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ARTICLE

Why do citizens become a member of an online neighbourhood watch? A case study in The Netherlands

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ABSTRACT

Aided by the growth of Internet and social media, citizens increasingly organize themselves to communally increase safety in their own neighbourhood. In this context, a prominent type of online self-organization includes online neighbourhood watches. In an exploratory case-study, 214 citizens of one neighbourhood in a medium-sized city in the Netherlands were asked in a door-to-door survey whether they currently were a member of an online neighbourhood watch. Subsequently, non-members were asked whether they would consider becoming a member. Departing from the Community Engagement Theory developed for the domain of physical safety, we examined to what extent both membership and membership orientation were influenced by psychological drivers on the individual, community and institutional level. Results showed that current membership was associated with drivers on the individual level (lower risk perception and higher response efficacy) and community level (lower sense of community and more previous community participation), but not the institutional level (trust in the police). Furthermore, the willingness to become a member was related to individual response efficacy only. These insights can be used by e.g. the police in their communication with citizens on online platforms, as well as when aiming to further stimulate these initiatives.

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Online neighbourhood watch; citizen participation; efficacy; sense of community

In past decades, neighbourhood watches have sprung up in cities all over the world. This is facilitated by the rise of technology and the Internet, and more recently, social media, which increasingly empower citizens to collectively deal with their own safety (Fieseler & Fleck, 2013; Lewis & Lewis, 2012; Lub, 2017), for example through an online neighbourhood watch. Such initiatives are usually also welcomed by local police forces, as they simply do not have the capacity and resources to be present 24/7 at every corner (Bullock & Sindall, 2014). As a result, police organizations have started to pay more attention to civic involvement and actively stimulate citizens to participate in the safety in their neighbourhood (Gill, Weisburd, Telep, Vitter, & Bennett, 2014; Sulaiman, Othman, Hamsan, Samah, & D'Silva, 2012). In order to design efficient strategies to stimulate such initiatives, it is important to know what drives citizens to join these online neighbourhood watches.

A prominent type of online self-organization through social media are WhatsApp Neighbourhood crime prevention groups. Members of such 'Neighbourhood-WhatsApp groups', usually living in the same street or neighbourhood, can for instance alert each other about suspicious circumstances they have noticed and act accordingly. In the Netherlands for example,

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there were already more than 8500 neighbourhood-WhatsApp groups active in 2018, each on average existing of twenty to fifty members (Lub, 2016; Pridmore, Mols, Wang, & Holleman, 2018; WABP, 2018). Although the Netherlands seem to be on the forefront of this development, as far as our knowledge goes, these initiatives appear to be on the rise elsewhere as well (e.g. in the UK; Lub, 2017). An example of another online application is Next Door (active in Western Europe and Australia), which is designed to stay in contact with neighbours on multiple topics, such as planning a neighbourhood event, finding a local baby-sitter, but also on safety and crime prevention (NextDoor, 2018).

Although there has not yet been a lot of research regarding the effectiveness of these fairly new online Neighbourhood-WhatsApp groups, the first results suggest a decline in burglaries in neighbourhoods where such groups were active (Akkermans & Vollaard, 2015). The effects of 'physical' neighbourhood watches, however, have attracted more attention among researchers. A meta-analysis about the effectiveness concluded that half of the studies showed a reduction in crime, while the other half showed uncertain effects (Bennett, Holloway, & Farrington, 2006).

In previous research on neighbourhood watches in general, the focus has predominantly been on the effectiveness and less on the social effects of neighbourhood watches: the psychological drivers behind an individual's decision to join and participate in neighbourhood watches have not been studied for as far as we are aware. Knowledge of the latter, however, may be instrumental in stimulating membership of these groups, as well as in centralizing communication between these groups with local police units. Therefore, this research will focus on (a) which psychological drivers can predict membership of neighbourhood-WhatsApp groups, and (b) among non-members: whether these drivers can predict their willingness to become a member in the future.

Psychological drivers

The decision to become a member of an online neighbourhood watch is likely to be based on individual considerations and perceptions, for instance on the perceived risk of becoming a victim of a crime and on beliefs regarding effectiveness of an online neighbourhood watch in reducing crime (Jackson, Allum, & Gaskell, 2006; Kanan & Pruitt, 2002). But even though individual motives will be of importance to decisions to become a member of a Neighbourhood-WhatsApp group, this behaviour might also be influenced by the specific community. As noted by Gil de Zúñiga and Valenzuela (2011) for example, individuals who have stronger social networks with neighbours or acquaintances participate more. Thus, citizens who have more contacts in their neighbourhood might also be more involved. In addition to the influence of the community, human behaviour might be affected by their relationship with the police. Citizens are not the only ones responsible for the safety in their area, but need to cooperate with the police. It might, for example, be predicted that a concept such as trust in the police will affect participation behaviour as well. Hence, drivers on the community, as well as on the individual and institutional (the police) level might be of importance when looking into psychological drivers behind membership of neighbourhood-WhatsApp groups.

Previously, the influence of these factors at all three levels on preparatory or preventive behaviour has been studied in the domain of natural hazards (Paton, 2013; Paton, Smith, Daly, & Johnston, 2008). Paton and colleagues introduced the Community Engagement Theory, which integrates psychological variables on the individual, community and institutional level, in order to gain more understanding about citizens' preparatory behaviour for natural hazards. This Community Engagement Theory has been validated for different types of disasters such as earthquakes, flooding's and tsunamis, and in a range of countries (Kerstholt, Duijnhoven, & Paton, 2017; Paton, 2013; Paton, Okada, & Sagala, 2013). As comparable results were found in these different contexts, Paton and colleagues considered it to be an all-hazard approach: factors at all levels were relevant in predicting preparatory behaviour (Paton, 2013). However, this conclusion applies to safety in the context of natural hazards, and thus refers to physical safety. According to Paton

(2013), dealing with uncertainty represents a common denominator in people's experience of various hazardous events. In case of a flooding, citizens may be uncertain about whether or when they actually fall victim to the flooding, its intensity, and its potential consequences (Kerstholt et al., 2017). This should not be different for the risk of becoming a victim of crime: whether or not citizens would become a victim of crime is uncertain, as is the severity of the crime itself, and its consequences for individuals and their community. Despite the fact that in different times and places the likelihood of falling victim to different hazardous events may vary substantially, taking preparatory action can be seen as key to cope with these uncertainties.

As joining an online neighbourhood watch is more of a social safety issue, it would be interesting to investigate whether similar factors at the various levels are also predictive for social safety issues. In this study we take a first step in this direction by testing Community Engagement Theory within the context of membership of Neighbourhood-WhatsApp groups as a means to prevent and detect crime. For this purpose, the psychological drivers were translated to the context of social safety.

Individual level

On the individual level, the Community Engagement Theory takes three individual drivers into account; risk perception, self-efficacy and response efficacy into account (Kerstholt et al., 2017; Paton et al., 2008). Previous research, however, showed that emotions were also an important driver for preparedness behaviour for natural hazards (Kerstholt et al., 2017; Terpstra, 2011) and, even more important for the present context, for citizen participation in the safety domain as well (Schreurs, Kerstholt, de Vries, & Giebels, 2018a). For this reason, negative emotions were added to the model for the purpose of this study.

Risk perception is the perceived likelihood of a risk, here concerning crime and disorder, and the perception of the consequences of that risk. When people perceive the risk as high, they will be more likely to act in order to mitigate that risk by taking protective measures (Paton et al., 2008).

Due to the experience of strong negative emotions (such as feeling anxious, feeling worried, angry or helpless), the assessment of a risk can be misguided by systematic illusions, for example by giving a higher weight to catastrophes, proximity and personal relevance (Slovic & Västfjäll, 2010). Past research has shown that these emotions have an effect on moral behaviour in general (e.g. pro-social behaviour) (Harkness & Hitlin, 2014; Teper, Zhong, & Inzlicht, 2015), and more specifically on participation behaviour in the police domain (Schreurs, Kerstholt, de Vries, & Giebels, 2018b). The latter study also showed that the experience of other-condemning emotions such anger influence responsive participation (e.g. reporting something to the police) and social control (discussing problems with neighbours, or addressing others about their disorderly behaviour). However, they did not have any effect on detection (e.g. joining networks such as Amber alert, or neighbourhood watches) (Schreurs et al., 2018b).

Whether people feel capable to perform a certain task, also called self-efficacy, can contribute to people's intentions to perform certain preparing behaviour as well as their actual behaviour (Paton & McClure, 2013). In the case of membership of an online neighbourhood watch, this for example concerns whether citizens see themselves as capable to join such a group, to collect information regarding suspicious circumstances and contact neighbours about this.

Response efficacy (also known as outcome expectancy), can be described as the faith people have in their adaptive response, and to what extent they believe that the response will be effective in protecting themselves or others (Floyd, Prentice-Dunn, & Rogers, 2000). If people are negative about the outcome, this decreases the probability of accepting and implementing protective measures, while positive expectations can motivate people to prepare and organize themselves (Kerstholt et al., 2017; Paton et al., 2008). For our study this would mean that when citizens believe that joining an online neighbourhood watch will reduce crime, they are more likely to join.

Community level

At the community level, the Community Engagement Theory distinguishes between three drivers. These are the sense of community people have, collective efficacy, and how much citizens have participated in their neighbourhood on other domains. Citizen participation is more than mere individual behaviour, as citizens can also communicate and cooperate with other citizens in their community in order to enhance safety in their neighbourhood together. Therefore, we should not treat citizen participation solely as an individual decision, but also take into account the social environment.

When citizens experience their community as close-knit and involved, they might be more likely to participate than when the community consists of unconnected individuals who just happen to live in the same neighbourhood (Ohmer & Beck, 2006). Another factor based at the community level is collective efficacy. Collective efficacy refers to the capacity of a group to accomplish a certain task (Hipp, 2016). In the context of Neighbourhood-WhatsApp groups, this can be translated to the perceived capability to create a safer neighbourhood as a community. Additionally, the more citizens already have participated in their community, the larger their social network can become. Previous research has shown that individuals who already have a large network, are more likely to participate again compared to citizens with a smaller network (Gil de Zúñiga & Valenzuela, 2011). Due to earlier experiences, citizens could gain a broader network of community members, and gain more knowledge on how to participate. This depends, of course, on the valence of the previous experiences. If these experiences were negative, they will be less likely to participate again and their collective efficacy will decrease as a result as well.

Institutional level

People's willingness to take responsibility for their own safety increases when they believe that they have a fair and empowering relationship with institutional agencies (Stoutland, 2001). For this to be established, citizens need to trust the institutions (which is the police in this domain) (Paton et al., 2008; Stoutland, 2001). Previous research showed that the degree of trust citizens have in the police is known to be dependent on their beliefs that the police share their priorities, act competently, behave dependably and treat citizens with respect. When this trust is absent, citizens might be less likely to see the police as their ally and less inclined to collaborate with the police (Stoutland, 2001). However, when trust is absent this also might lead to more citizen participation, when citizens are motivated to handle their safety on their own. This could also increase the risk of citizens taking the law into their own hands (Haas, de Keijser, & Bruinsma, 2014). When joining a Neighbourhood-WhatsApp group, trust in the police may play a role in two ways. When citizens trust the police they might be willing to assist the police, or in contrast, if they do not trust the police at all, they might want to take control of crime prevention into their own hands.To sum up, in this study we were interested which psychological drivers on an individual, community and institutional level from the Community Engagement Theory are related membership of Neighbourhood-WhatsApp groups. Additionally, if they were not a member at the time of the study, we further examined to what extent these factors contribute to accounting for differences in their willingness to become a member in the future.

Method

Participants and procedure

In this exploratory study, participants were recruited by selecting one neighbourhood within a medium-sized city in a rural Eastern part of The Netherlands (near the German border). As this was an exploratory research and we were mainly interested to gain insight into the drivers of membership, we selected a sample of one neighbourhood. Furthermore, during data collection, the

neighbourhood WhatsApp groups were still on the rise and not present across the entire city. Therefore, a larger neighbourhood was selected for an area for which was known (based on local newspapers and street signs addressing the presence of a neighbourhood WhatsApp-group) that there were many active neighbourhood-WhatsApp groups. As not all citizens join such a group, we had the opportunity to include members as well as non-members (but who did have the possibility to become a member) in our sample. The neighbourhood can be described as an prototypical neighbourhood for the city, including rental properties as well as owner-occupied homes.

Participants were recruited by going door-to-door by all residents in the neighbourhood between 5:30 and 8:30 PM in a period of two working weeks, asking citizens to participate in the study. If people were not at home, a second attempt was done to reach the residents on another day. When participants were willing to participate (approximately 85% of the reached households), a survey on paper was left behind and an appointment was made to pick up the survey at a later time of day. In total, this resulted in 214 participants.

The study was approved by the institutional ethical committee (University of Twente) and all participants gave informed consent before the study. Participants were informed that the goal of the study was to examine the existence of WhatsApp groups in the neighbourhood regarding safety, and citizens' motivations behind membership. The survey started with asking for informed consent. After that, participants were asked to fill in whether they were a member of a neighbourhood-WhatsApp group, and if they were not a member of such a group, whether they were willing to become a member in the future. After this they filled in questions regarding psychological factors (including the added drivers explained above) on the three levels of the Community Engagement Theory. All questions asked regarding the psychological drivers can be found in Table 1. The survey ended with some demographic questions regarding age, gender, and education[1]

In total, 214 citizens participated in the study. Of these 214 participants, 86 participants (40.2%) were a member of a WhatsApp group, while 128 participants (59.8%) were not. Of the members of a WhatsApp group, 55.8% was female, the mean age was 56.9 (SD = 12.8), 66.3% completed higher education, and they lived on average 18.5 (SD = 9.8) years in their current neighbourhood. For participants who were not a member of a WhatsApp group, 53.1% was female, the mean age was 56.9 (SD = 13.1), 48.7% completed higher education, and they lived on average 21.0 (SD = 10.4) years in their current neighbourhood. It stands out that our sample was quite highly educated in comparison to the proportion of higher educated citizens the Dutch population (30.9% in the Dutch population (Onderwijs in Cijfers, 2018). Except for this difference, no other clear differences between members and non-members concerning demographics were present. As only 2.4% of the (potential) population had a non-western background (Allecijfers.nl, 2018), and because of the relatively small sample, we did not take into account ethnicity in our study

Measures

Dependent variables

Membership was measured by asking respondents whether they were a member of a neighbourhood-WhatsApp group at this moment (yes (2)/no (1)).

Willingness to become a member was measured among the participants that indicated that they were not a member. They were asked *whether they would like to become a member* of a neighbourhood-WhatsApp group (yes (2)/no (1)).

Independent variables

All independent variables described below were measured on a 5-point Likert-scale. They were all based on the items used in the Community Engagement Theory (Paton, 2013), except for the construct of 'negative emotions" as indicated earlier. The items were adapted to the context of social safety (e.g. the focus of risk perception was on crime instead of on a natural hazard, and efficacy focused on the ability to create a safer neighbourhood, and organizing as a community in order to

Table 1. Overview of all items of the independent variables.

Independent variables	Items
Risk perception – Crime likelihood	How likely is it, … 1. That criminal activity such as burglary or robbery taking place in their neighbourhood 2. That you suffer from a criminal activity such as a burglary or robbery in your neighbourhood 3. That you will become a victim of criminal activity in your neighbourhood
Risk perception – Crime consequences	Suppose a criminal activity takes place in your neighbourhood. How likely do you think it is the following will happen? 1. damage to your house or possessions 2. not feeling safe in your neighbourhood 3. that your life gets disrupted through psychological damage 4. that you and/or your family members end up in a threatening situation
Negative emotions	How do you feel when you think about the possibility of crime taking place in their neighbourhood? 1. Tense 2. Anxious 3. Worried 4. Angry 5. Feeling unsafe 6. Helpless
Self efficacy	1. I consider myself able to supervise the neighbourhood 2. I consider myself able to share information about suspicious circumstances with my neighbours 3. I consider myself able to be alert of signals of crime and disorder 4. I consider myself able to share information about suspicious situations with my neighbours 5. I consider myself able to join a Neighbourhood WhatsApp-group 6. I have access to the resources required to participate in a Neighbourhood WhatsApp-group
Response efficacy	1. I think the neighbourhood becomes safer when I keep surveillance 2. Surveillance contributes to higher feelings of safety in the neighbourhood 3. Participating in a neighbourhood-WhatsApp group promotes the safety in my neighbourhood 4. A neighbourhood-WhatsApp contributes to higher feelings of safety in the neighbourhood 5. Warning or informing neighbours regarding suspicious circumstances contributes to a safer neighbourhood
Sense of community	1. I feel like I belong in my community 2. I believe my neighbours would help me if necessary 3. I would never move out of this community 4. I feel connected with the people in my neighbourhood 5. I often have friends from the neighbourhood come over to see me[a]
Collective efficacy	1. As a neighbourhood we are capable to make decisions, even if we differ in opinions 2. As a neighbourhood we can improve the quality of life in the community, even when resources are scarce 3. In difficult situations, as a neighbourhood we are able to work together on a solution 4. The people in this community can work together, even when it required more effort than normal 5. In general, we as a community first try to solve our problems ourselves 6. As a community, we are able to increase safety in the neighbourhood
Community participation	1. I have worked with others on something to improve community life 2. We have worked together as a community to improve the safety in our neighbourhood 3. I participate in local activities or events (e.g. neighbourhood festivals, street barbecues) 4. I attend public meetings when it concerns neighbourhood issues 5. I have been involved in volunteer activities intended to benefit the quality of living in my community (e.g. joined local groups, neighbourhood prevention)
Trust	1. I trust that the police take into account the needs of the residents in our neighbourhood 2. I trust that the police have a lot of knowledge to prevent crime 3. I trust that the police take adequate measures if there is a threatening situation 4. I trust that the police will inform me on time 5. I trust that the police give me the right advice on how I should act

[a]Item removed from construct for further analysis as a result of the factor analysis

prevent crime). A factor analysis on all items was conducted to examine whether the items loaded on the constructs as anticipated. As a result, some items were removed. All items can be found in Table 1, including the removed items.

Individual level

Risk perception was measured by asking participants how likely they thought it was that crime took place in their neighbourhood and would lead to personal consequences (Paton et al., 2008). The factor analysis showed three separate factors for risk perception (of which one was unreliable, α < .70) and the third factor was therefore not taken into account in further analysis. The first factor concerns the consequences of crime (four statements, α = .87, e.g. 'damage to your house or possessions', 'not feeling safe in your neighbourhood', 'that your life gets disrupted through psychological damage' and 'that you and/or your family members end up in a threatening situation'). This factor will be called *crime consequences* in further analyses. The second factor concerns the likelihood criminal activity taking place in the neighbourhood and being a victim of that crime (three statements, α = .79, items were 'criminal activity such as burglary or robbery taking place in their neighbourhood', 'suffering from criminal activities in your neighbourhood' and 'becoming a victim of criminal activity in your neighbourhood'). This construct will be called *crime likelihood* in further analyses.

Negative emotions were measured by asking respondents how they felt when thinking about the possibility of crime taking place in their neighbourhood. We specifically asked for six emotional states (tense, anxious, worried, angry, feeling unsafe and helpless, α = .91), which all scored on one factor.

Self-efficacy was measured by asking respondents how much they perceived themselves to be capable of contributing to a safer neighbourhood (6 statements, α = .72, e.g. 'I consider myself able to share information about suspicious circumstances with my neighbours').

Response efficacy was measured by asking participants to what extent they thought specific measures they could take would be effective (five statements, α = .82, e.g. 'participating in a neighbourhood-WhatsApp group promotes the safety in my neighbourhood').

Community level

Sense of community was measured by giving participants four statements regarding their connection with the neighbourhood (α = .80, e.g. 'I feel connected with the people in my neighbourhood').

Collective efficacy was measured by asking to what extent they perceived that they were able to solve problems in collaboration with other neighbours, by giving six statements (α .83, e.g. 'In difficult situations, as a neighbourhood we are able to work together on a solution'.

Community participation was measured by asking participants about their previous experience with a broad range of community participation (five statements, α = .74, e.g. 'I attend public meetings when it concerns neighbourhood issues'.

Institutional level

Trust in the police was measured by asking participants to what extent they trusted the police on 5 statements (α = .90, e.g. 'I trust that the police have a lot of knowledge to prevent crime').

Results

Descriptive statistics and correlations

Means, standard deviations, and correlations for the dependent and independent variables are shown in Table 2. Whether citizens currently are a member of a neighbourhood-WhatsApp group (no = 0; yes = 1) correlated positively with self-efficacy ($r = .19$, $p < .01$), response efficacy ($r = .27$, $p < .01$), collective efficacy ($r = .19$, $p < .01$) and community participation ($r = .44$, $p < .01$). We also asked citizens who were not a member yet ($N = 128$), whether they would like to become a member ($N = 34$). This correlated with both forms of risk perception; crime consequences ($r = .18$, $p < .05$)

Table 2. Means, standard deviations and correlations for membership of a neighbourhood-WhatsApp group and independent variables.

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Membership[a]	1.40	.49	–	–									
2. Willingness to become a member	1.73	.44	–	–									
3. Risk perception – Crime consequences	2.41	.60	−.02	.27**	–								
4. Risk perception – Crime likelihood	3.15	.79	.05	.21*	.76**	–							
5. Negative emotions	2.66	.85	−.05	.12	.18**	.07	–						
6. Self-efficacy	3.60	.64	.19**	.02	.05	.08	−.11	–					
7. Response efficacy	3.87	.49	.27**	.47**	.10	.21**	.09	.30**	–				
8. Sense of community	4.14	.56	.02	.14	−.14*	.03	−.05	.11	.23**	–			
9. Collective efficacy	3.67	.45	.19**	.15	−.10	−.03	−.04	.35**	.41**	.47**	–		
10. Community participation	2.36	.78	.44**	.19*	.15*	.14*	.04	.36**	.37**	.26**	.51**	–	
11. Trust in police	3.68	.63	.03	−.07	−.10	−.01	−.02	.20**	.19*	.18*	.31**	.14*	
12. Age	56.91	12.87	−.00	−.04	−.02	.03	.05	−.33**	−.03	.10	−.09	−.04	−.12
13. Gender[b]	1.54	.50	.03	.04	.08	.05	.21**	−.05	−.10	−.08	−.08	. −12	−.00
14. Education[c]	n/a	n/a	.19**	.17	−.01	.03	−.15*	.20**	.19**	.14*	.12	.15*	.01
15. Years in neighbourhood	20.01	10.25	−.12	−.03	−.01	−.01	.20**	−.20**	.04	.16**	.02	−.10	−.02

Note. * $p < .05$, ** $p < .01$, [a] 1 = not a member, 2 = member, [b] 1 = men, 2 = women. [c] Based on Dutch educational system from low educated (1) to highly educated (8).

Table 3. Logistic regression analysis predicting membership of a Neighbourhood-WhatsApp group.

Variable	β	S.E. β	Wald	df	*p*	Exp (B)
Risk perception – Crime consequences	−.410	.488	8.353	1	.004	.244
Risk perception – Crime likelihood	.644	.351	3.363	1	.067	1.903
Negative emotions	−.176	.206	0.732	1	.392	.838
Self-efficacy	.117	.300	0.152	1	.697	1.124
Response efficacy	.907	.425	4.562	1	.033	2.477
Sense of community	−.793	.358	4.906	1	.027	.453
Collective efficacy	−.453	.501	0.817	1	.366	.636
Community participation	1.630	.303	28.913	1	.000	5.104
Trust in police	−.861	2.179	.156	1	.693	.423

Model summary: −2 Log likelihood = 224.17, Cox & Snell R^2 = .26, Nagelkerke R^2 = .35. N = 214

and crime likelihood (r = .21, p < .05), response efficacy (r = .47, p < .01), and community participation (r = .19, p < .05). Negative emotions, sense of community and trust in the police did not correlate with membership or the willingness to become a member. Results also showed that the higher educated citizens are, the more likely it is that they are a member of a Neighbourhood-WhatsApp group. However, when someone is not a member yet, the level of education does not relate to the willingness to become a member. This suggests that lower education might constrain citizens from actually becoming a member.

Membership of neighbourhood-whatsapp groups

A logistic regression analysis was conducted to predict membership of a neighbourhood-WhatsApp group, using the psychological drivers on an individual, social and institutional level as predictors. A test of the full model against a constant model was statistically significant, indicating that the predictors as a set reliably distinguished between members and non-members (chi-square = 64.096, p < .001 with df = 9). Nagelkerke's R^2 of .350 indicated a moderately strong explained variance. As can be seen in Table 3, the Wald criterion demonstrated that risk-perception-crime consequences (p = .004), response efficacy (p = .033), sense of community (p = .027) and community participation (p < .001) made a significant contribution to predicting membership. Risk perception – crime likelihood was marginally significant (p = .067). The results show that citizens who have a low perception of crime consequences, high response efficacy, a lower sense of community, and have been more active in other forms of community participation already are more likely to be a member of a Neighbourhood-WhatsApp group.

Willingness to become a member of a neighbourhood-whatsapp groups

Among the citizens who were not a member yet (128), another logistic regression analysis was conducted to predict whether they would like to become a member based on the same psychological drivers. A test of the full model against a constant model was statistically significant, indicating that the predictors significantly predicted whether citizens were willing to become a member (χ^2 = 36.728, p < .001 with df = 9). Nagelkerke's R^2 of .364 indicated a moderately strong explained variance. As can be seen in Table 4, the Wald criterion demonstrated that only response efficacy (p < .001) made a significant contribution to the willingness to become a member. Risk perception – crime consequences was marginally significant (p = .57). This means that when citizens believe that becoming a member of a Neighbourhood-WhatsApp group to be an effective strategy in reducing crime and creating safer neighbourhoods, they are more likely to be willing to become a member.

Table 4. Logistic regression analysis predicting whether citizens who are not a member of a neighbourhood-WhatsApp group would like to become a member.

Variable	β	S.E. β	Wald	df	*p*	Exp (B)
Risk perception – Crime consequences	.845	.445	3.609	1	.057	2.329
Risk perception – Crime likelihood	−.027	.367	0.005	1	.941	0.973
Negative emotions	−.261	.364	0.514	1	.474	0.770
Self efficacy	.524	.432	1.476	1	.224	1.690
Response efficacy	2. 536	.717	12.494	1	.000	12.629
Sense of community	.077	.529	0.021	1	.885	1.080
Collective efficacy	−.403	.791	0.259	1	.611	0.668
Community participation	0.086	.419	.042	1	.837	1.090
Trust	−.347	.415	0.696	1	.404	0.707

Model summary: −2 Log likelihood = 108.69, Cox & Snell R^2 = .27, Nagelkerke R^2 = .39. N = 128

Discussion

In this study, we examined which psychological drivers on an individual, community and institutional level of the Community Engagement Theory (Paton, 2013) could predict membership of a Neighbourhood-WhatsApp group. Secondly, we were interested whether citizens who are not a member would like to become a member in the future.

At the individual level, differences were found between members and non-members of a Neighbourhood-WhatsApp group in risk perception regarding the consequences of crime and response efficacy. Compared to non-members, members perceived the consequences of crime in their neighbourhood as lower, and had higher beliefs that joining a Neighbourhood-WhatsApp group leads to a safer neighbourhood. A possible explanation for the difference in levels of response efficacy among members, might be that by being a member citizens also experience that their prevention strategies have an effect, which in turn could also have decreased their risk perception.

At the social level, sense of community and previous experience with citizen participation in other domains differed between members and non-members. Members had more experience with participating in their neighbourhood on other domains, such as organizing a street barbecue, and attending meetings concerning neighbourhood issues, while they experienced their community as less involved and close to them compared to non-members. It could be that when citizens already have broad social network and have participated in the past, they can find each other more easily when looking for volunteers to participate in other areas such as neighbourhood prevention (Gil de Zúñiga & Valenzuela, 2011). According to previous research on technology and crime prevention, online tools which facilitate residents to engage in collective problem-solving discussion, the possibility to regulate social norms will make it possible to share personal experiences and increase social ties (Lewis & Lewis, 2012). However, our results with WhatsApp as medium to facilitate communication showed an opposite effect. Sulaiman et al. (2012) describe initiatives where citizens develop and promote social change as a self-help approach. They argue that when a community is not united, this will often lead to failure of these initiative. However, the overall level of sense of community was quite high, so this is not likely to be the case here. Another possible explanation for the lower sense of community among members could be that the digital contact with neighbours via WhatsApp is experienced as more distant, or that they have negative experiences in these groups (such as arguments about what members share or stigmatization of specific groups) which leads them to feel less close. However, in order to understand this relation, future research regarding relations between neighbours and experiences with the online neighbourhood watch is necessary.

Trust in the police, on the institutional level, did not appear to differ between members and non-members. This result is in contrast with other studies (Jackson & Bradford, 2010; Sunshine & Tyler, 2003), which showed that trust in the police does encourage citizen participation in the police domain as well as secure cooperation from the public with the police. However, it could be that the current context differs from these studies in that citizens may not have seen the police as a relevant

actor in these online neighbourhood watches. Perhaps these citizen platforms are perceived as completely independent, and therefore trust in the police has no effect on membership and the willingness to become a member.

When asking non-members whether they were willing to become a member, results showed that this is only influenced by response efficacy. This means that when people feel that joining a neighbourhood-WhatsApp group will actually lead to crime and disorder prevention, they are more willing to become a member. The psychological drivers on the community and institutional level did not predict whether people are willing to become a member. These results may suggest that the *intention* to become a member is more of an individual decision, whereas *actually* becoming a member of a group might also be influenced by social aspects. Presumably, actually becoming a member is highly influenced by the social environment, for example by being asked by neighbours or because it is considered to be the social norm (Gil de Zúñiga & Valenzuela, 2011).

Since this was a correlational study, we do not know whether members already had other overall levels of risk perception, response efficacy, sense of community and participated more in other domains before joining these groups than non-members did. The result that only responsive efficacy influences the willingness to become a member, however, might imply that citizens' lower levels of risk perception and sense of community, and higher levels of response efficacy and community participation as a result of having become a member. This alternative interpretation would mean that instead of only being a driver, risk perception, sense of community and previous participation could also be explained by the social interactions citizens have with their neighbours while being a member, as has also been shown in research about 'physical' neighbourhood watches (Chavis & Wandersman, 1990; Ohmer & Beck, 2006). Since this study could not test causal relationships between psychological drivers and membership, it is therefore recommended that future research includes a longitudinal design measuring the psychological drivers before and after membership. As such, it can be established whether and to what extent membership effects the psychological drivers or vice versa. Additionally, a recommended future direction for research is to compare between two neighbourhoods in which neighbourhood WhatsApp-groups are active, in order to identify success factors as well as areas of improvement.

Interactions with neighbours can also lead to positive experiences such that they realize that they are able to contribute to a safer neighbourhood themselves (response efficacy) as well as collectively as a neighbourhood (collective efficacy). However, we did not measure citizens' experiences with their Neighbourhood-WhatsApp groups. People also might have negative experiences, such as stigmatization towards certain population groups or an overload of irrelevant information (e.g. regarding missing cats or a lot of individual responses to a reported incident). In future research, it would be recommended to also take into account which experiences citizens have, and whether these affect the psychological drivers.Overall, we did not find any effect of negative emotions on membership or the willingness to become a member. This result is in line with previous research, where it was also shown that collaborative participation (e.g. collaborating with the police) and detection (e.g. joining amber alert or an online neighbourhood watch) were not affected by emotions. In a similar vein, becoming a member of a Neighbourhood-WhatsApp group can also be considered as a more preventive and long-term action (Schreurs et al., 2018b). We would expect that emotions have a large influence in more reactive situations, such as the moment in which a perpetrator was stopped. This could also play a role in the context of an online neighbourhood watch, when a specific crime is being discussed in the WhatsApp group. However, during this study participants were asked to indicate their emotions towards crime in their neighbourhood at a time when they were not in the middle of reacting to a specific crime.Partly due to the relatively short existence of online neighbourhood watches, so far, little research has been conducted about their effects on crime reduction. There might be, for example, a waterbed-effect of the crime towards the neighbourhoods without online neighbourhood watches. This could, in turn, force other neighbourhoods to start an online neighbourhood watch, as to prevent the crime coming to their neighbourhood. This might change citizens' drivers behind becoming a member as well. For example, the perceived risk of crime occurring in neighbourhoods

without an online neighbourhood watch might increase and become more important in the decision to become a member. Relatedly, response efficacy might also become higher after seeing success on surrounding neighbourhoods, which could increase the influence of response efficacy on the willingness to become a member even more. However, a first study on online neighbourhood watches in the Netherlands, suggests that crime does not increase in surrounding neighbourhoods without online neighbourhood watches (Akkermans & Vollaard, 2015). At the same time, there is also the risk that these initiatives have negative side effects (such as vigilantism, stigmatization, exclusion of social groups, ethnic profiling (Lub, 2017). So before deciding whether the government should stimulate or facilitate the rise of this phenomenon, further research is necessary.

A general limitation of this study was that the sample was not random or stratified, but we selected a sample of one neighbourhood. This was deliberately chosen in order to be able to include a sufficient number of active members as well as non-members who were able to join a Neighbourhood-WhatsApp group (as it did already exist in their street). This way of sampling could have led to a bias in the data, however, as we did not have a representative sample. Furthermore, the sample was locally collected in a medium-sized city and in a region where looking out for your neighbours is historically important. Participants in this study generally had a high sense of community ($M = 4.14$) and lived relatively long in their neighbourhood ($M = 20$ years). This makes it likely that the sample from this region influenced the sense of community and the frequency to which citizens already participated in other domains and their relationship with membership of an online neighbourhood watch. We therefore do not know whether the results are representative for other cities (for example larger urban cities where citizens might be more individualistic) or to other countries. Additionally, we did not take ethnicity into account as we were aware of the small number of citizens in this area with a non-western background. It is recommended to study the psychological drivers of membership in larger cities as well as in rural areas, and in areas in which inhabitants have a much more varied ethnical background. Nonetheless, we believe that the application of the Community Engagement Theory on the social safety domain and the results of this study can act as a starting point for future research on explaining citizen participation. Nonetheless, we believe that the application of the Community Engagement Theory on the social safety domain and the results of this study can act as a starting point for future research on explaining citizen participation. The results of this study are also of importance to municipalities and police departments in other countries, since these online neighbourhood watches might pop up or get implemented there as well in the future.

Practical implications

Although we have to be careful with making firm conclusions based on one case study and future research is necessary, this case study comes with some practical implications. First of all, if municipalities or police departments want to promote neighbourhood initiatives like neighbourhood-WhatsApp groups, this study hints to the importance of focusing on increasing response efficacy, by emphasizing that neighbourhood-WhatsApp groups can contribute to a safer neighbourhood. In order to emphasize this, more research is needed whether these group actually have positive effects on the reduction of crime. In addition to reducing crime, another goal might be to positively influence the social relations between neighbours. For that reason it would be important to measure those effects as well. Therefore, municipalities could aim at increasing citizen participation in general, because people who are a member of these Neighbourhood-WhatsApp groups are also more likely to (already) participate in their community in other areas. However, although we do not know whether this is a result of membership or a selection bias, it appeared that members had a lower sense of community compared to non-members. A final implication for practitioners would be to stress the importance to be aware of possible negative effects of these Neighbourhood-WhatsApp groups as well.

Conclusion

Taken together, this study provides some useful first insights in psychological drivers associated with membership of Neighbourhood-WhatsApp groups. When citizens have the feeling that joining a neighbourhood-WhatsApp group will have positive effects on crime prevention, they are more likely to join. In addition, our study hints that social cohesion and citizen participation in other domains and membership influence each other. As neighbourhood watches are popular around the world, and online communication amongst citizens is increasing, this study can act as a starting point for future research on explaining citizen participation. When practitioners in the field gain knowledge on the citizen perspective of drivers behind joining a neighbourhood watch, this could give them necessary tools in order to communicate with citizens and facilitate or stimulate citizens to start or join an online neighbourhood watch.

Note

1. The survey also included some open questions regarding motivations of being (or not being) a member of such a group, but did not have additional value to the quantitative data and are therefore not reported in this paper. Since they were measured at the end of the survey, they could not have influenced the scale-items.

Disclosure statement

No potential conflict of interest was reported by the authors.

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