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The Recognition of Signs of Crime by Citizens

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Abstract

Recognizing signs of criminal activity such as undermining enables citizens to report it accordingly. This study aimed to examine if knowledge about signs of undermining criminality increases the recognition of it. Besides that, the relation between the recognition of crime and individual-related drivers of the Community Engagement Theory was investigated. To answer the research question an online survey was conducted, in which 53 participants partook. After evaluating this survey, it was found that knowledge did indeed increase the recognition of signs of undermining criminality. Furthermore, it was found that participants who recognized signs of crime, also tend to score high on risk-perception. Even though the study has limits, it suggests that knowledge increases the recognition of signs of undermining crime, which is why its findings should be reported.

1. General Introduction

> *"Sometimes it makes me feel paranoid, and afraid knowing that there is a lot that goes on," she said. "It does give me some comfort knowing my surroundings, but I'm always torn between wanting to know and see everything, or to have that blind eye toward everything."*
>
> (The New York Times, March 17, 2019)

This quote is taken from an article of the New York Times, addressing an app called "Citizen". The purpose of this app is for users to inform other users about various sorts of danger, which they could encounter in their vicinity. Incidents which Citizen reports about can range from traffic accidents, to fires, and to recently committed crimes (The New York Times, March 17, 2019). Nowadays, Citizen is not the only app, developed to offer citizens the opportunity to report crime and participate in what is called "DIY-policing". Amongst others, there are Next Door, Sherlock or Ondermijning, all serving different functions but at the same time facilitating interaction between citizens and the police.

DIY-Policing and Undermining.

Apps like "Citizen" or "Ondermijning" could be described with the term "Do it yourself policing" or DIY-policing for short. Until now DIY-policing has been a valuable addition for gathering intelligence, solving crimes, and making professional police work available for citizens (Denef, de Vries, Hadjimatheou, Roosendaal, et al, 2017). This type of policing occurs digitally, mainly on social media platforms such as Twitter or Facebook (Hofmann & Feltes, 2019) and has a positive effect on police legitimacy as citizens can interact with them (Denef, et al, 2017). The police use these platforms for searches or the identification of criminals or missing people by posting their pictures. In the past, these methods of citizen participation in policing proved to be useful. Therefore, it is important to encourage more engagement in DIY-policing.

Generally, there are three forms of DIY-policing to distinguish between. Firstly, citizens can act completely on their own which implies that once they found criminals and offenders, they also punish them (Hofmann & Feltes, 2019). This mostly happens in cases when citizens are unsatisfied with the work done by the police, as they can give up, lack the resources to solve a crime or take too long to restore justice (Denef, et al, 2017). Secondly,

citizens can solely connect with the police and other citizens and exchange information of public security. Lastly, a combination of exchanging information with others and taking justice into their own hands is a possibility (Hofmann & Feltes, 2019).

The focal point of this report corresponds with the second form of DIY-policing. The aim is to learn about knowledge of crime creating the ability to recognize it. Because only if citizens recognize crime, they can report it to the police and inform others.

Like previously stated, apps are an opportunity for citizens to participate in community policing. The one app included and used in this study was “Ondermijning”.
“Ondermijning” is translated into “undermining” and describes a form of organized crime, leading to the entanglement of the social and criminal world. Examples of undermining crime would be money laundering or human trafficking. Important for this study is however that undermining can also take place in a typical neighbourhood, for instance in the form of drug criminality.

This app was chosen because it is designed to teach knowledge about the recognition of the criminal underworld intertwining with our social world. At the beginning, the undermining app tests available knowledge on undermining of criminality. It does so by asking the user questions about undermining and showing the resulting consequences, risks, and dangers. Consequently, the user’s knowledge gets expanded and they gain a more complete picture of undermining and its social causes (de Vries, 2018). Resultantly, whenever undermining crime is recognised, users can forward what they witnessed to the police and others, to ensure public security. This leads to the questions, if this provision of knowledge does in fact help citizens to better recognise signs of undermining.

Individual-Related Driver of the Community Engagement Theory

Even if knowledge about signs of undermining is available, it is unclear whether it is the only factor responsible for the recognition of it. There are possibly other factors and characteristics innate to an individual with the ability to recognize crime. This is where the Community Engagement Theory should be introduced.

The Community Engagement Theory is comprised of three levels of psychological drivers, those being individual, community and institutional-related. In this report only the first psychological driver is necessary to mention, as the citizens gathering of information is an individual process.

The individual-related driver consists of the beliefs an individual has regarding crime and regarding the preventive and responsive behaviours, suitable for this crime. Beliefs in this case are for one risk perception, which describes the perceived likelihood of a crime occurring and the perceived severity of this crime's consequences. Previous studies already showed, how risk-perception influences the willingness to collect information about crime. Depending on how high the risk of crime seems to be, the higher is the likelihood of information gathering (Schreurs, 2019). Self-efficacy is another form of belief, describing whether individuals think they can perform a certain behaviour in the case of crime. Past studies have shown how individuals with low self-efficacy were more willing to learn about how to act when witnessing a crime (Schreurs, 2019). Lastly, response-efficacy or in other words outcome expectancy describes the belief that this behaviour has the desired effect (Schreurs, 2019). For instance, if citizens are uncertain about the effectiveness of a certain behaviour, they experience negative outcome expectancy. Nevertheless, in preceding studies high response-efficacy already indicated an increased eagerness to intervene crime (Schreurs, 2019). Like before, this gives rise to the question whether citizens would also show increased ambition to learn about signs of undermining, if they believed in its effectiveness.

Present Study

The focus of this study is to investigate the degree of which provision of knowledge of undermining increases the recognition of it. Deliberation of what is required by citizens to report crime, lead to the assumption that citizens first need to recognize undermining crime. This presupposes that they know about signs of undermining crime, resulting in the main research question:

"*Does knowledge of undermining improve the recognition of crime?*"

Simultaneously, the role of individual-related drivers is examined. Past studies already discovered how different rates of risk-perception, self-efficacy and response efficacy determined whether individuals are interested to learn about indicators of crime, or their partaking in its prevention. To learn if these drivers expressed themselves in an initial knowledge difference, they were related to the participants correct choices of signs of crime. It had to be their correct choices prior to them receiving knowledge, so that no other factor influenced their decision. This led to the secondary research question:

"*Do the individual-related drivers of the Community Engagement Theory affect the ability to recognize crime?*"

2. Method

Design

The design of this study consists of a quantitative, within-subject design. While the independent variable was the knowledge about signs of undermining criminality, the dependent variable was the number of recognized signs of undermining. This recognition of signs was measured by means of the participants observing a set of pictures. These pictures were shown two times, once prior to receiving knowledge about signs of undermining and once afterwards. Additionally, the individual-related drivers (risk-perception, self-efficacy, response-efficacy) were related to the previous measurements of recognized signs of crime, to explain a possible initial knowledge difference between participants.

Participants

The sample initially consisted of 53 participants. Eight participants were eliminated because they did not fill in the questionnaire completely, leaving 45 participants.

The demographic data of the participants, including age, gender, educational level, and nationality varied between participants. Eleven participants were male, 32 participants were female, and two participants did not identify with any of these genders. The age of the participants varied between 20 and 60 with an average age of M = 25.53 (SD = 11.20). With 91.11 percent most participants were German.

The sample was derived using a convenience sampling method and the only exclusion criteria was a sufficient understanding of the English language. To ensure the adherence of the ethical guidelines, each participant had to sign an informed consent form. Additionally, the study was approved by the ethical committee of the University of Twente.

Materials

Pictures. To measure to what extent participants could recognize signs of crime, we took pictures in several locations throughout Enschede.

Six of the pictures showed, according to a local police officer, undermining activities, while other six did not.

Knowledge. The intervention carried out in this study was the provision of knowledge about signs of undermining criminality. Participants received this knowledge after the pre-measurements about their recognition of signs of crime. It was provided in a written text and entailed information about signs of drug criminality and money laundering.

Signs of drug criminality mentioned were vacant garden centers, warehouses, or even regular houses. All of those can be used as "growshops" or for storage of illegal substances. In most cases, these buildings would be unpopulated and often have their windows covers. Something that is also very common would be the placement of security cameras to monitor the area. While seeing such a building, the biggest indicator for drug criminality would be the smell of drugs stored there and overly large water usage.

Indicators of money laundering are most prominently businesses and shops that do not show a lot of activity. The businesses themselves seem very unattractive and not a lot of customers are seen visiting there. Despite this lack of customers, owner and other workers of the businesses can often be seen for instance riving expensive cars and generally living an expensive lifestyle.

Psychological drivers. The questionnaire, which was used to measure individual-related drivers, distinguished between risk-perception, self-efficacy, and response-efficacy. All constructs were measured on a five-point Likert-scale ranging from strongly disagree to strongly agree.

1. Risk perception: Risk perception was divided into three subcategories. The first of them was perceived crime likelihood. The items for perceived crime likelihood showed a good reliability ($\alpha = .76$). In total 9 Items, such as "It is very likely that crime takes place in my neighborhood." and "I feel safe in my neighborhood.", were used to measure this component. The second component of risk perception was perceived crime consequences. The reliability of this scale was good ($\alpha = .86$; Paton et al., 2008) and was measured with two items, namely "Crime in my neighborhood influences my daily life." and "Crime in my neighborhood has severe consequences on the neighborhood.". The third component of risk perception was affect. This scale was based on the PANAS test, which showed a good test-retest reliability for

positive affect (α = .79; Watson, Clark, & Tellengen, 1988) as well as for negative affect (α = .81; Watson, Clark, & Tellengen, 1988). 5 items were used for this scale. For example, “I am determined to report undermining crime.” and “I am scared to report undermining crime.”.

2. Self-efficacy: The reliability for this scale was good (α = .71). Again, 5 items were used to measure self-efficacy, which included items such as “I know how to report crime to the police.” and “I consider myself capable to prevent crime in my neighborhood”.
3. Response- efficacy: Response-efficacy was measured with 6 items, including “Using a crime prevention app promotes safety in my neighborhood.” and “Participating in crime prevention programs makes a difference for the community.” and showed mediocre reliability (α = .52).

Procedure

For this study, the participants had to access the internet and enter either the Sona system website or the Qualtrics website as the questionnaire was an online questionnaire. Before starting the survey, each participant had to fill in an informed consent form.

Afterwards the participants were asked to enter a few of their demographic details such as their age, nationality, and gender. Next, the participants had to fill out a questionnaire to measure different psychological factors. For the participants to gain a clearer picture of the topic of this study, the participants were given some general information about undermining criminality in the next step. Following this part, the participants were shown a collection of different pictures, some showing signs of undermining and some not showing any undermining signs. The participants were asked to identify those pictures that they thought indicated undermining activity. Next, each participant received more information about undermining and a list of signs that indicate undermining crime. Lastly, the participants, again, had to select pictures of undermining crime from the same bunch of pictures they received before. Afterwards, the participants were thanked for their participation and the study was completed.

Data Analysis

The data analysis was carried out using the program SPSS IBM statistics. Pearson correlations were done to examine the relationship between the initial number of correct responses or correct rejections with age, gender, risk-perception, self-efficacy, and response-

efficacy. To answer the research question, a paired samples T-test was used to examine the correlation between the participants previous and past number of correct responses and correct rejections.

3. Results

Descriptives

The table below includes the number of participants, means, standard deviations and correlations of the necessary variables. The first two constructs describe the dependent variable, describing the measurements prior to receiving knowledge. Only the pre-measurements relation to the independent variables was measured as to examine possible initial knowledge already innate to the participant.

Table 1

Means, standard deviations and Pearson's correlation of correct responses and correct rejections in the pre-measurement, age, gender, risk-perception, response-efficacy, and self-efficacy

	N	M	SD	1.	2.	3.	4.	5.	6.	7.
1. Correct Responses (Pre)	45	2.42	1.50	1						
2. Correct Rejections (Pre)	45	4.16	1.33	-.28	1					
3. Age	45	25.53	11.20	.14	.22	1				
4. Gender	45			-.03	.22	-.01	1			
5. Risk-Perception	45	3.14	.38	.30*	.09	.02	.21	1		
6. Response-Efficacy	45	2.93	.43	.22	.13	.04	.13	.42**	1	
7. Self-Efficacy	45	2.54	.67	.26	.04	-.19	-.06	.36*	.43**	1

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

As seen in the table above, during the pre-measurements, participants got an average of 2.4 correct responses (M = 2.42, SD = 1.49) and an average of 4.16 correct rejections (M = 4.16, SD = 1.33).

Risk-perception was significantly correlated with the number of correct responses (r = .30, p < .05). The more participants perceived risk, the better they could identify signs of crime. No other individual-related drivers and constructs showed a correlation with correct responses (p > .05). The number of correct rejections showed no correlation to any of the individual-related drivers, nor with age or gender (p > .05).

Recognition

Two paired sample T-tests were conducted, one comparing the number of correct identifications in the pre- and post-measurement, and one comparing the correct rejections. For the correct identifications there was a significant difference between pre and post measurement (2.42 versus 3.64; t (44) = 4.47, p < .01. For the correct rejections no significant effect was found (4.16 versus 3.89; t (44) = -1.00, p > .05).

4. Discussion

The goal of this study was to answer the research question "*Does knowledge of undermining improve the recognition of crime?"*. The results indeed showed an improvement of correct responses after participants were provided with knowledge about signs of undermining. This would mean, that the provision of knowledge did increase the ability to recognize undermining. A training effect can be ruled out as no feedback was given to the participants after the pre-measurements. Thus, they did not know which choices were right or wrong during the post-measurement. Nevertheless, no improvement was found for the correct rejections. Theoretically, an improvement would be predicted as both would have to improve with knowledge. A possible explanation could be, that participants were shown all pictures at once, both those which show signs of undermining crime and those that do not. Their task was to only directly select those which they thought did show signs of crime, not those they thought did not. By seeing all pictures at once, specific signs may have been overlooked by participants, influencing their perception of them. Ergo, measurements for the correct rejections may not be significant, influencing the t-test and resulting in no significant difference.

The results showed that the higher an individual scored on risk-perception, the more signs of undermining criminality they recognized. Previous studies, like those of Schreurs (2019) showed how people scoring high in risk-perception are also more willing to collect information about crime. For the present study that could mean that people high in risk-

perception could have collected information about crime prior to participating in the study resulting in the higher rate of correct identifications.

Contrary to our expectations we did not find effects of response-efficacy and self-efficacy on correct responses. Schreurs (2019), for example, found a correlation between these individual-related drivers and her dependent variables. A reason for this difference could be that she used other variables like eagerness to intervene and willingness to learn how to act when witnessing a crime. These variables were more action-oriented, while our study focused on knowledge. In addition, neither age nor gender showed a significant correlation. It is possible that these results are not significant because most participants were in their 20s and approximately 71% of them were female, making the dataset unevenly distributed.

Strengths and Limitations

Certain strengths and limitations can be mentioned. Regarding its strengths, it is important to mention that this study focused on undermining, which is not yet an extensively researched subject. More precisely, to this point in time, there are no other studies of undermining which focus on the recognition of it. This means the present study is the first to do so and could possibly lead to further research on the subject in the future.

As for limitations, the results seen could have been different if the study were executed in its original way. The initial idea was to conduct this study in person, which was made impossible due to the corona pandemic. Like this study, the participants first would have been asked to fill in a survey concerning the individual-related drivers. Regarding the pictures however, participants first were supposed to walk a previously chosen route through Enschede. On this route they would have encountered the same buildings as in the pictures. However, seeing these buildings in reality, is different from seeing them on a picture. For some places, the environment could have influenced the participants choices. For instance, the atmosphere present at the places could have been experienced by them, possibly making them perceive the whole place differently.

Furthermore, like already stated in the discussion, participants saw all pictures at once. This possibly influenced their perception of the present signs due to comparison of the pictures with each other. A picture showing no signs of crime may have looked to similar to one that did, making it harder for the participants to observe and choose correctly. By the pictures being presented one after the other, they would have solely focused on each picture at a time. If this would have occurred the results could be more significant and bring forth a more explicit answer to the research question.

Additionally, the study lacks variety in its participants as they mostly consist of women in their 20s. Moreover, the validity of correct rejections is questionable. Therefore, it is advised to generalize this study with caution.

Lastly, the teaching about signs of crime could have been more detailed. The only information about signs of undermining found was provided by the undermining app. Although it did offer information, not all of it was completely applicable to the signs of undermining observed in the pictures. With a more detailed theoretical part, the recognition of crime could have improved more.

Future Research

For future research it is recommended to improve the study on all the limitations named above. To recap, that primarily means to let participants visit the selected places instead of just seeing them on pictures. Furthermore, the recognition task involving the pictures should be more detailed, so that clear responses and rejections are given. Perhaps this can be done by showing every picture separately. Participants would see the pictures one by one and be better able to observe present signs of crime.

Moreover, the provided information about signs of crime should be more extensive and applicable to all the pictures seen. It would also be beneficial to derive information from more than just one app, so that knowledge can properly broaden.

In future studies some other aspects could be implemented, potentially leading to further insights. For example, future studies do not necessarily have to solely focus on undermining crime. Although it is a subject that in the author's opinion needs more research, it does not have to be the only type of crime to focus on. If the recognition of signs of crime stays the focal point of future studies, it could also be applied to e. g. domestic abuse. Like in this study, participants could learn about signs of domestic abuse and be taught to recognize them.

Additionally, risk-perception could be studied in more detail. This study indicated that people scoring high in risk-perception already possess knowledge which enables them to better recognize crime. However, it would be interesting to learn more about this knowledge and how it is composed.

Finally, besides the individual-related drivers of the Community Engagement Theory and knowledge, other constructs could be investigated. They do not necessarily have to be psychological constructs. For example, upbringing or social status could potentially influence how crime is recognized.

Practical Recommendations

The insights gained in this study could also be applicable in a practical environment. It can be seen here, how knowledge and provided information increased the signs of recognized crime. Assuming a lot more citizens would get provided with this knowledge would therefore mean that there was a general increase in the ability to recognize signs of crime. Consequently, citizens would be more vigilant and report more crime to the police. Therefore, workshops offered in schools or for the public, teaching this knowledge about the signs of crime to a broader audience offers a practical and beneficial use for this study.

Conclusion

To sum up, this study demonstrated that knowledge about signs of undermining crime increases the recognition of crime. Additionally, the higher participants' risk-perception the better they were able to correctly identify signs of crime. An implication of these findings is that citizens should be provided with more information about how to recognize crime in order to be able to detect and consequently report it. The intention of this study was to make the recognition of crime more prominent in the research of criminal investigations done by citizens, and to motivate other researchers to get involved with the subject.

References

de Vries, A. (2018, April 23). Opsporen? Doe het zelf! Retrieved February 15, 2020, from https://socialmediadna.nl/opsporen-doe-het-zelf/

Denef, S., de Vries, A., Hadjimatheou, K., Roosendaal, A., van Vliet, H., Cecowski, M., … Williamson, F. (2017, September 28). DIY Policing. Retrieved February 15, 2020, from https://socialmediadna.nl/diy-policing/

Gill, C., Weisburd, D., Telep, C. W., Vitter, Z., & Bennett, T. (2014). Community-oriented poliing to reduce crime, disorder and fear and increase satisfaction and legitimacy among citizens: A systematic review. *Journal of Experimental Criminology, 10,* 399-428. doi:10.1007/s11292-014-9210-y

Herrman, J. (2019, March 17). All the Crime, All the Time: How Citizen Works. *The New York Times*. Retrieved from https://www.nytimes.com/2019/03/17/style/citizen-neighborhood-crime-app.html

Hofmann, R., & Feltes, T. (2019). Social Media for Community Oriented Policing: Best practices from around the world and future challenges. *European Law Enforcement Research Bulletin*, (18).

Paton, D. (2013). Disaster Resilient Communities: Developing and testing an all-hazards theory. *Journal of Integrated Disaster Risk Management, 3*, 1–17. doi: 10.5595/idrim.2013.0050

Schreurs, W. (2019). *Crossing lines together: how and why citizens participate in the police domain*. Enschede: University of Twente. https://doi.org/10.3990/1.9789036548496

Skogan, W. G. (2006). Advocate: The promise of community policing. In *Police Innovation: Contrasting Perspectives* (pp. 27-43). Cambridge University Press. https://doi.org/10.1017/CBO9780511489334.002

Xu, Y., Fiedler, M. L., & Flaming, K. H. (2005). Discovering the Impact of Community Policing: The broken windows thesis, collective efficacy, and citizens' judgement. *Journal of Research in Crime and Delinquency, 42*(2), 147–186. doi: 10.1177/0022427804266544