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Drivers of trust in emergency organizations networks: the role of readiness, threat perceptions and participation in decision making

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ABSTRACT

This paper explores the factors that influence public trust in public organizations responsible for providing services before, during and after emergencies. We develop a research framework and test it using a survey distributed among a representative sample of the Israeli population. The analysis develops the concept of an emergency network and explains its advantages as a mechanism for coordinating emergency services. It shows that trust in emergency organizations is related to trust in the public sector in general, the perceived level of readiness of emergency organizations and the degree to which people fear that an emergency situation will occur.

KEYWORDS Trust; emergency services; emergency organizations network; public perceptions; Israel

Introduction

In the recent two decades many societies have experienced mass emergencies, natural disasters, terror attacks and other crisis situations. Climate change has increased the frequency of natural disasters. Globalization and the mutual dependence between many societies have significantly increased tensions and human-made crisis situations that require emergency measures (Albala-Bertrand 2007; Boin and Bynander 2014; Jones and Murphy 2009; Lin 2015). Furthermore, the close ties between societies have increased the probability of cascading emergencies. Examples include the economic crisis of 2008, refugee and immigration crises as well as the spread of terror attacks (Alexander 2018). It follows that managing and dealing with emergencies is one of the main challenges that modern states face in the new millennium (Boin and Bynander 2014; Kapuco and Van Mart 2006).

However, there has been a growing understanding that the public sector manages such situations poorly both in terms of preparedness before the events occur, and providing services and solutions during and after them (Alexander 2018; Jones and Murphy 2009; Kapuco and Van Mart 2006; Moynihan 2008). In many cases, such events inflict the greatest damage on the weaker groups in the population, who do not have enough resources to prepare and insure themselves, or lack awareness of the need to do so (Bolin 2007; Enarson, Fothergill, and Peek 2007; Rodríguez, Quarantelli, and

Dynes 2007; Underhill 2009; Williams 2009). It is therefore very reasonable to attribute these failures to the retrenchment of the welfare state and the dominance of the neo-liberal approach that essentially leaves citizens to take care of themselves (Jones and Murphy 2009). However, given the mechanism of accountability in democratic systems, we may expect that in extreme situations citizens will make strong demands for government action and will also be willing to pay extra for such emergency services (Koliba, Zia, and Mills 2011; Lin 2015). The fact that this response rarely happens in such situations may indicate that the relations and trust between citizens and the public sector have deteriorated to the extent that the former does not expect anything from the government. Furthermore, these situations require collective action, meaning the participation of citizens in efforts to achieve collective goals (Killian 1994; Kreps 1998). Such mobilization requires trust between people in society and between citizens and authorities.

Therefore, trust is an important component in analysing the operation and management of the public sector in providing emergency services before, during and after emergency events occur (Christensen, Læg Reid, and Rykkja 2016; Jung, Song, and Park 2018; Kapucu and Garayev 2011). In the face of such events, all branches of government follow the lead of the emergency organizations that coordinate the response efforts (Van Wart and Kapucu 2011). Providing an effective response requires collaborative efforts that resemble a network structure (Moynihan 2009; Nohrstedt 2015; Willem and Lucidarme 2014). Furthermore, the public assesses the efficacy of these efforts as a whole rather than looking at the performance of each organization separately. Therefore, they tend to evaluate and respond to government efforts based on the level of trust they have in the set of emergency organizations that provide services and coordinate and manage the situation. Taken together, all of the organizations involved in providing emergency services comprise an emergency network (Moynihan 2009). Hence, we should question whether citizens have also lost trust in the emergency organizations that constitute the core of that network, and how this trust is related to the general trend of declining trust in government (Grey and Ropeik 2002; Shore 2003; Wray et al. 2006).

This paper explores various factors that affect the public's trust in the public organizations responsible for providing services before, during and after emergencies (henceforth: emergency organizations). To do so, we utilize rationales and measurement tools developed to explain trust and performance in the public sector.

Specifically, we test the relations between public trust in emergency organizations and two sets of variables. One set includes public attitudes towards the public sector such as trust, and public attitudes regarding the relations between the public sector and citizens such as perceived participation in decision making and perceptions of discrimination. The second set of variables includes public perceptions of aspects related to emergency situations such as the readiness of emergency organizations, personal readiness for emergency events, and the fear that emergency events will occur. Our study contributes to the research on emergency management because it investigates dynamics and variables that the literature rarely explores, and provides new insights in that regard.

We utilize our framework to analyse trust in emergency organizations in Israel. Due to historical, political, social and international reasons, Israeli citizens have experienced emergency situations for many years, and also expect to experience them in the future (Ben Zvi 2005; Gesser-Edelsburg and Zemach 2012). In fact, the Israeli

government declared an emergency situation during the establishment of the State in 1948 and this situation has been legally renewed ever since (Tzur 1999). Therefore, we would expect that the public sector would have established effective mechanisms for dealing with emergencies and also earned the public's trust. However, at the same time, people's trust in the public sector in general and their evaluation of its performance have always been relatively low (Vigoda-Gadot and Mizrahi 2014). Israeli society is also characterized by strong inclinations to avoid uncertainty (Hofstede 1983, 2016), meaning that feelings of personal threat will most likely affect their trust in emergency organizations. On the other hand, in the last two decades many countries in the world have been increasingly facing security threats leading to emergencies as well as other types of crises and disasters. Thus, Israel is not an outlier in this regard. Instead, it can be a good starting point for comparisons and generalizations. Israeli society is therefore an interesting and challenging field to explore these issues.

The paper proceeds as follows. In the next section we present the scientific background and the rationales for the research hypotheses. The third section describes the research model and methodology. The fourth section explains the research findings and the last section discusses the main insights and contribution of the study.

Trust, public sector management and perceptions of threats in emergency organizations networks

This paper investigates public trust in emergency organizations that provide services and coordinate collaborative efforts to handle emergencies. They comprise the core of what can be termed an emergency network (Moynihan 2009). The scholarly literature distinguishes among three types of situations: emergency, disaster and crisis (Kapucu and Van Mart 2006; Van Wart and Kapucu 2011). An emergency is an unexpected, difficult or dangerous situation that poses an immediate risk to one's health, life, property or environment, and requires quick action to deal with it. Mass emergency situations pose significant risks to the life or property of many people (Kapucu and Van Mart 2006). Within this broad definition of emergency, Bates and Peacock (1993, 13) characterize disasters as a social event arising out of a process that involves a socio-cultural system's failure to protect its population from internal or external vulnerability. Disasters flow from the normal functioning of social systems that take place when the life-sustaining functions of the system break down (Boin 2005, 159). While all disasters are emergency situations, the opposite is not necessarily true. A common definition of crisis is 'a threat that is perceived to be existential in one way or another' (Boin, 't Hart, and Kuipers 2018, 24). The core characteristics of crisis are threats, uncertainty and urgency (Rosenthal, Charles, and T' Hart 1989, 10). It follows that the professional definition of crisis is close to that of emergency, although in the public discourse the term 'crisis' is often used to cover all of these situations (Van Wart and Kapucu 2011). To avoid confusion and misinterpretation, this paper and the questionnaire we use refer only to emergencies.

The organizations that deal with the various aspects of emergencies are defence forces such as the police and army, health emergency organizations such as the Red Cross, fire services, coordinating agencies, public sector organizations that provide services for preparing for, dealing with and recovering from emergency events, local government and third-sector aid organizations. In this paper, we focus on public (or semi-public) agencies whose core activities relate to emergencies and therefore

constitute the heart of the emergency network. They include organizations that provide direct emergency services such as the Red Cross and its equivalents and coordinating agencies at the government level such as the Israeli Home Front Command. We are therefore dealing with the meso level, which stands between the macro government level and the micro organizational level. We investigate the factors that influence public trust in such organizations when they are grouped together to form a network (Willem and Lucidarme 2014).

Trust in emergency organizations, trust in government and public sector management

Trust in government and the factors influencing it have been studied extensively from various perspectives (Bouckaert 2012; Hardin 2006; Luhmann 1988; Sønderskov and Dinesen 2016). There are several working definitions, but the core idea used in public administration studies is that trust in government reflects the ‘faith people have in their government’ (Citrin and Muste 1999; Nannestad 2008). It indicates the citizens’ overall evaluation of how government works and their confidence in the good intentions of public officials to promote the public interest (Citrin and Muste 1999; Coulson 1998; Luhmann 1988). Levels of trust are generally measured by surveys and interviews using several indicators.

The scholarly literature discusses the measurement of public trust in the public sector by distinguishing between the government level and the organizational level (Grimmelikhuijsen and Knies 2017). At the government level or public sector level, it is common to measure trust by asking citizens to evaluate their trust in several public organizations and government offices and then group them to produce one measure of public trust in government (Citrin 1974; Poznyak et al. 2014). However, measuring trust at the organizational level may require a deeper and more multi-dimensional approach (Bachmann 2011; Hardin 2002; McEvily and Tortoriello 2011; McKnight, Choudhury, and Kacmar 2002). Grimmelikhuijsen and Knies (2017) scale measures trust at the organizational level by assessing three important dimensions – perceived competence, perceived benevolence and perceived integrity. We can call trust at the organizational level organizational trust, while trust in the government or in a specific public sector such as healthcare may be termed institutional trust (Nannestad 2008).

In this paper we explore the extent to which citizens trust what they see as a network of public organizations that deal with and coordinate collaborative efforts to respond to emergencies before, during and after their occurrence. This definition implies that when people think about emergency organizations, they are dealing primarily in terms of institutional trust. Accordingly, in this study we refer to the concept of institutional trust in emergency organizations and utilize a grouping measurement method.

Public trust can empower public officials, leading to greater effectiveness and improved management (Boateng and Cox 2016; Favero, Meier, and O’Toole 2016; Warren 1999). It can also motivate coordination between the various players in the public sector and reduce the transaction costs that have become prohibitive in many economic and administrative systems (North 1990; Robbins 2012; Rothstein and Stolle 2008). These aspects are particularly important in emergencies where citizens’ trust in those who handle them is crucial for cooperation and effectiveness (Christensen, Lægread, and Rykkja 2016; Jung, Song, and Park 2018; Kapuco and Garayev 2011).

Emergency organizations are usually part of the public sector, meaning that we can analyse public attitudes about and trust in them in terms of institutional trust (Wray et al. 2006). However, people often distinguish between their perceptions about specific public organizations, or a specific public sector such as healthcare or education, and their evaluations of the government as a whole (Grimmelikhuijsen and Knies 2017). Therefore, trust in emergency organizations or the emergency network, and trust in government are two different constructs that may relate to each other.

Emergency organizations function in complex environments, but citizens and public officials alike understand that to be effective and trustworthy, these organizations depend heavily on the resources, coordination and services provided by the government (Christensen, Lægreid, and Rykkja 2016; Kapuco and Garayev 2011; Wray et al. 2006). It follows that various parameters related to the functioning of government may help explain public trust in emergency organizations. The first of these factors is public trust in government, which is often reflected in public trust in specific organizations and emergency organizations in particular (Christensen, Lægreid, and Rykkja 2016; Grimmelikhuijsen and Knies 2017). Our first hypothesis follows.

H1: Public trust in government is positively related to public trust in emergency organizations.

The extensive literature on trust has established that various factors may increase trust in government. For example, an effective public sector that provides satisfactory services to citizens creates a positive atmosphere for trusting attitudes among the citizenry (Bouckaert 2012; Chanley, Rudolph, and Rahn 2000; Keele 2007; Khan 2016). In the context of this paper, this means that citizens evaluate the effectiveness of emergency organizations and their satisfaction with them. Studying disaster management, Lin (2015) conducted a comparative study using panel data from 150 countries between 1995 and 2009. The results demonstrate that strong capabilities on the part of the state mitigate the effect of a disaster on the population, especially in a democracy.

Indeed, the scholarly research on institutional trust indicates that a participatory organizational culture where public organizations incorporate citizens into the decision making process has a positive effect on trust in government (Vigoda-Gadot and Mizrahi 2014). The relations between citizens and governments have a great deal to do with the process of governing rather than solely with the outputs governments provide. At the core of the social contract between citizens and government is the expectation that the government will treat citizens fairly and be responsive to their needs (Downs 1957; Rawls 1971). In this regard, prior expectations have a strong and consistent influence on future expectations (Hjortskov 2018). The public management research incorporates these ideas in mechanisms of participation in decision making (Irvin, Renée, and Stansbury 2004; King, Feltey, and O'Neill 1998). We expect that if such mechanisms are weak, citizens will trust government less than when the mechanisms are strong. Given that transparency and communication are vital elements in dealing with emergencies, we maintain that citizens who regard the public sector as including them in their decision making will also trust emergency organizations. Our second hypothesis follows.

H2: Perceived participation in decision making is positively related to public trust in emergency organizations.

We should note, however, that participatory mechanisms and transparency also expose citizens to managerial and service practices that may seem opposed to the public interest and hence reduce, rather than increase, their trust in government (Cowell et al. 2012; Hurrelmann 2007). This possibility implies that such managerial practices may moderate the relationship between participation and trust.

Trust in emergency organizations, threat evaluations and readiness

In addition to these system-based parameters that may influence public trust in emergency organizations, there are also potential independent variables that relate to emergencies themselves. The scholarly research on public attitudes towards the public sector suggests that personal experience with specific services provided by public agencies may be related to citizens' evaluation of public agencies and their trust in them (Baekgaard 2015; Benesh and Howell 2001; Van Ryzin and Charbonneau 2010). Even though many citizens do not necessarily utilize all public services directly or experience the situations that create the need for these services, their level of trust in such agencies is still important. For example, many citizens do not have direct experience with law enforcement authorities such as the police or courts. Nevertheless, their evaluations of these authorities and their trust in them are valuable for the public legitimacy of these organizations and thus their effectiveness (Benesh 2006; Levi, Sacks, and Tyler 2009). In a similar vein, people who have not received treatment in a hospital for many years have opinions about the functioning of public hospitals and may act based on these opinions to pressure the government. In the absence of personal experience people may rely on the experience of others, particularly on information distributed through media channels as well as social media networks (Wray et al. 2006). Citizens may also assess the probability that they will need specific services or the threat they feel in the face of certain scenarios when they form their perceptions regarding public agencies (Baekgaard 2015; Van Ryzin and Charbonneau 2010). Furthermore, when assessing their trust in specific public agencies, citizens consider their overall experience with the public sector and their feelings about how society and the government treat them (Vigoda-Gadot and Mizrahi 2014). For example, people who feel that they are discriminated against by the public sector will tend not to trust any public agency.

Applying these rationales, we identify four possible variables that may be related to trust in emergency organizations. First, citizens evaluate the readiness of these organizations to deal with extreme events. Wray et al. (2006) show that people who have personal experience with security threats tend to trust the information distributed by public organizations. As explained above, in most societies relatively few people have personal experience with many services that the government provides including public services in emergency situations. Therefore, they try to replace such experience with evaluations of the readiness of emergency organizations and use them when deciding on their trust in them. Furthermore, by evaluating the level of readiness of emergency organizations citizens actually have indications about their future effectiveness and hence, the quality of their management. Second, citizens evaluate their own readiness for extreme events and compare it to what they think about emergency organizations.

People who feel they are completely prepared have probably invested a lot of resources because they trust no one but themselves. Therefore, they will tend not to trust emergency organizations. Third, people who are very fearful that an emergency situation will occur in the near future will most likely tend to trust emergency organizations. Feelings of threat and fear increase vulnerability and uncertainty, which often lead people to look for someone they can trust (Jung, Song, and Park 2018; Perry 2007; Zhai et al. 2006). Emergency organizations are good candidates for that purpose because part of their routine role is to communicate with the public, reduce fears and increase readiness. Therefore, this variable may interact with personal and organizational readiness for emergency situations. Fourth, people who feel that the government or society discriminates against them will most likely tend not to trust emergency organizations.

Four additional hypotheses follow.

H3: The perceived readiness of emergency organizations is positively related to public trust in emergency organizations.

H4: Perceived personal readiness for emergency situations is positively related to public trust in emergency organizations.

H5: Fears that an emergency situation will occur are positively related to public trust in emergency organizations.

H6: Feelings of discrimination by the government or society are negatively related to public trust in emergency organizations.

In conclusion, trust in emergency organizations is a complex construct that may be related to different kinds of variables. In this paper we investigate these relations using a survey distributed among Israeli citizens. While Israelis have experienced numerous emergency situations since, and even before, the establishment of the state, most of these situations have involved security threats. In fact, most Israelis live with constant threats to the existence of the state, and these feelings are part of the public and political discourse (Yiftachel 2006). The sense of emergency is thus deeply rooted in society but its appearance in daily life is relatively muted. Given this situation, we would expect to find strong feelings of personal threat and good personal and organizational readiness to deal with emergencies that together increase trust in emergency organizations. It follows that the Israeli context potentially reinforces our hypotheses.

Research model and method

Figure 1 presents the research model. It portrays the relationships between the dependent variable – citizens' trust in emergency organizations (TRSEmergency) – and two sets of variables. One set includes variables related to citizens' evaluations of trust in government (TRS) and variables related to the relations between citizens and the public sector – citizens' perceptions about participation in decision making (PDM) and feelings of discrimination (FeelDiscriminate). The second set includes variables related to evaluations of threats and readiness for emergency situations – the perceived readiness of emergency organizations (EmergencyReadiness), perceived personal

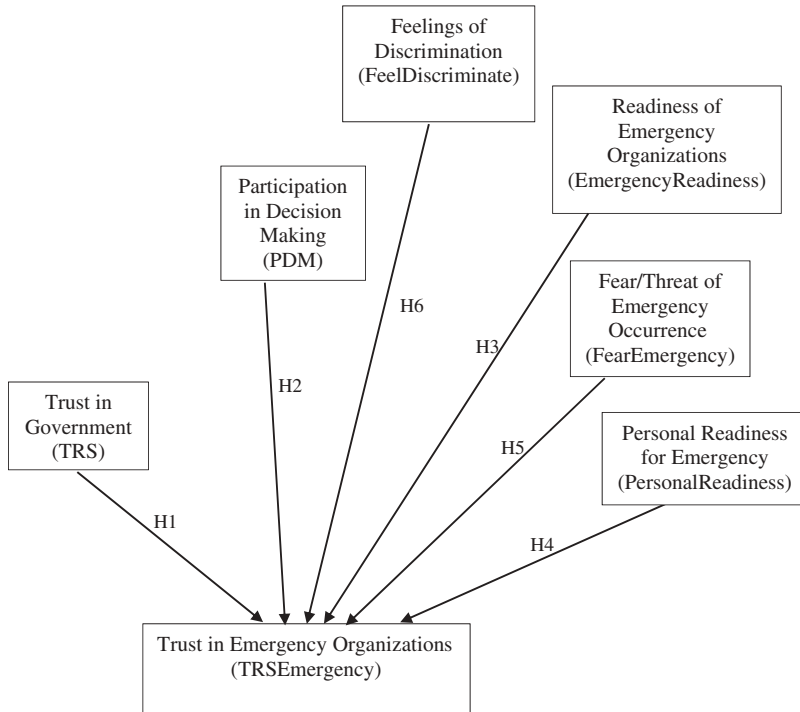


Figure 1. The research model.

readiness for emergencies (PersonalReadiness) and fears that an emergency will occur (Fear Emergency). Hypotheses 1–6 expect direct relationships between the variables. We also test for mediation and moderation, and control for demographic variables.

Sample and procedure

To test our model and hypotheses, we created a sample of 666 Israeli citizens. We asked them to report their perceptions about, and attitudes towards, the public sector and emergency organizations as well as threats of and readiness for emergency situations. Note that in the Israeli context the term ‘emergency situation’ is understood in a broad sense that includes mass violence, natural disasters and a variety of terror threats. We used a close-ended questionnaire and a procedure that has been developed and applied to similar populations in Israel since 2001 as well as in the US at the state and federal levels (Mizrahi, Vigoda-Gadot, and Van Ryzin 2010; Vigoda-Gadot and Mizrahi 2014). Data were collected in June 2018 through an Internet panel of participants from an Israeli research institute – iPanel. Panel surveys have many advantages, but also have disadvantages such as panel selection bias and panel attrition (Lohse et al. 2000). To compensate, the sample was designed so that it represented the Israeli population in most dimensions. Anonymity was assured, and the response rate was 65%.

Of the total sample, 49% were men and 51% were women, and the average age was 37.7 years (s.d. = 13.72). With regard to education 35.7% graduated high school, 25.2% had some college-level education and 38.9% completed higher education at the level of

a bachelors or masters degree. On average, the participants had 13.9 years of education (s.d. = 3). With regard to socio-economic level, 80% were Jews and 20% belonged to the Arab minority. A breakdown by income showed that 28% had a monthly household income far below the average (around \$3,500), 23.1% reported their income was a little below the average, 22.9% had an average income, and 19.2% and 6.8% reported an income a little higher or higher than average, respectively. The geographical distribution of the respondents corresponded to that of the Israeli population. Thus, the research sample was very representative of the overall Israeli population based on the Israeli census.

Measures

We measured the variables with groups of questions that were verified and tested in previous studies on trust in the public sector (Grimmelikhuijsen and Knies 2017; Sacks and Larizza 2012; Vigoda-Gadot and Mizrahi 2014) and on attitudes towards emergency organizations as well as the threat of emergencies and readiness (FEMA 2009; Redlener et al. 2007). We verified the questions for consistency using Cronbach's α test. The participants indicated their responses on a scale ranging from 1 to 6.

Trust in emergency organizations (trsemergency)

This variable was measured by three items indicating the response to the questions: 'Rate the extent to which you trust: (1) the National Emergency Management Authority, (2) life-saving organizations – the fire department and Magen David Adom (the Israeli equivalent of the Red Cross), and (3) the Home Front Command and local emergency crews.' The consistency of this variable was $\alpha = .80$. In this measure we included organizations that provide, manage and coordinate emergency services directly. Organizations that are involved in emergency situations but have meaningful functions in daily life, such as the police and the army, were excluded because citizens identify them with the general operation of the public sector rather than as part of the core of emergency networks.

Trust in the public sector (TRS)

This variable was measured by 21 items indicating the extent to which respondents trusted the following organizations: the Ministry of Health, public hospitals, their local healthcare provider, the education system, the higher education system, the court system, the Supreme Court, the State Attorney, the Attorney General, the army (IDF), the General Security Service, the Israeli undercover intelligence organization (the Mossad), the police, the prison service, the Ministry of Transport, the Ministry of Communications, the state comptroller, the treasury and tax authorities, the Israel Central Bank, political parties and the Israeli parliament (Knesset). The variable was calculated for each respondent as the mean value of trust among the 21 items. The consistency of this variable was $\alpha = .93$.

Perceptions of participation in decision making (PDM)

This variable was measured by five items indicating to what extent the respondents thought that public organizations: (1) are interested in the public participating in the making of important decisions, (2) are open to criticism and suggestions that come

from citizens, (3) respond quickly to public demands, (4) develop reasonable channels to communicate with the public and (5) are subject to significant monitoring by citizens. The consistency of this variable was $\alpha = .84$.

Feelings of discrimination (feeldiscriminate)

This variable was measured by two items indicating to what extent the respondents agreed with the statement: (1) 'People like me are not represented properly in the state' and (2) 'Sometimes I feel that the state discriminates against people like me.' The consistency of this variable was $\alpha = .81$.

Perceived readiness of emergency organizations (emergencyreadiness)

This variable was measured by eight items indicating to what extent the respondents thought that emergency organizations were ready for emergency situations. The organizations are: the police, fire and rescue departments, health emergency organizations, emergency units in the army, local government, government offices, the National Emergency Authority, and civil society organizations. The consistency of this variable was $\alpha = .89$. Here we also included organizations that are relatively removed from the core of the emergency network because the question specified readiness for emergency situations, meaning that citizens evaluated only this aspect of the organizations' operation.

Perceived personal readiness for emergency situations (personalreadiness)

This variable was measured by five items indicating to what extent the respondents thought that they were ready to defend themselves in emergency situations. The situations are: natural disasters, war, terror attacks, cyber-terror attacks and accidents related to hazardous materials. Although personal readiness is often associated with disaster-related scenarios such as natural disasters, people can invest in preparing for other types of emergencies as well. For example, people may invest in shelters or defence measures to improve their readiness for war, terror attacks and accidents related to hazardous materials. The consistency of this variable was $\alpha = .82$.

Fears that an emergency situation will occur (fearemergency)

This variable was measured by five items indicating to what extent the respondents feared the occurrence of emergency situations. The situations are: natural disasters, war, terror attacks, cyber-terror attacks and accidents related to hazardous materials. The consistency of this variable was $\alpha = .82$.

Data analysis

The analysis includes several stages. First, a zero-order correlation was analysed to assess the internal relationships among the research variables. Second, a standard multiple regression analysis was conducted to test for the effect of the independent variables on public trust in emergency organizations. Third, we used multiple stepwise regression analyses to test potential mediating variables. The test of mediation was conducted following the studies of Baron and Kenny (1986), Kenny, Kash, and Bolger (1998) and Kenny's Web page on mediation (<http://davidakenny.net/cm/mediate.htm>).

The analysis also controls for age, gender, income and education, which are the most relevant individual characteristics for the research setting, and helps address potential common source bias, which has become an issue for lively debate among public administration scholars in recent years (Favero and Bullock 2015; Meier and O'Toole 2013). Common source bias is a systematic error variance that is a function of using the same method or source (Richardson, Simmering, and Sturman 2009). Meier and O'Toole (2013) argue that citizens' surveys of government performance often contain valuable information that can be gathered in no other way. Segmentation according to individual characteristics showing that these factors distribute normally can solve most of the problems in such surveys (Gormley and Matsa 2014).

Findings

Table 1 presents the descriptive statistics, zero-order correlations and Cronbach's α for the research variables. It indicates that Israeli citizens have a great deal of trust in emergency organizations (Mean = 4.26, S.D = 1.05), but less trust in the public sector (Mean = 3.45, S.D = .85). Respondents also rate participation in decision making at a low level (Mean = 2.57 S.D = .95) and many of them report feelings of discrimination (Mean = 3.86, S.D = 1.42). Their assessment of the readiness of emergency organizations is medium to high (Mean = 4.02, S.D = 1), but their personal level of readiness is relatively low (Mean = 2.74, S.D = 1.07). Respondents report medium to high levels of fear that an emergency situation will occur (Mean = 4.08, S.D = 1.16).

As the table illustrates, most of the inter-correlations hold in the expected directions. The one exception is the insignificant relations between trust in emergency organizations and feelings of discrimination, meaning that H6 may not be supported by the data. However, feelings of discrimination have a negative relationship with trust in the public sector and participation in decision making. Among the independent variables, trust in the public sector and the readiness of emergency organizations have the strongest relationships with the dependent variable – trust in emergency organizations. In addition, none of the inter-correlations exceeds the maximum level of .70, which is a good indication of the absence of multicollinearity among the variables. Income, education, gender and age are not significantly related to trust in emergency organizations and to most of the independent variables.

Table 2 presents the results of the multiple regression analysis (non-standardized coefficients and standardized) [OLS] of the effect of the independent variables on trust in emergency organizations. It shows that most of the independent variables tested in our research model – trust in the public sector, participation in decision making, the readiness of emergency organizations and fears about the occurrence of emergencies – are related to trust in emergency organizations. Among the demographic control variables, only age is significantly related to trust in emergency organizations. The explained variance (adjusted R squared) of these independent variables is 0.47, meaning that these variables help explain 47% of the variation in trust in emergency organizations. These findings indicate that our research model presented in Figure 1 captures the core relations among the variables to a great extent. Hence, our findings support H1, H3 and H5 where two variables – trust in the public sector and the readiness of emergency organizations – have the strongest relationships with trust in emergency organizations ($\beta = .59, p < .001$; $\beta = .32, p < .001$, respectively). H4 and H6 are not supported by the data.

Table 1. Multiple correlation matrix and descriptive statistics for the research variables (Cronbach's α in parentheses).

	Mean (S.D.)	1	2	3	4	5	6	7	8	9	10
1. Trust in emergency organizations	4.26 (1.05)	(.80)									
2. Trust in the public sector	3.45 (.85)	.62***	(.93)								
3. Participation in decision making	2.57 (.95)	.24***	.57***	(.84)							
4. Feelings of discrimination	3.86 (1.42)	NS	-.12**	-.11**	(.81)						
5. Readiness of emergency organizations	4.02 (1)	.53***	.37***	.37***	NS	(.89)					
6. Personal readiness for emergency	2.74 (1.07)	.16***	.30***	.34***	NS	.28***	(.82)				
7. Fear of emergency occurring	4.08 (1.16)	.18***	.12**	.12**	NS	.15***	NS	(0.82)			
8. Income (low = 1–5 = high)	2.54 (1.27)	NS	NS	NS	-.11**	NS	.09*	NS	-		
9. Gender (1 = Women)	1.51 (.50)	NS	NS	NS	NS	.13***	-.16***	.24***	-.17***	-	
10. Age (years)	37.68 (13.72)	NS	NS	-.19**	NS	.10*	NS	NS	.31***	-.13**	
11. Education (1–6)	4 (1.23)	NS	NS	NS	-.08*	-.11**	NS	NS	.31***	-.15***	.13***

Table 2. Multiple regression analysis for the direct effect of the independent variables on trust in emergency organizations (non-standardized and standardized coefficients).

Variable	Trust in emergency organizations B(SE)	Trust in emergency organizations β
Constant	1.23 (.25)***	
1. Trust in the public sector	.72 (.05)***	.59***
2. Participation in decision making	-.22 (.04)***	-.20***
3. Feelings of discrimination	.04 (.02)	.06
4. Readiness of emergency organizations	.33 (.04)***	.32***
5. Personal readiness for emergency	-.05 (.03)	-.05
6. Fear of emergency occurring	.06 (.03)*	.06*
7. Income (low = 1–5 = high)	.05 (.03)	
8. Gender (1 = Women)	-.09 (.07)	-.04
9. Age (years)	-.01 (.00)**	-.11**
10. Education (1–6)	-.04 (.03)	-.05
R ²	.48	.48
adj R ²	.47	.47
F	57.32***	57.32***

N = 666; * $p < .05$, ** $p < .01$, *** $p < .001$.

Contrary to H2, participation in decision making is negatively, rather than positively, related to trust in emergency organizations ($\beta = -.20$, $p < .001$). At the same time, the correlation analysis presented in Table 1 indicates positive relations between these two variables. To explore this further result, we conducted a mediation analysis testing the possibility that trust in the public sector (M) mediates the relations between participation in decision making (X) and trust in emergency organizations (Y). The direct relationship between X and Y when regressing Y on X is $c = .24$ ($p < .000$). The relationship between X and M when regressing M on X is $a = .57$ ($p < .000$). When regressing Y on both M and X, the relationship between Y and M is $b = .71$ ($p < .000$), and that between Y and X is $c' = -.17$. It follows that the total effect is $c = .24$, the indirect effect through M is $ab = .40$, and the direct effect is $c' = -.17$. Ideally, when ab is substantial and c' is small in absolute value, we can conclude complete mediation. In addition, c' is smaller in absolute value than c . Yet, we should note that ab and c' have a different sign, indicating the presence of inconsistent mediation (i.e. a suppressor effect). In this case, inconsistent mediation means that participation in decision making is negatively related to trust in emergency organizations through trust in the public sector.

This finding is not only inconsistent with H2 but also challenges a core rationale in the public management literature according to which citizens' participation in decision making in the public sector is positively related to trust in specific public sector organizations (Irvin, Renée, and Stansbury 2004; King, Feltey, and O'Neill 1998; Vigoda-Gadot and Mizrahi 2014). In other words, responsive and participatory public administration contributes to institutional trust in general, but may be dysfunctional as far as trust in emergency organizations is concerned. A possible explanation may be that citizens who feel involved with the public sector are familiar with various malfunctions that characterize its operation and believe that these may intensify in extreme conditions. Therefore, involved citizens tend to trust emergency organizations less than they trust the public sector as a whole. Indeed, studies in the EU and the UK show that participation in decision making exposes citizens to managerial and service

practices that reduce their trust in the government (Cowell et al. 2012; Hurrelmann 2007). We tested for other mediating or moderating relationships but found no significant results.

Discussion

Research in dealing with emergencies has been a growing field in recent years. Given the large number of natural disasters, global crisis situations and man-made emergencies in recent decades, governments all over the world have become aware of the need to plan for, finance and prepare for such situations (Albala-Bertrand 2007; Alexander 2018; Boin and Bynander 2014; Jones and Murphy 2009; Lin 2015). Governments need to establish and/or reform mechanisms of dealing with emergencies so that emergency networks coordinate collaborative efforts and provide effective public responses to these situations.

Effective mechanisms to deal with emergencies require public legitimacy and cooperation because they function in extreme situations where people feel great pressure and uncertainty. People who trust the mechanisms and organizations responsible for dealing with emergencies will be willing to cooperate with and assist the authorities and other people in responding to an extreme event. Indeed, the public management literature has established the positive effect of institutional trust on the effective management of the public sector (Boateng and Cox 2016; Bouckaert 2012; Favero, Meier, and O'Toole 2016; Hardin 2006; Luhmann 1988; Sønderskov and Dinesen 2016; Warren 1999). Therefore, we suggest including this insight in emergency organizations in the public sector.

Although the research on institutional trust is rich, there is little research on trust in emergency organizations and in particular the factors that may explain it (Christensen, Læg Reid, and Rykkja 2016; Kapuco and Garayev 2011; Wray et al. 2006). By focusing on public trust in emergency organizations, we not only illuminate an important aspect of trust in the public sector, but also integrate rationales developed in the public management literature into the research on emergency management. So far, only a few studies have met this challenge (Boin 2005; Christensen, Læg Reid, and Rykkja 2016; Moynihan 2008).

Furthermore, this paper develops a nuanced approach to studying public attitudes towards the public sector in the context of emergencies. In providing services before, during and after emergencies, many public and non-profit organizations take part in three circles of involvement. One includes organizations that specialize in emergencies and provide immediate and direct services such as the Red Cross and its equivalents, as well as fire services. In the second circle we find coordinating organizations whose goal is to mobilize collaborative efforts and serve as network managers. An example is the Home Front Command, which instructs the civilian population on how to respond to threats to Israel. Moynihan (2009) examines, for example, the operation of Incident Command Systems (ICS) in the US in different crises, showing that despite its hierarchical characteristics, the network characteristics of crisis response fundamentally affect its operation. The third circle includes many organizations and ministries that have specific responsibilities related to emergencies, but these are not part of their core activities. Examples are the army, the police, healthcare organizations and hospitals, local government, welfare organizations and agencies that deal with the infrastructure such as electricity and water services.

The great challenge in studying public attitudes towards providers of emergency services is distinguishing between the first two circles and the third one. This distinction is essential because citizens evaluate the organizations that belong to the first two circles in the context of emergencies, while they view organizations that belong to the third circle based on their daily core activities. In this paper, we developed a theoretical framework and measures that distinguish between these two levels of operation and also explain their mutual relations. It established the concept of the emergency network as important aspect of emergency research. Such an approach is relatively new and proved beneficial in achieving a number of insights. Moreover, this approach contributes to public management research because it may be applied to other services where there is a clear distinction between direct providers and those that have indirect responsibilities. The healthcare sector is a good example in that regard and so are welfare services.

In a broad perspective our approach and findings align with network governance theory that views network governance as ‘coordination characterized by informal social systems rather than bureaucratic structures within firms and formal contractual relationships between them’ (Jones, Hesterly, and Borgatti 1997, 911). Jones, Hesterly, and Borgatti (1997) integrate transaction costs economics and social network theory showing the economic benefits of such coordination mechanisms. This rationale also guides explanations related to collaborative governance (Ansell and Gash 2008), as well as Moynihan’s (2009) analysis of response to crises. Indeed, our study established the concept of the emergency network as important aspect of emergency research.

Our analysis shows that three main factors are related to trust in emergency organizations – trust in the public sector, the perceived level of readiness of emergency organizations and the degree to which people fear that an emergency situation will occur. The first two variables have the strongest relationships with trust in emergency organizations. A fourth variable – perceived participation in decision making – appears to have a complex relationship with trust in emergency organizations, as there is inconsistent mediation through trust in the public sector as a mediator. This result implies that people who feel involved with the public sector tend to trust emergency organizations less than those who are less involved. In this respect, participation in decision making may be dysfunctional for emergency management. We suggest that involved citizens tend to be more suspicious in uncertain and high-risk situations and therefore trust emergency organizations less than they trust the public sector as a whole.

Our study has several limitations. First, we examined only the Israeli case. Hence, although we may generalize from the Israeli experience to other cases, one should remember that different findings might emerge in other places around the world. Furthermore, the configuration of services related to emergencies varies among countries and societies, which may limit the possibility of generalizations. Nevertheless, we should note that we did not include variables that are related to the structure of the emergency services in Israel but presented a generic model. Indeed, specific cultural and social characteristics may influence the views of Israeli citizens differently than in other places, but this is a limitation of any country-focused study. We tried to minimize these effects and biases, but, clearly, additional studies should apply the model to other places and use it as a starting point for a comparative framework. Second, the study uses a questionnaire that indicates respondents’ behavioural intentions but does not measure behaviour itself. This approach is common in trust research especially in areas that are rarely explored. Further studies will integrate additional research methods.

The paper does contribute several main insights to trust research. First, it establishes that trust in emergency organizations and trust in other public organizations are different constructs. Furthermore, the grouping of trust in several emergency organizations into one variable shows a high level of consistency (Cronbach's α test), implying that citizens view such organizations as part of a network (Moynihan 2009-). Second, in accordance with several studies, our analysis supports the observation that trust in the public sector diffuses to specific organizations or sectors (Grimmelikhuijsen and Knies 2017). Third, it points to perceptions of threats and risks in specific areas as possible influences on the level of trust in public organizations and the services they provide in those areas. While research on trust explains that threats and risks caused by the malfunctioning of the public sector may be related to trust in government, our analysis also points out the possible impact of threats arising from natural forces as well as social, economic and political dynamics on the global level that may trigger fears about emergency situations. Fourth, participation in decision making may prove dysfunctional in managing public organizations that handle uncertain and risky situations. Fifth, it is striking that feelings of discrimination are not related to trust in emergency organizations. It seems that people detach themselves and their feelings when evaluating the operation of such systems. This insight also holds when we consider demographic differences and diverse populations. Although our sample closely resembles the overall demographic characteristics of Israeli society, the findings indicate that they do not significantly influence trust in emergency organizations. Future research will explore this intriguing result further.

The study also has several practical implications. It indicates that citizens consider emergency organizations in their context, but evaluate other organizations that do not include dealing with emergencies as their core activities as part of the public sector. At the same time, citizens view emergency organizations as part of a network, and they tend to trust them more than they trust other public sector organizations. Public officials may leverage this distinction in two ways. First, in designing the structure and modes of operation of emergency services public officials should prioritize coordinating mechanisms based on networks rather than hierarchal or market-oriented ones. Bouckaert, Peters, and Verhoest (2010) study the shifting patterns of coordination mechanisms in the public sector in recent decades. They describe three main patterns of coordination – hierarchal, market and network. The first corresponds to traditional management practices, the second minimizes government control and prioritizes competition, while the third tries to create a moderate degree of centralized control that leaves enough space for exchanges and discourse between organizations. Network governance theory and collaborative governance research have developed similar rationales (Ansell and Gash 2008; Jones, Hesterly, and Borgatti 1997). We maintain that due to their special characteristics and citizens' views of them, emergency services should be managed and coordinated using a network structure. Second, in order to mobilize citizens to support and cooperate with emergency organizations, managers and coordinators should emphasize the network characteristics related to emergency services.

Furthermore, public trust in emergency organizations, and hence citizens' cooperation with them, is strongly related to public trust in the public sector as a whole. However, even if the public has little trust in the public sector as a whole, their assessment about the readiness of emergency organizations is a major factor in their trust in these organizations. To a large extent, convincing citizens that emergency organizations, coordinating agencies and the public sector as a whole operate as an

effective network to provide the best services in any emergency scenario will increase public trust in these organizations and motivate citizens' cooperation before, during and after emergencies occur. Thus, our theoretical insights and their practical implications demonstrate how the study of emergency services using public management tools can contribute to both fields. This study opens up several avenues of research as well as various possibilities for professional discourse with practitioners.

Disclosure statement

No potential conflict of interest was reported by the authors.

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