All eyes on you: A Q methodological study on the effects of digital community surveillance techniques within neighbourhoods

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Abstract

Purpose - There is a growing presence of people who participate in digital community surveillance techniques. This study tries to investigate the potential divide that might be a consequence of this usage. By translating Foucault's Panopticon and moral economies to a neighbourhood setting, this study has two aims. First, the goal is to find out what the potential effects of digital community surveillance techniques are on a small-scale level, being the neighbourhood. Secondly, it aims to find out how neighbours might experience surveillance technologies differently, by identifying groups of people with similar mindsets.

Methodology – The study is based on an interview-embedded Q-methodology with 16 participants that do or do not use digital community surveillance practices, and one police officer. The pyramid-shaped Q-sort consisted of 25 statements. During the creation of the Q-sort, participants were asked semi-structured follow-up questions.

Findings – First and foremost, the findings indicate the presence of three different groups based on the theoretical pillars. Both safety and the civic and domestic principle were of importance in this study. All participants would share information with neighbours or the police in case of suspicious activities, independently of participating in digital community surveillance practices. People are often unaware of the presence of surveillance techniques, which means they do not know if and what is recorded. However, for most people, privacy concerns do not outweigh the increased feeling of safety.

Conclusion – The explorative nature of this study results in contributions to the greater image of digital community surveillance techniques. Attitudes of civilians – either civic or domestic – and toward privacy are important determinants regarding this topic. The online aspect of privacy was not accounted for in this study, and should be included in future studies. All in all, civilians should be aware of the short-term and long-term consequences of digital community surveillance technologies in neighbourhoods.

1. Introduction

In September 2022, a man who was vandalizing cars was caught by the police. While this might seem unremarkable, this man was caught because the police got access to videos of neighbours filmed with a doorbell camera (Penris, 2022). Another striking point of this case is that the man who owned the car threatened to publish the videos, created with his doorbell camera, online. Doorbell cameras are an example of internet vigilantism. The term 'internet vigilantism' refers to the help of citizens with policing, security, and compliance via internet as 'informal community guards' (Chang & Poon, 2016). In this specific case, from one perspective, one could argue that it is very helpful that the man has videos of the criminal and is willing to share these. It will likely lead to more safety in the neighbourhood. Nonetheless, this man possesses recordings of all the activities that happen in the streets during the day. This means that privacy of regular people passing through that street is invaded.

There is a growing presence of cameras in Dutch neighbourhoods (Smithuijsen, 2022). More specifically, the presence of (doorbell) IP cameras in some houses increases. This is not the only example of digital community surveillance practices that has seen growth in the last years. Another example is WhatsApp Neighbourhood Crime Prevention (WNCP) groups. Within this group, neighbours share warnings, concerns, information, and suspicious information (Mols, 2021). Nevertheless, not everyone is willing or able to participate with such neighbourhood surveillance.

The topic of this study involves the growing division that might be a consequence of digital community surveillance cameras, whereas the people who participate in such practices have power over the people who do not. Thus, power becomes visible at different levels. First, people who participate can see everyone, but not the other way around. Second, the 'seen' ones do not know what is seen. Consequently, people with a camera are going to judge which behaviour is appropriate or not, and entire neighbourhoods are expected to behave towards this new standard (Dixon in Smithuijsen, 2022). The problem that this study addresses is an evaluation of how digital community surveillance techniques are currently being used or viewed. The study has an explorative nature, and it will result in directions for future research. Arguments for those directions will be based on the findings of this research.

This research addresses people that willingly and unwillingly participate in community surveillance practices. However, as indicated by Pridmore et al. (2019), citizens in neighbourhoods that do not participate in surveillance practices are often not included in existing studies. This is important to note, as they can become the subject of surveillance. Especially the people who do not willingly participate are unaware of the information that is collected, its purposes, and its ownership (Mols, 2021). Further, there is a demand to study people who are a member of WNCP groups and those who are not (Mols & Pridmore, 2019). More importantly, the moral costs of in-WNCP groups and outgroups

should be taken into account, as community surveillance practices fuel the divide between groups of citizens (Van Steden & Muhlbaum, 2022).

This study is built upon different theoretical pillars. First, Foucault's theory on Panopticon will be translated to a neighbourhood setting, where some groups are being controlled and guarded by others. This is done by the usage of surveillance technologies. Secondly, the concept of moral economies will be introduced. Neighbours determine which behaviour is justified based on their moral values. This will be further explained by aligning their attitude toward safety with their moral values. This will be demonstrated through the concept of security meta framing.

Thus, the aim is to find out what the potential consequences of digital community surveillance techniques are on a small-scale level. Further, it will be investigated whether people in neighbourhoods experience that they belong to a certain group, and whether they see this as a separation. By answering the first research question *"What effects do digital community surveillance techniques have on perceptions of safety and privacy within neighbourhoods in Twente?"*, the potential effects of surveillance techniques are mapped, including the effects they might have on the safety and privacy of a neighbourhood. However, not everyone in a neighbourhood might use these techniques. Therefore, the (non-) users will be compared with each other. This leads to the second research question, *"How do the moral principles of civilians lead to different perceptions of digital community surveillance techniques?"*. This question will help to understand whether neighbours feel the presence of surveillance technologies differently, but it also helps to identify whether there exist other sorts of groups between people with similar mindsets. Further, it will show whether their experiences toward digital community surveillance practices are distinct.

First, the theoretical pillars on which this research is built will be introduced. In section 3, Q methodology will be explained and it will be discussed how it is applied to the topic of digital community surveillance practices. The results of the Q analysis are presented in section 4, resulting in three different perspectives regarding the topic. In section 5, the results will be discussed and applied to digital community surveillance practices. Additionally, the limitations and directions for future research are presented. Finally, in section 6, the conclusions of the current study are wrapped up.

2. Theoretical framework

As there is an increase of the use of digital community surveillance practices, quite a few studies have been conducted already. Especially on WNCP, prior studies have been found (Mols, 2021; Mols & Pridmore, 2019; Pridmore et al., 2019; van Steden & Mehlbaum, 2022). Yet, studies related to (doorbell) cameras and community surveillance have been scarce.

This study will focus on the general sphere of digital community surveillance techniques. These surveillance techniques incorporate, amongst other things, WNCP groups, doorbell cameras, and street capturing cameras. To understand the effect of digital community surveillance techniques, it is important to know what those entail and how it potentially affects society. Additionally, the classical Foucauldian perspective is ever more pressing with contemporary technologies in surveillance. As this perspective includes seeing and being seen, it can exquisitely be applied to a neighbourhood situation where surveillance is used. Thereafter, it will be discussed how the gains of one side of the community – namely, safety – can be the losses of another side – namely, privacy – by introducing the concept of a moral economy as the next theoretical pillar. Finally, the concept of security meta-framing will be applied on moral economies, to show how differences in moral principles could lead to different perspectives regarding safety.

2.1. Community surveillance techniques and effects on society

It becomes more and more common that civilians are helping the police with detective work (Bos, 2022). It is a two-sided development. On the one hand, the police do not have enough resources to be constantly present on the street or to investigate all the information they receive. By having civilians collecting data or only asking for help when they think it is needed, the police do not need to be on places where it is not necessary. On the other hand, citizens know exactly what is going on in their neighbourhood, and even better, when something is suspicious. However, the disadvantage is that neighbours might not exactly know when something is suspicious enough that they should contact the police.

Since a few years, many initiatives have already been established to support civic participation in the police domain, such as a growing use of (doorbell) cameras. Another example is Bellingcat (2022), an open crowd-sourcing platform on the Internet created by and for civilians that helps to locate fugitives. An accessible example for civilians is the Dutch phone application “Mijn onderzoek” where they can upload details of a crime, such as the location, visible traces, and witness statements, or they can create a composite photo of a suspect (De Vries et al., 2020). Another known practice of civilian participation is the “track my phone” application after a phone gets stolen, where civilians – sometimes also without police support – try to get their phones back from criminals (Politie, 2022). This example is also related to internet vigilantism, where civilians use digital technologies to catch criminals.

Other well-known examples are neighbourhood watches and neighbourhood prevention WhatsApp groups. In such groups, suspicious activities or crimes that are witnessed in the neighbourhood are shared (Scheurs, 2020). At first, this seems a positive result of civilians taking preventive measures or reporting this to the police. In a neighbourhood in Tilburg, such a WhatsApp-prevention group led to a crime reduction of 50% (De Vries et al., 2020). According to the Dutch Police Academy (n.d.), there are also other common phenomena used by civilians. For example, when goods get stolen from their backyard, civilians are actively searching on second-hand commerce platforms, such as Marktplaats or Facebook marketplace. These examples already show that civilian participation can be on different levels, ranging from collecting and sharing information to trying to contact criminals.

A great amount of data is gathered through these civilian surveillance practices. Nevertheless, in some cases, civilians demand action taken by the police. Therefore, it is increasingly more pressing that we gain a better understanding of civilian surveillance practices that may lead to an increase in collected data and judgment of certain behaviour. Additionally, not all civilians engage in surveillance practices. This could lead to a division on a societal level within neighbourhoods. In the next section, this division will be further discussed through a Panopticon lens.

2.2. Panopticon and neighbourhood surveillance

Even though digital community surveillance techniques can be accessed in a variety of ways, it does not necessarily mean that everyone is taking part. The use of surveillance technologies can be compared to a modern-day Panopticon. In other words, surveillance tools are used to look out over citizens throughout society (Hendrix et al., 2018). Fox (1989) describes the essence of panopticon as a form of power that is based upon the presence of systematic surveillance, monitoring, reforming, and intervention. One could argue that digital community surveillance practices have the same essence. The ultimate goal of these techniques is to monitor what happens in a neighbourhood, and intervene with measures if necessary.

Digital community surveillance practices within neighbourhoods and in- and outgroup membership can be evaluated from a Panopticon perspective based on Foucault's theory (Weinrich, 2021). To fully understand how Panopticon can be applied to neighbourhoods, it is important to get an in-depth understanding of the theory itself. In the theory, a structure of cells was built around a central tower. The observer could see every cell from the tower, but the inmates did not know whether they were watched as they could not see the observer. This led to inmates behaving as if they were being watched. Instead of behaving to a set of explicit rules, the behaviour was based on the potential of constant surveillance. The tower that is present in the Panopticon theory feeds the suggestive feeling of constant surveillance (Blackford, 2004). Here, the observers are considered to be the established, ingroup, whereas the inmates are considered to be the outsiders. Within a neighbourhood, people who

participate in digital community surveillance practices are considered the established, as they can observe others.

Thus, the outgroup, who is not participating in such practices, is potentially being observed. Similar to the tower with tinted windows, the outsiders do not know if, and when, they are being observed. Outsiders are excluded from the knowledge of being observed, and they do not know which data is collected and how this is stored. The potential power imbalance between the ones who see and the ones who are seen is fundamental (Hogenstijn et al., 2008). Not all digital community surveillance techniques are directly visible. Some neighbours might know about it, in case they have been asked to participate as well. However, they might not be aware of a neighbour who recently installed a new camera. Therefore, the first layer of power in favour of the people who use digital community surveillance techniques. Not all neighbours might be aware by whom they are observed. Additionally, the users have the power to exclude others from the knowledge whether they are being observed, and what is being observed. This increases the loss of privacy for the ones who are not participating. Further, the people who use digital community surveillance techniques determine which behaviour is suspicious and call for action, based on their moral judgments. This shows that the ingroup is also superior regarding the power status that is granted to them by having access to the data (May, 2004). Yet, practices, rules, and regulations are considered to be helpful to generate a community. But, these are often created by the established, ingroup (Meier, 2013). This once again is a sign of their power.

The difference between Panopticon as described by Foucault and applying the Panopticon perspective to a neighbourhood is that within the tower, inmates knew that they were potentially being watched. It is focused on the feeling of continuous surveillance itself (Sekulovski, 2016). In a neighbourhood, people might not necessarily be aware that they are potentially being watched via a (doorbell) camera or people inside houses. Surveillance in a neighbourhood is operated by the people who use digital community surveillance techniques "who are opened to the gaze of those surveyed" (Green, 1999, p. 26). These people have the power to control the information.

To determine when to watch, and also what to watch, the established group needs to decide which behaviour they are going to assess. This is based on their moral values and will be further elaborated on in the next section.

2.3. Moral economies

Throughout life, everyone wants to feel safe. Thus, the ultimate goal of people is to create safety. The way civilians create safety could differ. For example, where someone feels safe by installing an alarm or adding extra door locks to their houses, others feel more assurance by joining forces in a WhatsApp-group or installing a camera. It differs how civilians think they "are doing the right thing". The different approaches to guarantee safety might come from differences in moral principles. By

applying the Panopticon perspective to a neighbourhood, different values come forward. For example, some people feel it is morally right to install a camera, whereas others do not. Or, how some individuals try to catch criminals after their bicycle gets stolen, whereas other people rather call the police. All in all, civilians assess whether they think it is morally right or wrong to use Panopticon-like surveillance technologies within communities, or rather depend on the police.

To report something as suspicious or as a crime, neighbours need to assess the situation or the behaviour based on their moral values. For instance, if they witness a crime, they have to judge whether they intervene in the situation or call the police. The extent to which someone sticks to their moral behaviour can lead to participation behaviour (Scheurs et al., 2018). If someone is extremely adherent to their moral values, this person might be more likely to intervene or call the police when witnessing suspicious behaviour. In general, most people adhere to the moral value to do something when they witness something (Scheurs et al., 2019).

The initial writing on moral economies already dates back to 1971. Back then, the concept was used to explain the moral indignation of citizens that were used to living following a certain standard of norms (Calabrese, 2005). In essence, it was about a set of moral principles that justified collective action to protest against the behaviour of other individuals or groups (Brette, 2017). The concept as it was described in 1971 illustrates how the crowd dealt with "automatic quasi-biological responses to hunger" (Palomera & Vetta, 2016, p. 416). This could also be translated to situations in neighbourhoods. Here, the use of digital community surveillance practices is a way of responding to the perceived safety one feels in the street. However, in 1971, rioting for lower food prices lead to a decrease in the profits of food producers. In other words, where the civilians won something – cheaper food – producers lost their profits. In neighbourhoods, one can see a similar situation. People who use digital community surveillance practices 'win' higher perceived safety, leading to people who do not participate 'losing' their privacy. But, if those people keep their privacy, by counteracting the use of surveillance techniques, other neighbours lose their feeling of safety.

Furthermore, the people who use digital community surveillance practices evaluate the behaviour in their neighbourhood. When assessing this behaviour as right or wrong, they work with different approaches to justify their opinion. For this study, the comparative framework for cultural differences of Thévenot, Moody, and Lafaye (2000) is adopted. This model is used as a justification tool to prove that someone's personal opinion is a generalizable statement for the common good (Thévenot et al., 2000). Further, the orders can be used as a way to raise persons as they cover economic, political, technical, and moral evaluations. The framework consists of six different orders. However, in the current study, two orders, or prnciples, of the framework were deemed most relevant, namely 'civic equality and solidarity' – hereafter called the civic principle. The second one is called 'domestic and traditional trustworthiness entrenched in local and personal ties' – henceforward called the domestic principle –

(Thévenot et al., 2000). The civic principle focuses on having the collective welfare as the standard and evaluating projects, or behaviour, based on that standard. What benefits the community is of higher value than what benefits an individual (Ten Eyck, 2016). Civic solidarity is of importance here, referring to citizens who take other's interests into account as well (Song, 2011). The safety of the neighbourhood will be evaluated based on rules and regulations belonging to that standard. The domestic principle fixates on the virtue of protecting one's personal home or so-called backyard. To preserve their safety, they do everything to protect their heritage. An important remark is that some individuals construct their interests to be consistent with the group interest (Lamont & Thévenot, 2000). This is not necessarily related to the neighbourhood. It is assumed that people who use digital community surveillance practices justify themselves, or their actions, based on these two orders.

Within the use of community surveillance practices, there is self-interest. This is mostly socially embedded, meaning that pursuing self-interest is also the fate of society (Vila-Henninger, 2016). In other words, individuals defend the use of community surveillance practices for the sake of the neighbourhood's safety. But, besides keeping the neighbourhood safe, they protect themselves and their houses foremostly. The other side of the coin, the loss of privacy, is not taken into consideration.

A moral economy can be found in the concept of digital community surveillance practices. The ingroup values their safety so highly that it might cost their privacy. Contrarily, the outgroup values their privacy more than their safety. The weakness of this sort of moral economy is that the outsiders might feel paranoid about whether they are being watched (Sanders & Sheptycki, 2017). As a consequence, they do not know whether their behaviour adheres to the standard of the established, ingroup or is being judged as suspicious. These so-called moral costs can then fuel potential divisions between the established and the outsiders for the sake of community safety (Van Steden & Mehlbaum, 2022). In this case, the ingroup has the power and the control to assess behaviour and make decisions based on their judgment. These decisions could be self-enacted, or it could be that they contact the police.

Throughout this article, the neighbours who do participate in digital community surveillance practices have been discussed. In the next section, we will also shed a light on those who do not participate in surveillance practices.

2.3.1. Security meta-framing

A distinction can be made based on whether someone adheres to civic or domestic principles. These principles can be related to the broader concept of security meta-framing. This concept evaluates perspectives on how people are living with security (Bajc, 2013). It applies to the topic of digital community surveillance techniques, as it includes, amongst other things, privacy and democracy. Whether someone uses surveillance technologies or not is a free choice, but it does have consequences for everyone's privacy. In essence, security meta-framing involves security as a logic, consisting of

techniques, procedures, and technologies of surveillance (Bajc, 2013). This can be extended to cities and neighbourhoods, where private security becomes more the norm by the presence of alarm installations, (doorbell) cameras, and WNCP-groups.

Rather than dividing groups into users and non-users, by applying meta-framing to digital community surveillance techniques, people are divided based on their moral principles. One could argue that people, in essence, try to optimize their safety. Whether someone tries to fulfil this by having an individual or collective attitude, might differ. For example, if someone decides to increase their perception of safety, this person could place a fence around his house and install cameras. This is considered as an individual measure, and aimed to protect someone's backyard. Thus, this sort of behaviour can be linked to the domestic principle. This does not necessarily have any consequences for the safety of the neighbourhood. However, it could be that direct neighbours are hampered by the fence, and perceive that their feelings are not taken into consideration.

The other side of the coin affects the people who have a collective attitude. Rather than choosing the options that feel best for them, they consider the feelings of others as well. Their measures include thinking of others in terms of dignity, respect, and collective welfare. The consideration of feelings of other persons can be linked to the civic principle. Rather than placing a fence around their backyard, they think of ways in which the neighbourhood's safety increases. This does not necessarily mean the use of digital community surveillance techniques, as there are also other possibilities to contribute to safety. Instead of thinking of themselves as an individual in the neighbourhood – as with the domestic principle –, their actions contribute to the collective by adhering to the civic principle. Noaberschap is something typical for the Eastern part of the Netherlands. It is not only present in Twente, but also in other forms in the Achterhoek or Drenthe. In Twente, it is about giving rather than receiving, and having no expectations to get something in return for the given help (Visit Twente, n.d.). It is about contribution to the neighbourhood. Often, there is Noaberschap between people who live close to one another, or at farms, who are often more isolated, and distant from facilities in the small villages. Within a Noaberschap, there are different rules and obligations. This is known as Noaberplicht. Noaberplicht entails help regarding important occasions, such as weddings or funerals, but also concerns smaller day-to-day issues. These issues might include safety. All in all, Noaberschap focuses on the collective, and is, therefore, chosen to exemplify the civic principle.

3. Methods

In the past, a few studies have already investigated digital community surveillance practices. Most of those studies were fully qualitative (Mols, 2021; Mols & Pridmore, 2019; van Steden & Mehlbaum, 2022) or both quantitative and qualitative (Pridmore et al., 2019). All these four studies focused on the experiences and daily practices of members of a WNCP group. Two studies included police officers as well (Mols & Pridmore, 2019; Pridmore et al., 2019). The current study has used a combined approach of qualitative and quantitative techniques in the form of a Q-method. The Q-methodology is used to study subjectivity, such as personal beliefs and values (McKeown & Thomas, 2013). This method perfectly fitted the study at hand, as one independently decides to participate in digital community surveillance practices, or not. Further, Q does not intend to generalize the opinion of a few to a whole population. The goal is to gather as many opinions as possible, leading to a wide spectrum of perspectives (Lee, 2017). Therefore, we look for the subjective opinion of participants. With this method, participants have the opportunity to give their perspectives regarding certain matters by ranking a set of statements on a previously determined dimension (Churruca et al., 2021). This ranking is the so-called Q sort. Afterward, the ranking of each participant is analysed and will lead to certain patterns of similarities – or differences – leading to a Q-set.

3.1. Participants

The sample consists of 17 people. A short description of the participants can be found in Table 1. A summary of the participants is provided in Appendix A. Initially, the goal was to have a 50/50 spreading of people who use and do not use digital community surveillance techniques. This would mean that an equal amount of people had the chance to share their experiences about participating in digital community surveillance techniques or not. The previously estimated number of participants – 20 – has not been reached. Despite the different sampling techniques that have been applied by the researcher, not enough participants were found to fulfil the quota. The sampling techniques that have been used by the researcher are, in no particular order, convenience sampling, snowball sampling, and the distribution of flyers among houses that visibly showed a (doorbell) camera or a sticker that indicated that the house owner was part of a WNCP group.

Besides being a (non-) user, there were no specific criteria to participate, besides creating a broad image of the topic. This means that people from different neighbourhoods, different educational levels, and different housing situations are included in the study. Further, if a person with certain characteristics participates as a user, ideally, another person that has the same characteristics participates as a non-user. To gather another different perspective, one local police officer was

interviewed as well. The purpose was to shed a light on how police officers view digital community surveillance practices.

Table 1.

Demographic Information on Participants

Participant	Gender[1]	Yes/no[2]	Age range	Digital surveillance technique
Chloe	F	No	50 – 60	
James	M	Yes	20 – 30	WNCP group
Oscar	M	Yes	50 – 60	Camera, WNCP group
Evelyn	F	Yes	30 – 40	Doorbell camera
Maya	F	No	50 – 60	
Grace	F	No	50 – 60	
William	M	No	20 – 30	
Jessica	F	No	20 – 30	
Sophie	F	Yes	50 – 60	Doorbell camera, WNCP group
Adam	M	N.A.[3]	50 – 60	
Oliver	M	Yes	50 – 60	Camera
Alice	F	No	50 – 60	
Arthur	M	No	50 – 60	
Theo	M	No	30 – 40	
George	M	Yes	50 – 60	Doorbell camera, camera
Charlotte	F	No	40 – 50	
Jacob	M	Yes	50 – 60	WNCP group

[1] Gender: male (M)/female (F)

[2] User of a digital community surveillance technique: yes/no

[3] The local police officer

3.2. Research instrument

For this study, an interview-embedded Q-methodology was used. The structure of the Q-set has a symmetrical distribution. It is numbered from a positive value to another negative value (from +4 to -4). The dimension of the scale went from strongly agree (+4) to neutral (0) to strongly disagree (-4) (Table 2). This results in a 9-point scale that leads to a pyramid shaped figure to simulate the distribution of normalcy. Further, people often feel very strongly about something that is either positive or negative about a limited number of statements (Watts & Stenner, 2012). In total, the Q set consisted of 25 statements. Each statement was printed separately on white paper and laminated afterward. This ensured a standard appearance of each statement. The choice was made to choose a fixed distribution

of the statements, so it was more convenient to facilitate the ranking process of the participants (Watts & Stenner, 2012). Besides raking the statemens, participants also got semi-structured follow-up questions regarding their choices. This is called a post-sorting interview, which aims to provide complementary information (Watts & Stenner, 2012). In general, the structure of the interview can be divided into four parts. First, an explanation on the study was given and more information on how Q-method works was provided. The first part ended by asking some general questions regarding the safety and privacy of the participants. An example of a question that was asked here is, "*Do you feel safe in the city that you live in?"*. Such questions were specifically to prompt participants' thoughts toward safety. Other questions were more related to privacy. For example, *"Do you always accept cookies when you enter a new website?*".

Table 2.

Frequency Distribution of Statements

Frequency distribution									
Ranking value	-4	-3	-2	-1	0	1	2	3	4
Number of items	1	2	3	4	5	4	3	2	1

After the introduction, the statements were stepwise introduced to the participants. The first ten statements covered the safety and privacy aspects of this study. The choice was made to only provide these ten statements first, as participants are then forced to choose between two wholly different things. Thus, whether they valued privacy more, or safety. An example of a statement that was given for privacy is "*The use of digital community surveillance practices is an invasion of privacy*". At the same time, the statement "*I should contribute to the safety of my neighbourhood"* was presented to the participant. After placing the statements, participants were asked semi-structured follow-up questions regarding their choices. In Table 3, all the statements can be found. For the first part, the statements were purposely given in a pair of two, namely 1 and 6, 2 and 7, and so on (Table 3: 1a, 1b). Then, the third part of the interview started. Here, ten statements on moral economies were provided (Table 3: 2). Because the section on moral economies included two principles – namely domestic and civic – for each principle, five statements have been created. An example of a statement for the civic principle is "*It is the task of the government to fight against crime*". A statement that is related to the domestic principle is *"People in my neighbourhood take care of problems themselves"*. For this part, the statements were not given in a particular order, one at a time. Once again, participants got semi-structured follow-up questions. The final part of the interview covered statements concerning in- and outgroup membership/established outsiders. This part only had five statements (Table 3: 3). Once again, the statements were given in a random order, and one at a time.

At the end of each round, participants were given the option to make any changes to how they had placed the statements. After placing all 25 statements, participants were given the option to make changes in the distribution. If they were satisfied, the interview was ended.

Table 3.

Statements that Were Presented to the Participants

Part	Statements
1a	*Community surveillance techniques and effects on society*
	1. I should contribute to the safety of my neighbourhood. 2. Community surveillance techniques contribute to a safer neighbourhood. 3. Watching each other contributes to the safety of a neighbourhood. 4. Digital techniques are accessible to keep the neighbourhood safe. 5. Talking to my neighbours about their behaviour positively affects the safety of the neighbourhood.
1b	*Panopticon and neighbourhood surveillance*
	6. The use of digital community surveillance practices is an invasion of my privacy. 7. Watching each other increases the feeling of distrust within a neighbourhood. 8. Someone watching a neighbour leads to a change of behaviour. 9. Neighbourhood watch leads to power differences within a neighbourhood. 10. People talk (online) about each other behind their backs.
2	*Moral economies*
	11. It is the police's task to guarantee safety in my neighbourhood. 12. The help of citizens in reducing crime is helpful. 13. Citizens can be helpful in recognizing criminals. 14. Your safety and that of your neighbours is your own responsibility. 15. Neighbours are allowed to intervene when there is criminality within the neighbourhood. 16. I expect that my neighbours adhere to the same moral values as me. 17. My 'win' is valued more important than someone else's 'loss'. 18. The safety of my householding is more important than the feelings of my neighbours. 19. People in my neighbourhood take care of problems themselves. 20. It is important to me that others think that my neighbourhood is a safe place.

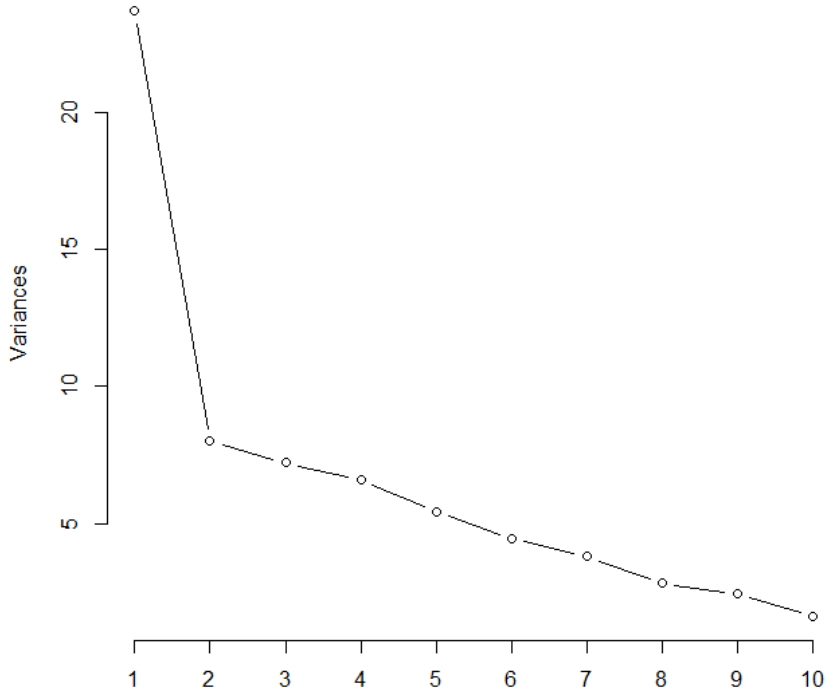
3	*In-and outgroup/established outsiders*
	21. The use of digital community surveillance practices leads to a division in my neighbourhood. 22. I like to participate in activities that are organized in my neighbourhood. 23. I feel like I am belonging to a certain group in my neighbourhood that others do not belong to. 24. Cohesiveness is important within a neighbourhood. 25. The use of digital community surveillance practices could lead to stigmatization.

3.3. Data analysis

After finalising all interviews, the Q-sorts of the participants were analysed with help of R Studio. Factors were identified through the principal component analysis and rotated using Varimax. The first helps to explain the maximum variance for each factor of the dataset (Akhtar-Danesh, 2016). As can be seen in Figure 1 and Table 4, the first factor explains the most variance, and the second the most variance from the remaining variability, and so on.

Figure 1.

Scree plot of the Unrotated Factors



In the scree plot (Figure 1), it becomes clear that Factor 1 explains much of the variability in the dataset. It is a rule of thumb to look for the 'elbow' in a scree plot. In Figure 1, the 'elbow' can be found right after Factor 2. This means that only two factors would be extracted. In most Q studies, two to four factors are extracted (Cuppen et al., 2010). The data from Table 4 shows that a combination of two

factors would result in an explained variance of 40,58%, which is less than 50%. Adding the third factor would lead to an increased explained variance of 14,33% (54,91%). However, it is important to note that the explained variance is not leading in deciding on the number of factors to extract. Ideally, the Q methodology aims to gather as many insights as possible, rather than reaching the highest explained variance. One might argue that the explained variance of the three factors is quite high, which would ultimately mean that the variety of perspectives present in this study is not. Yet, it was not decided to pursue only two factors, as there are already two initial groups: the users and the non-users of digital community surveillance practices. Further, the decision was also made to not extract more than three factors. With the relatively low sample size, there are already statements present in one factor that load significantly in another factor as well. By extracting more factors, this might have been even a greater number then it is now already. In the present study, factor 1 and factor 3 are the most opposite of each other, and factor 2 can be considered as a sort of bridge between those factors, by loading significantly on factors that are present in either factor 1 or factor 3. This will be shown in Section 4.

Thus, the three factors that were identified contained four to six significant loadings per factor. Of the 17 participants, six loaded on factor 1, 6 on factor 2, and four on factor 3 (Table 4). Importantly, none of the participants loaded significantly on more than one factor, and only one participant did not load significantly on any of the factors.

Table 4.

General Factor Characteristics

	Factor 1	Factor 2	Factor 3
Average reliability coefficient	0.80	0.80	0.80
Number of loading Q-sorts	6.00	6.00	4.00
Eigenvalues	3.46	3.44	2.44
Percentage of explained variance	20.34	20.24	14.33
Composite reliability	0.96	0.96	0.94
Standard error of factor scores	0.20	0.20	0.24

Hence, it was determined to extract three factors. Ultimately, this leads to three different perspectives on digital community surveillance techniques. Based on Table 5, it was decided to look at the statements that were ranked the highest on either side of the spectrum. For this study, it means that the statements that were ranked 4 or 3, or -4 and -3, were considered to be most useful to interpret a factor. After this, the respondents that ranked a statement with one of these rankings were identified. The transcriptions of these respondents were read to look for quotes that helped to interpret and explain the factors.

Table 5.

The Ranking Value of Statements on Each Factor

	Factor 1	Factor 2	Factor 3
4	12	11	18
3	1	1	3
3	4	2	10
2	2	12	6
2	3	13	8
2	13	18	24
1	5	4	1
1	15	19	12
1	20	20	13
1	24	24	15
0	8	3	2
0	10	14	14
0	18	15	17
0	21	22	19
0	23	25	20
-1	11	5	4
-1	14	8	5
-1	16	10	9
-1	22	17	25
-2	6	9	7
-2	9	16	11
-2	19	21	21
-3	17	7	16
-3	25	23	22
-4	7	6	23

3.4. Including the police officer

In this study, the police officer was included to gather a different perspective. To test to which extent the police officer influenced the extraction of factors, the analysis has also been conducted without the police officer. Here, it turned out that there were no differences in factor 3. In other words, the same participants loaded significantly. Regarding the statements that were either ranked high or

low, no huge differences were found. Thus, the character of factor 3 – independently of the police officer – stayed more or less the same.

Within factor 1 and factor 2, differences were found. Some of the statements that were characterizing for either factor 1 or factor 2, were – after the removal of the police officer – characterizing for the other factor. So, rather than participants that cluster around the perspective of the police officer, the perspective of the police officer aligns with the sentiment of some of the participants. Since the interview with the police officer is representing some of the participants' views, this interview was included in this study.

4. Findings

In the following section, the findings of the interview embedded Q-methodology will be presented. First, factor 1 and factor 3 will be described. Then, factor 2 will be explained. This is because factor 2 is considered to be a bridging factor, as it shows overlap with either factor 1 or factor 3.

After analysing the Q-sorts and the interviews, the theoretical pillars are matched to each factor as a sort of characteristic (Table 6). This is based on the ranking of the statements. Here, 'community surveillance techniques and effects on society' refer to the broader topic of safety, whereas 'Panopticon and neighbourhood surveillance' refer to privacy. Both the domestic and civic principle are descendants of 'Moral economies'.

Table 6.

Overview of Theoretical Pillars of Each Factor

	Factor 1: Civic principles rooted in contribution	Factor 2: Domestic attitude regarding civic principles	Factor 3: Domestic principles rooted in safety
Ranking			
High - agree	Community surveillance techniques and effects on society Civic principle	Community surveillance techniques and effects on society Civic principle	Community surveillance techniques and effects on society Panopticon and neighbourhood surveillance Domestic principle
Low - disagree	Panopticon and neighbourhood surveillance Domestic principle Established outsiders	Panopticon and neighbourhood surveillance Established outsiders	Civic principle Established outsiders

4.1. Factor 1: Civic principle rooted in contribution

Table 7 shows that six participants loaded significantly on this factor. Four of these participants are female, and four of those have an age varying between 50 and 60 years old. Three of them do not use digital community surveillance techniques, and one participant is a police officer. Whether he uses a digital community surveillance technique is not included in this study.

Table 7.

Distinguishing and Defining Statements of Factor 1

Distinguishing and defining statements factor 1		
Sorted on	#	Statement
		More positively sorted statements
4	12	Help of citizens in reducing crime is helpful.
3	1	I should contribute to the safety of my neighbourhood.
3	4	Digital techniques are accessible to keep the neighbourhood safe.
2	3	Watching each other contributes to the safety of a neighbourhood.
2	13	Citizens can be helpful in recognizing criminals.
1	24	Cohesiveness is important within a neighbourhood.
0	18	The safety of my householding is more important than the feelings of my neighbours.
		More negatively sorted statements
-1	11	It is the police's task to guarantee safety in my neighbourhood.
-1	16	I expect that my neighbours adhere to the same moral values as me.
-2	6	The use of digital community surveillance practices is an invasion of my privacy.
-3	17	My 'win' is valued more important than someone else's 'loss'.
-3	25	The use of digital community surveillance techniques could lead to stigmatization.
-4	7	Watching each other increases the feeling of distrust within a neighbourhood.
Number of Unique Significant Loadings: 6		Explained variance: 20%

Based on Table 7, statements 12 (ranked 4), 1 (3), 4 (3), 17 (-3), 25 (-3), and 7 (-4) are considered to be determinants for this factor. The statements that were ranked high for this factor concerned ways to keep the neighbourhood safe. For example, the fact that the help of citizens is helpful to reduce crime (statement 12), everyone has a stake in contributing to the safety of the neighbourhood (statement 1), and the accessibility to digital techniques as a way to keep the neighbourhood safe (statement 4). What is outstanding within this group is that the statements that were ranked high were mostly concerning safety. This is shown by their support for digital community surveillance techniques. Even though not everyone is a user, they still acknowledge the role that such techniques can contribute to the safety of

their neighbourhood. What further characterizes this group is their attitude toward the accessibility of joining a WhatsApp-group or installing a (doorbell) camera.

However, they also notice that it is not necessary to use digital community surveillance techniques to contribute to safety. For example, rather than sending a message in a group chat that is set up for a specific goal, people directly contact the neighbour at hand who is affected by a certain situation. Besides alarming neighbours, they look for deviating things in the neighbourhood. Examples of such things are cars trespassing or slowly driving by. Nonetheless, people in this group also do not hesitate to contact the police if it is deemed necessary. As Oscar, who uses a camera and is a member of a WNCP group (statement 1, ranking +2), explains:

> *"When civilians see something, they can alert police officers. If you see something and you do not alert anyone, you do not contribute. And if you do alert police officers when you see something, you can help police officers to reduce crime"*

This example shows that people belonging to this group feel obligated by their moral worth to see the neighbourhood as a collective and alert people when necessary or involve the police. The statements that the people in this group strongly disagreed with concerned different aspects. Statements that were ranked low for this factor concerned distrust as a consequence of watching each other (statement 7), stigmatization (statement 25), and the importance of placing themselves above other neighbours (statement 17).

The term 'watching each other' had a negative sentiment according to the participants. They felt it as something positive, and rather call it Noaberplicht. This is explained by Chloe, a non-user of digital community surveillance techniques, (7, -2):

> *"[…] That everyone sees it as a Noaberplicht to let others know is something is going on. Also without being really connected."*

So, rather than trying to intervene in someone else's life, it is experienced as a way of taking care of each other. Another example that supports their positive attitude toward watching each other was given by Evelyn, who has a doorbell camera (3, +2), said:

> *"I read a story about a man who placed a plant outside his house, each day. When there was no plant, his neighbours knew something was wrong. I think it is good to take care of each other, even though this example is not digital. But still, I think you should take care of safety together"*.

Other examples related to watching each other are noticing closed curtains or the absence of a car in front of the house for consecutive days. So, neighbours are watching each other, but they see it as a way of taking care of each other or as a Noaberplicht, rather than a way of distrust.

Secondly, most participants did not place themselves above other neighbours. They rather strive for the collective good. The strive for togetherness shows that they do not value themselves as more important than the collective – or, the neighbourhood. This is exemplified by Jessica, who does not use a digital community surveillance technique (18, -4), and said:

> *"I think it should be equal. Something should never be at the expense of someone else. I want my neighbourhood to be as safe as possible, but it should not be at the expense of someone else"*.

So, if a neighbour is opposed to a camera, the people in this group would not necessarily install it. They rather try to find compromises or other ways to increase their feelings of safety. Finally, the participants in this group did not see stigmatization as a consequence of digital community surveillance techniques. The police officer, who was included in this group, also did not have any experiences with stigmatization that was caused by the use of surveillance technologies.

To conclude, the participants that loaded significantly on factor 1 ranked statements regarding safety the highest, followed by statements concerning civic principles. Their disagreement was the highest with statements related to privacy and neighbourhood surveillance, and domestic principles.

4.2. Factor 3: Domestic principles rooted in safety

The third factor contained four participants that loaded significantly on this factor (Table 8). Three of them are male; one is female. Similarly, three participants do not use digital community surveillance techniques, and one does. The age varied most in this group, two participants have an age between 50 and 60 years old, one participant between 20 and 30 years old, and the final participant of this group has an age between 30 and 40 years old.

Table 8.

Distinguishing and Defining Statements of Factor 3

Distinguishing and defining statements factor 3		
Sorted on	#	Statement
		More positively sorted statements
4	18	The safety of my householding is more important than the feelings of my neighbours.
3	3	Watching each other contributes to the safety of a neighbourhood.
3	10	People talk (online) about each other behind their backs.
2	6	The use of digital community surveillance practices is an invasion of my privacy.
2	17	My 'win' is valued more important than someone else's 'loss'.
1	15	Neighbours are allowed to intervene when there is criminality within the neighbourhood.
0	20	It is important to me that others think my neighbourhood is a safe place.
		More negatively sorted statements
-1	5	Talking to my neighbours about their behaviour positively affects the safety of the neighbourhood.
-2	21	The use of digital community surveillance practices leads to a division of my neighbourhood.
-3	16	I expect my neighbours to adhere to the same moral values as me.
-3	22	I like to participate in activities that are organized in my neighbourhood.
-4	23	I feel like I am belonging to a certain group where others do not belong to.
Number of Unique Significant Loadings: 4		Explained variance: 14%

Based on Table 8, statements 18 (ranked 4), 3 (3), 10 (3), 16 (-3), 22 (-3), and 23 (-4) are considered to be determinants for this factor. The statements that were ranked high for this factor were

mostly related to privacy and neighbourhood surveillance. For example, using surveillance technologies felt like an invasion of privacy (statement 6). Other statements were related to the domestic principle and safety.

The ranking orders of the statements differ at certain fundamental points between factor 1 and 3. An example of this difference is the ranking of statement 17, regarding wins and losses. Where participants in factor 1 strongly disagreed with this statement (-3), the statement was ranked at 2 in this factor. This illustrates how these factors are contrasting. Another example is the statement that was ranked the highest in this factor concerning the domestic principle. This statement is considered as characterizing for this group, and was about the importance of the own householding above the feelings of neighbours. Here, the self-interest of either adhering to safety or privacy becomes visible. Further, when applying the concept of security meta-framing to this group, their high agreement on this statement shows their preference for the individual rather than the collective. Rather than joining a WhatsApp-group, people belonging to this group might rather choose safety measures that are focused on protecting their householding.

Another thing that stood out in this group is the statement regarding talking about other people. By ranking this statement high, participants acknowledge the tendency of people to talk about them behind their backs. This is exemplified by George, who has both a doorbell camera and a regular camera (10, 3), and said:

> *"If you look at Twitter, you don't want to become the main character at Twitter. Online is a great way of sharing ideas, but also to talk about people"*.

It is important to note that the participants do not relate this statement to digital community surveillance techniques, but rather generalize this. This could be face-to-face, or, for example, on Twitter. None of the participants indicated that they saw this gossiping happening in WNCP-groups, but rather in private WhatsApp-conversations between neighbours.

Similarly to participants in factor 1, the people in factor 3 think that watching each other does contribute to safety. Again, they see it as a good way rather than trying to intervene in someone's life. Participants indicated that they look for unusual things, rather than spy on people.

The statements that people in this group strongly disagreed with were related to all theoretical pillars in this study. Their strongest disagreement was related to group membership, meaning that they did not experience different groups in their neighbourhood. What further characterizes this group is the disagreement with the statement 'I like to participate in activities that are organized in my neighbourhood' (statement 22). This disagreement shows their individualized role in the

neighbourhood, which was also visible in the statements that were ranked high. Important to note is that things were organized, but people did not feel the urge to join or felt an absence of social cohesion. This is explained by Theo, a non-user of digital community surveillance techniques (22, 0) :

> *"A neighbourhood day is organized. Or something like drink coffee with your neighbours, but then you're just awkwardly standing in a rainy pop-up canopy tent, talking to people you don't know*".

Finally, people belonging to this group held no expectations regarding similarities in moral values. They are also not bothered by the lack of similarities. Here, two explanations can be found. Firstly, it might be another example of their individualized attitude, as they rather let every neighbour live the way they want to rather than obliging their moral standards to others. Secondly, it could be explained by the sort of neighbourhood people live in. In a rather homogeneous neighbourhood, similar moral beliefs were expected, as a part of the homogeneity.

While in this group, people try to contribute to safety by prioritizing themselves above others. This does not mean that they walk through the neighbourhood with blinders; they still alarm neighbours about suspicious or unusual activities. However, they have a more individualized nature when it comes to certain matters. This aligns with their adherence to the domestic principle. The individualization might not be directly related to safety, but becomes more visible by their attitude towards other things.

4.3. Factor 2: Domestic attitude regarding civic principles

Six participants loaded significantly on factor 2. What defined the people in this factor, can be found in Table 9. Four of the participants are male, and five of them have an age varying between 50 and 60 years old. Four of them use digital community surveillance techniques and two do not.

Table 9.

Distinguishing and Defining Statements of Factor 2

Distinguishing and defining statements factor 2		
Sorted on	#	Statement
		More positively sorted statements
4	11	It is the police's task to guarantee safety in my neighbourhood.
3	1	I should contribute to the safety of my neighbourhood.
3	2	Community surveillance techniques contribute to a safer neighbourhood.
2	12	The help of citizens in reducing crime is helpful.
2	18	The safety of my householding is more important than the feelings of my neighbourhood.
1	4	Digital techniques are accessible to keep the neighbourhood safe.
0	22	I like to participate in activities that are organized in my neighbourhood.
		More negatively sorted statements
-1	8	Someone watching a neighbour leads to a change in behaviour.
-2	21	The use of digital community surveillance practices leads to a division in my neighbourhood.
-3	7	Watching each other increases the feeling of distrust within a neighbourhood.
-3	23	I feel like I am belonging to a certain group where others do not belong to.
-4	6	The use of digital community surveillance techniques is an invasion of my privacy.
Number of Unique Significant Loadings: 6		Explained variance: 20%

Based on Table 9, statements 11 (ranked 4), 1 (3), 2 (3), 7 (-3), 23 (-3), and 6 (-4) are considered to be determinants for this factor. The statements that were ranked high for this factor were mostly related to safety and civic principles. For example, the role of citizens and the police in crime reduction scores high (statements 11, 12, and 13). Further, they acknowledge the contribution of individuals and digital community surveillance techniques to the safety of a neighbourhood (statements 1 and 2). These two concepts could also be linked together. By individually contributing or by either using or accepting the use of digital community surveillance techniques, the safety of the neighbourhood increases. By alerting neighbours or the police in cases of suspicious activities, or witnessing a crime, they help the police. This ultimately helps the police in their efforts to guarantee safety in the neighbourhood, a

statement that was ranked the highest in this factor. However, the people in this group do not think that guaranteeing safety is a task solely assigned to the police. They feel that other governmental bodies and civilians have a responsibility in this matter as well.

Other participants also had difficulties with the interpretation of some of the statements, but especially people in this group questioned some statements. An example of a word that was interpreted differently was the word 'contributing'. Even though the participants ranked this statement high, they were somewhat uncertain about their role. Jacob, a member of a WNCP group (1, 0), said:

> *"I'm not consciously contributing to safety, but if I see something odd, then I'll do something about it. We do have a WhatsApp group and we communicate"*.

The statements that people in this group strongly disagreed with were mostly about matters related to privacy and neighbourhood surveillance, and the domestic principle. They disagreed most with their privacy being invaded as a consequence of the use of digital community surveillance techniques (statement 6). Further, the people in this group did not feel the presence of group membership (statement 23), and they also do not think that watching each other increases distrust (statement 7).

It could be expected that the participant belonging to this group do not see the use of digital community surveillance techniques as a way of invading their privacy, as they acknowledge the important role its usage or acceptance could play in keeping the neighbourhood safe. Further, by handing over potential videos or screenshots to the police, they, in turn, could help to guarantee safety in the neighbourhood. An example of camera footage that could be turned over is of a car that keeps driving through the street.

Another statement that the participants disagreed with was about the existence of groups in their neighbourhood. James, who is also participating in a WNCP group (23, -4), said:

> *"I don't feel this* [existence of groups] *at all. I also do not think that I belong to a certain group, because I'm in a WhatsApp group. […] I don't have the feeling that a belong to a certain elite that contributes to the safety of our neighbourhood, and that it will lead to power differences*".

Other participants were more considerate of the diversity in demographic characteristics when thinking of group divisions, such as age, occupation, having children, etcetera. Some did feel the

presence of groups based on those characteristics, but they did not experience exclusion based on the (non-) use of digital community surveillance practices.

The final statement that the participants quite strongly disagreed with was about the increasing distrust as a consequence of watching each other. However, some of the participants indicated that watching each other has its boundaries. For example, when a neighbour intervenes in someone's life when it does not have any consequences for the neighbourhood's safety. Arthur, a non-user of digital community surveillance techniques (7, -3), explained how watching each other can help:

> *"Sometimes, the elderly woman next door is all alone at home, and then she texts me: someone is at my door. Well, I am going to check on that person for her. I'm helping her that way. But if she sees an odd bus standing outside... She knows which bus I'm driving, so if there's a different one, she will tell me. Looking for things that deviate".*

The people in this group thus see watching each other as a way of helping each other out, rather than trying to intervene in a neighbour's life.

In short, participants belonging to this group value the civic principle and acknowledge the role surveillance techniques could play to increase the safety of a neighbourhood. They quite strongly disagree with statements related to privacy and surveillance and the domestic principle. Nonetheless, some overlap can be found between the statements that scored high in this factor and some of the statements that were ranked high in other factors. Therefore, this factor is considered a bridging factor. Regarding statements that participants strongly agreed with, there are similarities in ranking with the statements of factor 1. Concerning statements with strong disagreement, there is an overlap with the items of factor 3.

5. Discussion

This study aimed to find out what the potential effects of digital community surveillance techniques are on a small-scale level, being the neighbourhood, by answering the research question, *"What effects do digital community surveillance techniques have on perceptions of safety and privacy within neighbourhoods in Twente?*". Firstly, it is acknowledged that digital community surveillance techniques could contribute to the safety of the neighbourhood. Another way of contributing to safety is by watching each other. This indicates that the collective is kept in mind when thinking of ways to preserve a safe neighbourhood. Further, citizens acknowledge their role in crime and criminal recognition. In turn, this could lead to crime reduction with, as a consequence, a safer neighbourhood. Criminal recognition is not necessarily caused by digital community surveillance techniques, as people also trust their guts and eyes. Nonetheless, it could be supported by using surveillance technologies. Secondly, there are two camps to find regarding privacy. On the one side, people do not sense digital community surveillance techniques as an invasion of privacy, but rather as an extension of their perception of safety. Here, especially the lack of thoughts regarding online privacy is important to note. On the other side, people are more conscious of the number of surveillance technologies and their effects. Privacy reduction was caused by how their traces could potentially be tracked and the storage of data, amongst other things.

The second research question, *"How do the moral principles of civilians lead to different perceptions of digital community surveillance techniques?*", helps to grasp an understanding of people's mindset regarding the contribution of safety. It was hypothesized that moral economies would be present in digital community surveillance techniques. By selecting two moral principles – civic and domestic –, this study tried to indicate their presence. The findings show that these two principles are present within neighbourhoods. Even though none of the participants expressed they would not look after their neighbours, still, preferences for either a collective or individual attitude were found. In cases of uncomfortableness caused by surveillance technologies, participants with a collective attitude would try to find ways to compromise, whereas participants with an individual attitude would rather emphasize the importance of their householding above the feelings of others. What further stands out in this study is the presence of Noaberschap. The findings indicate that people who adhere to the civic principle referred to the concept of Noaberschap as a way of protecting the safety of the collective. A side note can be made concerning the adherence to the civic principle. The extent to which someone thinks contributing to the safety of the collective differs. For example, some participants indicated it is a way of looking for unusual things or help when asked by a neighbour, others seem to be bothered by each car that is trespassing.

Nowadays, consumerism impacts people's life and living standards are amplified. If people feel the need for an increased feeling of safety, they simply 'buy' it by participating in digital community

surveillance technologies, such as (doorbell) cameras. Citizens have the power to implement safety measures in their communities (Walby, 2005). Examples of these measures are surveillance technologies. Importantly, such technologies can lead to altered power relations within communities. An example is the dominant power role of tech companies in administering surveillance technologies (Rudschies, 2022). Their dominant role can be further explained based on data possession, data storage, or adding more privacy-invasive features to technologies. Within their surveillance capitalism, the entire population is a target of data extraction (Zuboff, 2015). Other examples of how power relations can be altered are the acquaintance of people to the presence of cameras in their neighbourhood, the possibility of parents watching their children, and how data is shared with other neighbours and companies, all leading to a reduction of privacy (Tan et al., 2022). Within the classical Foucauldian perspective, people could feel that they are constantly being under surveillance (Blackford, 2004). The findings indicate that some are aware of the cameras when walking through a neighbourhood. Nevertheless, this did not lead to a reduction in privacy. Further, it was hypothesized that people would behave differently when experiencing the suggestive feeling of being under surveillance, known as the observer effect (Baclawski, 2018). Within this study, the effect was not found. In other words, people would not change their behaviour when they feel like they are potentially being watched. Although, some people felt the indirect presence of cameras when moving around. This is an example of how power relations could be altered. In this case, there is information asymmetry between those who possess the data and those who are the data subject. As Foucault describes it in his theory, knowledge authorizes power, so, knowledge is power (Rudschies, 2022). When there is information asymmetry, the ones without knowledge thus have no power. Often, civilians do accept this new power imbalance by thinking it is beneficial for them – e.g., an increased feeling of safety. By not noticing any power differences, people in this study might have accepted the power imbalance already. This aligns with the finding of Boudreau (2013), that people – independently of being in favour or opposed to surveillance cameras – are more and more open to accepting it, without any questions asked. Or, as Lightfoot & Wisniewski (2014) put it, "the freedom to collect information is at the expense of individual freedom of the general public" (p.36). In other words, the choice of one individual to collect information affects the privacy of all.

Throughout this study, the focus has mostly been on the physical aspect of privacy. However, a major aspect of digital community surveillance techniques is the storage and possession of data, being the online aspect of privacy. Online privacy can be defined as how an individual perceives their concerns regarding the invasion of their privacy by others in the online space, whereas physical privacy involves similar concerns regarding their physical space (Zhu & Grover, 2022). In their study on the Amazon Ring doorbell camera, Selinger and Durant (2021) mentioned that using surveillance systems could lead to a slippery slope due to short-term (protecting family and property) and long-term (accepting any demand

of the surveillance technology at hand) consequences. Especially the convenience of (installing and) using a digital community surveillance technology makes it a powerful incentive for consumers. Based on this, it can be argued that some people might only think about the short-term benefits that digital community surveillance techniques can provide to them. Such benefits might include the low effort to purchase/install and the easiness of use (Selinger & Durant, 2021). However, in the long term, more privacy-invasive features might be added or the privacy policy of technologies might change. Since people are already using technologies, they might be forced to accept those changes. This might lead to severe consequences for both physical and online privacy, and is once again a sign of the power imbalance caused by big tech companies. An example of a privacy-invasive feature that is added later on could be facial recognition. Due to such a feature, civilians can be tracked throughout the day by people who own a (doorbell) camera, and their faces and steps are stored in a database. Here, civilians can be considered as the incidental user of surveillance technologies due to their coincidental presence in an area that is covered by, for example, a (doorbell) camera (Tan et al., 2022). This increases the risk of civilians becoming a target of hackers with, consequently, an increasing amount of ransoms demanded from innocent people. Thus, civilians could become repeatedly the victim of power imbalances. Yet, due to ignorance or negligence, people are more focused on the short-term consequences of digital community surveillance techniques. The people in this study that used (doorbell) cameras were often unaware of how data was stored. This confirms the findings of Tan et al. (2022), that users often have limited knowledge and insight into how technologies affect their lives.

5.1. Limitations and directions for future research

Even though racism is one way how established-outsider relationships are formed, this is not a core issue that will be used throughout this article. Ethnicity might also influence attitudes toward the police and people's willingness to participate, but this is not included in this research.

Another limitation compromises Q-methodology as a whole. When creating their Q-sort, participants were obliged to rank statements at 0, or, neutral. It is often referred to as a neutral state of no feeling, or no meaning, leading to a statement that might have been misplaced (Watts & Stenner, 2012). This was also something that came forward during this study. It might also not be something that can be prevented, however, it is something to keep in mind when looking at Q-sorts of individual participants.

The people that participated in this study were found via non-probability sampling. Thus, not everyone was able to participate in the study. This could lead to a somewhat biased perspective, as only people living in the eastern part of the Netherlands participated in the study. According to statistics from CBS, people that live in the southern part of the Netherlands (Brabant, Limburg) have taken more security precautions than people living in other parts of the Netherlands. Even though this not only

concerns digital community surveillance practices – such as safety locks and roller blinds – there are also more houses with burglar alarms and camera surveillance (Centraal Bureau voor de Statistiek, 2022). Regarding WNCP groups, people living in the south and the east (26%) are more often participating than people who live in the north and the western part of the Netherlands (less than 20%) (Centraal Bureau voor de Statistiek, 2022). The current study partially covers the eastern area as described in the survey of the CBS. These examples show that the results of this study cannot be generalized to the entire country, let alone other countries, as there are already differences within the particular regions of the Netherlands.

Further, other geographic factors, such as whether someone lives in a city or a village, have not been included in this study. Common demographic factors were also not part of this study. This includes educational level or level of income. For example, groups with a lower income tend to have a lower level of trust in the police, which might reduce support for technologies used for surveillance as well (Gurinskaya, 2020). All in all, future research could focus on including geographic and/or demographic factors in their studies.

During the interviews with users of digital community surveillance practices, it came forward that not everyone is aware of how, how long, or where recorded videos are stored. However, that aspect is not covered by this study. It might be more related to online safety rather than the physical safety that this study tried to incorporate. Future studies could examine the role of online safety in the context of digital community surveillance techniques, with the ultimate goal of creating greater awareness around the topic.

Finally, the statements were initially created in English even though the interviews have been conducted in Dutch. This means that the initial statements have been translated into Dutch as well. A potential limitation is that it was not possible to directly translate everything. This might have led that some meanings of the statements getting lost in translation. Additionally, the interviews were translated from Dutch to English. Here, it could also mean that the intended meaning of participants could not directly be translated. The severity of this limitation is doubtable because it is contradicted by the indeterminacy of translation of Quine (1970). To phrase it simply, it does not matter that some meanings might have been lost in translation, as there are always alternative translations of certain sentences or words. To ensure that participants understood the statements correctly, the researcher tried to stir them in the right direction, without prevailing any personal opinions.

6. Conclusion

This study contributed to the greater image of digital community surveillance techniques, by providing consequences of usage for society on a small-scale level, namely the neighbourhood. Existing studies in the Netherlands were mostly focused on WNCP groups, whereas American studies focused on doorbell cameras, such as Amazon Ring. The current study combined multiple digital community surveillance techniques and has, therefore, an explorative nature. Additionally, the use of Q methodology provided in-depth perspectives into the topic at hand. Especially the forced choice that the participants had to make led to interesting insights regarding an individual or collective attitude.

The answers to the two research questions lead to the conclusion that digital community surveillance techniques, as it is investigated in this study, do not directly have a large impact on neighbourhoods. Rather than the initial two groups that this research started with – the users and the non-users of digital community surveillance technologies – the findings indicated that three groups can be defined. However, only two of these groups are distinctive. Rather than in- and outgroups, other distinctions that were found within this study were related to homogenous versus heterogeneous neighbourhoods, the domestic versus the civic principle, and whether digital community surveillance practices were considered as a privacy loss or not.

An important remark here is that online privacy was not accounted for in this study. However, it could be a major aspect in accepting or using digital community surveillance techniques. The current study expects that civilians already accept the power imbalances that are caused by surveillance technologies, as the findings indicate they are not aware of any power differences. Participants indicated that they did not have thought of the topics that were discussed in the interview before, which supports the previously mentioned line of reasoning. This study results in an urgent call to investigate the role of online privacy in digital community surveillance technologies. For people to make a deliberate decision, they should be aware of the potential consequences of digital community surveillance practices. Thus, understanding the consequences of seeing others and being seen. Further, the role of companies developing surveillance technologies should not be underestimated. Their immense power to add more privacy-invasive features is important to consider when deciding on accepting surveillance technologies in neighbourhoods, especially in the current societal debate regarding privacy.

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Appendix A

Gender		
	Male	9
	Female	8
Age range		
	20 – 30	3
	30 – 40	2
	40 – 50	1
	50 – 60	11
Surveillance technique		
	WNCP group	4[1]
	Doorbell camera	3[1]
	Camera	3[1]

[1] *Surveillance technique: some participants used a combination of surveillance techniques.*