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The urge to search: cognitive and affective drivers of citizen searches in missing person cases

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ABSTRACT

In missing persons cases, police often face citizen initiated searches. Though possibly beneficial (e.g., capacity), citizen involvement also carries risks (e.g., destroying evidence). It is important to manage searches, but often the police have no formal basis for cooperation and no legal means to impose restrictions. The police can only manage searches by exerting their influence at the behavioral level. Before behavioral interventions can be developed, it is necessary to understand the psychological drivers underlying citizen searches. Through a questionnaire ($N = 627$) based on Community Engagement Theory, Theory of Planned Behavior, and affective measures, we investigated what factors influence citizens' intent to search. Intention related positively to affect, and beliefs about efficacy and usefulness. The only negative relationship found was for perceived authority. The results suggest that affect is a strong predictor of citizen involvement, and that strengthening perceived police authority offers opportunities to limit or redirect citizen searches where necessary.

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Missing person cases; citizen participation; policing; community engagement theory; theory of planned behavior

Introduction

Locating missing persons is perhaps the most underestimated core activity of the Dutch police. Recent research shows that about 30,000 people are reported missing every year in the Netherlands (Lam, 2024). For perspective: the Dutch population is 17.5 million, and the police force numbers about 65,000 employees. Fortunately, most missing persons cases end well (or relatively well). In 99% of cases, the person is found alive by the police, or the alert is withdrawn in some other way. Fewer than one percent of missing persons are found to have died as a result of a traffic accident, crime, natural or unnatural causes, or suicide (Lam & Kop, 2023). In most cases, the disappearance is of relatively short duration. About two-thirds of missing persons are found within a day. The recovery rate increases to about 85% within a week, and more than 90% after a month. A minority of missing persons have still not been found after a year: according to the Ministry of Justice and Security, there are on average 25 such cases per year (Lam & Kop, 2023; Ministerie van Justitie en Veiligheid, 2023; Van Leiden & Hardeman, 2015).

Challenging policing situations

The impact of missing persons cases on police organizations is profound. For example, in the UK a typical medium risk case, in which the missing person is found within 48 hours, has been

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estimated to take 37 policing hours (Shalev Greene & Pakes, 2012). In the Netherlands, the costs of a missing person case have never been officially calculated. However, Dutch specialists estimate a similar average of 24 to 32 hours of police work per disappearance (Central Unit, personal communication, 18 september 2023). This includes initial registration, consultation of police systems, neighborhood searches, checks on last known locations, and/or monitoring of technical resources, e.g., by tracking cell phones (Central Unit, personal communication, 18 september 2023; Shalev Greene & Pakes, 2012). As several officers are often working on the same case at the same time, in a short-term missing persons case the investment of police time may be considerably higher than the total duration of the disappearance (Shalev Greene & Pakes, 2012).

Disappearances are often complex, labor-intensive, and time-consuming because the circumstances are unclear. Ambiguity about what happened is common in police investigations, but this is especially true of missing person cases, which are typically surrounded by a complex web of behaviors and underlying causes (N. Fyfe et al., 2015; N. R. Fyfe et al., 2015; James et al., 2008). For example, people may disappear because they voluntarily want to get off the grid, because of social or health problems, as a result of an accident or crime, or because they plan to end their lives. As James et al. (2008) concluded, the list of possible scenarios is endless.

Missing persons cases are frequently further complicated by citizen involvement. This involvement is most evident in the form of large-scale searches. Several cases in the Netherlands have become national front-page news, with dozens or even hundreds of volunteers helping to search (e.g., NOS, 2018; RTL Nieuws, 2022; Harmsen, 2022; Tijmstra & Bomers, 2022). Moreover, citizen searches are even more common than can be inferred from the media. A Dutch study shows that about a quarter of those surveyed had direct experience of someone they knew personally going missing.¹ Three-quarters of them indicated that they subsequently went looking for the missing person themselves (Lam & Kop, 2023). Furthermore, 20% of respondents reported having helped search for someone they did not know personally (Lam & Kop, 2023). These figures clearly show that in a substantial proportion of missing persons cases, citizens conduct their own searches.

Citizen searches

The assistance of citizens can benefit the recovery of a missing person. By joining in the search, citizens form additional eyes and ears, allowing a larger area to be searched much faster. Citizen searches under police direction save valuable police capacity, which can be used for other policing tasks or for specific searches (Lam & Kop, 2020). If properly organized, citizens can also be deployed quickly. In the Netherlands, non-profit organizations such as the Veterans Search Team and the Red Cross can be on the scene anywhere in the country within two hours (Veteranen Search Team, n.d.). Furthermore, some citizens or groups also have specialized knowledge, expertise, or resources that may be valuable to a search (Lam & Kop, 2020; e.g., Dregteam SOAD, n.d.). Contributions may include drones, search dogs, underwater equipment, or relevant skills (such as tracking) gained during a previous military career. A final benefit is that citizens sometimes offer a different perspective or approach than the police. In 2017, during a search for a young Dutch woman who was missing, a team of citizens found the clue that led to the case being solved. Remarkably, this clue was found, thanks to a different search strategy, in a location that was not a police priority (Lam & Kop, 2020; Tijmstra & Bomers, 2022).

Despite potential benefits of citizen involvement, research shows that it is not without risks. An influx of citizens may cause the police to lose control of the search (or search area). They may lose track of which locations have been searched and by whom. If citizen and police searches are not coordinated, it may be unclear who is actually in charge (Lam & Kop, 2020). In addition, citizen searches entail certain forensic risks. For example, citizens may (unwittingly or on purpose) endanger an investigation by contaminating, destroying, or losing evidence (Lam & Kop, 2020; Tijmstra & Bomers, 2022). Citizens may potentially also harm themselves, by searching unprepared or dressing incorrectly for the terrain or weather conditions. Sometimes people even take small

children with them while searching, apparently unaware that they might find a deceased person (Jong et al., 2014).

Because of these risks to the missing person, the investigation, and the citizens themselves, it is important that citizen searches are well managed. Often, however, the reality is that the police find themselves dealing with citizen searchers but lack any formal basis for cooperation or legal means to impose restrictions. It is therefore important to develop means for the police to manage citizen searches without depending on enforcement. Understanding the psychological mechanisms that underlie the decision to help search offers police opportunities for behavioral interventions, such as targeted communications. Therefore, the purpose of this study is to explore what factors influence citizens' intention to search. This provides insight into what factors influence citizens' intention to (help) search for missing persons.

After presenting the theoretical backgrounds, the research methods, results and conclusion of this exploratory study are presented successively.

Theoretical background

Despite the considerable impact of missing persons cases on the police, the subject has been relatively little studied and is theoretically underdeveloped (Parr & Fyfe, 2013; Taylor et al., 2019). Hardly any research has been done on citizen searches for missing persons, and research on the underlying psychological mechanisms is virtually non-existent (Lam & Kop, 2023). Therefore, it is necessary to fall back on a more general psychological framework.

Theory of planned behavior

One of the most researched and best empirically supported behavioral theories is the Theory of Planned Behavior (TPB; Ajzen, 1985, 1991). The TPB can be used to explain and predict behavior and/or to change it by developing effective interventions (Van Der Hulst & Janssen, 2006). TBP's basic premise is that behavior is caused by underlying beliefs, especially subjective expectations and valuation of outcomes. This evaluative process determines an individual's *attitude*, a predisposition to act positively or negatively toward a particular object or psychological object (Ajzen, 1993; Littlejohn, 2002). Behavior is further influenced by a person's beliefs regarding their own ability to actually carry it out: a concept known as *self-efficacy* (Ajzen, 2020; Bandura, 1977). Finally, behavior is influenced by an individual's beliefs regarding how others expect them to behave, a concept known as subjective norms (Ajzen, 2012; Fishbein & Ajzen, 2011).

In recent years the Theory of Planned Behavior has been successfully applied to predict behavior in the context of social safety, both of police officers and citizens. Attitude, subjective norms, and self-efficacy have been found to influence police officers' behavior and discretionary choices to varying degrees and in different circumstances (Del Pozo et al., 2021; Hyland et al., 2012; Ishoy, 2015, 2016; Lam, Schoonderwoerd, et al., 2022; Thornton & McGlynn, 1998; Zakaria et al., 2016). Where citizens' behavior is concerned, *attitude* was found to positively correlate with crime-reporting intent (Mensink, 2020; Schreurs et al., 2018) and intention to search for a missing person (Lam & Kop, 2023). Citizens with higher levels of *self-efficacy* were more willing to act in the event of a crime occurring (Schreurs, Franjkić, et al., 2020). Another study found that all three constructs significantly predicted citizens' intention to report incidents, with *subjective norms* having the strongest predictive power (Keller & Miller, 2015).

Community engagement theory

The TPB provides a useful theoretical framework, but by itself is probably insufficient to explain why people go searching for a missing person. Searching is not a purely individual decision, but usually takes place in groups and in relation to an official agency, namely the

police. Whereas the TPB regards behavior primarily from an individual perspective, the Community Engagement Theory (CET) offers a perspective that places participative behavior in a broader context. Most notably, the CET distinguishes drivers of citizen behavior at three different levels: the individual, community, and institutional level (Kerstholt et al., 2017; Paton, 2008, 2013).

Essentially, people are motivated to act if they believe their response contributes to their safety (Paton, 2008; Paton et al., 2013). If citizens attribute control of the situation to factors outside themselves or are convinced their actions have no influence, they will not act (Paton et al., 2013). Therefore, at the individual level, the central factor is *response efficacy*, based on positive and negative outcome expectations (Paton, 2013; Schreurs, Kerstholt, et al., 2020). However, behavior is also shaped at the community level, as active *community participation* provides a social context that affects individuals' perceptions about risks, mitigating behavior, and the *collective effectiveness* of the community as a whole (Becker et al., 2015; Paton, 2013). People's behavior is also shaped, finally, at the institutional level: Especially in uncommon and uncertain situations, people often turn to official agencies for support (Paton et al., 2013). Consequently, citizens' behavior is also influenced by the citizen-government relationship, as people are willing to take more responsibility for their own safety if they *trust* agencies and feel *empowered* (Paton, 2013; Paton et al., 2008, 2013).

There is a growing body of empirical evidence that CET is a relevant theoretical framework for the policing context. Several recent studies have explored the relevance of the CET to citizen participation and policing, showing that factors at all three levels of the CET influence various forms of participation, such as reporting a crime (Mensink, 2020; Schreurs, Franjkić, et al., 2020), joining a neighborhood watch group (Schreurs, Franjkić, et al., 2020), or assisting with a criminal investigation (Langhorst, 2019). In general, results seem to indicate that citizens' behavior is affected particularly by efficacy beliefs at the individual or community level (Langhorst, 2019; Schreurs, Franjkić, et al., 2020). However, studies have also found (marginally) significant effects for *community participation* (Schreurs, Franjkić, et al., 2020). Significant influences of *empowerment* (Langhorst, 2018; Mensink, 2020), *trust* (Schreurs, Franjkić, et al., 2020), and *legitimacy* (Schreurs, Franjkić, et al., 2020) substantiate the importance of police-citizen relations.

Affect

The theoretical constructs from the TPB and CET are complementary and together provide a broad theoretical framework. However, both models emphasize cognition in relation to behavior and overlook the influence of emotions (i.e., Armitage & Conner, 2001; French et al., 2005; Manstead & Parker, 1995; Mohiyeddini et al., 2009). Not all behavior is cognitively motivated; on the contrary, it is often influenced by affect (De Pelsmacker & Janssens, 2007; Peters et al., 2006). It has therefore been argued that applications of the TPB should also consider affective determinants of behavior (French et al., 2005). Of particular relevance to missing person cases is the consistent finding that helping others (i.e., prosocial behavior), often without personal gain or even at the expense of self-interest, is strongly influenced by affect (Dovidio, 1984; Penner et al., 2005).

Affect may be defined as a collective term for describing states of feeling, including both short-lived emotions and more general moods (Niven, 2013). Essentially, two forms of affect can be distinguished (but also experienced simultaneously), both of which affect prosocial behavior (Dovidio, 1984; A. Isen, 2008; A. M. Isen et al., 1976). The first, positive affect, empirically has the most consistent influence on behavior and strongly promotes helpfulness (Dovidio, 1984). The second form of affect, negative affect, has a more variable effect that may or may not lead to prosocial behavior (Baumann et al., 1981; Cialdini et al., 1973; Peters et al., 2006). However, a recent study demonstrated that both positive and negative affect were significant predictors of the intention to search for a missing person (Lam & Köp, 2023). This finding suggests that in missing person cases, affect in general is an important driver of the intention to search.

Exploratory model

Together, the TBP, CET and affect provide a comprehensive overview of factors that have been shown to influence citizen involvement in various forms of policing. However, it is not known to what extent they apply to citizens' spontaneous searches for a missing person. Based on the above theoretical perspectives, we constructed an exploratory model centered on individual beliefs and affect. We used the three different levels of drivers from the CET to classify these personal beliefs according to the context to which they relate: individual, community and institutional.

The individual level concerns a person's beliefs regarding helping to search for a missing person themselves, namely outcome expectations (*attitude*), competence (*self-efficacy*) and effectiveness of one's own actions (*response efficacy*; Ajzen, 1993, 2012, 2020; Schreurs, Kerstholt, et al., 2020). Under the individual level we also included the degree of experienced affect after being confronted with a missing person case. Previous research has shown that both positive and negative affect are positively related to willingness to help search (Lam & Kop, 2023). Building on these findings, in this study we combined positive and negative affect in to a single measure, examining the extent to which the overall intensity of affect explains willingness to help search.

At the community level, we distinguish two categories of personal beliefs regarding other citizens. The first variable concerns implicit *subjective norms* determined by what individuals believe significant others would do or approve of (Ajzen, 2012; Fishbein & Ajzen, 2011). The second community-level variable relates to the extent to which individuals believe in the effectiveness of collective citizen searches. Generally, collective efficacy is viewed as an attribute of a group shared by its members (Bandura, 1997; Watson et al., 2001; Zaccaro et al., 1995). Individual perceptions are measured and aggregated to the group level. Collective efficacy represents a group attribute only insofar as there is some degree of agreement among individual judgments of efficacy (Bandura, 1997). However, consistent with previous CET research, in this study we focused only on individual beliefs regarding the effectiveness of searching with a group of citizens (Schreurs, Kerstholt, et al., 2020). To clearly distinguish these individual beliefs from aggregate measures of collective efficacy, we refer to this construct as *perceived collective efficacy*.

The third level in our model consists of individual beliefs about police legitimacy and trust. Currently, there is considerable scientific debate on how legitimacy should be conceptualized. Much research emphasizes two major components: a sense of shared values or normative alignment by which interactions are judged and felt obligation to obey authority (Hamm et al., 2017; Tyler, 2006). According to Tyler (2003, pp. 310, in Tankebe, 2013), obligation is 'the most direct extension of the concept of legitimacy.' Other researchers argue that obligation is a broader concept and that obedience does not always necessarily stem from legitimacy (Bottoms & Tankebe, 2012). Similarly, some scholars consider trust to be a component of legitimacy, although this is empirically contradicted by other research (Hamm et al., 2017; Tankebe, 2013). For this study, we define trust as an autonomous variable, consistent with previous CET research (Paton, 2013; Schreurs, Kerstholt, et al., 2020). As for legitimacy and the related obligation to obey, we limit ourselves to a simple direct measurement of the individually held beliefs regarding the perceived authority of the police directing the search for missing persons in these cases. The full exploratory model is shown in Figure 1.

Previous studies suggests that positive perceptions of outcome expectancy, self-efficacy, response efficacy, perceived collective efficacy, and social norms can all be expected to correlate with a stronger intention to help. This positive correlation would also be expected for higher levels of experienced affect. In general, trust and perceived authority are expected to correlate positively with engagement, but in missing persons cases there is likely to be a negative relationship: people are more likely to take action if they feel that the police are not doing anything or cannot do anything (e.g., Lam & Kop, 2020).

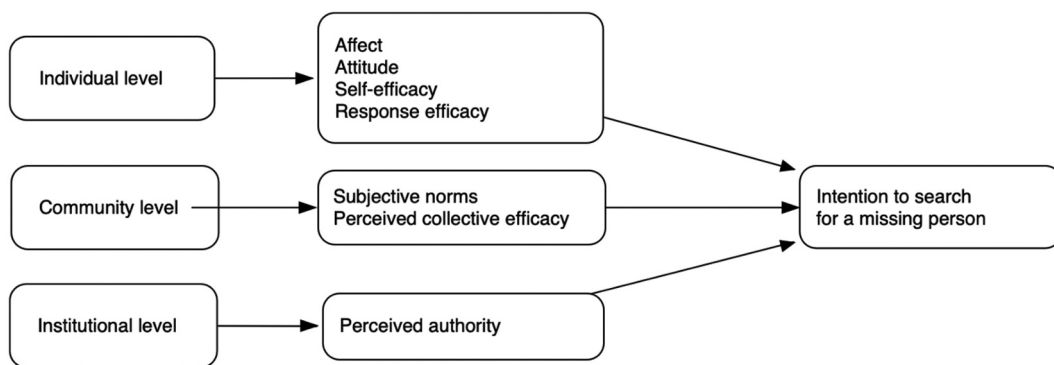


Figure 1. Conceptual model of search intention: drivers and driver levels.

Present study

The purpose of this study is to specify the drivers of citizens' intentions to help search for a missing person. Based on the literature, we identified the most likely drivers as presented in Figure 1. These concepts were operationalized for a questionnaire, in which respondents were asked to what extent they were willing to help after reading a call about a missing person. This allowed us to examine which predictive factors could explain variance in search intention.

Method

For this study, a quantitative research method in the form of an online questionnaire was used in which participants were presented with a fictitious missing person case. The study used eight predicting variables and one dependent variable, which are detailed below.

Participants

Participants were recruited through an external panel agency, Quelsa, which approached potential respondents within their database by email. The predetermined target group was 18 years or older, residing in the Netherlands and equally divided between men and women. Contacts were sent an invitation to complete an online questionnaire about citizen participation in missing persons cases. The questionnaire was administered using the survey software Questback and could be completed in the respondent's own environment via desktop computer, cell phone, or laptop.

A direct link opened an informed consent page, where participants were informed that their participation was anonymous and voluntary, and that they could discontinue the questionnaire at any time. At the end of the questionnaire, the contact information of the lead researcher was shared in case respondents had any questions regarding the study. The questionnaire could be completed until the target number of 750 respondents had been reached; this occurred within a few days.

Data quality was checked by visual inspection and by calculating the variance in responses. 39 respondents were removed because they did not complete the questionnaire in full. Another 84 respondents were removed because the variance in one or more sets of questions was 0, indicating a straight-line response pattern. Their exclusion resulted in a verified dataset of 627 respondents.

Efforts were made to ensure a balanced distribution of gender, education level, and socio-economic status. Consequently, the number of male and female respondents was equally divided ($N_M = 312$, $N_F = 315$). Older age groups were slightly overrepresented in the sample. Just over half of the respondents were 56 years of age or older ($N = 262$, 58%). A quarter of respondents were between 36 and 55 years old ($N = 163$, 26%). One sixth were younger than 35 ($N = 101$, 16%). For one third of respondents the highest educational attainment was primary or partial secondary

education ($N = 212$, 34%); or almost half it was secondary or vocational education ($N = 249$, 41%); and almost a quarter had completed some form of higher education ($N = 148$, 24%). Income levels were fairly evenly distributed: 20% had a below-average income, 33% an average income, and 21% an above-average income. The remaining respondents did not state their income. The majority of respondents were born in the Netherlands ($N = 597$, 95%).

Procedure

The questionnaire was structured as follows: first, the seven independent variables based on the TPB and CET were measured. Next, respondents were presented with a missing persons scenario, after which the last independent variable (affect) was measured. The final step was to measure intention to help search. Figure 2. shows the general structure of the questionnaire and the full set of questions is included in Appendix A. The operationalization of the variables is detailed below.

Independent variables

Attitude, the perceived instrumental and experiential outcomes of searching for a missing person, was measured by using a semantic differential scale consisting of eight antagonistic word pairs. Five word pairs focused on the instrumental aspects of attitude, e.g., 'I think searching for a missing person is useless – useful.' The other three items captured the experiential dimension of attitude, i.e., 'I think searching for missing person is pleasant – unpleasant.' The semantic differentials were measured on a 7-point Likert-scale; Cronbach's alpha showed good internal reliability, $\alpha = .87$.

Subjective norms were measured by four items that addressed respondents' perception of what others in their environment would think or do. For example, 'most people around me who are important to me would approve (or appreciate it) if I helped search for a missing person'. The items were measured using a five-point Likert scale and were internally reliable, $\alpha = .83$.

Self-efficacy was measured using four items related to respondents' perceptions of their ability to search for a missing person, such as 'I feel physically able to help search.' The efficacy items formed an internally consistent scale, $\alpha = .80$.

Response efficacy was measured by three items that focused on the perceived effectiveness of respondents' contributions to a search. For example, 'my assistance will increase the chance of a missing person being found.' These items had good internal consistency, $\alpha = .83$.

Perceived collective efficacy, defined as the individually held beliefs regarding the effectiveness of searching as a group of citizens, was measured using three items, such as 'Together, as citizens, we can help find a missing person faster.' The internal consistency of these items was good, $\alpha = .84$.

Trust in the police was measured by three items, asking respondents if they could 'trust the police to act correctly in a missing person case', for example. These items formed a reliable scale, $\alpha = .87$.

Perceived authority of the police was measured using three items measuring the individually held perceptions of the perceived authority of the police directing the search for missing persons in these cases, e.g., 'The police are the authority on missing person cases and people should obey the decisions of police officers'. Cronbach's alpha revealed that one item greatly reduced the internal reliability of the scale: 'Sometimes you may ignore what the police tell you to do, for example if they

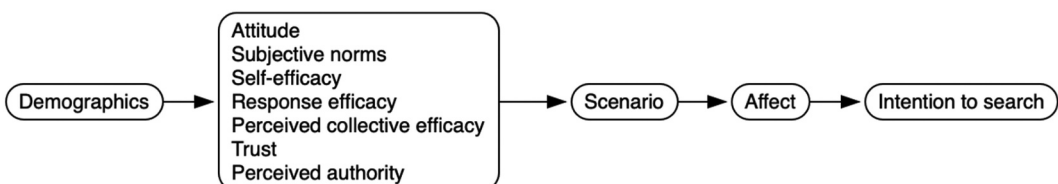


Figure 2. General structure of the questionnaire.

urge you not to search yourself.’ However, the two remaining items were sufficiently consistent, $\alpha = .71$.²

The overall intensity of respondents’ affective state (i.e., *Affect*) was measured with a set of nine items, scored on a 5-point Likert scale. Four items concerned measures of negative affect, e.g., ‘Can you indicate how you feel now, reading this. Upset.’ The other five items addressed components of positive affect, e.g., ‘Can you indicate how you feel now, reading this. Inspired.’ Although conceptually different, all items for positive and negative affect could be combined into a single reliable scale that provided an indication of the respondent’s current level of affective state, $\alpha = .86$.

Scenario

To optimally contextualize the willingness to help, respondents were presented with a realistic scenario of a missing persons incident. The scenario consisted of an anonymized Facebook post based on an actual Dutch missing person case. Identifiable characteristics such as name, clothing, and location were modified to prevent recognition. The scenario was the same for each respondent:

Dear all,

My girlfriend has been missing since 7 p.m. last night. Her name is Sophie de Jong. Blonde. 1.70 m tall. 25 years old. Lives in Amsterdam. Long camel-colored coat. Black touring bike (Koga) with black saddle bag, hand brakes, and luggage rack.

Last known location 18.15, nature reserve Botshol, near Vinkeveen. She has not read my apps since 19.45 (1 tick). Police have started a search, and family and friends are also searching. They are assuming the worst.

Maybe someone has a tip. We can’t get into her Google or Apple account. She was supposed to be in Amsterdam today for an appointment, but didn’t show up there either.

Hopefully you can do something. ...

Please send serious reactions and tips via personal message and please call 0800–6070 or 0800–7000. (anonymously)

Please do not start spontaneous searches – keep to the paths. If there is a large-scale search, notifications will follow.

Greetings,

Robert

Dependent variable

Intention to search for the missing person was measured by six items on an 11-point slider scale, e.g., ‘What would you be willing to do to help find this person? – Join a search organized by the police’. These items could be combined into an internally consistent scale that measured the intention to actively search, $\alpha = .89$.

A score was calculated for all variables by averaging the scale items. However, different scales were used in the questionnaire, for example, 5-point and 7-point scales. Therefore, for clarity and ease of interpretation of the results section, the means, standard deviations and regression coefficients of all variables were converted and presented as a 5-point Likert scale.

Results

Descriptives

The means of the predictor variables showed that respondents on average held positive beliefs regarding the usefulness of citizen searches for a missing person and their own ability to contribute

Table 1. Variable means, standard deviations, and Pearson's correlations ($N = 627$).

Variable	M	SD	1.	2.	3.	4.	5.	6.	7.	8.
1. Attitude	3.92	0.68	–							
2. Affect	2.72	0.71	.17*	–						
3. Subjective Norms	3.86	0.65	.41*	.20*	–					
4. Self-Efficacy	3.67	0.73	.40*	.20*	.62*	–				
5. Response Efficacy	3.63	0.73	.39*	.27*	.56*	.66*	–			
6. Perceived Collective Efficacy	3.92	0.66	.45*	.23*	.62*	.60*	.70*	–		
7. Trust	3.93	0.72	.27*	.15*	.38*	.32*	.35*	.45*	–	
8. Perceived authority	3.90	0.75	.18*	.08	.29*	.27*	.28*	.36*	.63*	–
9. Search intention	3.02	0.95	.24*	.60*	.23*	.32*	.34*	.28*	.11	.00

Bold numbers indicate strong correlations, * $p < .0001$ (Bonferroni corrected $p < .05 = .00014$).

to such searches. Scores indicated that in general participants believed that citizen searches were useful and effective ($M_{\text{attitude}} = 3.92$; $SD = 0.68$; $M_{\text{perceived collective efficacy}} = 3.92$, $SD = 0.66$).

Regarding their own ability, respondents considered themselves capable of searching and their contribution to a search useful ($M_{\text{self-efficacy}} = 3.67$; $SD = 0.73$; $M_{\text{response efficacy}} = 3.63$, $SD = 0.73$). Furthermore, they believed their environment would approve of them joining a search ($M_{\text{subjective norms}} = 3.86$, $SD = 0.65$). As for their perception of the police, the mean scores indicated that respondents trusted the police to act correctly when dealing with a missing persons incident ($M = 3.93$, $SD = 0.72$). Moreover, they perceived the police as the legitimate authority which must be obeyed during missing persons cases ($M = 3.90$, $SD = 0.75$). Despite the realistic presentation of the case, affect scores showed that respondents did not report a strong affective state after reading the scenario ($M = 2.72$; $SD = 0.71$).

All variables correlated significantly³ with each other, with the exception of perceived authority and search intention. However, three-quarters of the correlation coefficients were below .40, indicating that the actual correlations between variables were mostly weak. Affect was the only predicting variable that correlated strongly with search intent ($r = .60$, $p < .0001$).

Of all the predictor variables, all the efficacy variables were found to be highly correlated. This can be explained by the fact that they are conceptually related and may partially overlap. Interestingly, the efficacy variables correlated moderately to strongly with subjective norms. One possible explanation is that perceived subjective norms are a result of the perceived self-reliance of the respondent's environment. Finally, trust in the police and perceived authority were strongly correlated ($r = .63$, $p < .0001$). See Table 1 for Pearson's correlations.

Preliminary checks

Several measures were taken to ensure that the data met the assumptions for regression analysis. Harman's single-factor test was used to ensure that the data variance was not attributable to the instrument, which is a risk in methods where all variables are measured at the same time (i.e., common method bias). A common variance of 25.0% was found, which does not exceed the 50% threshold and makes common method bias implausible. Collinearity diagnostics showed that all variance inflation factors (VIFs) were below 3, indicating acceptable levels of correlation between the predictor variables. After visual inspection of the normal distribution of the regression residuals and homoskedasticity, the data were considered acceptable for further analysis.

Regression

A multiple linear regression analysis was used to test whether the eight psychological drivers predicted search intention. The regression equation was significant, $R^2 = .42$, $F(8,618) = 57.88$, $p < .001$. Five predictor variables significantly impacted search intention and together explained 42% of the variance in respondents' willingness to search. Affect had the strongest influence, β

Table 2. Multiple linear regression analysis with search intention as dependent variable ($N = 627$).

Variable	B	β	R ²	Adj.R ²
			.43	.42***
Attitude	.10	.08*		
Affect	.73	.55***		
Subjective Norms	-.05	-.04		
Self-Efficacy	.20	.16***		
Response Efficacy	.13	.10*		
Perceived Collective Efficacy	.02	.02		
Trust	.01	.01		
Perceived authority	-.16	-.13***		

* $p < .05$, ** $p < .01$, *** $p < .001$.

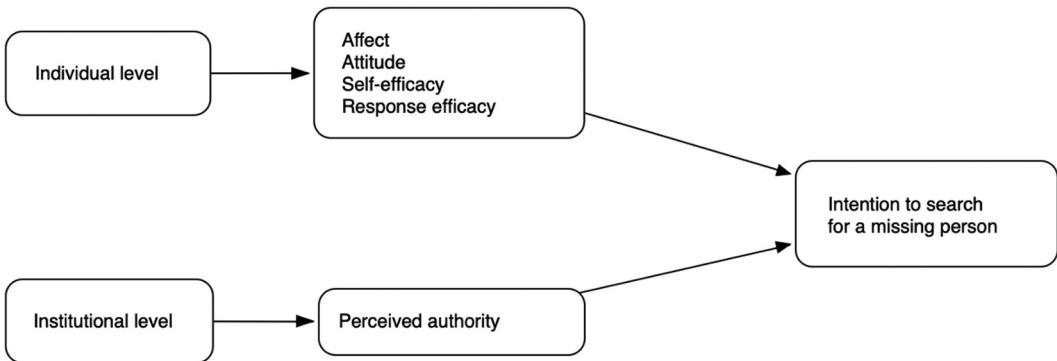


Figure 3. Model of significant predictors of search intention.

$= .55$, $p < .001$, showing that if a respondent experienced stronger feelings, they subsequently also showed greater willingness to help search. The second largest effect was found for self-efficacy, $\beta = .16$, $p < .001$. Response-efficacy and perceived authority had similar-sized effects on intention, $\beta_{RE} = .10$, $p = .034$, $\beta_{Le} = -.13$, $p = .001$, but perceived authority was a negative predictor. While a strong belief in the effectiveness of searching led to a greater willingness to search, greater acceptance of the police as a legitimate authority actually led to less helpfulness. Attitude was the weakest significant predictor, $\beta = .08$, $p = .034$. Subjective norms, perceived collective efficacy, and trust in the police did not influence search intention to a significant degree ($p_{SN} = .42$, $p_{CE} = .75$, $p_{Tr} = .90$). See Table 2 for all regression coefficients. The model of significant predictors is presented in Figure 3.

Conclusion and discussion

The purpose of this study was to investigate which factors influence citizens' willingness to help search for a missing person. To this end, a conceptual model was tested based on eight selected drivers of behavior from Community Engagement Theory (CET) and the Theory of Planned Behavior (TPB). Previous research has shown both theories to be relevant with respect to citizen participation in policing (e.g., Lam, Kop, et al., 2022; Schreurs, Franjkić, et al., 2020). Consistently with these studies, the drivers examined were found to be a good predictor of the intention to help search and to account for 42% of the variance. The model distinguished drivers at three different levels: individual, communal, and institutional. The results showed that only one driver occurred at the institutional level; all the others reflected the individual level.

The main finding of this study concerns the role of affect in relation to citizens' willingness to search for a missing person. Although both CET and TPB are cognitive-based theories – that is, they assume that people are primarily driven by their beliefs and perceptions regarding a given situation and behavior (Ajzen, 2012; Paton et al., 2013) –, this study shows that variation in intention was

primarily explained by respondents' affective state. In fact, variations in affective state influenced intention at least three times more strongly than cognitive factors from the CET and TPB. The observation that affect increases willingness to help others, in this case by searching, is consistent with previous studies showing that positive affect promotes prosocial behavior (e.g., Dovidio, 1984; A. Isen, 2008). Although earlier results on the prosocial effect of negative affect have been mixed, and research found no effect on reporting a crime or on joining a neighborhood watch (Schreurs, Franjkić, et al., 2020), a recent study found that both positive and negative affect predicted citizens' intention to search for a missing person (Lam & Kop, 2023). Building on this insight, the present study shows that a general measure of affect was a significant predictor of search intention. This suggests that within this context, the strength of an individual's general emotional state (consisting of both positive and negative feelings) has a particularly strong influence on prosocial behavior.

At the individual level, efficacy-related beliefs proved to have the greatest influence on respondents' willingness to search. People were more willing to help if they believed they were capable of searching and that doing so would contribute to finding the missing person. This relationship between different forms of efficacy and intention is consistent with previous research. Both the CET and the TPB predict and have shown that people's behavior is influenced by their confidence in their ability to perform behavior and their belief in the resulting effects (e.g., Ajzen, 1991; Paton, 2008, 2013). In contrast, although previous research has found that attitude has a significant influence on behavior in various crime and policing contexts (Schreurs et al., 2018), in the present study it appears to be only marginally significant and the weakest predictor of search intention of all the contributing variables. This is consistent with the strong influence of affect, which further substantiates that helping search is an emotional rather than a rational decision. An additional methodological explanation has to do with the specificity of the constructs and their measurement. The present study measured a general attitude toward helping search, which is arguably not transferable to actual behavior in a specific situation (Ajzen et al., 2018). Moreover, since there is some conceptual overlap between the instrumental aspect of attitude (usefulness) and response efficacy, some of the variance in intention is likely attributed to the latter in the analysis.

None of the community-level drivers, collective efficacy or subjective norms, were found to be significant predictors of search intention. One possible explanation for the lack of influence of perceived collective efficacy is that respondents probably could not refer to an existing group, which made it difficult for them to estimate the efficacy of collective efforts. For precisely this reason, group-related factors such as sense of community and past participation were not included in the model beforehand, but apparently this lack of communal reference also extends to efficacy assessments. Another explanation could be that respondents' beliefs about efficacy stemmed primarily from estimates at the individual level and therefore did not reflect a shared or aggregated sense of true collective efficacy. Similar mechanisms may also explain why subjective norms did not significantly influence search intention: It is plausible that in this regard respondents did not experience a salient norm established by relevant others. Although missing persons incidents are common, for most people it is a unique occurrence. Therefore, it is unlikely that people in the respondents' circles are regularly involved in searches or would disapprove if the respondents did not become involved in a search. Consequently, it is likely that searching is primarily an individual decision rather than a decision based on social considerations. This explanation is consistent with previous research on the use of citizens in the search for missing persons by the criminal investigation department, where the norm in the police department was not found to play a significant role (Lam, Schoonderwoerd, et al., 2022).

At the institutional level, only perceived authority of the police was found to be a significant driver (in this case, a negative one): the more respondents felt they should obey police decisions, the less likely they were to search themselves. This finding deviates from previous observations that legitimacy promotes cooperation with the police (Hinds, 2009; Schreurs, Franjkić, et al., 2020; Tyler & Fagan, 2008). One possible explanation is that unlike in the case of other forms of cooperation and participation, respondents may implicitly assume that the police are opposed to citizen searches

and that obedience to police instructions is equivalent to not searching. The negative relationship between perceived authority and citizen search is a tentative confirmation of observations that citizen searches stem (in part) from dissatisfaction with government action, or a perceived lack of government action (Lam & Kop, 2020, 2023).

Relevance

The current research offers several important insights that expand our understanding of citizen participation in policing. First, it offers a new perspective on the nature of citizens' fundamental psychological drivers. Most theories and models attempt to explain citizen involvement from a cognitive point of view and assume that behavior arises from more or less rational choices and beliefs (e.g., Paton, 2013; Ajzen; Van Eijk & Steen, 2016). However, the present study substantiates the intuitive explanation that helping to search is determined to a much higher degree by affect. In this regard, it is important to emphasize that intention, the dependent variable, is itself a reasoned construct. It is therefore plausible that in reality the relationship between affect and behavior will be even stronger than in the model, because in emotionally charged situations people are more likely to act intuitively than to make a conscious decision to do something. Emotions may influence decisions by changing outcome expectations or information-processing, and as they become more intense they may increasingly take over the rational decision-making process (Loewenstein & Lerner, 2003). Second, despite the dominant influence of affect, the current research does provide partial support to the CET and TPB as an explanation of citizen participation in missing persons cases. Moreover, this study shows that the common denominator between both theories is also the most relevant cognitive factor for explaining behavior: people's belief, first, that they can help and, second, that their help makes a difference. Overall, this study constitutes a first step toward a comprehensive theoretical framework of citizen participation in missing person cases.

Limitations

The study has several limitations that could be addressed in further research. The first limitation is substantive: this study used a scenario in which a person unknown to the respondents had gone missing. This is a realistic scenario that leads to large-scale citizen searches several times a year, which the police then have to deal with. However, it is more common for people to be faced with the disappearance of someone they know, such as a neighbor's child. Since in these circumstances people will be searching primarily in their own neighborhood, together with people they know and with whom they have community or family ties, it is quite possible that community-based motivations, such as sense of community, play a stronger role in these cases than in our scenario. Furthermore, it cannot be ruled out that respondents may have been influenced by specific aspects of the scenario, such as characteristics of the victim or the location where she allegedly disappeared.

A second limitation is that affect was only measured at one point, namely after respondents read the missing person scenario. While methodologically this allowed a relationship to be established between affect and search intention, it was not possible to determine the extent to which affect was caused by the missing persons case presented. It is therefore possible (if unlikely) that the affect measure in this study measured only the respondents' affective baseline and not their emotional response to the case. Further research is needed to better understand causality and degree of affective response to this type of incident.

A third limitation, again methodological, is that intention was taken as the dependent variable. Although the relationship between intention and behavior is now well established scientifically, it must be kept in mind that intention only explains part of the variance in behavior (Armitage & Conner, 2001; Sheeran, 2002; Webb & Sheeran, 2006). Although this study provides important insights regarding the psychological mechanisms that underlie civic assistance, broader research will be needed to determine the extent to which these drivers transfer to real-life situations.

A final limitation relates to the construct validity of the questionnaire. Because this is a relatively little researched topic, the goal was to identify factors through an exploratory questionnaire. To do this, existing theoretical constructs were specifically adapted to the context of searching for a missing person. This means that in this study the use of certain terms, such as perceived collective efficacy and perceived authority as a proxy for legitimacy, is different and more limited than in the mainstream literature. This has two important implications. Although great care was taken in designing the questionnaire, future research will need to further confirm the construct validity of the measures used. For example, by using item response theory, Rasch analysis and confirmatory factor analysis. Also, future research should place the constructs used in a broader context, such as current developments in police legitimacy research (e.g., Cao & Graham, 2019; Hamm et al., 2017; Jackson & Bradford, 2019; Trinkner, 2019, Tyler, 2006a; Tankebe, 2013).

Implications for police practice

The current results suggests that affect is the main driver of citizens' spontaneous searches. This conclusion provides guidance for police in two different situations: if a missing persons case suddenly leads to mass searches, or if citizen participation in a search is actually desired. First, in the past the Dutch police have repeatedly been caught off guard by situations where large groups of citizens have spontaneously initiated a search and the police or an NGO⁴ have subsequently had to intervene to manage the situation. By actively monitoring and assessing how public sentiment is developing (particularly on the social media), police can be prepared for when and where such initiatives are likely to arise. They could then anticipate, for example, through targeted communications and/or by bringing search coordinators to the scene and establishing a structure to incorporate citizens in the police operation (Lam & Kop, 2023). Second, and perhaps more importantly, in some cases it may literally be a matter of life and death to mobilize citizens to look out for a missing person and help locate them quickly. This need not necessarily be done by involving citizens in active searching, but for example by issuing an Amber Alert to request citizens to look out for persons matching a given description. In these situations, police can increase the public's cooperation and awareness by capitalizing on affect in their communications: they should avoid dry, factual messages and instead word and present messages in such a way that they evoke feelings of concern and unease as well as interest. Recent research suggests that may be achieved either by using wording that accounts for a higher (positive) valence score, or by using mixed emotions, combining wording and symbols with both negative as well as positive valence (Leppert et al., 2022).

Of the cognitive factors examined, self-efficacy and, to a slightly lesser extent, response efficacy were shown to be important drivers. This means that if the police want to encourage citizen participation or self-efficacy, efforts must be made to make citizens more confident in their own ability to search for a missing person properly and to indicate the value of participating in such a search (response efficacy). This is consistent with previous findings that citizens feel the need for a checklist or instruction on how best to search, or an app that supports them in doing so (Lam & Kop, 2020). An example of how citizens can be supported is the Dutch website SAREA – Searching Together. This site gives advice on what people can do when someone goes missing, with the aim of providing reassurance and guidance during the first, hectic, phase of a disappearance (SAREA, n.d.).

However, the involvement of citizens is not desirable in all situations, for example because searches are already being conducted by specialized police teams or there is a threat to public order. Often citizens cannot legally be stopped from participating in a search, because people are free to search as long as they do not break the law. The police may appeal to people not to search, but in such cases it is important that people comply voluntarily. The only factor in the citizen-police relationship that has a significant impact on willingness to search (in this case a negative one) is the perceived authority of the police. This finding probably reflects a direct and an indirect effect of legitimacy: directly, the research shows that people are slightly less likely to search if they perceive the police as the authority

in this field that they should obey. Second, people are more likely to follow police instructions (e.g., to stay at home and not search) if they view the police as a legitimate institution.

Such findings underscore the importance of the police being accepted as an authority and continuing to invest in their relationship with the public. In general, enhancing police legitimacy is a complex issue. However, research suggests that legitimacy and acceptance of police decisions is strongly related to procedural justice. To increase legitimacy, outcomes are less important than, for example, treating citizens with respect and making transparent and informed decisions that take citizens' needs and concerns into account (Tyler, 2004). In missing persons cases, certain choices made by the police regarding the search can be better explained, thereby preventing (unnecessary) citizen initiatives (Lam & Kop, 2020).

Notes

1. Based on the Dutch police's definition of a missing person case: someone has unexpectedly disappeared and it is unknown where this person is now. His or her absence is deviant from normal behavior and it is in the missing person's interest to be found.
2. This finding is consistent with (Schreurs, Franjkić, et al., 2020) who found relatively low reliability for similarly phrased legitimacy items. Reliability was improved by including only positively framed items.
3. This held even after a Bonferroni correction on the p-value for all intercorrelations.
4. The Missing Persons Coordination Platform (CPV) has taken on the coordination of citizen searches in several missing persons cases.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Ethical Statement

The questionnaire and methodology for this study were approved by the University of Twente ethics committee. Informed consent was obtained from all individual participants included.

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Appendix A. Questionnaire items

[Introduction]

When a missing person case occurs, citizens often actively help with the search or organize a search themselves. The following questions are about what you think about that.

[Attitude]

I find searching for a missing person myself:

- Bad - Good
- Unpleasant - Pleasant
- Harmful - Harmless
- Useless - Useful
- Unattractive - Attractive
- Unpleasant - Pleasant
- Unfavorable – Favorable
- Unwise – Sensible

[Subjective norms]

Please indicate the extent to which you agree/disagree with the following statements.

Most people around me who are important to me. . .

- would help search themselves if necessary.
- would approve (or appreciate) it if I helped search for a missing person.
- think I should help search if someone is missing.
- think helping to search is the right thing to do.

[Self-Efficacy]

Please indicate the extent to which you agree/disagree with the following statements.

- I feel confident that I could help search for a missing person if I wanted to.
- I feel mentally able to help search.
- I feel physically able to help search.
- I feel confident that I could properly search for a missing person.

[Response Efficacy]

Please indicate the extent to which you agree/disagree with the following statements.

- My help increases the chances of finding a missing person.
- If I help with the search, it contributes to the missing person being found more quickly.
- A search becomes more effective if citizens like me help.

[Perceived Collective Efficacy]

Please indicate the extent to which you agree/disagree with the following statements.

- I am confident that by working together we citizens can effectively search for a missing person.
- As citizens, together we are able to help find a missing person faster.
- Using a citizen search team would help in the search for a missing person.

[Trust]

Please indicate the extent to which you agree/disagree with the following statements.

- You can trust the police to act properly when a missing person goes missing.
- The police will do everything they can to bring a missing person case to a successful conclusion.
- You can trust the police to assess a missing persons case correctly.

[Perceived authority]

Please indicate the extent to which you agree/disagree with the following statements.

- The police are the authority regarding missing person cases and people should obey the decision of police officers.
- Sometimes you are allowed to ignore what the police tell you to do, for example, if you are urged not to search yourself.
- In missing persons cases, you must accept the decisions the police make even if you think they are wrong.

[Scenario]

The following message is an actual Facebook post following a recent missing person case. Due to the privacy of those involved, the names and location have been anonymized.

Dear people,
My girlfriend has been missing since 7 p.m. last night. Her name is Sophie de Jong. Blonde. 1.70. 25 years old. Lives in Amsterdam. Long camel colored coat. Black touring bike (Koga) with black saddle bag, hand brakes and luggage rack.

Last known location 18.15 nature reserve Botshol, near Vinkeveen. She has not read my apps since 19.45 (1 tick). Police have started a search, family and friends are also searching. They are assuming the worst. Maybe someone has a tip. We can't get into her Google or Apple account. She was supposed to be in Amsterdam today for an appointment, but didn't show up there either.

Hopefully you guys can do something. . .

Please serious responses and tips via personal message and please call 0800-6070 or 0800-7000 (anonymously).

Please do not start spontaneous searches, do not get out of the paths. If there is a large-scale search, a message will follow.

Greetings,

Robert

[Affect]

Can you indicate how you are feeling now, reading this message?

Upset

Hostile

Alert

Ashamed

Inspired

Nervous

Determined

Attentive

Active

[Intention]

As you read this message, to what extent would you want to help find this person?

What would you want to do to help find this person?

Search online yourself.

Participate in a search organized by the police.

Join a search organized by family or friends.

Join a search organized by the Red Cross.

Organize your own search.