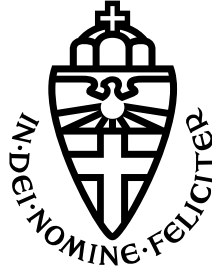


BACHELOR THESIS
COMPUTING SCIENCE



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Online Political Participation in the Age of Digital Surveillance

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August 23, 2022

Abstract

With the increase of government surveillance, other research has identified a chilling of political activity. Meanwhile, both government surveillance and political activity are moving more and more online. There are ways of resisting online surveillance. Unfortunately, using resistance techniques requires some technical skills. With an increasingly technologically knowledgeable population, especially looking at the younger generations, it stands to reason that the possibility of resistance might mitigate the chilling of online political activity in the context of online government surveillance in this group. However, empirical evidence does not support that. There seems to be no chilling effect on online political activity among the studied population. In fact, there is a strong positive correlation between perceived online government surveillance and online political activity. Resistance does not seem to play any role in this. It is theorized that this result was obtained because Dutch people do not fear consequences from government surveillance and because of a positive correlation between perceived surveillance and political interest.

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Chapter 1

Introduction

For decades, government surveillance in the public sphere has been steadily increasing worldwide. Moreover, As the public sphere is evolving in accordance with the digital age, so is surveillance. We all move around in online environments, knowing we are being watched by Google, Facebook, and possibly even the government directly. We post on message boards, watch Youtube videos and message friends, seemingly not caring that we are being observed every step of the way. However, what if this surveillance impacts our behavioral patterns more than we believe? It is not unthinkable that people are less inclined to sign an online petition against the government if that very same government is watching them do it. Research shows the so-called 'chilling effect' perceived government surveillance may have on political activity. Some empirical data supports the hypothesis that people who perceive government surveillance are more reluctant to participate in online political activities like engaging in discussions, researching opinions, or signing petitions [38][36].

The described phenomenon can seemingly be captured by a well-known metaphor: Jeremy Bentham's panopticon. Designed in 1791, the panopticon is a dome prison with a pillar in the middle. It is designed so that a single guard inside the pillar can directly look into each prison cell and tell what is going on. In turn, the prisoners do not see the guard, creating an asymmetrical power relation. The idea is that the guard's potential presence is enough to discipline the prisoners into only performing what is deemed to be 'acceptable' behavior. Bentham did not limit himself to prisons, however. He applied the same concept to many facets of society. Michel Foucault used and extended the panoptical model as a metaphor for societal institutions and how they exert power on the general population. Of course, by the time the internet came into existence, Bentham had long passed away [16]. There is, however, a critical difference between the present-day situation and the classical panopticon. Whereas the prisoners could not resist the guard's gaze, society can now resist in some capacity against their watch-

ers. A prominent example of this would be the application of cryptography, making it difficult for outside parties to observe communication. Another widespread way of resisting is VPN use [13]. Even though we can observe this difference, most empirical data still seems to suggest that the effects of the online panopticon are very much visible in our society [38][36].

A possible explanation for this mystery could be that society is not equipped to use the digital resistance tools available to them. Just because VPNs exist does not mean that the general population is in a position actually to use them. A study from the European Union shows that just 34% of the population has ever changed the cookie settings in their browser, a straightforward privacy protection measure [33]. This statistic begs the question of whether we can reasonably expect the average person to know about complex protection methods. What is more, is that just perceiving government surveillance is enough to strain online political activity. WhatsApp messages may be encrypted, but when people are unaware of that, they might still assume that the government is reading everything they are writing. Thus, this story is twofold; It is about (perceived) surveillance and resistance against this surveillance.

While technological knowledge is not yet as widespread as we would like it to be, looking at the younger generations, it is clear that it will become increasingly universal as time goes on. They are tech-savvy and comparatively highly educated [20]. If we want to not only say something about the digital panopticon right now but something about what it might look like in the future, we have to look at these generations. No empirical data shows how the effects of perceived online surveillance in technologically knowledgeable people differ from that in others. Additionally, most related research heavily focuses on the US and even there barely any empirical data has been collected to support the online panopticon metaphor. Thus, there is a clear knowledge gap here.

This study will attempt to fill the gap and lay a foundation for future work by investigating the following question: **How does technological skill affect people's participation in online political activity in the light of perceived government surveillance?**

To answer the main question, I will investigate the following sub-questions:

1. How do people perceive online government surveillance?
2. To what degree do people use resistance methods against online government surveillance?
3. How do people participate in politics online?

Chapter 2 will introduce important theories and concept. Chapter 3 is dedicated to the main research. First this chapter will discuss the data collection and processing methods, after which it will delve into the results.

This chapter will also discuss the research limitations. Next, chapter 4 will contain conclusions. Lastly, there will be an appendix containing the survey questions used.

Chapter 2

Preliminaries

2.1 Chapter Introduction

This chapter will delve into the literature that was needed to complete this thesis. It provides the reader with the necessary framework to understand the research.

2.2 Online Surveillance

Lyon defines surveillance as "any collection and processing of personal data, whether identifiable or not, for the purposes of influencing or managing those whose data have been garnered [26, p. 2]." He attempted to conceptualize online surveillance back in 2001. He breaks the concept of surveillance down into four key characteristics:

- Purposeful: There needs to be a pointed reason behind the object being watched.
- Routine: It is hidden in the seams of daily life.
- Systematic: Observation is carried out following a fixed schedule.
- Focused: Detailed information is gathered about the observed object [26].

Ball identifies four more elements in a surveillance network:

- Re-presentation: Data gathered through technological means can be represented in another form.
- Meaning: New surveillance technologies allow life to be interpreted from new perspectives.
- Manipulation: Inherently, a power relationship exists between the surveillant and the surveilled.

- Intermediaries: A surveillance network involves actors who have a role in this network [3].

In his other work, Lyon elaborates on the routineness of online surveillance. He emphasizes that everyday life has moved online for a large part. He notes that lower socioeconomic groups and women have constantly been exposed to surveillance in various forms. However, emerging dependence on the internet for daily tasks is now resulting in middle-class citizens and men being affected by surveillance as well [27].

Marx observes that surveillance today is not applied to specific people deemed suspicious but to everyone. He defines new surveillance as "the use of technical means to extract or create personal data [29, p. 12]." Andrejevic also points out that modern surveillance is not systematic or purposeful. Nowadays, the aim seems to be to collect data without a predefined goal [2].

2.3 Data in the Digital Age

Over the past years, we have witnessed the rise of big data. Brayne defines big data as a vast, fast, disparate and digital environment [7]. Andrejevic and Gates expand upon this definition by including the emerging techniques to make sense of large quantities of data [2]. From the 80s onward, the previously clear boundaries within which personal data flowed started slowly fading away. Government departments started to connect and centralize their databases, allowing them to construct profiles of individuals that were more accurate than ever before. On top of that, the public and private sectors started to integrate more and more [36]. Meanwhile, mass storage and parallel computing are steadily growing cheaper. Cookies and GPS tracking are just two examples of how Big Tech keeps track of people. Gartner identifies three dimensions of big data: volume, velocity and complexity [17].

Zuboff introduced the term 'surveillance capitalism, which is the commodification of privacy observed in modern capitalist societies. Data, produced in various ways without the knowledge or consent of the observed, has become one of the most valuable objects in commercial transactions. She also introduces a new asset class named 'surveillance assets.' Surveillance assets are appropriated through data tracking, database combining and other automatic operations that aid in the accumulation of data. Exploiting these surveillance assets results in surveillance capital. Interestingly, Zuboff suggests that trust in surveillance capitalists, like Google, is declining due to evidence that shows how little such corporations care about the lives of those they collect data from [41].

2.4 Commercial Data vs. Government Data

According to Dempsey, the American government is analyzing commercially collected data for counter-terrorism purposes. Legal constraints for this practice are limited. Notes that whereas the consequences of commercial parties processing data are relatively mild for the individual, the consequences of the government processing that same data can be life-altering. Commercial data processing can result in targeted ads, while government data processing can, in the worst case, result in arrest or deportation [11].

2.5 Data Doubles

When CCTV cameras started to get a more significant presence in public spaces, the panopticon immediately became a popular framework for analyzing their effects. However, Galič et al. explain that the digital age has transformed society into something so different from the one Foucault based his analysis on that the panoptical framework falls short. One significant way modern society is different: digital profiles are now more valuable than actual people. You are nothing more than information. You are your age, nationality, gender, education level, interests, etc. The human behind the information is no longer critical [16]. Haggerty accurately names these sets of information about persons 'data doubles'. A so-called 'surveillant assemblage creates these data doubles.' A surveillant assemblage consists of traditionally separate surveillance practices and technologies that integrate abstract human bodies into data flows that form data doubles when reassembled. Surveillant assemblages are considered analogical to rhizomes (a subset of plants). Firstly, like rhizomes, they grow rapidly; Small variations of combinations of surveillance techniques result in many new uses for the assemblage. Secondly, like rhizomes, they maintain a hierarchy between classes; they ensure the panopticon where the few are watching the many stays a reality [19].

2.6 The File

Los compares data doubles to 'the file,' referring to the personal files that governments keep in totalitarian regimes. The file symbolizes fear of prosecution for speaking up about politics. People under these regimes censor themselves so their files will not get marked. As Los notes, in the panopticon, the subjects are instilled with a positive norm; they learn to display certain behaviors. In contrast, in a totalitarian regime, citizens are supposed to *avoid* particular behaviors. Furthermore, Los compares German legal positivism and how the computer code behind modern surveillance systems is considered void of morality. The latter she names 'surveillant

positivism.’ In surveillant positivism, automated surveillance technologies are applied without moral judgment [25].

2.7 Resistance against surveillance

Marx describes eleven ways people resist surveillance, seven of which are relevant for this study.

- Discovery moves: They involve actively looking for signs of surveillance and changing behavior accordingly.
- Avoidance moves: When avoiding, the surveillance subject actively avoids places where they suspect surveillance may occur.
- Switching moves: Valid data is used for something that that data does not apply to. Distorting moves are similar.
- Distorting moves: In distorting moves, one uses technically valid data, but this data does not mean what it appears to say.
- Refusal moves: They happen when one simply says ‘no’ to surveillance and follows up by ignoring it completely.
- Blocking moves: They aim to stop an outsider from observing a specific piece of information.
- Masking moves: Masking moves go beyond blocking moves in the sense that they not only block information from being seen during surveillance, but they replace it with false information [31].

One of the elements of surveillance identified by Ball was ‘manipulation.’ Resistance methods aim to break or disrupt the information flows within the power relation between the surveillant and the surveilled, as to create brief moments where surveillance is absent [3].

2.8 Avoidance of the law

Just as individuals can use avoidance techniques to escape surveillance, so does digital surveillance have ways to avoid the law; developments in surveillance technology allow the government to create workarounds for privacy protection laws. Ogura defines e-government as “a fundamental governance structure with highly computerized administration and communication networks and digitized personal databases as a necessary precondition to implement administrative work [34, p. 283].” One could quickly characterize the Netherlands as having such e-government. Unfortunately, E-government

has adverse effects on both rule of law and democracy. Laws dictate the behavior of persons, but not of technology. As such, ICT can act unlawfully. On top of that, our legislative bodies are ill-equipped to verify whether the government uses ICT lawfully due to a lack of ICT knowledge among members of parliament. If ICT can take unlawful actions without anyone finding out if it does, it is to be expected that the government would use digital surveillance for unlawful ends [34].

2.9 Chilling effects

The theory of chilling effects is that specific government actions dissuade people from displaying certain activities. Not the people, but these activities are chilled [37]. The term 'chilling effect' was first used by the Florida Legislative Investigation Committee in 1963 [10]. Schauer was the first to scientifically analyze it as a theory 15 years later, in 1978. Initially, it was mostly a legal theory, an argument used in first amendment (free speech) cases. In the context of legal scholarship, criminal laws are supposed to deter people from committing criminal acts. However, laws that prohibit a specific activity also deter people from unrelated legal activities. This is the chilling effect in a legal context. Schauer identified two components of the chilling effect theory:

- Recognition of uncertainty: The law is intentionally vague. The legal system forces judges to interpret the law when they apply it. This makes for somewhat uncertain outcomes and even leads to errors. In other words, there is always a risk that certain activities which, to an individual, aren't *obviously* forbidden by the law can still result in punishment. This creates fear.
- The principle of comparative harm: The inevitability of error in the legal system forces us to choose between wrongful convictions or wrongful acquittals. To the extent that it is decided that wrongful acquittals are more harmful than wrongful convictions, fear in individuals of wrongful convictions will increase.

The fear caused by both the recognition of uncertainty and the principle of comparative harm together results in a chilling effect [37].

2.10 Demographics of privacy concern

From data collected over a span of 7 years between 2001 and 2008, Goldfarb and Tucker concluded that younger people are more careless when it comes to revealing personal information than older people. Moreover, they found that during the period of the collected data, the gap between young and old

was widening. A general trend of increased privacy concerns across all age groups could also be observed. This can be explained by a growing range of contexts in which privacy is deemed relevant. [18].

Lee et al. researched the relationship between demographic characteristics and privacy concerns in South Korea in 2019. They found that men ages 50 and above are generally more concerned about privacy than women in these age groups. Below the age of 50, women tend to be more concerned. The shift is explained by men staying in the workforce for longer, thus being more exposed to privacy issues in their daily lives at a later age than women. In line with the findings of Goldfarb and Tucker, Lee et al. found that privacy concern increases with age. In addition, the study found that privacy concern increases as income increases. This is because people with a higher income have more to lose. Lastly, a higher level of education correlates with more privacy concerns. Interestingly, younger people with a high level of education have more privacy concerns than older people with a low level of education. Overall, young highly-education people tend to be the most concerned about privacy out of all groups [23].

2.11 Political participation

Brady, Verba & Schlozman developed a resource model for political participation. The resources they came up with are time, money and civic skills. They note that these resources are not evenly divided over the whole population but are skewed in favor of more affluent groups. In their model, political participation can be divided into activities that involve giving time, giving money and voting. Civic skills are those skills needed to effectively organize, communicate and find your way in institutions. These skills are first of all learned in school. In addition, the higher degree you hold, the higher the probability of you holding a job where you get the opportunity to further develop civic skills. Therefore a decent way of measuring civic skills is by measuring education. In addition to the three factors mentioned above, quantitative research backs up the role of political interest in political participation. This is the most crucial factor in influencing people to vote [6].

The research of Coffé suggests a difference in how men and women participate in politics. Women are more likely to vote, while men are more likely to take actions involving direct contact and are more likely to be active members of political parties [9].

2.12 Validity of data analysis methods

A Likert-type item is a single question for which a Likert-type scale is used. If at least four Likert-type items measure the same thing, a Likert scale can

be created by converting the answers to integers and calculating the mean [5].

P-values show the statistical significance of a relationship between two populations. In other words, p-values are a probability measure that give the probability that an observed difference between two populations is mere chance. Commonly, a p-value is allowed to be at most 0.05 for statistical significance [40]. A t-test is a statistical test that aims to determine the difference between the means of two populations. It produces a t-value. As the difference between means grows bigger, so should the calculated t-value. A large t-value implies a small p-value [24]. A t-test relies on the following assumptions to be valid:

- The data can be organized in a normal distribution.
- The variances of the normal distributions from which the data is derived are the same.
- The test scores have independent errors.

Having said that, research shows that t-tests are nearly invulnerable to violation of their assumptions. Boneau showed that purposely violating the assumptions of a t-test lead to minimal variations in the outcome, making t-tests robust. However, this just holds when the samples being tested are of a similar size and the respective population distributions are of a similar shape, or at least are both symmetrical [4].

Linear regression models a independent variables as predictors in a linear function for a dependent variable. In simple linear regression, there is only one independent variable. Multiple linear regression has more than one independent variable. Linear regression relies on the following assumptions to be valid:

- There is a linear relationship between the data points.
- The errors are normally distributed.
- The errors have equal variances (i.e. there should be homoskedacity in the data rather than heteroskedacity).
- The test scores have independent errors.

It should be noted that the third assumption can be circumvented by using a robust regression algorithm, such as iteratively reweighted least squares. Furthermore, the first two assumptions can be checked with plots, whereas the last assumption is checked by performing a Durbin-Watson test [39]. The outcome of this statistical test should approach 2 [14][15]. Linear regression produces a p-value like t-tests, which should be 0.05 or lower for statistical significance, as well as a z-value which works similarly to t-values.

Chapter 3

Research

3.1 Chapter introduction

This chapter will discuss the research that was conducted. It is divided into three sections that talk about survey design and data analysis, the results and research limitations.

3.2 Survey design

A survey was created and distributed to gather the empirical data needed to answer the research question. The survey is divided into four sections:

1. General information
2. Resistance methods
3. Perceived surveillance
4. Political participation

An English language version of the survey can be found in Appendix A.1. The following paragraphs will dive into each of the survey sections, the target populations and the data analysis methods.

3.2.1 General information

This thesis examines the relationship between online government surveillance and online political participation. There are, however, other known factors that political participation is affected by. These are civic skills, free time, money and gender [6][9]. In addition, interest in politics and trust in the government might also affect political participation. Internet skills could be considered a subset of civic skills, but since it is vital for this thesis, extra stress is put on it in the survey. Nevertheless, all the characteristics

mentioned above are likely to affect the level of online political participation in the survey's participants.

3.2.2 Resistance methods

This section contains statements concerning the way participants resist digital surveillance. A 5-point Likert scale is used. The participants are asked if they fully agree, agree, neither agree nor disagree, disagree or fully disagree with each statement. Each statement is based on one or more resistance method types: discovery, avoidance, piggybacking, switching, distorting, blocking, masking, breaking, refusal, cooperative and counter-surveillance moves [29]. The ones that were left out are: piggybacking, breaking, cooperative and counter-surveillance moves. These types of moves are not relevant for this thesis research because their applications are either too obscure (in the case of piggybacking and cooperative moves) or require an extremely assertive surveillance subject (in the case of breaking and counter-surveillance moves). One of the statements used is the Dutch translation of a statement previously used in a similar study: The government monitors citizens' electronic mail and web surfing [22].

3.2.3 Perceived surveillance

In the perceived surveillance section, the participant is asked to state their opinion on statements related to the way they perceive digital government surveillance. The key to this is the word 'perceive.' The extent to which the surveillance is there is irrelevant. The participant's perception of it is what might affect their online political participation. As in the previous section, responses are measured on a 5-point Likert scale. Possible answers are again: fully agree, agree, neither agree nor disagree, disagree, fully disagree. The statements vary in degree of invasiveness. Though this research is focused on government surveillance, one of the questions relates to data collection by private parties. In light of the Cambridge Analytica scandal, people might feel (perhaps rightfully so) that even when they give their data to private organizations, this data might still end up in the hands of government bodies.

3.2.4 Political participation

Online political participation is partly measured by reusing Dutch translations of questions created for a similar study. These questions are peer-reviewed. The following questions were reused:

- Have you ever used the internet to contact an elected representative, government official, or candidate for office to express your opinion about a local, national, or international issue?

- Have you signed an internet petition about a local, national, or international issue?
- Have you used the internet to persuade another person about your view on a local, national or international issue [22]?

Other questions used were newly created to supplement the ones above. These new questions are more specifically targeted toward a Dutch audience.

3.2.5 Target population

Since this thesis research focuses on the Netherlands, the survey was distributed in Dutch only. Distributing it in English, thus allowing international residents of the Netherlands to answer too, might give a warped view of the results. For example, suppose an international resident answered the questions specifically relating to government surveillance. In that case, they might have a biased predisposition since they would likely keep the government of their home country in the back of their mind.

The survey was conducted in LimeSurvey, a free and simple collection program suitable for professional use. Distribution started at the end of February and went on throughout the beginning of March. It was sent to friends and acquaintances, who again spread it in their respective friend groups. This created a snowball effect. A link to the survey was also posted on LinkedIn and in large student Whatsapp groups. After a week, a reminder was sent to those who had received the survey but had not yet filled it out.

A majority of the survey participants studied either computer science or law. Since this research aims to measure the effect of technological savviness on the potential chilling effect of online political participation caused by government surveillance, this is perfect. It means that in the pool of participants, many have much affinity with technology and many do not. This allows for making comparisons. In addition, since most of the participants are university students, a high level of civic skill is present. This allows for drawing more conclusions from the data regarding the chilling effect of surveillance.

3.2.6 Data analysis

Likert scales were created for the survey's perceived surveillance and resistance sections. The answer options 'I do not know what this means.', 'Fully disagree.', 'Disagree.', 'Neither agree nor disagree.', 'Agree' and 'Fully agree.' were converted to the integers 0, 1, 2, 3 and 4. Which answer option gets assigned which number depends on whether the question was negative or positive. Either way, 'I do not know what this means.' and 'Neither agree nor disagree.' always got assigned the integer 0.

In order to analyze the central tendency and variability of the created Likert scales, the mean and standard deviation were computed. A t-test was conducted to compare groups. This made it possible to compare the two groups' mean, standard deviation, standard error and 95% confidence interval. Additionally, it produced a t-value and p-value. T-tests are robust regarding violations of assumptions [4]. Taking into account the scale of this thesis, the decision was therefore made to ignore the assumptions for t-tests and accept results that were only slightly less accurate.

Linear regression was used to identify relationships between perceived surveillance, resistance, political participation and other variables. Iterative weighted least squares was used as the regression algorithm, as it is robust against heteroscedasticity, a property that much of the data does have. Next, the assumption of linearity was assessed by visually checking the data plots for a linear relationship between the data points. It was also visually determined if the assumption of normality was met. This was accomplished by creating Q-Q plots and checking if the data points formed a diagonal line. Finally, the assumption of independence was checked with a Durbin-Watson test. In order to pass the test, the outcome should be close to two. The decision was made to accept any outcome between 1.5 and 2.5.

3.3 Results

In the next paragraphs, the survey results will be presented and discussed. This is done by going through each of the three sub-questions identified in the thesis introduction individually:

1. How do people perceive online government surveillance?
2. To what degree do people use resistance methods against online government surveillance?
3. How do people participate in politics online?

3.3.1 How do people perceive online government surveillance?

General tendency of perceived surveillance

Figure 3.1 shows a normal distribution of how surveillance is perceived across all participants. Since there were four questions in this section and 'I do not know what this means.' was not an answer option here, the minimum score for each participant was zero and the maximum was four. The middle is, therefore, two. This can be considered the neutral point because it represents the score participants get if they only answer 'Neither agree nor disagree.' It is noteworthy that the mean is, at 2.38, higher than the neutral

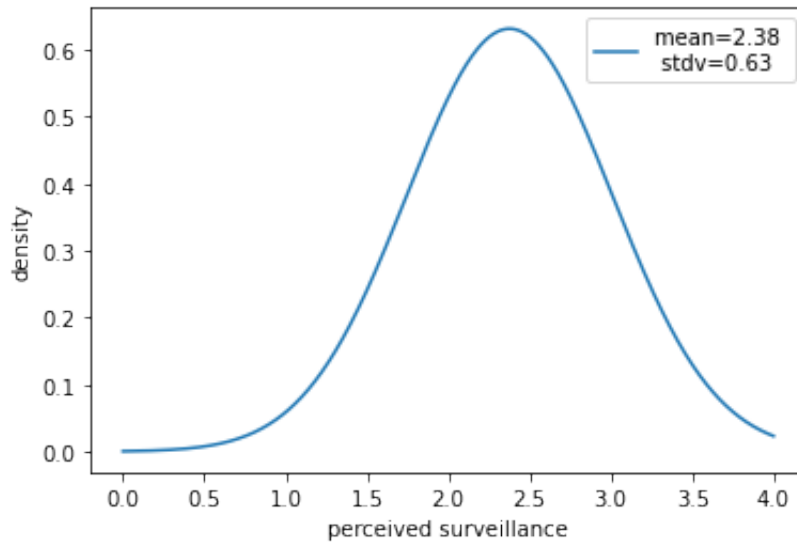


Figure 3.1: Perceived surveillance.

point. This indicates that people generally perceive at least some online government surveillance. The standard deviation of 0.63 means that 68.2% of participants got a score ranging from 1.75 to 3.01. This indicates a lack of extreme tendencies to one side or the other. The central tendency bias can explain this. This bias entails that participants tend to avoid extreme answers on a Likert scale [12].

The somewhat high surveillance perception is surprising in light of Lyon's characterization of surveillance in the electronic age. He observes that digital surveillance is, among other things, routine. This type of surveillance is not in your face; it is hidden. This would most definitely hinder people's ability to observe it [26]. One explanation for people perceiving it without seeing it may be that online surveillance is not purposeful or systematic. What this comes down to is that everyone is now being surveilled in digital environments, irrespective of whether you did anything illegal or suspicious [30] [2]. If people know this simple fact, they do not have to observe the surveillance to perceive it. If people realize that everyone is being observed, they also realize that they are being observed.

Gender and perceived surveillance

Previous research gives reason to suspect a connection between gender and perceived surveillance. It needs to be noted that the research took place in South Korea while this thesis took place in the Netherlands. The way

different cultures view gender may affect the results. Lee et al. found that men over 50 were more privacy aware than women of the same age, while below 50, it is reversed [23]. In this thesis research, most participants are students. Therefore, the t-test is expected to show a higher mean for women than men. It needs to be said that out of 109 participants, four did not explicitly identify as either male or female. Because a group of four is too small to draw observations, they were left out of the t-test.

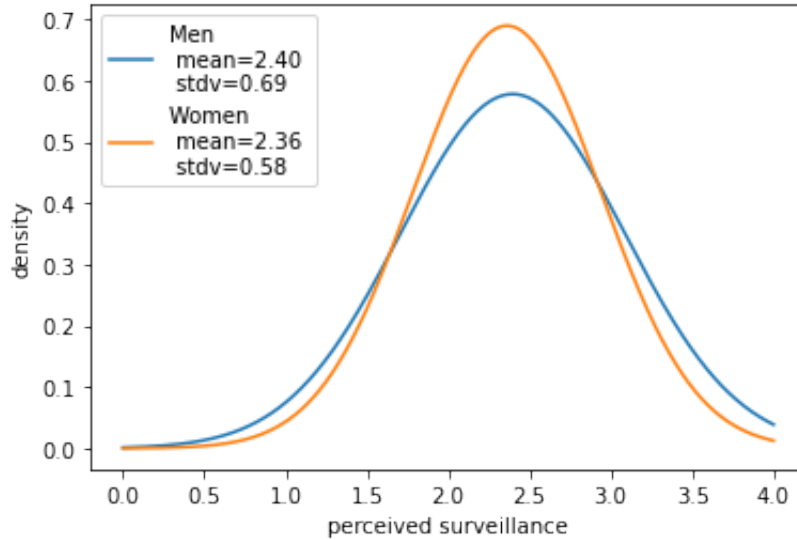


Figure 3.2: Perceived surveillance by gender.

| | Variable | N | Mean | STDV | SE | 95% conf. interval |
|----------|----------|-----|-------|-------|-------|--------------------|
| 0 | male | 55 | 2.395 | 0.690 | 0.093 | [2.209, 2.582] |
| 1 | female | 50 | 2.360 | 0.578 | 0.082 | [2.196, 2.524] |
| 2 | combined | 105 | 2.379 | 0.637 | 0.062 | [2.255, 2.502] |
| t-value: | | | | 0.611 | | |
| p-value: | | | | 0.777 | | |

Table 3.1: Perceived surveillance by gender.

Table 3.1 and figure 3.2 show that, contrary to what was expected, there appears to be no substantial difference between the average perceived surveillance of men ($M = 2.40$; $STDV = 0.69$) and women ($M = 2.36$; $STDV$

= 0.58). The result is not significant and seems to have a low predictive value for perceived surveillance ($p = 0.78$; $t = 0.61$).

Education and perceived surveillance

Previous Korean research indicates that the level of education of a person appears to influence privacy awareness. The higher the level of education, the more privacy-aware Korean people generally are [23]. The Dutch Central Bureau of Statistics (CBS) defines low education as having completed primary school, VMBO and the first three years of HAVO or VWO or MBO1. The CBS defines middle education as having completed HAVO, VWO or MBO2-4. Furthermore, high education is defined as having completed HBO or WO [1]. Of the pool of participants, only one person has a low education. However, a reasonably large set of participants falls under the definition of middle education. Therefore, the t-test considers the group of participants with middle and higher education. Future research should look into the effects of having only a lower education on surveillance perception, specifically in the context Dutch school system.

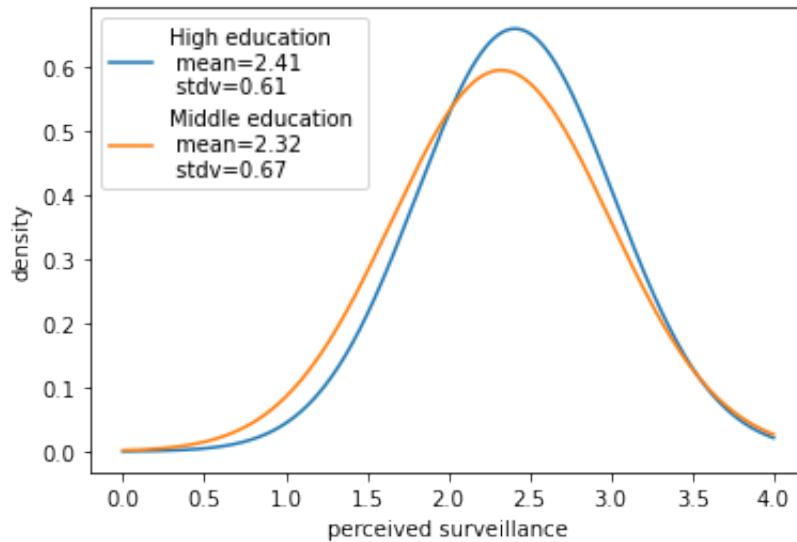


Figure 3.3: Perceived surveillance by education level.

Table 3.2 and figure 3.3 suggest that having a high education ($M = 2.41$; $STDV = 0.61$) does not necessarily point towards a higher perception of surveillance than those that have a middle education ($M = 2.32$; $STDV =$

| | Variable | N | Mean | STDV | SE | 95% conf. interval |
|----------|---------------------|-----|-------|-------|-------|--------------------|
| 0 | higher education | 61 | 2.410 | 0.606 | 0.078 | [2.255, 2.565] |
| 1 | secondary education | 47 | 2.324 | 0.671 | 0.098 | [2.127, 2.522] |
| 2 | combined | 108 | 2.373 | 0.633 | 0.061 | [2.252, 2.494] |
| t-value: | | | | 0.693 | | |
| p-value: | | | | 0.490 | | |

Table 3.2: Perceived surveillance by education level.

0.67). This result was not significant or close to being so ($p = 0.49$; $t = 0.69$).

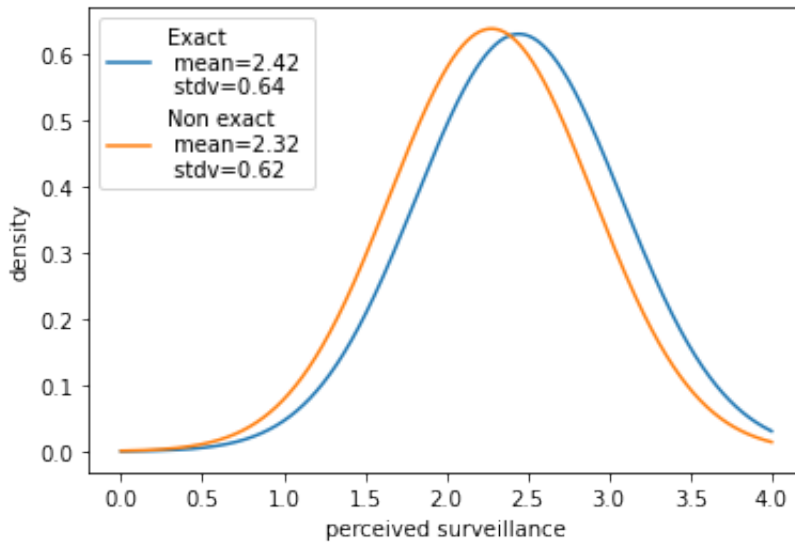


Figure 3.4: Perceived surveillance by educational direction.

Table 3.3 and figure 3.4 show the effect of educational direction on perceived surveillance. A distinction was made between exact education (exact and computer science, engineering) and non exact education (behavior and society, arts and culture, education and upbringing, law and public administration, language and communication). The results suggest that participants with an exact education ($M = 2.42$; $STDV = 0.63$) might perceive more surveillance than those with a non exact education ($M = 2.28$; $STDV = 0.63$). While this result is not significant ($p = 0.26$; $t = 1.13$), it gets much closer to being so than educational level. Given a larger participant

| | Variable | N | Mean | STDV | SE | 95% conf. interval |
|----------|-----------------------|-----|-------|-------|-------|--------------------|
| 0 | beta education | 71 | 2.426 | 0.627 | 0.074 | [2.278, 2.575] |
| 1 | alpha/gamma education | 38 | 2.283 | 0.637 | 0.103 | [2.073, 2.492] |
| 2 | combined | 109 | 2.376 | 0.632 | 0.060 | [2.256, 2.496] |
| t-value: | | | | 1.129 | | |
| p-value: | | | | 0.261 | | |

Table 3.3: Perceived surveillance by educational direction.

pool, future research might be able to provide more conclusive evidence. Educational level might have had a larger impact if it had been possible to consider a low level of education in addition to a middle and high level.

Trust of government

As previous research has noted, online surveillance done by governments can potentially have far-reaching consequences for the surveilled. Arrests and deportations cannot be ruled out [11]. Moreover, we know that, at the very least, the American government exploits surveillance assets to construct digital profiles [11][41]. Lastly, we are living in an age of surveillant positivism in which ICT systems that collect and interpret digital profiles cannot be trusted to act in a way that is ethical or lawful [25][34]. This begs the question if general trust in the government influences perceived government surveillance. Low government trust would likely make people warier of the consequences, especially given the factual information that the most prominent Western government does use surveillance assets to its advantage.

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|--------|-------|---------|---------|--------------------|
| x | -0.256 | 0.059 | -4.351 | 0.000 | [-0.372, -0.141] |
| Durbin-Watson: | | | 2.299 | | |

Table 3.4: Effect of government trust on perceived surveillance

Figure 3.5 shows a clear correlation between government trust and perceived surveillance. The more people trust the government, the less government surveillance they perceive. Table 3.4 shows that this result is statistically significant and has a high predictive value for perceived surveillance ($p = 0.00$; $z = -4.34$). Thus, the expectation is confirmed.

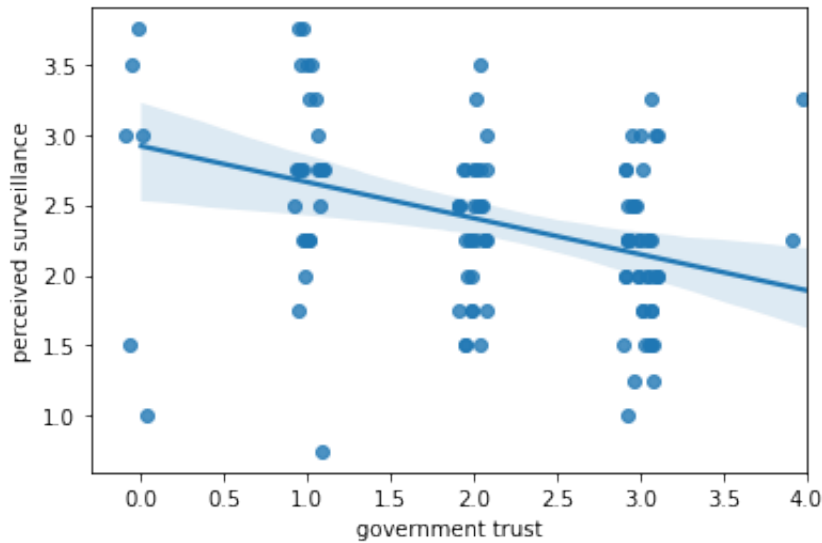


Figure 3.5: Effect of government trust on perceived surveillance.

Technological skill

Since surveillance in this thesis research refers specifically to online surveillance, it is in line with the expectation that those with more technical skills would have a better idea of what it looks like and how much surveillance takes place. In a way, this was already measured by looking at educational background, as people with an exact education likely are more technologically skilled than people with a non exact education. However, a more direct measurement would be to consider people's self-reported technological skill.

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|-------|-------|---------|---------|--------------------|
| x | 0.039 | 0.083 | 0.467 | 0.641 | [-0.123, 0.201] |
| Durbin-Watson: | | | 2.159 | | |

Table 3.5: Effect of technological skill on perceived surveillance

From figure 3.6 and table 3.5, no clear relationship can be derived between self-reported technological skill and perceived surveillance. Self-reported technological skill does not appear to be a good predictor for perceived surveillance ($p = 0.80$; $z = 0.47$). This is somewhat unexpected and might be explained by the Dunning-Kruger effect. The Dunning-Kruger effect is

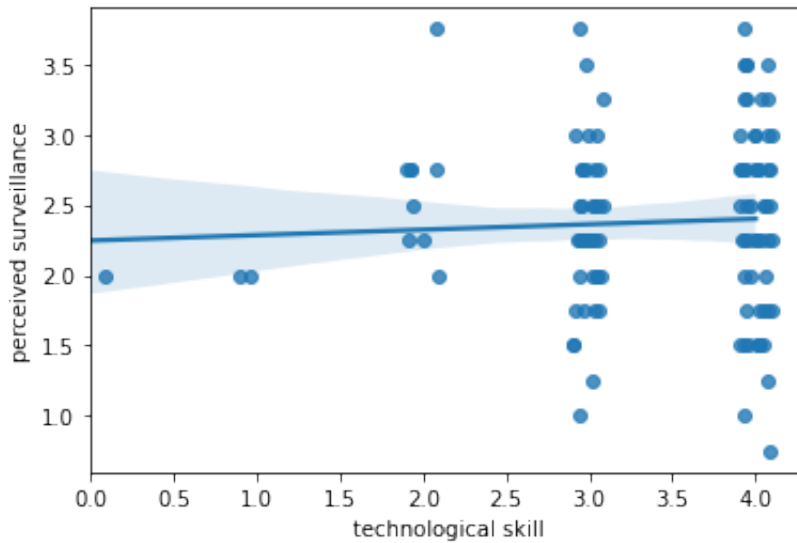


Figure 3.6: Effect of technological skill on perceived surveillance

a well-known bias that says people tend to overestimate their knowledge of a topic when they have little knowledge of it [28]. In this thesis research, a whopping 96.33% of participants indicated they either agree or completely agree with the statement 'I am good with technology.' At first glance, it seems unlikely that they are all as knowledgeable as they think. However, as will become more apparent soon, it seems to be the case that technological skill, in general, is simply not a good predictor for perceived surveillance.

Conclusions

It can be concluded that when looking at the entire population of participants, the general tendency is that some surveillance is perceived ($M = 2.38$; $STDV = 0.63$). This could be explained by contemporary digital surveillance's purposeless and unsystematic nature. Gender, as well as education level, do not seem to influence perceived surveillance much. However, solid evidence was found pointing toward a general lack of trust in the government, resulting in a higher level of perceived surveillance ($t = -3.37$; $p = 0.00$). This correlation makes sense given the following facts:

- It is known that the strongest Western government is constructing accurate digital profiles of individuals, partly through the usage of surveillance assets [11][41].
- Consequences of government actions based on digital profiles can have disastrous consequences for an individual's life [11].

- The government cannot be trusted to learn and reflect on wrong persecutions, as we live in an age of surveillance positivism [25].
- Online surveillance systems have ways of acting unlawfully [34].

While self-reported technological skill is not a good indicator for perceived surveillance ($p = 0.64$; $z = 0.47$), it would not be a stretch to assume that educational direction is a more objective measure of technological skill. Educational direction appears to be a better indicator. While lacking a significant result, the result does point in the direction of education, impacting perceived surveillance ($p = 0.26$; $t = 1.13$). Participants with an exact education tended to perceive a higher degree of surveillance ($M = 2.42$; $STDV = 0.63$) than those with an exact or non exact background ($M = 2.28$; $STDV = 0.64$). Future research should explore this more and attempt to get a significant result. It must be said that it is possible, even likely, that educational direction impacts perceived surveillance for reasons other than a difference in technological skill.

3.3.2 To what degree do people use resistance methods against online government surveillance?

General tendency of resistance

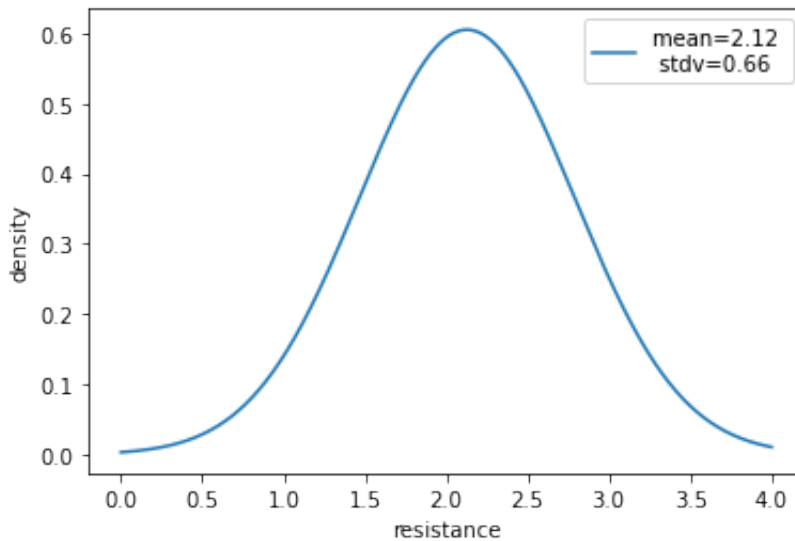


Figure 3.7: General resistance.

Figure 3.7 shows a normal distribution of the amount of resistance displayed against digital surveillance across all participants. The answer options in this second were coded as numbers ranging from zero to four. Each

participant’s score consists of the mean of the answers they gave to the five questions in this section. Therefore, the middle is two. It should be noted that the mean in figure 3.7 ($M = 2.12$; $STDV = 0.66$) is just above two. The standard deviation indicates that 68% of participants scored between 1.46 and 2.78. Across all questions, the average number of participants indicating they use the resistance method described in that questions is 48.8. It should be noted that the questions ‘When I am asked for optional personal information online, I answer it’ and ‘I use a VPN or TOR Browser’ stand out from the rest. For the former, 88 participants indicated they use this resistance method, while for the latter, only 21 participants indicated this. This is unsurprising, considering one needs less technical knowledge for the former than for the latter. The nature of refusal moves is more straightforward than that of masking moves, of which these statements were examples. A refusal move entails saying ‘no’ to surveillance and moving on; the participant is passive. Meanwhile, a masking move is more complicated, as it requires the participant to actively replace observed information with false information [29]. Moreover, the somewhat low mean begs the question if people feel like resisting is even possible, considering that the production of surveillance assets does not require knowledge or consent of the surveilled anyway [41]. An alternative explanation would be that people do not know how to resist (i.e., they lack technological knowledge).

Technological skill and education

Respectively, sixteen and eight participants openly admitted that they did not know what encryption and VPN/TOR are. However, quite some of them responded with ‘neither agree nor disagree’ and many responded with ‘disagree’ or ‘completely disagree’ to the questions relating to them. It is unclear if the people that gave these responses understood all the concepts clearly. Moreover, it is plausible that these questions may be a victim of the Dunning-Kruger effect, meaning some people could overestimate their knowledge of these concepts [28]. In short, while the results do not obviously indicate that lack of technological knowledge plays a part in low resistance, it is worth finding out.

| Variable | Coef | SE | z-score | p-value | 95% conf. interval |
|----------------|-------|-------|---------|---------|--------------------|
| x | 0.335 | 0.082 | 4.081 | 0.000 | [0.174, 0.496] |
| Durbin-Watson: | | | 1.926 | | |

Table 3.6: Effect of technological skill on resistance

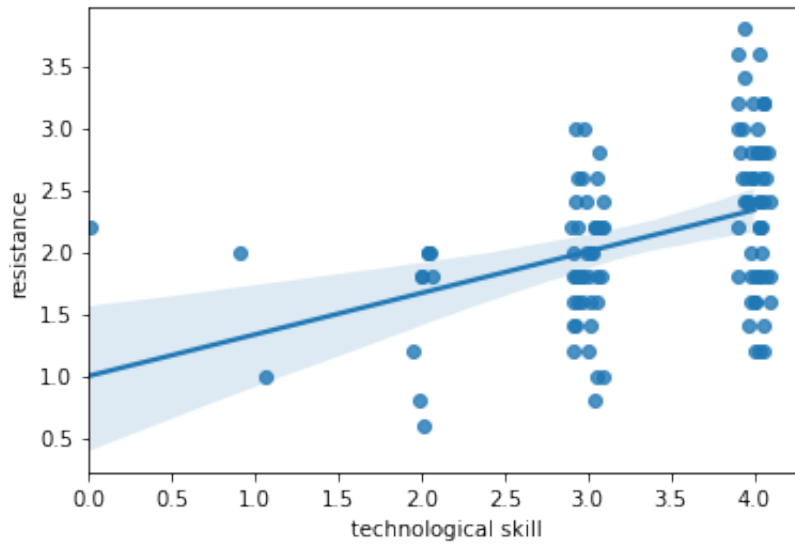


Figure 3.8: Effect of technological skill on resistance

Figure 3.8 shows a clear linear relationship between self-reported technological skill and resistance. This is interesting, as no such relationship could be found between technological skill and surveillance. As such, even if self-reported technological skill is inflated due to the Dunning-Kruger effect, the result here implies that there is still a ranking between groups. Table 3.6 shows that a strong, significant positive relationship between technological skill and resistance ($p = 0.00$, $z = 4.08$).

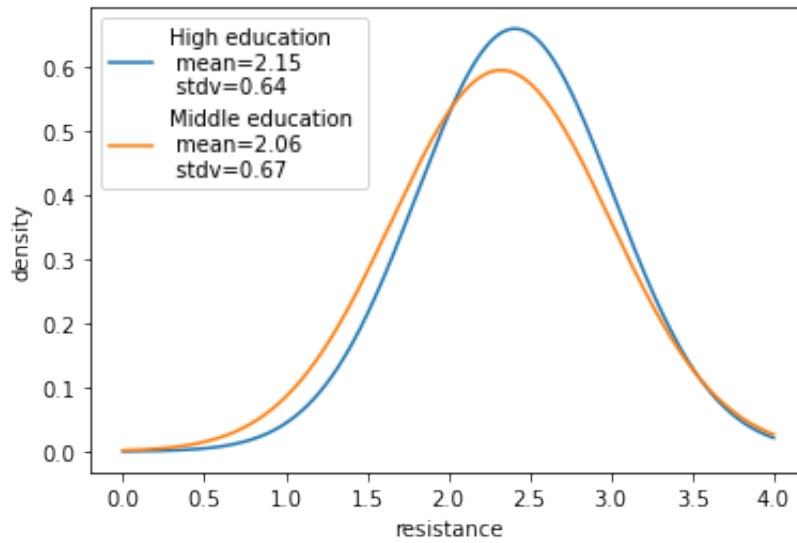


Figure 3.9: Resistance by education level

| | Variable | N | Mean | STDV | SE | 95% conf. interval |
|----------|---------------------|-----|--------|-------|-------|--------------------|
| 0 | higher education | 61 | 2.157 | 0.643 | 0.082 | [1.993, 2.322] |
| 1 | secondary education | 47 | 2.0638 | 0.671 | 0.098 | [1.867, 2.261] |
| 2 | combined | 108 | 2.373 | 0.633 | 0.061 | [2.252, 2.494] |
| t-value: | | | | 0.735 | | |
| p-value: | | | | 0.464 | | |

Table 3.7: Resistance by education level.

Since there appears to be a strong correlation between self-reported technological skill and resistance, it is interesting to look at more objective measures of technical skill. Figure 3.9 shows the effect of education level on resistance. Participants with a high education ($M = 2.15$; $STDV = 0.64$) seem display just a bit more resistance than those with a middle education ($M = 2.06$; $STDV = 0.67$). While in line with the expectations, it is in no way a significant result ($p = 0.46$; $t = 0.74$). This was the same for perceived surveillance. The difference between low and high education might be larger, but there is not enough data to support this hypothesis.

The effect of educational direction seems to weigh in much more than education level, as displayed in figure 3.9. From table 3.7, it follows that

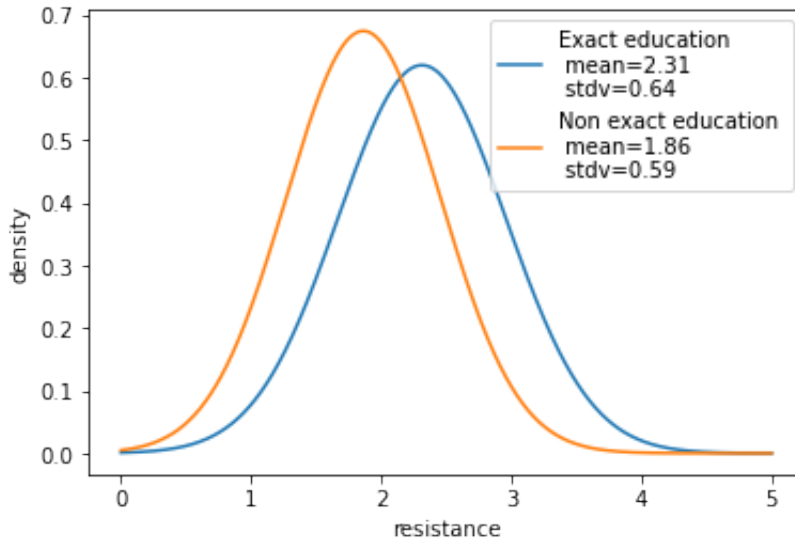


Figure 3.10: Resistance by educational direction.

| | Variable | N | Mean | STDV | SE | 95% conf. interval |
|----------|---------------------|-----|-------|-------|-------|--------------------|
| 0 | Exact education | 64 | 2.313 | 0.644 | 0.081 | [2.152, 2.473] |
| 1 | Non exact education | 45 | 1.862 | 0.592 | 0.088 | [1.684, 2.040] |
| 2 | combined | 109 | 2.127 | 0.659 | 0.063 | [2.001, 2.252] |
| t-value: | | | | 3.713 | | |
| p-value: | | | | 0.000 | | |

Table 3.8: Resistance by educational direction.

the effect of having a technical education on resistance is significant and extensive ($p = 0.00$, $t = 3.713$). This finding is consistent with self-reported technological skill. As such, evidence heavily points toward technological skill correlating with the usage of resistance techniques.

Government trust

In the previous section, it was shown that low government trust correlates with high surveillance perception. It begs the question of if this also results in action on the surveilled part; is low government trust enough to not only perceive more surveillance but also display more resistance? In the light of the work of previous work, it would be expected to be so [11]. If people perceive a higher degree of digital government surveillance out of fear of government actions, it would logically follow that they not only perceive it

but try to do something about it.

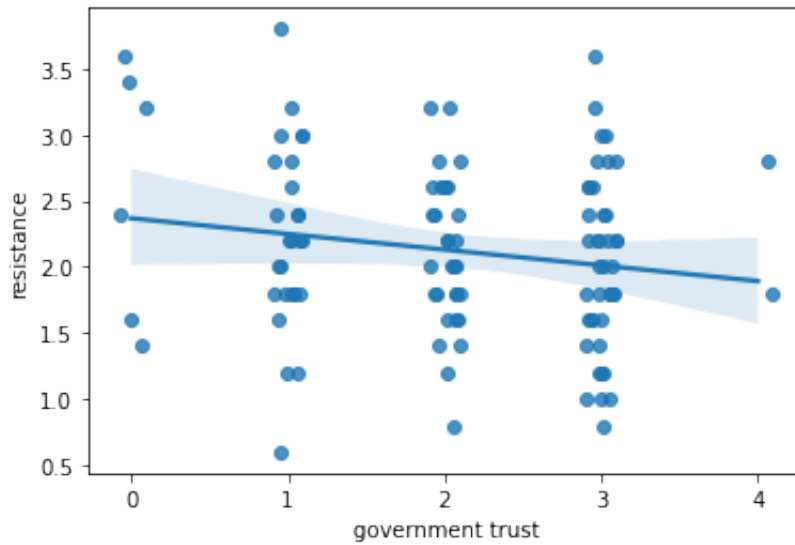


Figure 3.11: Effect of government trust on resistance

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|--------|-------|---------|---------|--------------------|
| x | -0.119 | 0.070 | -1.687 | 0.092 | [-0.252, 0.019] |
| Durbin-Watson: | | | 1.812 | | |

Table 3.9: Effect of government trust on resistance

Figure 3.11 shows a slight negative effect of government trust on resistance. This effect is much smaller ($z = -1.69$) than the effect of government trust on perceived surveillance ($z = -4.351$). The result is not significant, but barely ($p = 0.09$). It seems likely that a larger participant pool would have given a significant result in this case. Future research should try to confirm or discard this suspicion. The fact that government trust has a more considerable impact on perceived surveillance than it does on resistance can be explained by the higher level of technological skill that seems to be required to use resistance techniques as opposed to perceived surveillance.

Perceived surveillance

Now that perceived online government surveillance and resistance against said surveillance have been analyzed separately, the effect of one on the other

will be discussed.

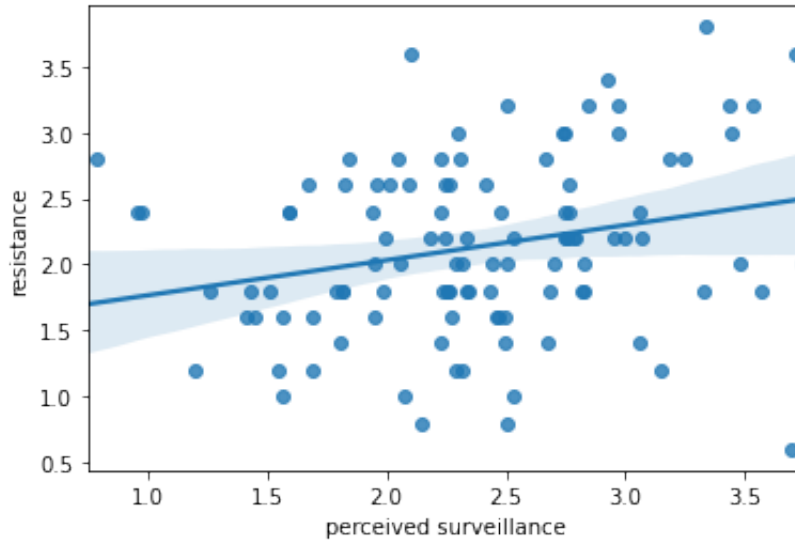


Figure 3.12: Effect of perceived surveillance on resistance

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|-------|-------|---------|---------|--------------------|
| x | 0.266 | 0.100 | 2.664 | 0.008 | [0.070, 0.461] |
| Durbin-Watson: | | | 1.754 | | |

Table 3.10: Effect of perceived surveillance on resistance

Figure 3.12 shows the correlation between perceived surveillance and resistance. A higher degree of perceived surveillance is accompanied by a higher degree of displayed resistance. Table 3.10 confirms that this effect is significant ($p = 0.01$; $z = 2.66$). Two factors can explain this:

- Skill: Figure 3.13 shows that a positive correlation between perceived surveillance and resistance, in fact, only exists for those participants that report having decent to good technological skills. These are in the majority and therefore outweigh those who lack these skills. In short, the general trend leans towards perceived surveillance positively correlating with resistance only because this study has a technologically skilled population. This reinstates that technological skill is a prerequisite for resistance to perceived online surveillance.

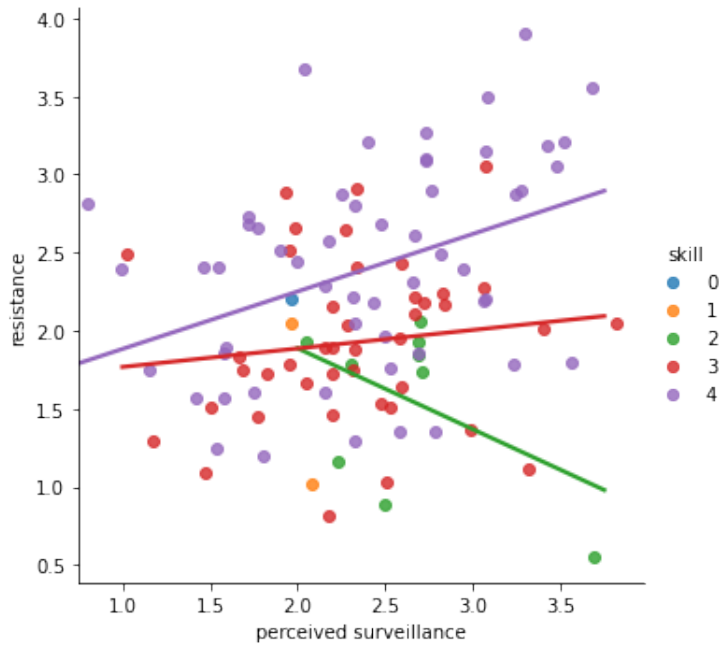


Figure 3.13: Effect of perceived surveillance on resistance by technological skill

- Motivation: Figure 3.14 shows a positive correlation between perceived surveillance and resistance regardless of government trust, but resistance is higher in those participants who trust the government less. Again, this group is much bigger than the group that does trust the government. Since this study population tends to mistrust the government, they would be motivated to resist in light of Dempsey & Flint [11]. It should be noted that the line in figure 3.14 that represents 1 on the scale of government trust appears to be heavily influenced by outliers, explaining why it shows a negative correlation

Conclusions

In general, it can be said that some resistance is being displayed against digital surveillance, though it is not an impressive amount ($M = 2.12$; $STDV = 0.66$). Remarkably, self reported technological skill has a much larger effect on resistance ($z = 4.081$; $p = 0.00$) than it does on perceived surveillance ($z = 0.266$; $p = 0.798$). This makes sense because before one can resist, one needs to know that there is something to resist. This means that resisting is always an extra step compared to perceiving. As is the case for perceived surveillance, education level is not as influential regarding resistance as educational direction. Participants with a technical background tend to resist

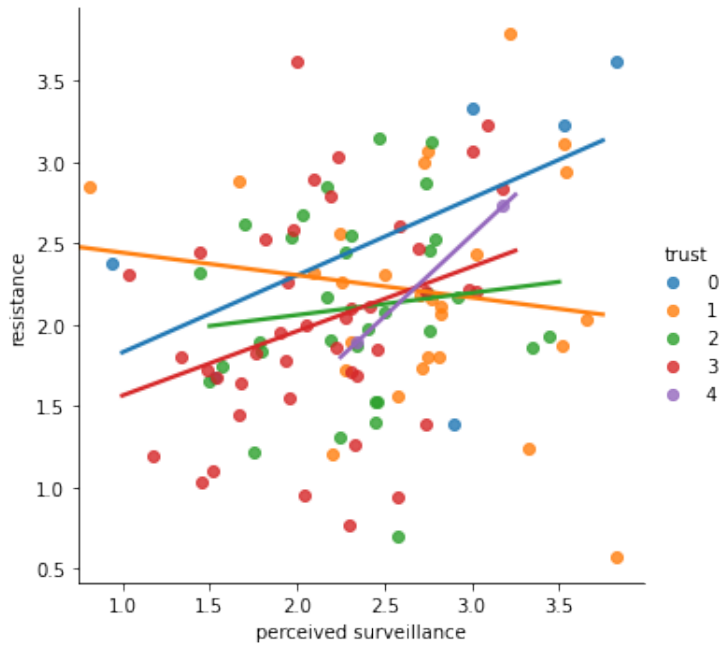


Figure 3.14: Effect of perceived surveillance on resistance by government trust

much more ($M = 2.31$; $STDV = 0.64$) than those with a different background ($M = 1.86$; $STDV = 0.59$). The effect of education background on resistance is bigger and more certain ($p = 0.00$; $t = 3.71$) than the effect of education background on perceived surveillance ($p = 0.26$; $t = 1.13$). This is in line with self-reported technological skill.

Government trust appears to have a negligible effect on resistance, but this result is just short of significant ($p = 0.09$; $z = -1.68$). This correlation is notably less strong than the correlation between government trust and perceived surveillance ($p = 0.00$; $z = -3.37$). This makes sense, given the technological skill seemingly required for acts of resistance but not for perceiving surveillance. A correlation between government trust and resistance can ultimately be explained by the same facts that explain the correlation between government trust and perceived surveillance, plus the need for some technological knowledge.

There exists a strong correlation between perceived surveillance and resistance ($p = 0.00$; $z = 2.66$). This suggests that the participant population of this thesis research, predominantly young and capable of using technology, sees surveillance as a problem when they perceive it because otherwise, they would not try to exist. Secondly, it suggests a certain level of pro-activeness to do something about this problem.

3.3.3 How do people participate in politics online?

General

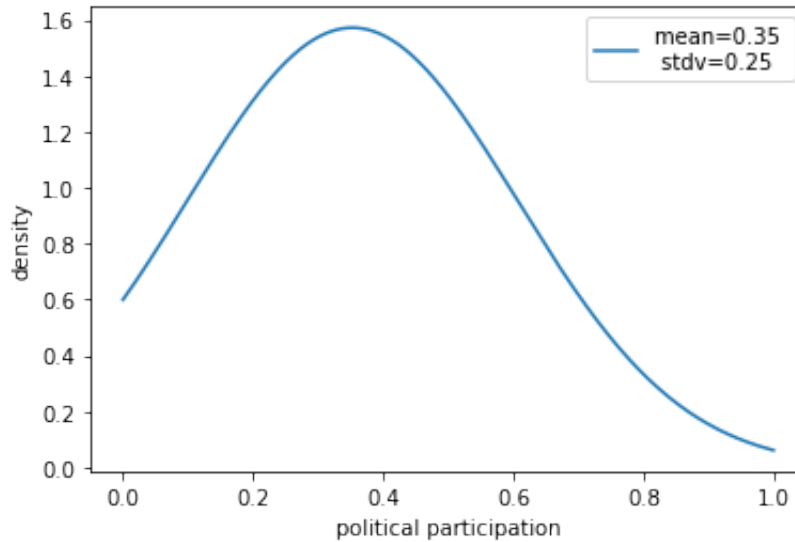


Figure 3.15: General political participation

Figure 3.15 shows the general level of political participation across the entire participant population. Contrary to how surveillance and resistance were measured, the political participation section does not use a Likert scale. Because all questions in this survey section had a binary yes-or-no answer, the scale here goes from zero to one. The score of an individual participant is the mean of their answers, with 'yes' corresponding to a 1 and 'no' corresponding to a 0. Generally speaking, political participation is low. The mean is lower than half of the maximum score ($M = 0.35$; $STDV = 0.25$). Moreover, the zero score is less than two standard deviations away from the mean, meaning that between 5% and 32% of participants have a total political participation score of 0.

A difference between the questions can be observed. The questions asking if people have ever filled out a Vote Match and if they have ever signed an online petition were overwhelmingly answered with 'yes.' Every other question received a majority of 'no' answers. The political participation resource model could explain this [6]. Out of the three categories of political activity, filling out a Vote Match and signing an online petition might be best classified as voting, even though that is not what they strictly are. While filling out a voting match is not the same as voting, it is a precursor to voting; it is a tool used to know what to vote for. At the same time, signing an online petition can hardly be classified as an activity that involves giving time or

money and is similar to the effort of voting. In essence, signing a petition is voting for a stance on a specific issue rather than a stance on a host of issues (a party). The other questions from the survey can be classified as activities that involve giving time. No questions about activities that involve giving money were asked since the target population was students, a group that does not generally have much money to donate.

Gender

Traditionally there are more male than female elected representatives in the Netherlands. However, it begs the question if this is reflected in the collected political participation data.

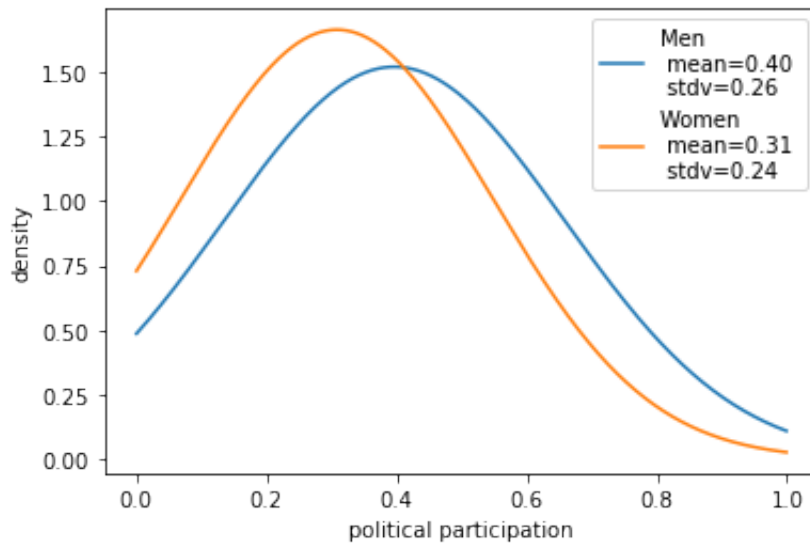


Figure 3.16: Political participation by gender

| | Variable | N | Mean | STDV | SE | 95% conf. interval |
|----------|----------|-----|-------|-------|-------|--------------------|
| 0 | male | 55 | 0.396 | 0.262 | 0.035 | [0.325, 0.467] |
| 1 | female | 50 | 0.308 | 0.240 | 0.034 | [0.240, 0.376] |
| 2 | combined | 105 | 0.354 | 0.255 | 0.025 | [0.305, 0.404] |
| t-value: | | | | 1.087 | | |
| p-value: | | | | 0.280 | | |

Table 3.11: Political participation by gender.

Figure 3.16 shows that there is indeed a difference between political participation of men ($M = 0.40$; $STDV = 0.26$) and political participation of women ($M = 0.31$; $STDV = 0.24$). This result is not significant, but the p-value and t-value are not terrible either, suggesting that there is a fairly good chance of a larger participant pool leading to a significant result here ($p = 0.28$, $t = 1.09$). Four out of six survey questions were geared toward active political participation, which men are likelier to participate in. On the contrary, only two questions related to political participation do not involve direct contact, which women are more likely to partake in [9]. This could explain the observed difference.

Spare time

As mentioned, two survey questions in the political participation section relate to voting. The other four relate to actions that involve a time investment. Therefore, it is expected that there is some correlation between the amount of spare time participants have and the amount of online political participation. However, the data contained some apparent errors that had to be filtered out. For example, one participant indicated that they had 20 hours of spare time after school, work and sleep. This is impossible. Therefore, only the data points that went up to twelve hours of spare time were considered for the analysis.

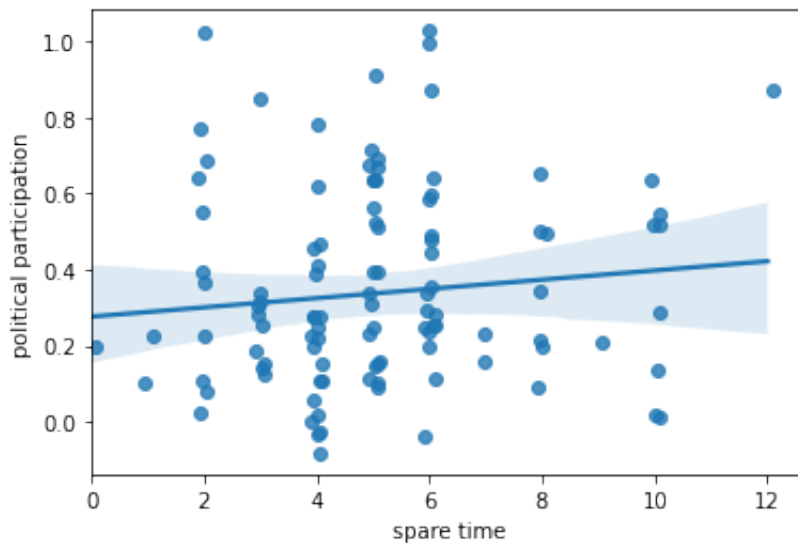


Figure 3.17: Effect of spare time on political participation

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|-------|-------|---------|---------|--------------------|
| x | 0.012 | 0.011 | 1.089 | 0.276 | [-0.010, 0.034] |
| Durbin-Watson: | | | 1.934 | | |

Table 3.12: Effect of spare time on political participation

Figure 3.17 indicates a positive correlation between spare time and on-line political participation. However, this result is not as big as expected and is not significant, as shown in table 3.12 ($p = 0.28$; $z = 1.089$). One reason might be that a large part of the participants are students. Generally speaking, students have more flexible schedules than working people, making finding time for other activities easier even if the amount of time is limited.

Civic and technological skill

Since this thesis research is about online political participation and not necessarily political participation in the general sense, some technological skills might be needed to participate in these activities. However, these activities mainly involve basic actions like navigating websites and sending emails. For that reason, technological skill is not expected to influence online political participation as much as civic skill.

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|-------|-------|---------|---------|--------------------|
| x | 0.029 | 0.033 | 0.889 | 0.374 | [-0.035, 0.094] |
| Durbin-Watson: | | | 1.966 | | |

Table 3.13: Effect of technological skill on political participation

Figure 3.18 seems to confirm the expectation, as mentioned earlier, with self-reported technological skill barely correlating with political participation. As can be read from table 3.13, this correlation is not very strong, nor is it significant ($p = 0.374$; $z = 0.889$). Judging by the graph, one could even argue that the assumption of linearity, a prerequisite for applying linear regression, has not been fulfilled here.

As seen in previous sections, educational direction might be another indicator of technological skill, even if people overestimate themselves due to the Dunning-Kruger effect [28]. If the effect of self-reported technological

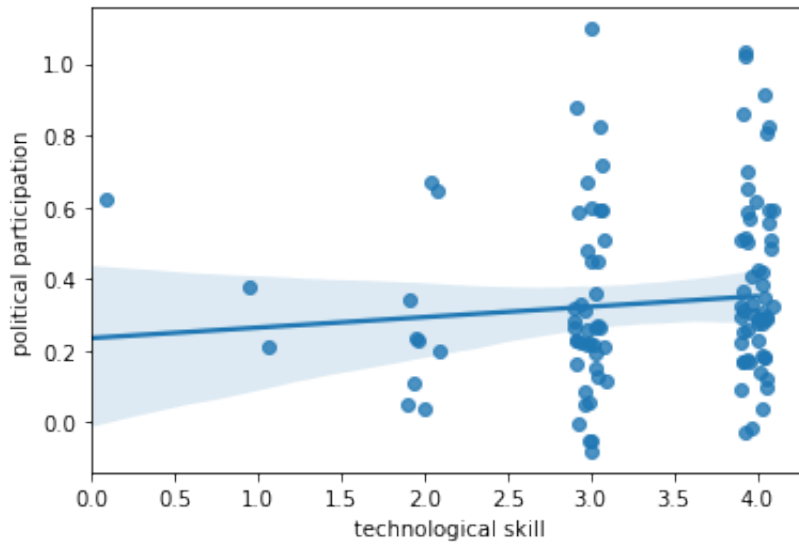


Figure 3.18: Effect of technological skill on political participation

skill on political participation is already so small, the effect of educational direction is likely not significant either.

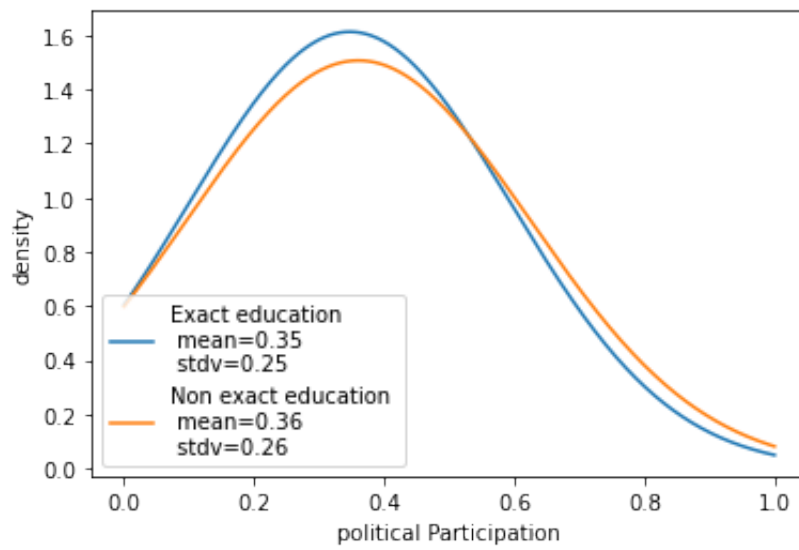


Figure 3.19: Perceived surveillance by educational direction.

| | Variable | N | Mean | STDV | SE | 95% conf. interval |
|----------|---------------------|-----|-------|--------|-------|--------------------|
| 0 | exact education | 64 | 0.347 | 0.247 | 0.031 | [0.285, 0.409] |
| 1 | non exact education | 45 | 0.360 | 0.265 | 0.040 | [0.280, 0.440] |
| 2 | combined | 109 | 0.352 | 0.254 | 0.024 | [0.304, 0.400] |
| t-value: | | | | -0.265 | | |
| p-value: | | | | 0.792 | | |

Table 3.14: Perceived surveillance by educational direction.

Figure 3.19 and table 3.14 indeed reveal that having an exact education ($M = 0.35$; $STDV = 0.25$) does not make people more likely to display online political participation compared to someone with a non exact education ($M = 0.36$; $STDV = 0.26$), solidifying the findings about self-reported technological skill.

Previous research shows a correlation between civic skill and education. Furthermore, civic skill is one of the resources required for political participation according to the resource model[6]. With this in mind, it is expected that those participants with a high education level display a higher degree of online political participation than those with a middle education level.

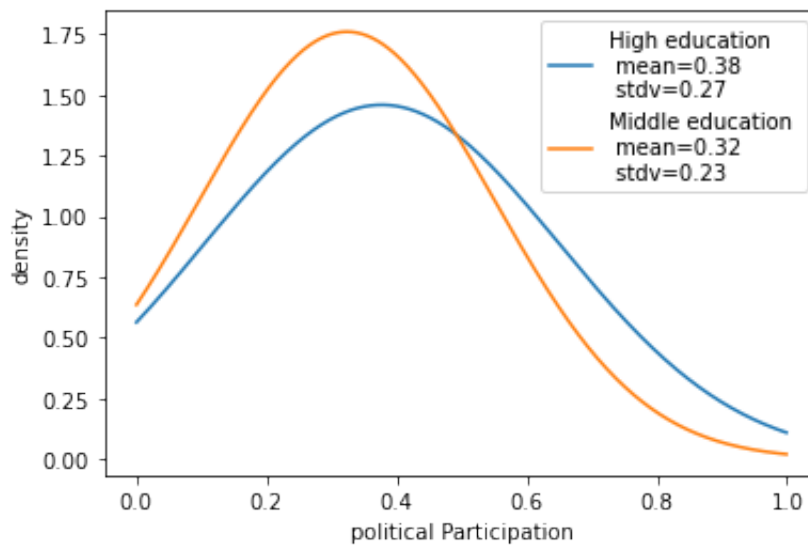


Figure 3.20: Political participation by education level

| | Variable | N | Mean | STDV | SE | 95% conf. interval |
|----------|------------------|-----|-------|-------|-------|--------------------|
| 0 | high education | 61 | 0.377 | 0.273 | 0.035 | [0.307, 0.447] |
| 1 | middle education | 47 | 0.323 | 0.227 | 0.033 | [0.257, 0.390] |
| 2 | combined | 108 | 0.354 | 0.254 | 0.024 | [0.305, 0.402] |
| t-value: | | | | 1.087 | | |
| p-value: | | | | 0.280 | | |

Table 3.15: Perceived surveillance by educational direction.

In figure 3.20 it can be seen that participants with a high level of education ($M = 0.38$; $STDV = 0.27$) on average display more political participation than participants with a middle level of education ($M = 0.32$; $STDV = 0.23$). However, this difference is not significant, nor is it of great predictive value ($p = 0.28$, $t = 1.09$). Even though this thesis research cannot confirm it beyond a reasonable doubt, it is not a stretch to think that the difference based on education level is not random, given previous research.

3.3.4 Political interest and government trust

Political participation is the most important predictive variable regarding whether people vote or not. It appears to play an essential role in political participation alongside the resources from the political participation resource model [6]. Note that two survey questions have been categorized as belonging to the voting category. Moreover, (lack of) trust in the government might also indicate political interest, as it appears to imply that that person is opinionated about the government's actions. Therefore, it would be interesting to see if government trust correlates with political participation.

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|-------|-------|---------|---------|--------------------|
| x | 0.082 | 0.023 | 3.607 | 0.000 | [0.037, 0.126] |
| Durbin-Watson: | | | 1.847 | | |

Table 3.16: Effect of political interest on political participation

The regression line in figure 3.21 backs up the findings from previous research. It shows an obvious relationship between interest in politics and political participation. This result is significant according to table 3.16 ($p = 0.00$; $z = 3.61$). This is unsurprising and does not require further explanation.

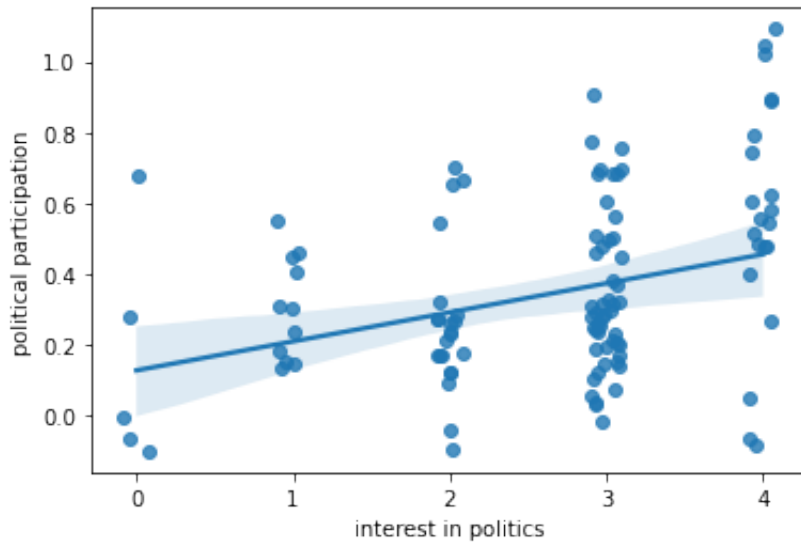


Figure 3.21: Effect of political interest on political participation

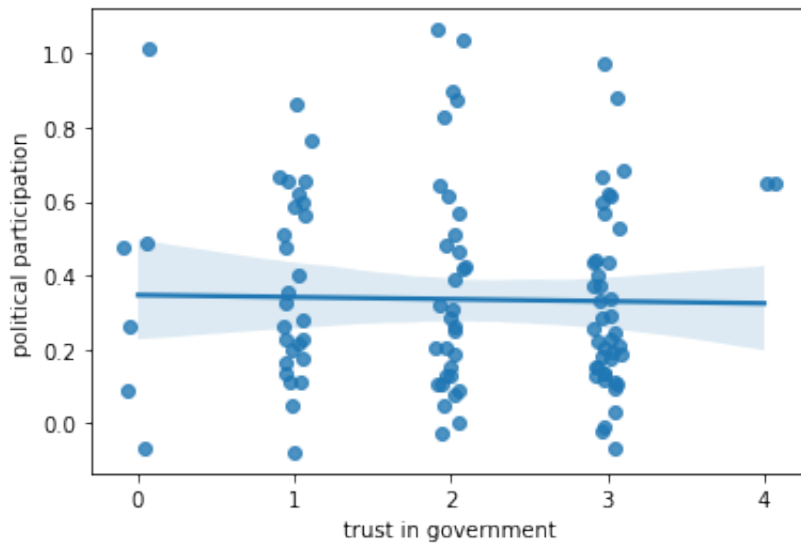


Figure 3.22: Effect of government trust on political participation

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|--------|-------|---------|---------|--------------------|
| x | -0.006 | 0.026 | -0.219 | 0.826 | [-0.056, 0.045] |
| Durbin-Watson: | | | 1.966 | | |

Table 3.17: Effect of government trust on political participation

As figure 3.22 shows, there seems to be no correlation between trust in the government and online political participation. This is surprising in light of what was hypothesized before. According to table 3.17, level of government trust is an extremely weak predictor for online political participation and the result is not significant ($p = 0.86$; $z = 0.17$). This means that a lack of trust does not seem to activate people to make a change themselves, but neither does it stop them from doing that.

Perceived surveillance and resistance

In order to bring every section of this thesis research together, it is necessary to examine the effect of perceived surveillance and resistance to said surveillance on online political participation among the survey participants. This is where chilling effects come into play. According to the theory of chilling effects and much of the empirical research that has been conducted in support of this, an increase in the degree of perceived surveillance should chill political participation [37][38][36]. However, there is evidence that points to the absence of a chilling effect under the following conditions: Previous research that found an absence of the chilling effect did so under two conditions:

- People perceive government surveillance.
- People oppose the current government administration [22].

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|-------|-------|---------|---------|--------------------|
| x | 0.094 | 0.038 | 2.490 | 0.013 | [0.020, 0.168] |
| Durbin-Watson: | | | 2.035 | | |

Table 3.18: Effect of perceived surveillance on political participation

Entirely contrary to the essence of the chilling effect, the regression line in figure 3.23 shows a clear positive correlation between perceived online

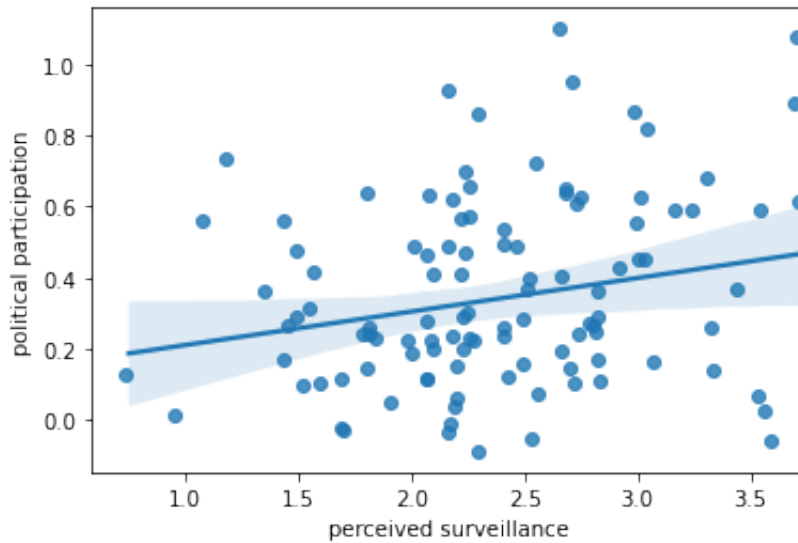


Figure 3.23: Effect of perceived surveillance on political participation

surveillance and online political participation. In other words, an increased degree of perceived online surveillance correlates with increased online political participation. Looking at table 3.18, the result is significant ($p = 0.01$; $z = 2.49$). This breaks with research supporting the existence of a chilling effect in the context of government surveillance and political participation. What makes the result difficult to interpret, however, is that unlike in existing research supporting the absence of a chilling effect, opposing the government administration does not appear to be a factor here. This thesis research found no correlation between lack of government trust and online political participation. As will be elaborated on in the next paragraph, resistance against surveillance among the target population of this study cannot serve as an explanation for the lack of chilling effect.

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|-------|-------|---------|---------|--------------------|
| x | 0.006 | 0.037 | 0.171 | 0.864 | [-0.067, 0.079] |
| Durbin-Watson: | | | 1.991 | | |

Table 3.19: Effect of resistance on political participation

Figure 3.24 and table 3.19 show no correlation between resistance against electronic surveillance and political participation at all ($p = 0.864$; $z =$

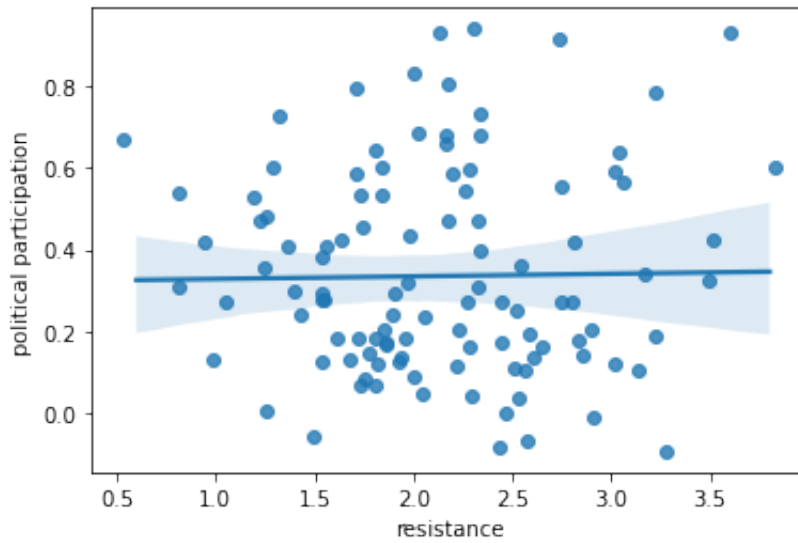


Figure 3.24: Effect of resistance on political participation

0.17). Therefore it does not seem to be the case that the lack of a chilling effect results from perceived surveillance being mitigated by resistance. The explanation should be sought elsewhere.

| Variable | Coef | SE | z-value | p-value | 95% conf. interval |
|----------------|-------|-------|---------|---------|--------------------|
| x | 0.106 | 0.059 | 1.795 | 0.073 | [-0.010, 0.221] |
| Durbin-Watson: | | | 2.141 | | |

Table 3.20: Effect of political interest on perceived surveillance

The lack of correlation between government trust and online political participation may reflect a political culture in which the government is not feared. Perhaps people in the Netherlands do not believe in surveillance positivism or that the possible consequences of government surveillance are brought into practice in their country [25][11]. This could be an explanation for the absence of a chilling effect. Individually, both political interest and perceived surveillance were found to have a positive correlation with online political activity. As it turns out, these variables positively correlate with each other too, as shown in figure 3.25. This result is extremely close to being significant ($p = 0.07$; $z = 1.80$), as shown by table 3.20. This could mean two things:

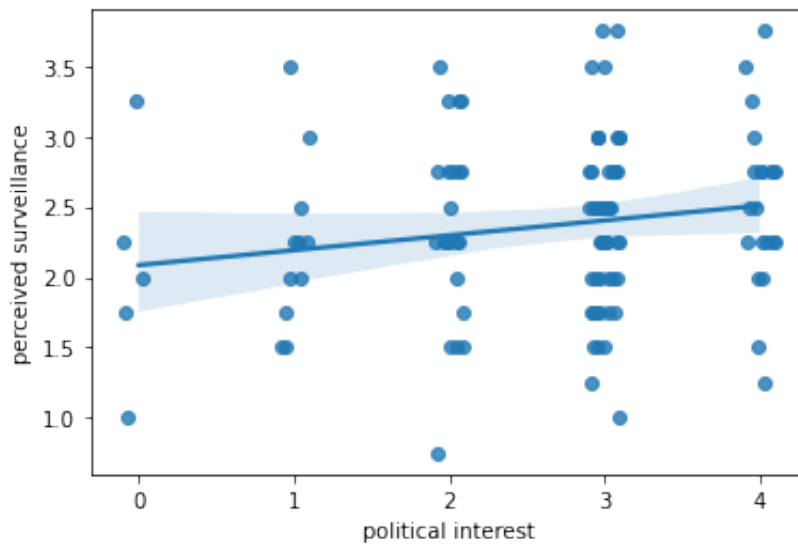


Figure 3.25: Effect of political interest on perceived surveillance

- Increased interest in politics causes people to pay more attention to government actions and thus perceive more online government surveillance.
- Increased perception of online government surveillance motivates people to try and somehow change that and thus get more interested in politics.

Either way, this connection could explain why there is not only no chilling effect but a positive correlation between perceived surveillance and political activity.

Conclusions

It can be said that, generally speaking, online political participation is low among the participants of this study ($M = 0.35$; $STDV = 0.25$). Participation is much higher when it comes to activities related to voting than when it comes to activities that require a time investment. It is unknown how the participants would have responded to questions involving a money investment. Further research could look into this.

While no conclusive results were found to back up previous research ($p = 0.28$; $t = 1.09$), men ($M = 0.40$; $STDV = 0.26$) seem to participate more in online politics than women ($M = 0.31$; $STDV = 0.24$). This may be a result of the type of questions that were asked, as research shows that men and women participate in politics differently. Spare time seems to have a

positive correlation with online political participation, corresponding with previous research, but no significant results could be obtained here either ($p = 0.28$; $z = 1.10$).

While technological skill ($p = 0.37$; $z = 0.89$) and educational background ($p = 0.79$, $t = -0.26$) do not appear to correlate with online political participation, education level might correlate with it somewhat ($p = 0.28$, $t = 1.09$). The first results could be caused by the fact that online political participation requires only the most basic computer skills, skills that anyone in the age range most of the participants are in would have. The results relating to education level might have to do with civic skills, as education level is a good indicator of this and civic skill is a requirement for political participation according to the resource model.

Political interest correlates very strongly with political participation ($p = 0.00$; $z = 3.61$), aligning with previous research. Surprisingly, trust in the government does not appear to affect political participation in the survey participants in any meaningful way ($p = 0.83$, $z = -0.22$). This could explain the lack of chilling effect on political activity caused by perceived surveillance. It could imply that the Dutch people do not fear their government. Hence, there would be no reason to chill behavior. The absence of a chilling effect cannot reasonably be explained by a high degree of resistance against surveillance in the participant pool because no correlation between resistance and political participation seems to exist ($p = 0.86$, $z = 0.17$). It needs to be remarked that not only is there no chilling effect, there is a positive correlation between perceived online government surveillance and online political activity ($p = 0.01$, $z = 2.49$). This can be explained by the correlation between perceived surveillance and political interest ($p = 0.07$; $z = 1.80$). Seeing as there is a connection between these variables, the connection between perceived surveillance and political activity starts to become clearer.

3.4 Research limitations

3.4.1 Unused survey questions

The survey used for this research was designed to be as short as possible since this would increase the goodwill of people to fill it out. It was thought this would ensure that as many responses as possible were generated. However, in the end, a couple of the questions that were asked were not helpful for the eventual analysis. This is a shame because it means the survey could have been shorter and could have generated more responses, or the space could have been used for more valuable questions. The questions that were not used for the analysis will be discussed individually.

Firstly, since the target demographic of the current research was students, there was no great variety in age. On top of that, due to the unfortu-

nate survey design, it was impossible to even get the nuances in that small age range. This was the case because instead of being asked an integer, participants were given a few age ranges and were asked to say which they belonged to. In hindsight, this was a mistake. Moreover, most participants belonged to the ranges 18 to 22 (45%) and 22 to 24 (36%), resulting in too little data for the other answer options to conclude anything from.

Secondly, the question in which participants were asked about how much money they make was not helpful. This, again, is the result of the target population being students. Students do not generally have a high income, as reflected in the answers. 72% of participants indicated that they have a yearly income of 10.000 euros or less. Like with the age question, this left too little data for the other answer options for the question to be useful.

Lastly, participants were asked whether they were politically active. However, an overwhelming number of participants (87%) said 'no' to this. This automatically made the follow-up question that asked about the specific ways people were politically active useless because of a lack of data. All other survey questions were taken into account in the analysis.

3.4.2 Municipal elections

The survey for this research was conducted at the beginning of March. The Dutch municipal elections were held on 16 March. In the weeks leading up to that, party politics got much more attention in media and daily conversations than during regular times. It is possible that this inflated interest in politics could have influenced the answers to questions relating to political interest and government trust. It could also have increased the (admittedly low) political participation levels. For example, more people might have filled out a Vote Match because of the elections.

3.4.3 Covid-19

In December 2021, the Dutch government announced a new lockdown in the battle against Covid-19. In January 2022, some relaxations were announced. However, the lockdown would not completely end until March. The government's approach to the pandemic has sparked controversy in the most extreme sense since the very beginning. This could have influenced responses to questions related to government trust and possibly government surveillance. The latter should be considered within the context of the government's CoronaMelder app.

Moreover, the fact that so many events and activities have been moved online between 2020 and 2022 because the Covid-19 pandemic might have increased the amount of online political participation. When the pandemic subsides, this type of political participation might subside too. To see if the results differ, it would be interesting to repeat the current research several

years from now, when Covid-19 no longer influences daily life.

3.4.4 Population size

The survey in this study got 109 full responses. Additionally, it got 38 partial responses. While this is enough for the scope of this thesis research, it is not a huge number. The relatively small dataset decreases the study's statistical power, which in turn means that results found to be significant have an increased chance of being erroneous. On top of that, a winner's curse can occur in small studies like this. Small data sets can only show large effects. Medium and small effects will not be detectable. As a result, significant results found in a small data set have a higher chance of being exaggerated. This is called 'effect inflation' [8]. Nevertheless, this does not necessarily stand in the way of accomplishing the aims of this study, which is exploring a little explored field and giving impetus to future research. Future research can give more conclusive answers to the questions asked here.

3.4.5 Privacy paradox

Norberg et al. introduced the idea of a privacy paradox: consumers tend to be very vocal about privacy concerns, but when push comes to shove, they give up their personal information to companies on a whim. An experiment conducted by Norberg et al. showed that risk influenced people's intentions to provide personal information. Under this circumstance, people were likelier to say they intended not to share personal information. However, the risk did not affect actual behavior [32]. Some controversy exists about the existence of the paradox and much controversy exists about its explanation. Nevertheless, the research leans toward agreeing the privacy paradox exists. The most common explanation derived from papers that have tried to explain this phenomenon is that cognitive biases and heuristics influence privacy decisions [21]. The privacy paradox could have influenced answers participants gave to the questions in the survey sections regarding perceived surveillance and resistance methods. This is something to keep in mind.

Chapter 4

Related Work

Most research about political participation assumes a context in which surveillance is not a factor. However, Krueger showed through quantitative research that people who oppose the government administration and are aware of the way the government monitors them are actually much more likely to participate in online political activity than others. According to him, political resistance is likely to occur in a situation where people are aware of being watched, can watch their watcher and can communicate with each other. These conditions do not correspond with the classical prison panopticon, where prisoners cannot watch their watcher and are isolated from each other. However, they match up better with the other panoptical models [22]. This is an interesting contrast with Stoycheff et al., who found the exact opposite phenomenon to be true. Their research showed that people who are aware of government surveillance are actually less likely to participate in online political activity. One explanation for this could be societal changes over time, considering that Krueger conducted his research in 2005 and Stoycheff et al. did in 2018 [22][38].

Another survey was conducted in 2017 by Penney. He attempted to explore the chilling effect of online surveillance. He asked participants how they would act in hypothetical scenarios. Scenario's included schemes to regulate online behavior, public and private sector surveillance and an anti-cyberbullying law. Just like Stoycheff et al., he found a strong presence of a chilling effect. Moreover, he found that certain scenario's in combination with certain behaviors were disproportionately affected. A notable demographic finding is that younger people are resisting online surveillance at a below-average rate. Paradoxically, he also concluded that it seems likely that younger people are more paranoid when it comes to online government surveillance than older age groups. At the same time, engaged internet users seem more likely to display resistance. However, only two survey questions were focused on this aspect [36]. In addition, Penney observed an (immediate and long-term) chilling effect when it comes to traffic to privacy-sensitive

Wikipedia articles in the US in the wake of Snowden's mass surveillance revelations [35].

It needs to be said that empirical data in regard to chilling effects and surveillance is scarce. This thesis research adds to small body of empirical data that is out there.

Chapter 5

Conclusions

This chapter will draw some conclusions. In order to do that, let us circle back to the introduction chapter and reintroduce the research question of this thesis: How does technological skill affect people's participation in online political activity in the light of perceived government surveillance?

First, it can be concluded that young people, primarily students, across the board appear to perceive online government surveillance. Technological skill seems to barely impact the amount of perceived surveillance if there is any impact at all. What seems to impact perceived surveillance more is government trust. A solid negative correlation was found here. While technological skill does not correlate with perceived surveillance, it does with using resistance methods to said surveillance. This correlation can be seen both with self-reported technological skill and educational background. Government trust correlates with resistance levels as well, but not as much as it does with perceived surveillance. This can be explained by the extra step it takes to go from perceiving online government surveillance to protecting yourself against it.

A robust positive correlation does exist between perceived surveillance and resistance. However, this only holds for the groups of participants that self-report being technologically skilled, reinforcing the idea that resisting requires more technological skill than perceiving. Moreover, this suggests that technologically skilled people do see the presence of online government surveillance as invasive when they perceive it and are willing to do something about it. Furthermore, it was found that people that perceive online government surveillance are more likely to display resistance the less trust they have in the government.

In line with findings from previous research into political participation, some weak evidence was found that men are more likely to be politically active online than women and that there is a positive correlation between spare time and online political activity, as well as between civic skill (measured by educational level) and online political activity. Unsurprisingly,

strong evidence suggested that political interest correlates with online political activity. Technological skill does not play a role, nor does government trust.

A strong positive correlation exists between perceived online government surveillance and online political activity. This means that no chilling effect can be observed. Previous research found an absence of the chilling effect for people who perceive government surveillance and oppose the current government administration. However, since government trust does not play a role in online political activity here, it can hardly be said that this thesis research found an absence of the chilling effect for the same group for which previous research found it. This cannot be explained by the high usage of resistance techniques against surveillance. Despite a correlation between technological skill and resistance, resistance does not correlate with online political activity. To answer the research question: technological skill does not seem to affect people's participation in online political activity, but perceiving surveillance does. One theory explaining the absence of a chilling effect is that the Dutch do not fear government consequences of surveillance. As for why there is not only no chilling effect but a positive correlation between perceived surveillance and political activity, this can be explained by the positive correlation between political interest and perceived surveillance.

Going back to the beginning, the introduction chapter mentioned and explained Bentham's panopticon. A chilling effect should have been observed if we lived in a panoptical system. The absence of one, as supported by empirical evidence, suggests that the panoptical model does not apply to the digital world. The digital world fits the conditions Krueger describes for political activity: people are aware of surveillance, can see the surveiller and can communicate with each other [22]. Even though technological skill was not found to correlate with increased online political activity, at least future generations can rest safe knowing that the digital world is fertile ground for political participation, unlike the classical panopticon.

A possible explanation was provided for the absence of a chilling effect among the target audience of this thesis research in the context of perceived surveillance. Further research should test this explanation more extensively or come up with alternatives. Moreover, further research should factor in variables that this thesis research was unable to: income, age and (to a degree) education. Some results in this thesis research fell just short of being significant. However, it seems likely that a larger participant pool would have given significant results. Future research should try to get significant results here by getting more people to participate.

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Appendix A

Appendix

A.1 Translated survey

A.1.1 General information

1. What gender do you identify yourself with?
 - Man
 - Woman
 - Other
 - Prefer not to say
2. What is your age?
 - Younger than 18
 - 18 to 22
 - 22 to 26
 - Older than 30
3. What is your highest attained education?
 - No diploma
 - Primary school
 - VMBO, third year HAVO/VWO, MBO1
 - HBO/WO bachelor
 - HBO/WO master
 - Doctor, PhD
4. What is your educational direction?
 - Earth and environment

- Exact en computer science
- Behavior and society
- Health
- Art and culture
- Education and upbringing
- Law and public administration
- Language and communication
- Engineering
- Other

5. How many hours of spare time do you have on an average day outside of work, studies, chores and sleep?

Insert a number 0-24

6. What is your yearly income?

- Less than €5.000
- €5.000 to €10.000
- €10.000 to €15.000
- €15.000 to €20.000
- €20.000 to €25.000
- €25.000 to €30.000
- €30.000 to €35.000
- €35.000 to €40.000
- €40.000 to €45.000
- €45.000 to €50.000
- More than €50.000
- Prefer not to say

7. Are you politically active?

- Yes
- No

8. In which way(s) are you politically active? (Only displayed if answer to question no. 7 was 'Yes')

- Member of a political party

- Member of a political youth organization
- Elected representative
- Protester
- Other

9. Indicate as to what degree you agree with the following statement: I am interested in politics.

- Completely agree
- Agree
- Neither agree nor disagree
- Disagree
- Completely disagree

10. Indicate as to what degree you agree with the following statement: I trust the government.

- Completely agree
- Agree
- Neither agree nor disagree
- Disagree
- Completely disagree

11. Indicate as to what degree you agree with the following statement: I know my way around technology.

- Completely agree
- Agree
- Neither agree nor disagree
- Disagree
- Completely disagree

A.1.2 Resistance methods

1. When I suspect that my internet behavior is being tracked, I change it.

- Completely agree
- Agree
- Neither agree nor disagree
- Disagree

- Completely disagree
- 2. When I am asked for my personal information online, I answer truthfully.
 - Completely agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Completely disagree
- 3. When I am asked for optional personal information online, I answer it.
 - Completely agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Completely disagree
- 4. My online communication is encrypted.
 - Completely agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Completely disagree
- 5. I use a VPN or TOR Browser.
 - Completely agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Completely disagree

A.1.3 Perceived surveillance

- 1. The government processes too much of my personal information.
 - Completely agree
 - Agree

- Neither agree nor disagree
 - Disagree
 - Completely disagree
2. The government monitors mail and web traffic of citizens.
- Completely agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Completely disagree
3. The government monitors online platforms on which citizens publish data.
- Completely agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Completely disagree
4. Online platforms (e.g. Facebook and Google) handle my personal data with diligence.
- Completely agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Completely disagree

A.1.4 Political participation

1. Have you ever signed an internet petition with in relation to a local, national or international issue?
- Yes
 - No
2. Have you ever tried to convince another person on the internet of your point of view in relation to a local, national or international issue?
- Yes
 - No

3. Have you ever commented on local, national or international political developments on a social media platform?
 - Yes
 - No

4. Have you ever used the internet to contact an elected representative, civil servant or candidate representative to state your opinion about a local, national or international issue?
 - Yes
 - No

5. Have you ever been part of a digital political meeting?
 - Yes
 - No

6. Have you ever filled out a digital voting match or a different questionnaire that asked you to share your political views?
 - Yes
 - No