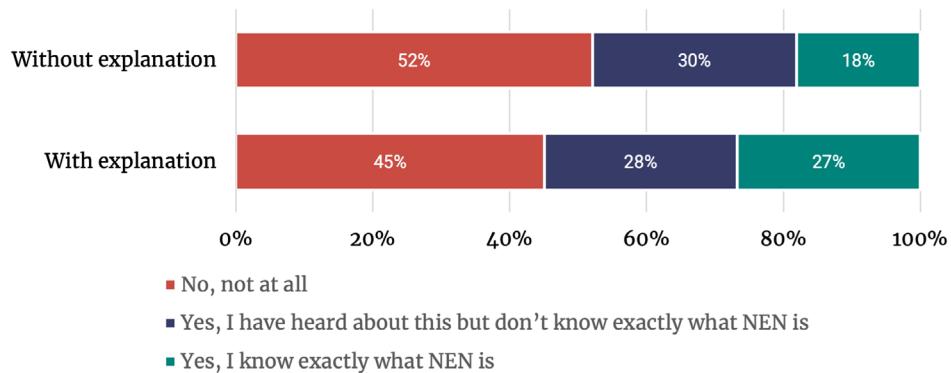
Half of Dutch people (somewhat) familiar with NEN

Of the respondents that did not receive an explanation about NEN, 52 percent say that they have not heard of the institute. The remainder (48%) have heard of NEN: 30 percent have heard of the institution but do not know exactly what it is, while 18 percent do.

Of the group that received the explanation, more respondents say they are somewhat familiar with the institute (55%): 28 percent have heard of the institute, while 27 percent know what NEN was. All things considered, we can conclude that approximately half of all Dutch people are - in their own view - familiar with NEN.

Figure 2.12 – Have you ever heard of an institute called NEN?

Basis: whole sample (n = 2,154).



Familiarity with NEN is higher among Dutch people that like to use digital technology than among people who prefer to use it as little as possible. This difference can be seen in the question accompanied by the explanation about NEN (42% vs 50% somewhat or completely familiar) as well as the question without an explanation (48% vs 59%). We see no significant differences here when it comes to agency in the field of digital technologies.

2.5 Values

Safety and privacy main values in the design of digital technologies

Various values, such as privacy and transparency, can play a role in the design and use of digital technologies. We presented various statements to respondents, each of which reflected a value – an overview has been provided in Table 2.6. We asked them which values are most important to them when it comes to the design of digital technologies.

Table 2.6 – Statements per value

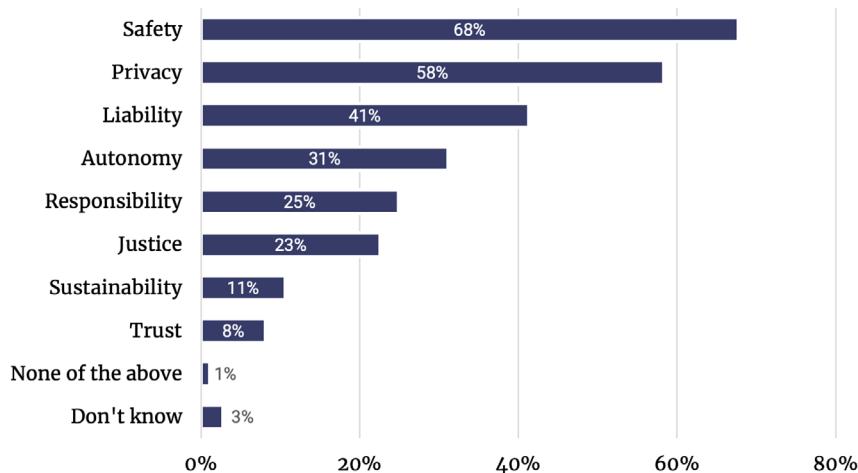
Value	Statement
Safety	Technologies must be safe and well protected. All users, from children to the elderly, must be safe and protected
Privacy	Privacy and data protection must play a central role in the design
Liability	It must always be possible to hold companies and organisations accountable for their actions in the design and production of digital tools and services
Autonomy	Every digital tool must be available to everyone, understandable, accessible and repairable
Responsibility	Responsible tech and responsible data usage should be central to public policy
Justice	Digital tools must work equally effectively for everyone and must not exclude certain users, such as people with disabilities
Sustainability	Digital tools and services must comply with environmental standards
Trust	Everyone must be well informed about the design choices behind the digital tools that they use

Safety is the most commonly selected value: two thirds opt for the accompanying statement ‘Technologies must be safe and well protected. All users, from children to the elderly, must be safe and protected’. Over half of the people (58%) also find privacy very important, which was reflected in the statement ‘Privacy and data protection must play a central role in the design’.

Relatively speaking, sustainability (11%) and trustworthiness (8%) are deemed to be least important.

Figure 2.13 – Which of the following statements do you find (most) important when it comes to the design of digital technologies?*

Basis: whole sample (n = 2,154). The statements presented per value are shown in Table 2.6.



* Displayed with the following mouse-over explanation: In this case, digital technology refers to digital tools (e.g. smartphones, navigation systems) and services (e.g. DigiD or WhatsApp) for daily use.

People with greater agency mainly have the same values as those with less agency

Figure 2.14 shows that people with above-average agency concerning digital technologies mainly find the same values important as people with relatively low agency. However, people with above-average agency are more likely to select the values of safety (71% vs 66%) and privacy (61% vs 56%) than people with below-average agency.

Sustainability more important to young people and highly educated people

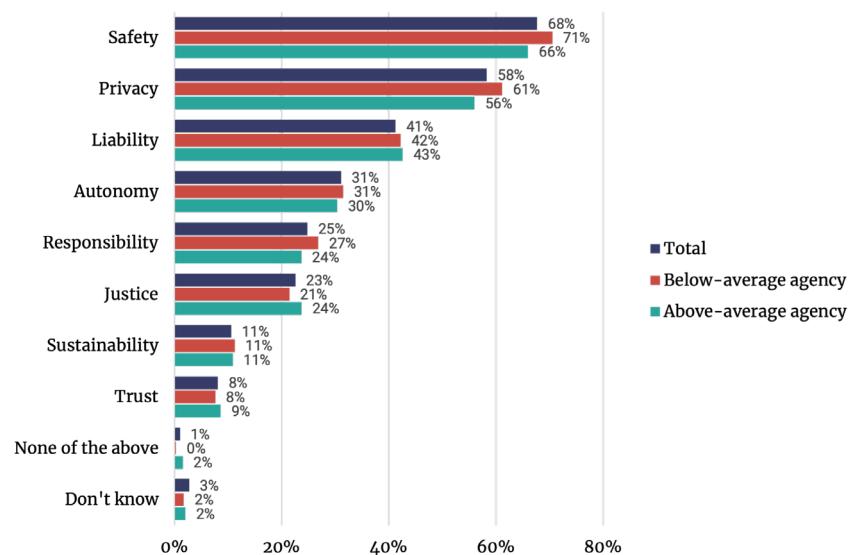
Table 2.7 shows that young people (18 to 24 years) are less likely to value privacy (45%) than average (58%). But they actually find sustainability slightly more important (18%) than average (11%). People who have completed higher education are also more likely to find sustainability important (18%) than people who have completed senior secondary (7%) and secondary education (5%). The values of ‘responsibility’ and ‘liability’ are also more important to higher educated people than other groups.

People who have only completed secondary and senior secondary education are more likely to value ‘justice’ (‘Digital tools must work equally effectively for everyone and must not exclude certain users, such as people with disabilities’).

We also see several differences when it comes to political preferences (not shown in figure). Sustainability is relatively important to people who vote for GroenLinks (34%) and Partij voor de Dieren (29%). Relatively speaking, the latter group of voters also greatly value responsibility (56%). People who vote for SP and PvdA find justice relatively important (35% and 31% choose this respectively).

Figure 2.14 – Which of the following statements do you find (most) important when it comes to the design of digital technologies?*

Based on level of agency. Basis: whole sample (n = 2,154). The statements presented per value are shown in Table 2.6.



* Displayed with the following mouse-over explanation: In this case, digital technology refers to digital tools (e.g. smartphones, navigation systems) and services (e.g. DigiD or WhatsApp) for daily use.

Table 2.7 - Which of the following statements do you find (most) important when it comes to the design of digital technologies?*

Based on age, gender and education. Basis: whole sample (n = 2,154).

	Total	Age					Gender		Education		
		18- 24	25- 34	35- 49	50- 64	65+	M	F	Sec.	Senior sec.	Higher
Safety	68%	69%	63%	64%	72%	67%	64%	71%	65%	68%	69%
Privacy	58%	45%	61%	57%	61%	57%	58%	58%	60%	56%	60%
Liability	41%	42%	45%	41%	38%	43%	51%	32%	34%	40%	47%
Autonomy	31%	32%	23%	27%	34%	36%	29%	34%	37%	32%	27%
Responsibility	25%	28%	25%	24%	26%	23%	23%	26%	17%	26%	28%
Justice	23%	19%	18%	20%	24%	27%	22%	24%	29%	24%	18%
Sustainability	11%	18%	13%	14%	8%	7%	9%	12%	5%	7%	18%
Trust	8%	5%	10%	9%	6%	10%	9%	8%	9%	8%	8%
None of the above	1%	0%	1%	1%	2%	0%	1%	1%	1%	2%	0%

Sustainability rarely important when buying a mobile phone

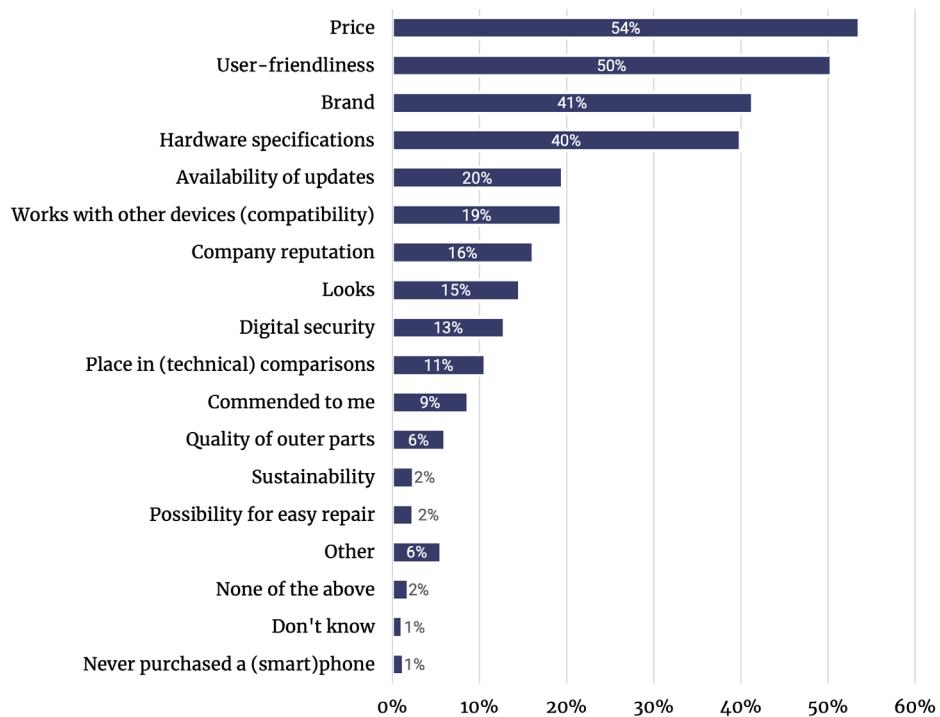
We asked respondents to think about the last mobile phone that they bought, and to then indicate what they took into consideration when they selected this phone. Practical considerations top the list: the most commonly mentioned are price (54%), followed by user-friendliness (50%), the brand (41%) and hardware specifications, like the camera and battery life (40%).

Considerations that related to the value of 'sustainability' score relatively low: only 2 percent say that they took the environmental friendliness of the device into account.

Six percent of the respondents say that aspects 'other' than those presented played a role in their purchase. The open response field that follows also reveals a lot of hardware specifications, namely the dimensions of the device and the quality of the camera. In addition, 'habit' and 'familiarity' play a role for this group, for example, because people often buy the same brand. Finally, a few respondents say that they purchased their phone second-hand or received it from someone they know.

Figure 2.15 – Think about the last mobile phone that you bought. What did you take into consideration when you selected this mobile phone ahead of others?

Multiple answers possible. Basis: whole sample (n = 2,154).



Values not clearly reflected in real-life choices

There is a certain amount of consistency between the values that people find important in the design of digital technologies (such as privacy, safety and sustainability, see Table 2.6) and the aspects that have the biggest influence when purchasing new technologies.

Dutch people who said that they found 'sustainability' important in the design of digital technologies (11% of whole sample, see Figure 2.13), are slightly more likely than average to say that they consider environmental friendliness when purchasing a telephone (7%, aver. 2%). They also place slightly more emphasis on the reputation of the company that is selling the phone (22%, aver. 16%). However, the more practical aspects, such as price and user-friendliness (both 50%), are also a lot more likely to play an important role for this group.

Dutch people who find 'trustworthiness' to be important – the value that 'everyone must be well informed about the design choices behind the digital tools that they use' – are more likely than average to consider the availability of updates (31%, aver. 20%) and digital security (20%, aver. 13%) when they buy a new phone.

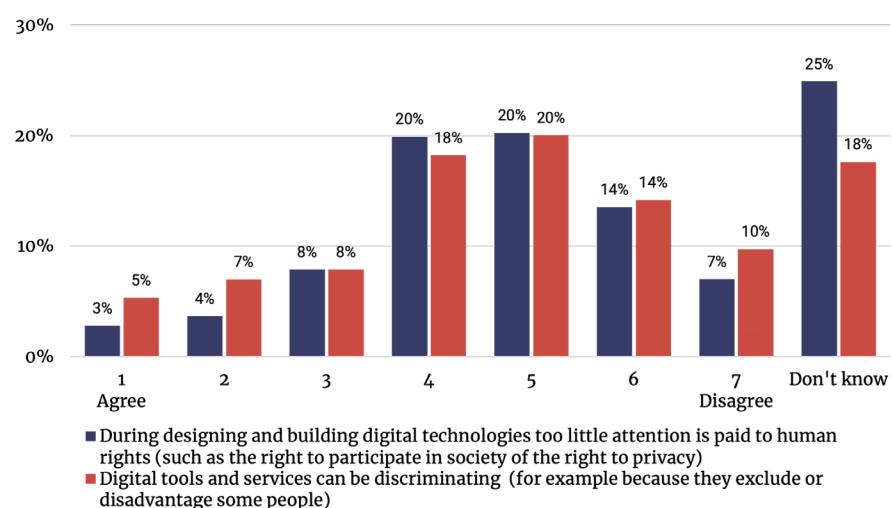
Four in ten: digital technologies do not pay enough attention to discrimination and human rights

Four in ten Dutch people feel that not enough attention is given to human rights when designing and producing digital technologies, like the right to participate in society and the right to privacy. One in seven people (14%) disagree with this. However, a large number say that they did not know (25%) or opt for the central position on the scale (20%).

Four in ten Dutch people also agree with the statement that digital technologies can be discriminatory. One in five people think that this is not the case. Eighteen percent opt for the central position and a further eighteen percent say that they do not know.

Figure 2.16 – To what extent do you agree or disagree with the following statements?

Basis: whole sample (n = 2,154).

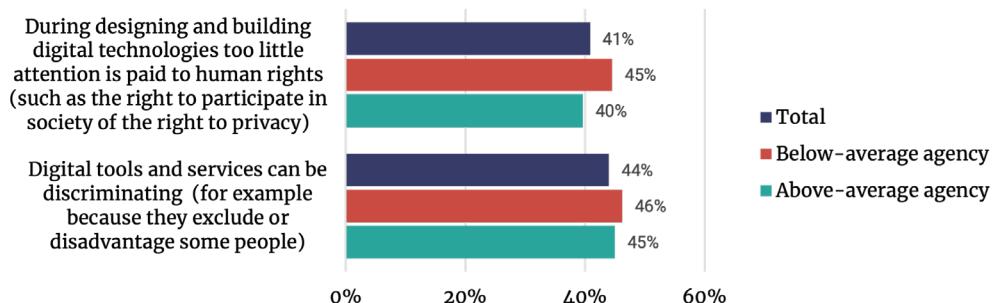


MinPeople with less agency are (slightly) more likely to believe that not enough attention is being given to human rights

People who think that they have relatively low agency are slightly more likely than people who have relatively high agency to think that not enough attention is given to human rights during the design and production of digital technologies. Among people who have below-average agency, 45 percent agree with the statement, while this is 40 percent among people with above-average agency. However, we see no significant differences between the groups when it comes to the statement 'Digital technologies can be discriminatory'.

Figure 2.17 – To what extent do you agree or disagree with the following statements?

Based on level of agency. Shown in figure: % agree (5-7). Basis: whole sample (n = 2,154).

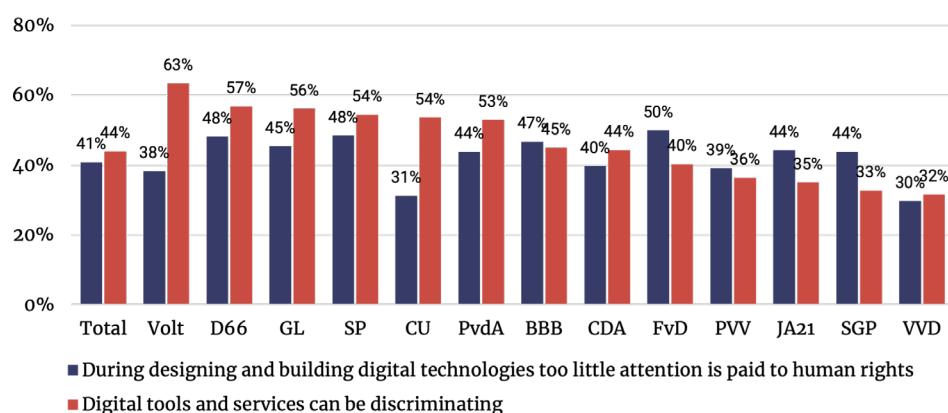


Concerns about human rights and discrimination mainly among progressive left-wing voters

Differences can also be witnessed on the basis of political preferences. People who voted for progressive left-wing parties (SP, PvdD, PvdA, GroenLinks) during the elections for the Dutch House of Representatives are more likely to agree with the statements than people who voted for centre-right (CDA, CU, D66) and right-wing conservative (SGP, PVV, VVD) parties. SP voters are more likely to think that not enough attention is given to human rights (48%), while VVD voters are least likely to think this (30%). People who voted for Partij voor de Dieren are most likely to think that digital technologies can be discriminatory (63%). Once again, VVD voters are least likely to agree with this statement (32%).

Figure 2.18 – To what extent do you agree or disagree with the following statements?

Based on political preferences. Shown in figure: % agree (5-7). Basis: whole sample (n = 2,154).



2.6 Behaviour

Vast majority protect privacy online

Nine in ten Dutch people say that they take some kind of measures to protect their privacy online. Only 7 percent say that they do nothing special to protect their personal privacy. Approximately a quarter (23%) take one or two measures. Most people (68%) take more measures. Two percent of them do not know or would prefer not to say.

As shown in Figure 2.19, the most common measure involves installing an antivirus scanner and/or a firewall (68%). In addition, over four in ten people say that they occasionally change their passwords, occasionally delete their cookies, refuse cookies, and do not use public Wi-Fi networks.

Three percent take other measures. For instance, this involves using an alternative e-mail address for (potential) spam, avoiding certain apps (such as Facebook and other social media), using the incognito feature in their web browser, and not filling in details if this is not mandatory.

High agency goes hand-in-hand with higher privacy protection

When it comes to agency, we see that people who perceive themselves to have above-average agency in relation to digital technologies take quite a lot of different measures, relatively speaking, to protect their privacy online. Figure 2.20 shows that three quarters of the people with above-average agency take more than two measures, while this is approximately two thirds (64%) in the group with below-average agency. The group with below-average agency are more likely to do something (1 to 2 measures), but are not more likely to do completely nothing to protect their privacy.

Figure 2.19 – What do you normally do to protect your privacy online?

Multiple answers possible. Based on level of agency. Basis: whole sample (n = 2,154).

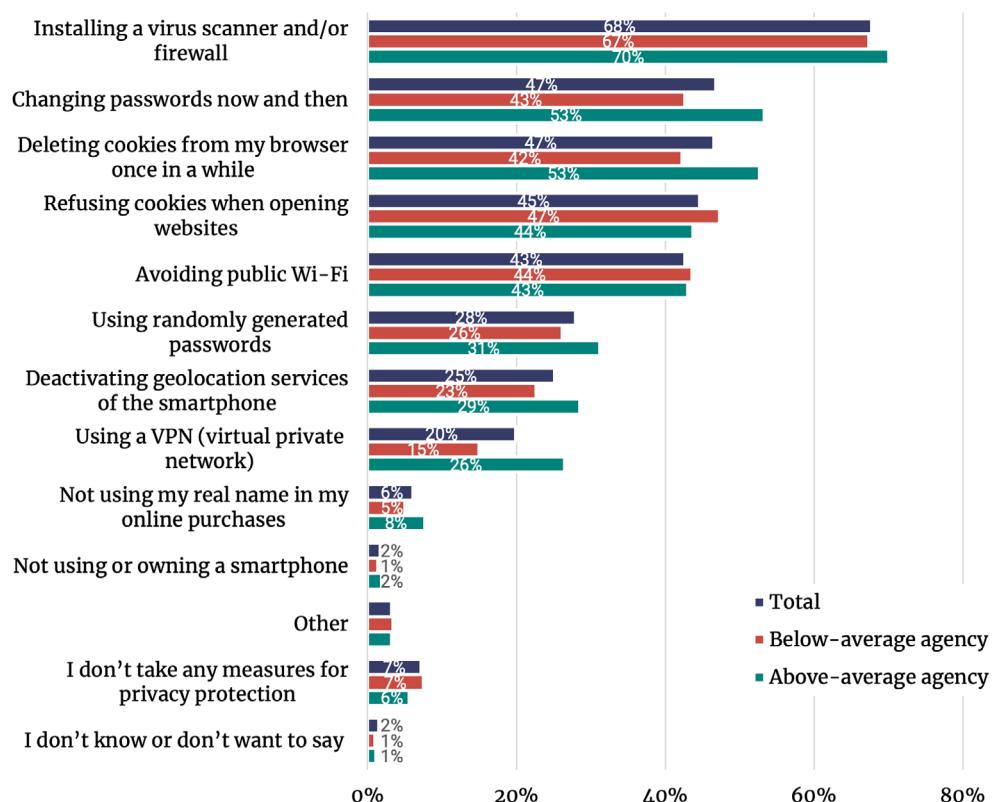


Figure 2.20 – Level of effort to protect online privacy

Based on level of agency. Basis: whole sample (n = 2,154).

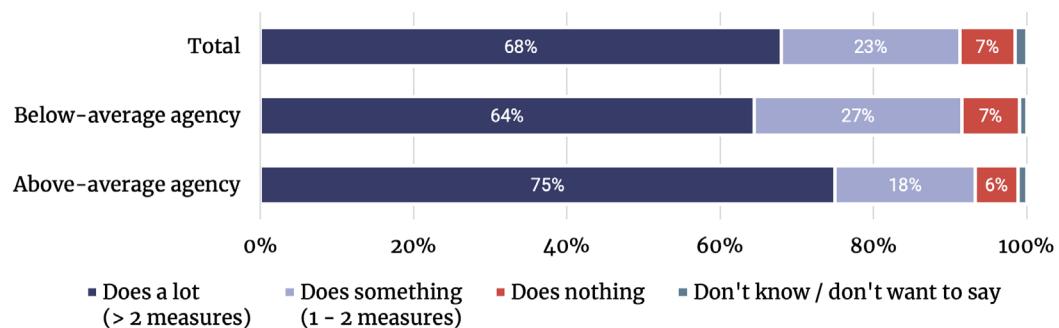


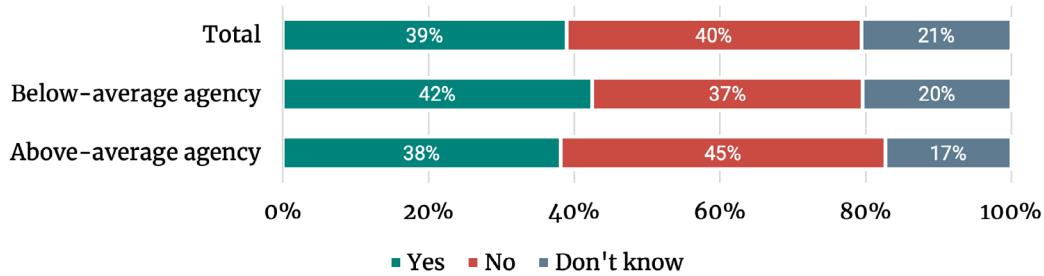
Figure 2.19 shows that people with above-average agency say they are more likely to occasionally change their password, delete the cookies from their browser, use randomly generated passwords and to turn off the GPS location on their phones.

Forty percent avoid certain technologies due to concerns; the same percentage do not do so

Four in ten (39%) Dutch people say that they have sometimes not used digital technologies due to concerns about things such as safety and privacy. An equally large proportion (40%) have not (yet) avoided using digital technologies for the same reason. One in five people say that they don't know.

Figure 2.21 – Have you sometimes NOT used digital technologies because you had concerns about ethical aspects, safety, privacy or other such issues?

Based on level of agency. Basis: whole sample (n = 2,154).



People who feel that they have above-average agency in relation to digital technologies are more likely to avoid using digital technologies due to their concerns (42%), than people who feel that they have relatively low agency (38%).

When we ask people which tools and/or services they did not use because they had concerns, the most commonly mentioned are banking apps, Internet banking and social media (Facebook, TikTok). A number of respondents also say that they avoid using artificial intelligence, such as ChatGPT and chatbots. Privacy-related considerations, like not wanting to share data, are the most commonly mentioned reason for avoiding certain technologies. In addition, security-related considerations ('protection against hacking') are also mentioned. To a lesser extent, concerns about disinformation, online negativity and geopolitical reasons ('espionage by China') are also mentioned.

The quotes below illustrate some of the answers that were provided.

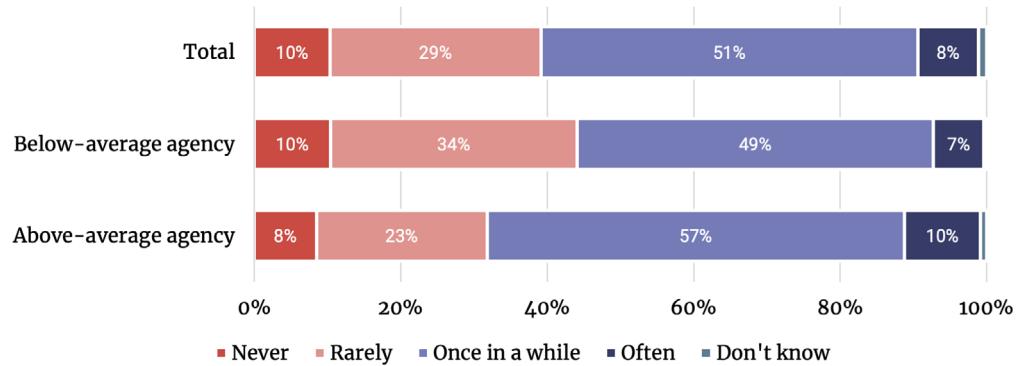
- “Twitter and suchlike because it wants to know too much about me.”
- “Social media because of the hate mails and fake news.”
- “I do not install many apps because their privacy rules are too expansive.”
- “The first thing that comes to mind is AI; I think we are really not aware how quickly this can control everything and provide false information that people deem to be true.”
- “Banking app. Because I do not trust it; I am afraid that the app will be hacked.”
- “Paying with my phone. I think it is unnecessary, and it is another app that can be tracked via cookies. In addition, I have the feeling that it is less safe than using a regular bank card.”
- “I do not use a banking app because I have no faith in the security of my phone. If I have to pay for something via my bank, I do it on my home computer, which has been properly secured. In addition, I make all my purchases via a computer and not via my phone.”
- “I do not use social media because other people will have access to information about my life. I prefer to not have a digital presence. There was also a time when I was strongly against TikTok. But I am not bothered now because I know that western apps collect the same data as TikTok.”
- “TikTok, a smartphone where I had to download a programme from China. I do not trust China, and prefer that they do not have my data.”

Majority sometimes talk to friends and/or family about digital technology

Over half of all Dutch people say that they sometimes talk to friends and/or family about digital technologies and their role in society: 51 percent do this 'occasionally', 8 percent do this 'often'. One in ten say that they never talk about it with family or friends; three in ten do this 'almost never'.

Figure 2.22 – To what extent do you have conversations with friends and/or family about digital technology and its role in society?

Based on level of agency. Basis: whole sample (n = 2,154).



Dutch people who have a below-average sense of agency are less likely to speak to people they know about (the role of) digital technologies than people who think they have an above-average sense of agency. Among the people with above-average agency, 57 percent say they speak about it with family and/or friends ‘occasionally’; this is 49 percent among people with below-average agency. The latter group were more likely to ‘almost never’ speak about it.

The younger that people are, the more likely they are to have sometimes discussed the subject of digital technologies with people they know. Among people between the ages of 18 and 24, two thirds (67%) do this ‘occasionally’ or ‘often’; while slightly more than half (54%) do this in the 65+ age group. In addition, people who have completed higher education are more likely (67%) to do this than people who have only completed senior secondary (59%) and secondary education (49%).

3 Case studies: 5G networks and DigiD

To gain insight into the familiarity and experiences of Dutch people with digital technologies, we asked them about their knowledge of and attitude towards two specific cases: 5G and DigiD. This chapter addresses how familiar people are with these two technologies, to what extent they use them, and what their opinion is about these applications.

The questions about 5G and DigiD were presented on a split-run basis, which means that half of the respondents – who had been allocated randomly – received questions about 5G while the other half received questions about DigiD.

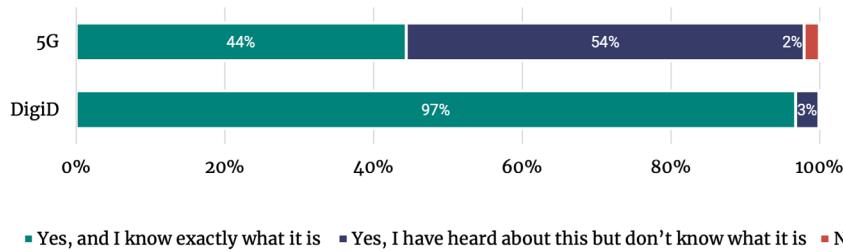
3.1 Knowledge

Most Dutch people familiar with DigiD and 5G

Almost all Dutch people (97%) are familiar with DigiD; they know exactly what it is. The remaining 3 percent have heard of it. People are less knowledgeable about 5G networks: just under half know that they exist but do not know exactly what they are, while 44 percent do know what they are. 2 percent of people have never heard of mobile 5G networks.

Figure 3.1 – Do you know what a mobile 5G network is? And: Do you know what DigiD is?

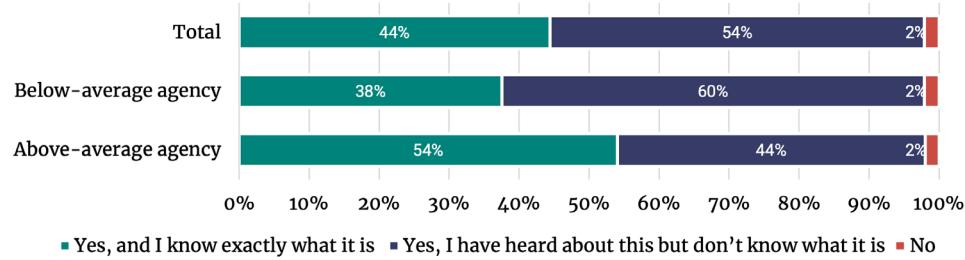
Basis: split-run for 5G (n = 1,062) and DigiD (n = 1,092).



When it comes to familiarity with this technology, there is a clear difference between people with above-average agency and the group with below-average agency. Both groups have the same proportion of people who are completely unfamiliar with 5G (2%). However, the majority of Dutch people with above-average agency (54%) know exactly what 5G is, whereas the group with below-average agency has the largest percentage (60%) of people who have heard of 5G but do not know exactly what it is. When it comes to familiarity with DigiD, there are no visible differences in terms of agency.

Figure 3.2 – Do you know what a mobile 5G network is?

Based on level of agency. Basis: split-run for 5G (n = 1,062).



3.2 Use

DigiD commonly used, mobile 5G network less so

After the questions about familiarity with 5G and DigiD, we added a piece of text in the questionnaire to explain what we mean by mobile 5G networks and DigiD:

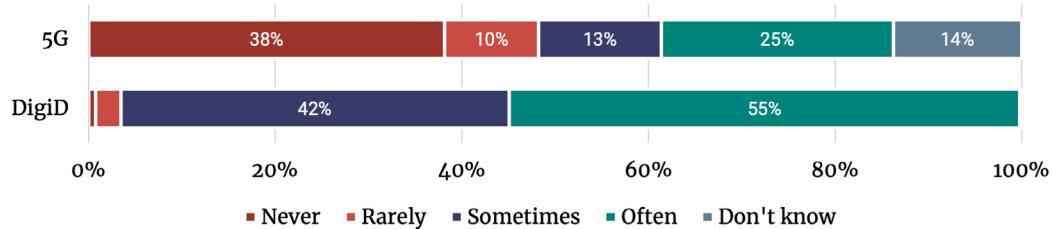
"5G is the fifth generation of mobile phone networks that allow devices to make a wireless connection to the Internet. The technology behind 5G always works in the same way. This is an example of a new standard in telecommunication. 5G offers new possibilities for making connections between smartphones and other smart devices."

"DigiD is an online service that you can use to verify your identity on the websites of, for example, the Tax Authority, health insurers or municipalities."

We then asked to what extent people use these applications. As shown in Figure 3.3, people are considerably more likely to use DigiD than mobile 5G networks. Half of all Dutch people use DigiD often, while a further 42 percent do so sometimes. Only 4 percent rarely or never use this service. In terms of 5G, a quarter of people use the networks often, and 13 percent sometimes. Four in ten Dutch people say that they never use mobile 5G networks.³ One in ten people do this rarely. Finally, there is also a group of people (14%) who do not know if they occasionally use mobile 5G networks.

Figure 3.3 – Do you sometimes use mobile 5G networks? And: Do you sometimes use DigiD?

Basis: split-run for 5G (n = 1,062) and DigiD (n = 1,092).



³ It is possible that some of the people who say that they do not use 5G networks actually do use them (for example, because an automatic connection is made), but are not aware of it. Based on the data, it is not possible to say whether this is the case.

The proportion of highly educated people that use 5G sometimes or often (42%) is higher than the proportion of the group with a lower level of education that comes into contact with it on a regular basis (31%). In this regard, it is worth mentioning that a relatively large proportion of people with a lower level of qualifications do not know whether they sometimes use 5G (21%, versus 13% among highly educated Dutch people).

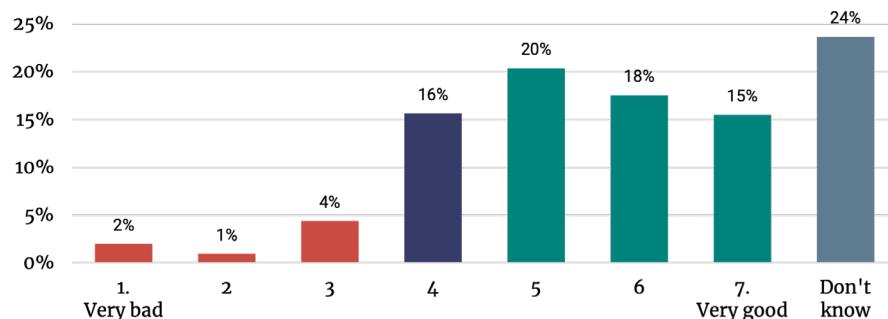
3.3 Opinion about mobile 5G network

Majority positive about 5G, expect no harmful impact on health

Over half of all Dutch people tend to be more positive than negative about 5G technology: on a seven-point scale that runs from 1 ('very bad' that 5G exists) to 7 ('very good' that 5G exists), 53 percent give a score of 5, 6 or 7. A quarter of the population say that they do not know what they think about this technology. Finally, a group of 7 percent are negative about mobile 5G technology: they think that it is (very) bad that such technology exists.

Figure 3.4 – What do you think about mobile 5G technology? Do you think it is good or bad that such technology exists?

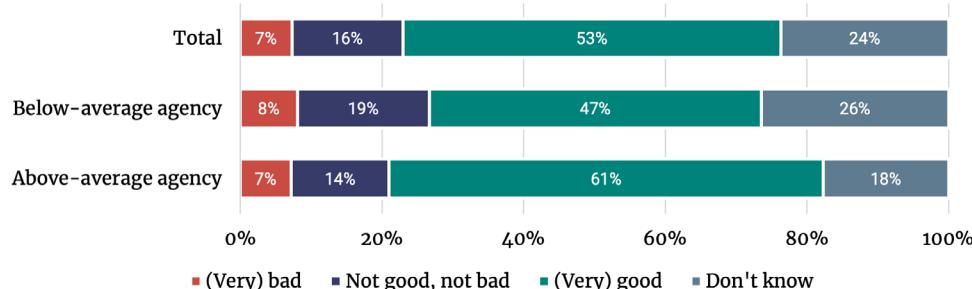
Basis: split-run for 5G (n = 1,062).



When we look at agency, we can see differences in people's attitudes towards 5G. In the group with high agency, 61 percent of people are positive towards 5G. At 47 percent, this proportion is significantly lower among the lower-agency population. This does not mean that the latter group are more likely to be negative towards 5G: they often say that they don't know (26%) or do not have a clear opinion about it (19%).

Figure 3.5 – What do you think about mobile 5G technology? Do you think it is good or bad that such technology exists? Broken down based on level of agency.

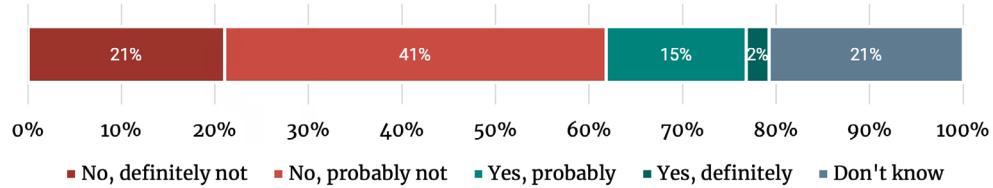
Based on level of agency. Basis: split-run for 5G (n = 1,062).



Most Dutch people (62%) do not think that 5G networks present a risk to health. 17 percent of people think this is definitely or probably the case. One in five people say that they don't know.

Figure 3.6 – Some people are convinced that radiation from 5G networks is harmful to people's health. Others think this is not the case. Do you think 5G networks damage people's health?

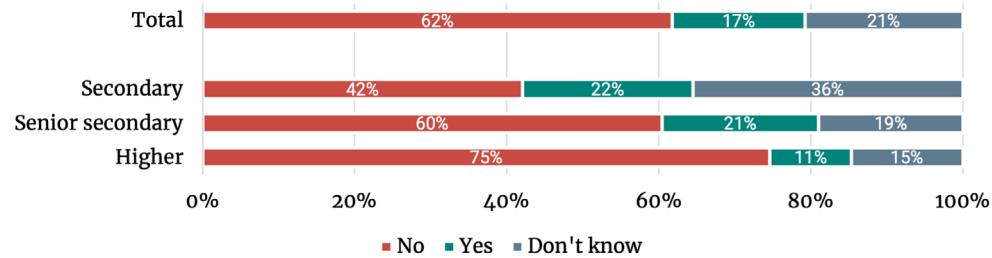
Based on level of agency. Basis: split-run for 5G (n = 1,062).



Clear differences can be seen between Dutch people who have completed secondary, senior secondary and higher education when it comes to how they perceive the risks of 5G networks. For instance, one in five people who have only completed secondary and senior secondary education think that 5G has harmful effects on people's health, while this is one in ten among people who have completed higher education.

Figure 3.7 – Some people are convinced that radiation from 5G networks is harmful to people's health. Others think this is not the case. Do you think 5G networks damage people's health?

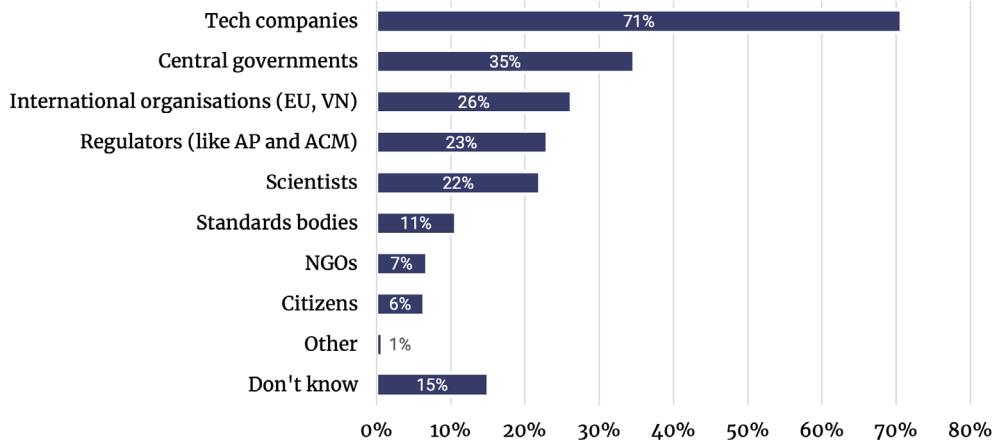
Based on level of education. Basis: split-run for 5G (n = 1,062).



Dutch people mainly expect tech companies to have an influence on how 5G technology works. Here, it relates to decisions on such things as how 5G works, how the technology will develop in the future, and with which rules it must comply. One in three people think that central governments (also) have a say in this, while a quarter think that international organisations like the EU and UN have an influence on this. To a slightly lesser extent, people expect this from regulatory bodies like the AP and ACM (23%) and scientists (22%). A relatively small proportion think that standards bodies, non-governmental organisations and the public have a say in how 5G technology works.

Figure 3.8 – According to you, who has the biggest influence on how 5G technology works? Select maximum of 3 answers.*

Basis: split-run for 5G (n = 1,062).



* The following mouse-over explanation was shown for the question: "Standards bodies are organisations that develop standards and guidelines for all kinds of products and services. For example, for the construction, electricity and mobility sectors."

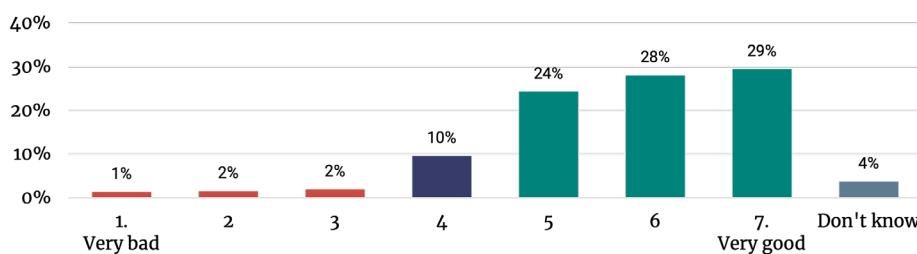
3.4 Opinion about DigiD technology

Eight in ten positive about DigiD, a quarter concerned about privacy

As was the case with mobile 5G networks, a majority of Dutch people are also positive about DigiD. On a 7-point scale from 1 ('very bad' that DigiD exists) to 7 ('very good' that DigiD exists), 82 percent give a score of 5, 6 or 7. One in ten people are neutral about this, while 5 percent think it is (very) bad that such technology exists.

Figure 3.9 – What do you think about mobile DigiD technology? Do you think it is good or bad that such technology exists?

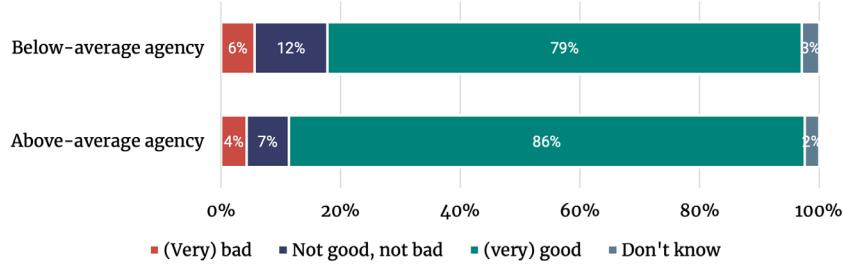
Basis: split-run for DigiD (n = 1,092).



The group with an above-average sense of agency have a slightly larger proportion (86%) of people who think that it is good that such technologies exist than the group that deem themselves to have less agency (79%).

Figure 3.10 – What do you think about mobile DigiD technology? Do you think it is good or bad that such technology exists?

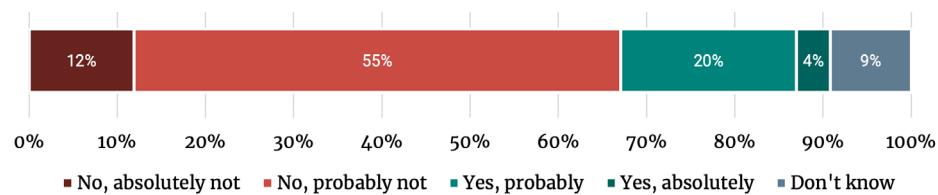
Based on level of agency. Basis: split-run for DigiD (n = 1,092).



Two thirds of Dutch people believe that DigiD does not present a risk to their privacy. A quarter think that this is (probably) the case. One in ten people say that they don't know.

Figure 3.11 – Some people feel that DigiD presents a risk to their privacy. Others think this is not the case. Do you think that DigiD presents a risk to your privacy?

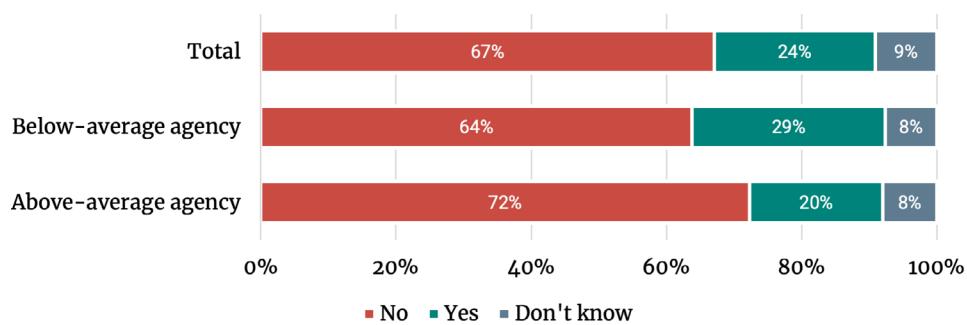
Basis: split-run for DigiD (n = 1,092).



Differences can be seen between the group that feel a below-average sense of agency and the group that feel an above-average sense of agency. 64 percent of the first group think that DigiD does not threaten their privacy. At 72%, this proportion is higher in the group that feels an above-average sense of agency.

Figure 3.12 – Some people feel that DigiD presents a risk to their privacy. Others think this is not the case. Do you think that DigiD presents a risk to your privacy?

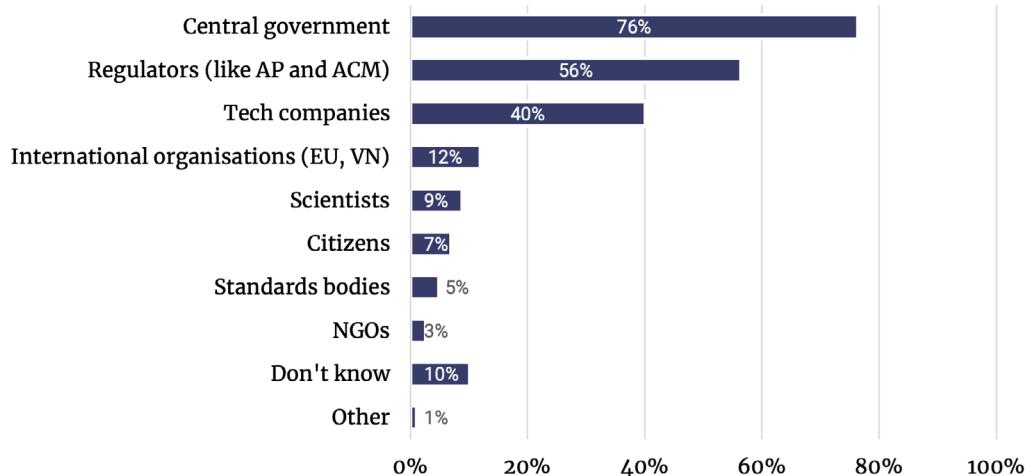
Based on level of agency. Basis: split-run for DigiD (n = 1,092).



Three quarters of Dutch people suspect that the central government has an influence on how DigiD works. Half of the people (also) think that supervisory bodies like the Dutch Data Protection Authority (AP) and the Authority for Consumers and Markets (ACM) play a role in this. Tech companies are also mentioned by a substantial proportion of the population (40%). To a lesser extent, people think that international organisations like the EU and UN (12%), scientists (9%) and the public (7%) can have an influence on this.

Figure 3.13 – According to you, who has the biggest influence on how the technology for DigiD works? For example, decisions about how DigiD works, how the technology will develop in the future, and with which rules it must comply. Select maximum of 3 answers.*

Basis: split-run for DigiD (n = 1,092).



* The following mouse-over explanation was shown for the question: "Standards bodies are organisations that develop standards and guidelines for all kinds of products and services. For example, for the construction, electricity and mobility sectors."

3.5 European digital identity

Little familiarity with European digital identity

Finally, we presented the following plan of the European Commission to respondents:

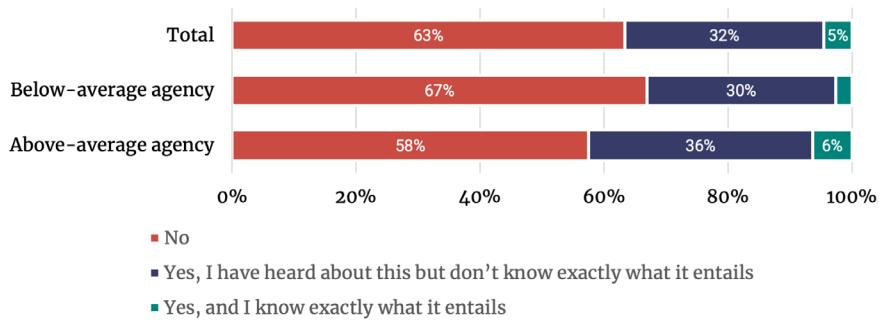
"The European Commission is working to establish technology that makes it possible to verify your digital identity throughout the EU. This technology will be available on mobile phones and other devices. The public can use it online and offline to identify themselves for public and private services within the EU, for example, at the bank or when requesting a driving licence."

Most Dutch people (63%) are not aware of this plan. One third say that they have heard of it, but do not know exactly what it entails. A further 5 percent are well aware of the content of this plan.

There are differences between the groups of Dutch people with an above-average and below-average sense of agency. Two thirds of Dutch people who deem themselves to have below-average agency are completely unaware of this plan. This percentage is 58 percent in the group with above-average agency.

Figure 3.14 – Are you aware of this plan?

Basis: split-run for DigiD (n = 1,092).



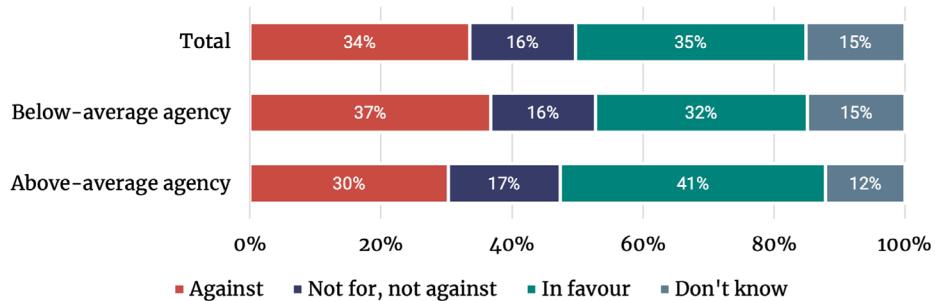
Opinions about European digital identity are divided

One third of the population is against the plan for a European digital identity. An equally sizeable group are in favour of it.

The ratio between people who are for and against differs between Dutch people with above-average agency and Dutch people with below-average agency. The group that deem themselves to have above-average agency have a larger proportion of people who are for the European digital identity than against it (41% and 30% respectively). This is the opposite in the group that deem themselves to have less agency (37% for, 34% against).

Figure 3.15 – Are you for or against the plan for a European digital identity?

Based on level of agency. Basis: split-run for DigiD (n = 1,092).



The fourth chapter discusses what Dutch people know about standards – agreements about the criteria that products or services must meet – and standardisation – how they are developed. Attention has also been given to the role that standards play in people's daily professional lives. Finally, we will discuss how much impact people think the public has on the development of technological standards, and what influence they should actually have.

4.1 Knowledge and experience

Respondents were shown the introduction below to prepare them for the questions about standardisation:

"Many of the things that we use in our daily lives have to meet certain standards. These standards are agreements about the criteria that products or services must meet.

Technological tools and services also have to comply with standards. For example, there are standards for how USB cables work and for the voltage and design of power sockets.

The following questions relate to such standards and how they are developed. This process is referred to as standardisation."

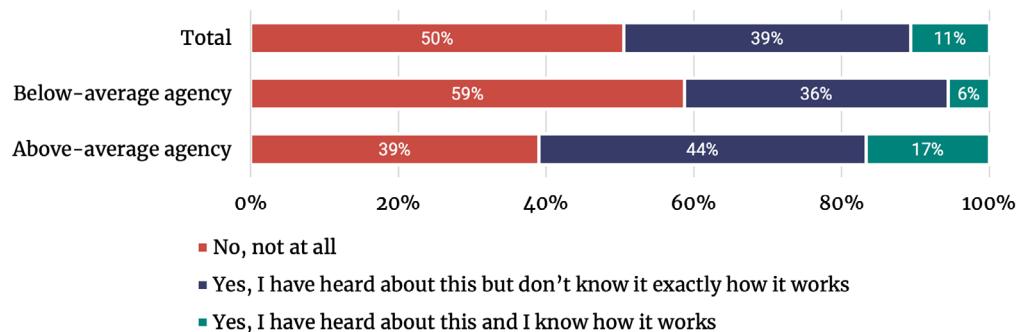
Half of the people somewhat familiar with standardisation processes

After reading the introduction, half of the respondents say that they know, to varying degrees, how technological standardisation processes work. One in ten people have heard of them and know how they work, while 39 percent have heard of them but do not know exactly how they work. The other half are not at all familiar with them.

Dutch people with an above-average sense of agency possess significantly more knowledge about technological standardisation processes. 17 percent of the group with above-average agency are completely familiar with standardisation processes, and 44 percent are a bit familiar with them. This is 6 percent and 36 percent respectively in the group with below-average agency.

Figure 4.1 – Do you know how technological standardisation processes work?*

Based on level of agency. Basis: whole sample (n = 2,154).



* The following mouse-over explanation was shown for the question: "Standards are agreements about the criteria that products or services must meet."

Which people are familiar with technological standardisation processes? As stated, they are more likely to have above-average agency when it comes to digital technologies, but there are also links to the use of digital technologies, the role they play in their personal and professional lives, and the level of knowledge about digital technologies.

These people are more likely to be men and have completed senior secondary or higher education. People who like using digital technologies (13%) and for whom technology plays an important role in their personal (13%) and professional (14%) lives say relatively often that they know how standardisation works. This also applies to people who feel that they possess a lot of knowledge about digital technologies (17%).

One in three people encounter standards in their daily professional lives

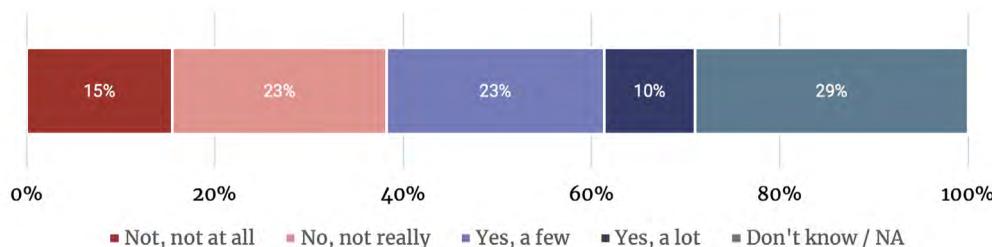
We presented the following text to respondents: "In some sectors, technological standards⁴ play a more important role in daily professional activities than in other sectors, for example, the IT or production sectors. Do you have to meet many specific standards in your day-to-day activities?"

One third of people say that standards play a role in their day-to-day activities: this is 'a few' for 23 percent of the people, and 'a lot' for 10 percent of the people. A similar proportion say that standards do not really play a role in their daily professional lives. This is 'completely not' the case for 15 percent, and 'not really' the case for 23 percent. The question is not applicable to approximately one third of the people, or they do not know.

⁴ With mouse-over explanation: "Standards are agreements about the criteria that products or services must meet".

Figure 4.2 – Do you have to meet many specific standards in your day-to-day activities?*

Basis: whole sample (n = 2,154).



* The following mouse-over explanation was shown for the question: "Standards are agreements about the criteria that products or services must meet."

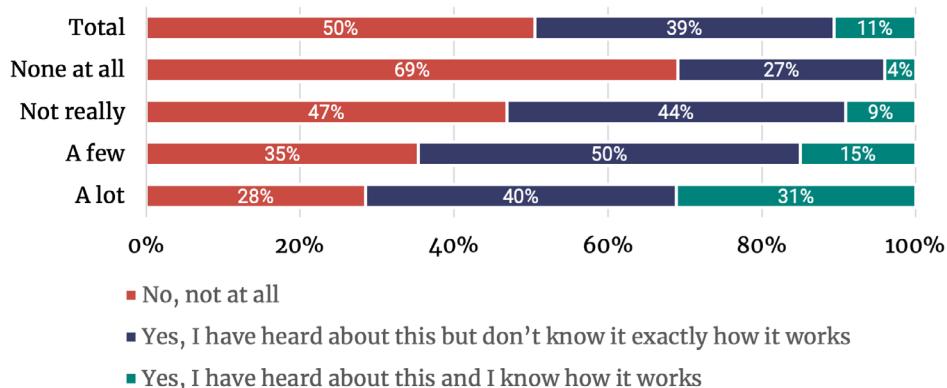
People who have completed higher education are more likely to encounter 'a few' or 'a lot' of specific standards in their professional lives (41%) than people who have only completed senior secondary (34%) and secondary education (17%).

People who work with standards are more like to know how standardisation works

We have already seen that half of Dutch people are somewhat familiar with how standardisation processes work (see Figure 4.1). Figure 4.3 shows that people who say that they encounter a lot of standards in their professional lives are also more likely to know how standardisation works. Seven in ten people (69%) who do not encounter standards at all say that they do not know how standardisation works. Of the people who encounter a lot of standards, seven in ten (71%) say that they are (a bit) familiar with standardisation processes. Three in ten of them know how these processes work.

Figure 4.3 – Do you know how technological standardisation processes work?

Based on prevalence of standards in day-to-day activities. Basis: whole sample (n = 2,154).



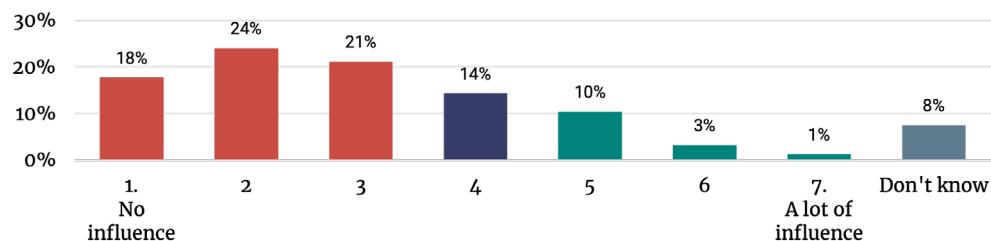
4.2 Influence of citizens

Two thirds: citizens have no influence on the development of standards

Most Dutch people have a pessimistic view of the influence that the public has on the development of technological standards. Almost two thirds of people are more likely to think that the public has no influence (places 1 to 3 on the 7-point scale) than has some influence. Eighteen percent opt for the lowest score on the scale, namely 'no influence whatsoever'(1). One in seven people think the public has neither no influence nor a lot of influence. The same proportion think the public does have a lot of influence.

Figure 4.4 – In your opinion, how much influence does the public have on the development of technological standards?*

Basis: whole sample (n = 2,154).



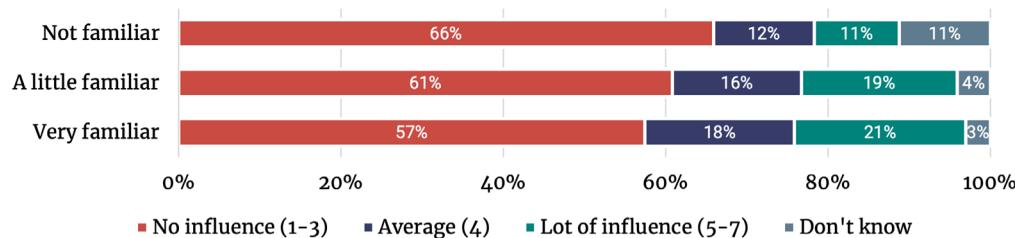
* The following mouse-over explanation was shown for the question: "Standards are agreements about the criteria that products or services must meet."

Dutch people who are familiar with standardisation are (slightly) more likely to believe in public influence

Among Dutch people who say that they are (somewhat) familiar with how technological standardisation processes work (50% of everyone, see Figure 4.1), the proportion of people who think the public has an influence on the development of these standards is larger (approximately one fifth) than among the group who do not know how these processes work (approximately one tenth). At the same time, a majority of people in all groups believe that the public has no influence on standardisation.

Figure 4.5 - In your opinion, how much influence does the public have on the development of technological standards? 7-point scale where 1 stands for 'no influence whatsoever' and 7 stands for 'a lot of influence'.

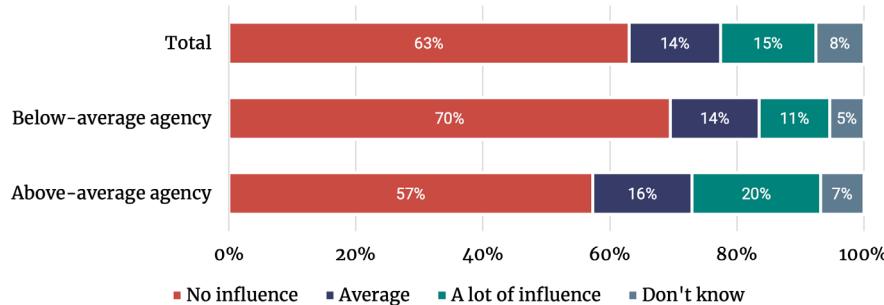
Based on: familiarity with standardisation processes. Basis: whole sample (n = 2,154).



A majority (57%) of people who have a relatively high sense of agency – they know better than the average person how they can express their concerns and/or have the impression that they can make informed choices – say that the public has no influence whatsoever on the development of technological standards. However, this is clearly lower than among Dutch people with a below-average sense of agency, where 70 percent think that the public has no influence whatsoever.

Figure 4.6 – In your opinion, how much influence does the public have on the development of technological standards?*

Based on level of agency. Basis: whole sample (n = 2,154).



* The following mouse-over explanation was shown for the question: "Standards are agreements about the criteria that products or services must meet."

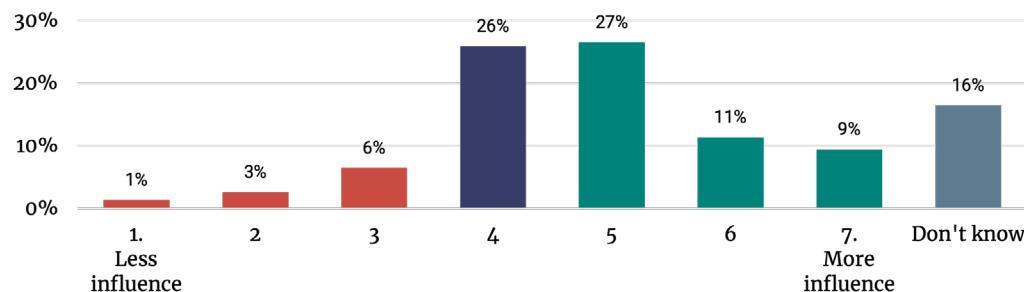
The other main differences can be witnessed on the basis of age. The elderly are relatively more likely to think that the public has no influence on the development of technological standards. For instance, this is a view that is shared by over two thirds of people between the ages of 50 and 64 (69%) and over the age of 65 (67%). The 25 to 34 age group is the most optimistic: a quarter believe that the public has a lot of influence. This is followed by the 18 to 24 age group, of whom 18 percent attribute a lot of influence to the public.

'Preferably more influence for the public than less influence'

When asked what the influence of the public should be when it comes to the development of technological standards, a quarter of people settle for the status quo: they place themselves in the middle of the scale, and neither prefer to see more influence for the public nor less influence for the public. One in ten people feel that the public should have less influence instead of more influence. However, almost half would like to see more influence. Finally, quite a large proportion (16%) say that they do not know.

Figure 4.7 – Do you think that the public should have more, less or the same amount of influence in the development of technological standards in the future?

Basis: whole sample (n = 2,154).



It is striking that there are no significant differences based on agency or use of digital technologies – people who like using technologies and people who perceive themselves to have above-average agency on this front, are equally likely (approximately 50%) to think that the public should have more influence as Dutch people who use technology as little as possible and feel a low sense of agency on this front.

