Centrum für Interdisziplinäre Wirtschaftsforschung
Diskussionspapier

1/2022

A chance to win or lose it all? A systematic literature review on the consequences of natural disasters for governments

Anna Kindsmüller

Center for Interdisciplinary Economics
Discussion Paper Series

Center for Interdisciplinary Economics
Discussion Paper
1/2022

May 2022

ISSN 2191-4419

A chance to win or lose it all? A systematic literature review on the consequences of natural disasters for governments

Anna Kindsmüller

Abstract

Natural disasters, which usually abruptly cause severe harm and cost lives, have been shown to affect governmental popularity by sometimes leading to additional governmental popularity and sometimes to a loss of popularity. By considering the various theoretical propositions and empirical findings about this nexus together in a systematic review, here we pinpoint which factors determine whether a government gains or loses popularity after a natural disaster. The review shows that a government's operational and symbolic reactions increase the governmental popularity after a natural disaster but suggest that symbolic actions do so more strongly. On the contrary, in a society with significant political knowledge, a government has fewer opportunities to increase their popularity when using only symbolic means or cheap talk.

JEL-Codes: H11, H12, H84
Keywords: natural disasters, crisis, governmental popularity

Alle CIW-Diskussionspapiere finden Sie hier:

https://www.wiwi.uni-muenster.de/ciw/de/forschung/ciw-diskussionspapiere

Westfälische Wilhelms-Universität Münster
CIW – Centrum für Interdisziplinäre Wirtschaftsforschung
Scharnhorststraße 100
D-48151 Münster

Tel: +49-251/83-25329 (Sekretariat)
E-Mail: clementine.kessler@uni-muenster.de
Internet: www.wiwi.uni-muenster.de/ciw

1 Introduction

Natural disasters, like floods, storms, hurricanes, fires or heat waves, occur from time to time and usually cause considerable damage and cost lives. In the wake of such severe disasters, governments often come to the fore, and people turn to incumbents for aid and assistance (Lambert et al., 2010; Olson & Gawronski, 2010). In that sense, a natural disaster may become a window of opportunity for incumbents to meet citizens' needs and prove good management skills. At the same time, it may expose a government's failings in disaster management.

Popular examples may come to mind in which governments used the opportunity provided by the disaster and gained extra popularity, but many other examples exist in which governments have been criticized for various failures in disaster management. For instance, the 2002 Elbe flooding in Germany is thought to have helped Gerhard Schröder, who was German Chancellor at that time, win the subsequent election (Bechtel & Hainmueller, 2011). Similarly, Hurricane Sandy is said to have contributed to the re-election of the former president of the United States Barack Obama in 2012 (Velez & Martin, 2013). On the contrary, Hurricane Katrina led to enormous criticism of the New Orleans government in 2005 for mismanagement (Malhotra & Kuo, 2008; Preston, 2008).

Although it is easy to comprehend that the direction of such effects has something to do with governmental (mis)management, the existing theoretical and empirical literature about the effects of natural disasters on incumbents' popularity show that there is more to know about this nexus. Several theories are useful for understanding the complex political dynamics that unfold after a natural disaster. The presented examples already suggest that the effect of a natural disaster on governmental popularity may work in both directions, i.e., it may lead to additional governmental popularity or to a loss of popularity. Considerable theoretical and empirical literature deals with various sub-aspects that may determine which direction the response goes in; taken together in a review of the literature, those studies provide valuable information and offer a bigger picture of the factors and circumstances that matter for incumbents after a natural disaster. Thus, the essential goal of this article is to answer the question of which factors affect whether a government in a democratic country gains or loses popularity after a natural disaster.

The article at hand is organized as follows. First, I elaborate on why an event, even though it is beyond an incumbent's control, may influence his or her popularity. Second, I present a theory by Bueno de Mesquita et al. (1999) that shows why a democratic government, in contrast to an autocratic one, is more likely to respond to a natural disaster and which circumstances define and limit the scope of governmental crisis reaction. This lays the foundation for theoretical arguments about the effects of several factors, like governmental crisis reactions or citizens' political sophistication, on governmental popularity after a natural disaster. Third, I give an overview of the existing empirical support for the described theoretical propositions, then I briefly summarize the existing knowledge and discuss the limitations of the presented literature. The presented theories and empirical studies help to determine the impact of governmental actions and citizens' perceptions on governmental popularity and, thus, show whether these factors lead to a gain or a loss of governmental popularity.

2 Why a natural disaster matters for governmental popularity

Before analyzing the various impacts of natural disasters on governments in democracies, it must be discussed if it is reasonable to assume that natural and clearly not man-made events are able to affect that sphere of human organizational structures.

A natural disaster is a sudden, harmful event that can originate, for example, from extreme wind, rain, heat or an earthquake. It can cause floods or droughts that destroy houses, damage infrastructure and result in severe economic struggles as well as health issues or famines for many citizens, not just single individuals. Considering the literature, the severeness of a natural disaster is not uniquely defined, so that no specific threshold exists with which to define a disaster as being severe. Rather, the severeness of a disaster is usually defined by various factors, such as reported fatalities (Healy & Malhotra, 2010) or disaster-related measures, i.e., wind speed or rainfall measures (Eriksson, 2016; Cole et al., 2012). Other authors rely on official databases on disaster damage (Healy & Malhorta, 2009; Healy & Malhotra, 2010; Gasper & Reeves, 2010; Gasper & Reeves, 2011) or types of emergency declarations that are made after a severe disaster (Gasper & Reeves, 2010; Gasper & Reeves, 2011).

For classification, disasters can be differentiated into three types (Boin et al., 2008). The first type includes classical natural disasters like storms, hurricanes, tornados, heavy rainfalls, earthquakes, epidemics, extreme heat or fires. They all have in common that they are exogenous and caused by natural forces. The second type of disaster is characterized by human actions. Terror attacks are a typical example of this disaster type, as they are characterized by acts of some enemies toward certain groups of society. The third type of disaster originates from society itself and can be caused by malfunctions of institutions and organizational systems. Among these are financial crises, human-made ecological disasters (due to technical failures) or breakdowns of a political system (Boin et al., 2008; Boin et al., 2009). Here, I focus on the political consequences of the first type of disaster, natural disasters, because the origins of this type of disaster are not clearly related to human action. Thus, various options exist regarding governmental prevention and responses and, similarly, regarding who is responsible. Additionally, I focus on natural disasters that cause an abrupt, sudden shock and a change of living conditions, whereby the origin is a clearly definable event with a direct and exogenous trigger that lasts a few days to a few weeks maximum. In contrast, a pandemic is a different kind of natural disaster. It begins in a few countries, so that political reactions can be prepared even before the disaster actually occurs (Birkland, 2006). Therefore, the article at hand excludes pandemics and health crises. As they unfold over weeks and can last several years, they are long running and latent threats for human lives, and, thus, demand a completely different crisis management.

But why should such natural disasters, whose occurrence cannot be influenced by citizens or their governments, have any effect on governments? Severe natural disasters usually cause sudden changes in living conditions and, considering humans' multifarious needs, natural disasters can be classified as Maslowian shocks (Olson & Gawronski, 2010), referring to humans' hierarchical set of needs defined by Maslow, who considered physiological needs to be fundamental. All further human needs build on them: personal safety, social relations, individual needs (esteem needs) and, finally, self-actualization (Maslow, 1943). For most people, having the first two needs fulfilled is usually given, such that they can focus on accomplishing the subsequent needs. But, a natural disaster abruptly changes this comfort and suddenly forces humans to concentrate on fulfilling their basic needs (Olson & Gawronski, 2010).

From a psychological viewpoint, this abrupt change of living conditions can become relevant for governments: People who face dramatic changes and insecurity may turn to

their governments when they believe the government can provide the safety people need in this situation (Lambert et al., 2010). Responding to dramatic events and ensuring safety can be viewed as one basic function of a government, as governments and leaders are held accountable for social and economic outcomes (Ostrom & D. M. Simon, 1985). Additionally, people are often quick to attribute blame after a disaster because doing so helps suffering people to find a connection between the disaster, the abrupt change of living conditions and possible actors (Rudolph, 2003; Achen & Bartels, 2017).

From investigations of other dramatic events, like economic crises or terror incidents, it is known that external shocks affect governments and have political consequences, even though the government itself was not directly responsible for their occurrence (Arce & Carrión, 2010; Mueller, 1970; Bali, 2007; Chatagnier, 2012; Park & Bali, 2017). The existence of a link between natural disasters and political consequences has been investigated for at least a hundred years. In 1925, Miller published an article looking for reasons why strong populism had taken hold in Kansas in the 1880s and 1890s. He argued that the main origins of populism were the end of a boom and the high debt burden of many citizens. He also suggested that climatic conditions might have contributed to the end of the boom, resulting in losses for many settlers that had come to Kansas with high hopes just a few years before (Miller, 1925). In the same year, Barnhart (1925) published an article in the American Political Science Review, elaborating on the nexus of drought and the Populist Party vote share in Nebraska around 1890. The author found that the vote share was comparatively low in regions in which the drought was less severe, thus arguing that a drop of the amount of rainfall was more critical in regions that already exhibited only a little more rainfall than required for agriculture; in those regions, the rainfall threshold to avoid fatal crop failures was already low. Barnhart, however, did not consider the drought to be the only factor that encouraged people to vote for a Populist Party and end a long-term Republican supremacy. "The drouth (sic) not merely made the economic position of the farmer temporarily worse, but it put him in a receptive frame of mind for the arguments of the Independent leaders" (Barnhart, 1925, p. 540). Thus, Barnhart clarified that voters did not directly blame the governing politicians for the natural disaster, but the drought put voters in a situation that made them more prone to look at other shortcomings (perhaps caused by the government) that had made their living conditions even worse.

Abney & Hill (1966) were some of the first to empirically investigate the political consequences of a natural disaster. They analyzed the impact of Hurricane Betsy, which

hit Louisiana in September 1965 before an urban election. Even though the opposition candidate addressed the hurricane in his campaign and blamed the incumbent for bad preparation as well as bad crisis management, they mentioned two reasons why the incumbent did not lose the election and stated that they did not find a significant impact of the hurricane on voting behavior. First, they argued that the incumbent mayor showed political skillfulness when reacting to the disaster, as citizens could see him "working in the heart of the disaster area with his shirt sleeves rolled up" (Abney & Hill, 1966, p. 975). Moreover, with the government exhibiting sufficient material capabilities, he provided substantive aid to the affected areas. Second, the authors argued that he may have been re-elected partly due to aspects of the political culture, such as

> "(1) the extent to which the responsibility of preparing for and dealing with a disaster is specific and understood, (2) the citizens' previous perceptions of government and the degree to which they change their perceptions, and (3) the extent to which a natural disaster is considered a legitimate political variable." (Abney & Hill, 1966, p. 975)

Consulting survey data from the affected city, the authors found initial evidence that such factors play a decisive role and can affect whether incumbents benefit from a natural disaster or lose popularity. These factors will be described in greater detail in the next sections.

In sum, the general literature and early studies already suggest some reasons why a natural disaster may affect a government's popularity. These studies illustrate that several mechanisms must be considered when investigating the link between governments' popularities and natural disasters; these mechanisms are discussed in the next chapters.

3 Consequences of natural disasters for incumbents in democracies

What causes whether a government gains or loses popularity after a natural disaster? The following chapter discusses the theoretical propositions for answering this question.

Literature on the political consequences of natural disasters has described various factors that determine whether governments may benefit or lose popularity in the aftermath

of such disaster. However, many studies focus on single factors or few interactions that determine the direction of this effect, while the shock of a natural disaster hits a complex system in which humans live and interact. To obtain a systematic overview of the nexus between governments and severe natural disasters in democracies, one can generally distinguish the levels at which the various factors work: The system in which politicians and citizens act is composed of a set of institutions, and these institutions define the possible reactions to the disaster. In a democratic country, a government is confined by manifold checks and balances. The political system then affects the motivations of whether and how to react to the disaster (Bueno de Mesquita et al., 1999; Quiroz Flores & Smith, 2013). Thus, before analyzing in detail the effects of governmental actions and citizens' perceptions on governmental popularity after a natural disaster, I first describe in section 3.1 the institutional context in which both act.

Facing constitutional limitations, political opponents and varying incentives, governments can choose between certain options regarding how to react to the natural disaster. These options range from doing nothing at all to providing generous material and financial aid. The kind of reaction a government chooses may determine whether the government gains or loses popularity after the disaster. Then, citizens also evaluate their governments. This evaluation can be affected by their own life circumstances or their knowledge of political processes and accountability. Importantly, both citizens and democratic leaders, even though they act within the same already described institutional setting, have their own interests when responding to the natural disaster and evaluating the crisis management. Information about each other's actions are not automatically known on both sides (Laffont & Martimort, 2002), and this asymmetry of information makes it necessary to distinguish between the government's reactions to the disaster and the citizens' perceptions of the government's crisis management when discussing their effects on governmental popularity after a natural disaster. Therefore, in the following section (3.2), I discuss both governmental disaster reactions and citizens' perceptions as well as their effects on governmental popularity.

3.1 The institutional context

Governments' and societies' possible reactions to a natural disaster depend on the political system. Of course democratic systems vary, but a basic set of rules defines a democracy (Schmitter & Karl, 1991). Those mechanisms and institutional settings in a

democratic country can explain why democratic governments, in contrast to autocratic ones, have a clear incentive to react to these events.

An important principle about the fundamental motivations of leaders and their actions to stay in office has been illustrated by Bueno de Mesquita et al. (1999). By contrasting leaders' fundamentally different motivations in democracies with those in autocracies, the authors clearly demonstrate why democratic governments rather tend to meet citizens demands. Therefore, this also provides a starting point for investigating the political consequences after natural disasters in democracies.

Bueno de Mesquita et al. (1999) defined three sets of a country's population: the set of all citizens, citizens who have an institutional right to choose the leaders (selectorate) and those in the selectorate upon whom incumbents rely to uphold their power (winning coalition). In modern democracies, the selectorate is composed of citizens who have suffrage, and the winning coalition corresponds to the voters who are needed to win the election. In democracies, the winning coalition is composed of the majority of the selectorate and, thus, is usually larger than in autocratic systems.

Leaders have an incentive to gratify their winning coalition to sustain their power. The aim is to make sure that every member of the winning coalition sufficiently benefits in order to prefer the incumbent over a rival. In democratic countries, a large winning coalition must benefit for the leader to stay in power, while in autocracies, where the number of members of the winning coalition is usually smaller, to sustain power a leader must only realize specific benefits for a small subgroup and strike a certain balance of power between the most important rulers (Apolte, 2019). In larger winning coalitions, benefits must be allocated among more members, and, hence, the share for every member becomes smaller. Therefore, incumbents with larger winning coalitions can less easily guarantee the loyalty of their coalition by the provision of benefits. However, a large selectorate reduces a defector's chance of becoming a member of a new winning coalition, as the pool of available people to form a new winning coalition is large. Bueno de Mesquita et al. (1999) inferred that "Policy failure is not the dimension on which leaders are measured in systems with small winning coalitions [...]" (p. 154). They argued that the greater the winning coalition (and the smaller the selectorate), the greater is the incumbent's incentive to focus on good public policies (Bueno de Mesquita et al., 1999). Consequentially, the theory provided by Bueno de Mesquita et al. (1999) stresses that political failure and mismanaging serious disaster can have negative effects

for governments in democracies, where dissatisfaction and public criticism can lead to the loss of an election.

In contrast to systems with small winning coalitions and large selectorates, in democracies people not only turn to the government for help and accountability, but they also expect democratic governments to provide the desired public goods. This is especially important after natural disasters, as democratic governments are highly sensitive to disaster damages or casualties and, thus, will try to succeed in providing aid to members of their winning coalition or try to protect them in advance (Quiroz Flores & Smith, 2013).

Democratic countries are usually built with the objective of ensuring sovereignty of the people, including checks and balances that seek to limit and avoid abuse of power (Persson et al., 1997). Different institutions work to control and limit the power of single authorities (La Porta et al., 2004), such that institutions shape a government's possibilities for reacting to natural disasters and the accountability process and may also impede the provision of (often quickly required) aid in the aftermath of natural disasters (Kuipers & Brändström, 2020). Generally, the ability to provide aid presupposes sufficient availabili-ty of material and financial resources, i.e., governments with fewer resources may not be able to provide the desired aid.

Additionally, Hood (2011) pointed out that accountability can be shared or delegated to single members of a government or of a public administration in order to avoid negative consequences for the whole government. Likewise, governments that are formed by a coalition of two or more parties can try to blame their partners for mismanagement. Another opportunity to share accountability can be found in federal structures. Natural disasters usually do not affect a whole country and its population but rather hit a subpopulation in a city or county. As such, the accountability for disaster management can be shared between different levels of government, depending on institutional rules. In some countries, regional or local governments have the main responsibility for providing aid and taking on crisis management. However, national governments may have the option to support or intervene, leading to a situation in which different governmental levels may blame each other for mismanagement or the failure to help (Gasper & Reeves, 2011). In sum, while a government's chance to benefit from a disaster shock may decrease with the number of opponents who seek to disclose failure or impede the provision of aid, it may increase with the number of options to delegate accountability.

Another important factor in democracies is the media and the internet, as they are the channels through which the events themselves and the governmental and oppositional actions are transported to the public (Boin et al., 2009). Members of the media report on the events and may, in order to attract attention, focus more strongly on single, selected aspects. Thus, the media can shape citizens' perceptions of good or bad governmental crisis management (Kuipers & 't Hart, 2014; Kuipers & Brändström, 2020).

As the media spreads knowledge about the event, the way people perceive the government's crisis management is important not only for those directly affected by the natural disaster but also for those who hear about it but are not directly affected, as people may express concern and compassion for their fellow citizens. This, thereby, influences government approval in the whole country (Kuipers & 't Hart, 2014; Bytzek, 2008). One can infer that the more popular that the media reports on aspects of governmental work during a natural disaster are, the greater the likelihood that citizens' opinions about the government will be shaped, even though some citizens are not personally affected by the disaster.

Due to reporting, the media plays a further crucial rule. If one assumes that politicians seek to satisfy their winning coalition, politicians can leverage their reputation for good management and the provision of aid by especially focusing on problems that the media has identified as urgent and has presented to the public. Thus, the media can exert pressure on governments to react to certain problems rather than to others. Conversely, governments may prioritize problems that they know will attract greater attention by the media (Kuipers & Brändström, 2020). Therefore, the media not only shapes the discussion but also partly controls a government's actions (Besley & Burgess, 2002).

When considering the role of the media, further situational factors can make a significant difference for the question of whether a government is able to benefit from a natural disaster. First, the severeness of a natural disaster is highly relevant. The more damage it causes, the more media attention will be attracted. Further, a severe disaster will concern more people directly and will cause more attention where people are not directly affected. Second, the time frame of the disaster matters. Depending on the time of occurrence, other events that happen at the same time can distract attention (see, e.g., Eisensee & Strömberg, 2007), or, if nothing else happens, the media may highlight a smaller disaster in a way that makes it more important than it really is (Velez & Martin, 2013; Kuipers & Brändström, 2020).

3.2 The two main actors: governments and citizens

As argued, the institutional context in democracies defines citizens' and the government's sets of possible actions and perceptions after a natural disaster. However, a government's actions and the citizens' perceptions may critically impact the effect that a natural disaster has on a government's popularity and on whether a government gains or loses popularity after the disaster. Therefore, in the following I discuss those effects of governmental disaster reactions and citizens' perceptions of the governmental disaster management on governmental popularity.

3.2.1 The governmental crisis management

Governments in democratic systems work and act within the boundaries of the already described institutional settings. A severe natural disaster requires governments to assist citizens that belong to the winning coalition. This section focuses on the governmental motivations and theoretical options for disaster (re)actions. Several disaster management options are described, focusing on whether each would be expected to increase or decrease a government's popularity after a natural disaster.

Democratic leaders have several options for reacting to and dealing with a natural disaster. The most obvious and direct way to help in the aftermath of a severe disaster is an operational response (usually providing financial and material aid). Governments can provide aid for all concerned persons or, in case of limited resources, must decide to whom the aid shall be given. One simple way to provide aid would be to give it to the most affected citizens who are unable to pay for the damage on their own. In federal systems, national governments can give the aid to those states where the damage from the natural disaster is biggest or where it is too big to be covered by local governments alone. However, from an incumbent's point of view, the decision to support some subgroups may appear more beneficial than to support others. Downton & Pielke (2001) argued that factors beyond just the citizens' or a local government's general needs or capability to cope with the disaster circumstances are at play when determining who receives resources. Considering the situation in a democratic country as described in the previous chapter, a government that aims to be re-elected will try to benefit those who are likely to form their winning coalition (Bueno de Mesquita et al., 1999). In line with this reasoning, a government in power would most likely direct resources toward

electorally important groups, especially when a disaster happens in electorally important times (Downton & Pielke, 2001). In federal systems, for instance, when resources are given from a national to a local government, national governments may especially grant aid to electorally important states (Garrett & Sobel, 2003; Gasper & Reeves, 2010; Gasper & Reeves, 2011).

The principle-agent theory suggests that an additional factor matters when a government seeks to gain popularity after natural disasters. Governmental leaders can be understood as agents who are expected to act in the interest of the voters (the principals). However, incumbents may have interests other than their principals and usually have an advantage over them, as incumbents are in a better position to know their true resources and actions (Laffont & Martimort, 2002). Principals may know about this asymmetry of information and seek quality signals to assess the performance of their agents. Therefore, incumbents who aim to convince voters should signal their qualities in crisis management. However, the mere provision of aid is not necessarily equivalent to the best signaling methods. Therefore, governments must make sure that citizens learn about disaster reaction or provided aid programs and inform citizens about their operational reactions.

However, the provision of financial or material aid requires considerable resources that usually must be allocated wisely. Other, rather symbolic actions and rituals, such as energetically joining in the tasks of cleaning up houses or building dams after a flood, are less costly and save resources that the government can use elsewhere. When the incumbents manage to convince voters by mere symbolic actions, this may increase their chance of benefiting from the disaster. This is especially important when resources for providing operational aid are scarce or can only be provided by another level of government (Bytzek, 2008).

Symbolic reactions to a disaster are a valuable tool for incumbents for other reasons as well. For example, symbolic reactions may help sway citizens who are not directly affected by the disaster, as they face greater barriers to estimating the true amount of damage and aid provided than those who live in directly affected places, and unaffected people have little reason to become well informed about all the disaster details and the aid programs (H. A. Simon, 1972). Additionally, pictures of symbolic actions are spread more easily via media outlets than an overview of the provided financial aid. Moreover, the fraction of directly affected people is usually a lot smaller than the whole population with suffrage (Bytzek, 2008). Symbolic actions, like pictures with sleeves

rolled up, are more likely to demonstrate good management and reach a large share of a country's society. Moreover, such symbolic actions serve another important purpose: They demonstrate compassion for the victims and people-oriented leadership ('t Hart, 1993; Olson & Gawronski, 2010). Thinking of natural disasters as Maslowian shocks, incumbents use such symbolic actions during hard times to reassure and calm citizens ('t Hart, 1993; Boin & 't Hart, 2003).

Closely entwined with symbolic actions is targeted framing of the disaster or the governmental crisis management ('t Hart, 1993; de Vries, 2004; Brändström et al., 2008; Boin et al., 2009). When applying framing techniques, incumbents stress certain aspects of their work so that these aspects become more salient to the voters than other aspects that the incumbents may prefer to dismiss. Governments may frame the disaster by introducing new management benchmarks to their advantage, frame information so that it appears more positive or even hide possible prevention failures (Hood, 2011). It has long been known that framing and presentation strategies change impressions (Tversky & Kahneman, 1981). Framing strategies may, for instance, include positively connoted words "like 'comprehensive', 'generous', 'straightforward' and 'unbureaucratic' when it comes to describing the kind of aid given and the mode of its delivery" (Bytzek, 2008, p. 91).

As described above, political rivals in democratic countries will also try to frame the events to their own advantage, making it more likely that incumbents who win this framing contest will have greater chances of benefiting from the natural disaster.

When competing with political rivals, incumbents can make use of institutional features, as a severe natural disaster can affect incumbents at different governmental levels. Federal structures enable incumbents to shift responsibility (Hood, 2011) as well as to grant additional resources (Gasper & Reeves, 2011; Kuipers & Brändström, 2020). The rationale may work as follows: A disaster declaration, often used in the United States, can be announced, which allocates additional resources from the national to the state level. This may be beneficial for all governments in the country, as it increases the provision of aid (Gasper & Reeves, 2011). But, conversely, if the additional aid is not granted, a local government can blame higher governmental levels for the lack of support and may even use them as a scapegoat for further mismanagement. The same may happen even without the opportunity for granting additional resources when governments use federal systems to shift the accountability to other governmental levels or other institutions, regardless of whether they are factually or just putatively responsible. In order

to gain or preserve their own popularity, this behavior may help incumbents delegate their own accountability and negative aspects of their disaster management toward other institutions.

While many ways of reacting to a natural disaster may increase an incumbent's popularity, one thing that is almost completely out of the incumbents' control once the natural disaster has happened, and that can easily lead to a decrease in governmental popularity, is whether the government was (in-)sufficiently prepared for the disaster (Abney & Hill, 1966). While governments are clearly unable to prevent the occurrence of natural disasters like floods, storms or earthquakes, they may find themselves being responsible for the prevention and reduction of the damages caused by these disasters. A flood may cause less damage when a government has preemptively allocated resources to building levees and dams. A drought may be alleviated by anticipatory water policies. Therefore, if a natural disaster suddenly reveals the incumbents' insufficient prevention strategies and pre-disaster management failures, the government's starting position for convincing citizens of good crisis management during and after the disaster is worsened (Olson & Gawronski, 2010; Kuipers & 't Hart, 2014). This can be expected to reduce the government's chance of proving its qualities and of benefiting from the natural disaster (Boin et al., 2009). Considering the common phrase "there is no glory in prevention," one must consider that the incentives for governments to allocate resources to preventing rather rare events, as well as voters' low tendencies to reward such spending, encourage governments to prefer spending for disaster aid over spending for preparedness (Healy & Malhorta, 2009; C. Cohen & Werker, 2008). That holds true even if the overall costs of prevention would be lower than the cost of disaster aid.

Another factor that may decrease governmental popularity in the aftermath of a disaster is making mistakes in providing disaster aid. The provisions of financial and material aid, especially *quick* provision, is needed when people face severe damages, as this demonstrates good management skills (Brändström et al., 2008). By contrast, the longer a disaster lasts (without sufficient disaster aid), the more hitherto undiscovered or neglected drawbacks of incumbents' management become obvious to voters (Boin et al., 2008). Citizens will then tend to search for scapegoats (Boin & 't Hart, 2003), which may lead to a reduction of governmental popularity.

Using any of the disaster reactions mentioned above requires governmental and personal skills. In that sense, Olson & Gawronski (2010) highlighted five skills: first, the competence to know how to efficiently use the given resources; second, compassion to

demonstrate concern for the victims, which goes along with the third and fourth skills, namely correctness and credibility, which relate to the honesty and transparency of the aid while giving reliable information. The final skill on this list is anticipation, because an insufficient disaster preparation can backfire, as argued above. Boin & 't Hart (2003) additionally argued that a government during a natural disaster needs the ability to calm victims and concerned citizens and reassure them that the situation can be handled.

To sum up the theoretical propositions about the effects of governmental disaster management on governmental popularity, it can be expected an incumbent's popularity will increase by providing aid, especially toward electorally important groups, and successfully signaling the governmental work. Additionally, the use of symbolic actions, framing techniques or shifting accountabilities toward other institutions may increase governmental popularity. In contrast, governmental popularity may decrease as a result of prevention failures and delaying the provision of disaster aid.

3.2.2 Citizens' evaluation of the government

While a government can choose between different reactions to affect its popularity, some aspects on the citizens' side also affect whether a government finally gains or loses popularity after a natural disaster.

One has been mentioned above. The citizens must understand the natural disaster as a legitimate political variable (Abney & Hill, 1966; Barnhart, 1925), as it is relevant for a government whether citizens only assess the disaster as a result of higher forces or tend to see (or look for) human failure in every misfortune. In the latter case, citizens may blame their governments for the state of the world alone, regardless of how the government deals with the particular situation (Gasper & Reeves, 2011; Achen & Bartels, 2017). On the contrary, citizens may only base their evaluation of the government on the actual disaster management performance (Healy & Malhorta, 2009; Healy & Malhotra, 2010; Gasper & Reeves, 2011) and treat the environmental circumstances as unable to be influenced. Citizens' ways of acting and thinking may be somewhere in the middle, as the mere fact that one's living conditions have worsened may affect an individual's expectations toward the governmental disaster management or make people more prone to notice other governmental mistakes that happened unrelated to the natural disaster (Barnhart, 1925).

One can assume that those citizens who have suffered severe damage from a natural disaster are more likely to be less satisfied with the government, even more so when they see some governmental responsibility (Lay, 2009; Forgette et al., 2008). A citizen's assessment of the situation and the governmental crisis management will then be affected by the personally and directly suffered harm. Furthermore, victims with personal involvement in the catastrophe are not only worse off because of their decreased living conditions, but they will naturally have more knowledge about the damages and the true governmental support they receive, while unaffected people must rely on media information (Bytzek, 2008; H. A. Simon, 1972). This may imply that the greater the number of people who are affected seriously, the greater the number of people who will know about governmental mistakes if they occur (Forgette et al., 2008; Arceneaux & Stein, 2006).

According to the principle-agent theory, as mentioned above, the signaling of good governmental crisis management is crucial for the government's popularity. Of course, one can anticipate that the principals are aware that the agents are better informed about their resources and actions (Laffont & Martimort, 2002); therefore, citizens must be able to screen governmental actions, which can be done in different ways. Besides relying on media reporting, citizens' general knowledge about politics and accountability can additionally affect their evaluation of incumbents' management in disaster situations (Arceneaux & Stein, 2006). As argued before, incumbents can shift responsibilities, blame other actors and make use of federal structures. Citizens who understand the political system and true governmental responsibilities will find it easier to distinguish cheap talk from actual support and good management. Accordingly, greater political knowledge within society will force governments to focus on actual good management in order to benefit from the natural disaster.

Citizens who are not well informed about politics can draw conclusions about the quality of the governmental work based on heuristic information unrelated to the disaster (Tversky & Kahneman, 1974). A typical example of this is the reliance on party affiliation. Citizens may generally evaluate management by politicians and governments of their own or a close party as being better than management by a different party (G. L. Cohen, 2003; Rudolph, 2006). Some may also look at pre-crisis trust in and satisfaction with the governmental work in general, such that governments with greater pre-crisis support in society may have some advantage when it comes to managing a natural disaster (Boin et al., 2009).

Importantly, the citizen's satisfaction with a government or a government's popularity can be affected by anything at any time. In contrast, voting decisions are made at defined dates. Therefore, whether natural disasters affect voting decisions depends on the timing of an election after the disaster and the citizens' memories regarding the governmental crisis management. Minor management mistakes may be forgotten faster than big ones, but even bad mistakes may temporarily decrease a government's popularity but not impinge on the election result if an election happens several years after the disaster (Boin et al., 2009). Accordingly, the impact of a disaster and governmental disaster management on an election result – regardless of whether one thinks there was good or bad disaster management – may be stronger the closer the disaster occurred to election day, since the governmental actions will be more vivid in people's memories. Similarly, if natural disasters and bad management happen repeatedly, bad impressions of the government reiterate and manifest themselves, resulting in a greater likelihood of permanently losing popularity and votes (Ostrom & D. M. Simon, 1985; Lambert et al., 2010; Chowanietz, 2010).

In sum, it can be expected that due to the use of heuristics, incumbents that belong to parties with generally greater support among society may have an advantage in increasing and preserving their popularity after a natural disaster. In contrast, when more citizens are seriously affected by the disaster, more citizens will have knowledge about the true governmental disaster response and the provided aid. In that case, more management mistakes (if they happen) will be revealed and a government may not be able to increase its popularity by using cheap talk only. Additionally, the closer that the disaster and the management mistakes happen to an election, the greater the likelihood that the mistakes will not only decrease governmental popularity but may even decrease the incumbents' vote share.

4 Empirical findings

Up to now, this article has theoretically described the factors that may affect whether governments in democracies are able to benefit from a natural disaster. Now, I turn to empirical analyses of the nexus between government popularity and natural disasters, which is intended to portray the theoretical concepts about the consequences of natural disasters for democratic governments that are empirically supported.

4.1 Study selection criteria

The empirical studies that contribute to defining those factors that affect whether a government gains or loses popularity after a natural disaster are selected based on the criteria presented in the following sections.

The data availability and the usable analytical methods depend on when and where a natural disaster occurs. As natural disasters occur randomly, datasets and methods to analyze their consequences vary greatly. The popularity of a democratic government is usually measured in two ways: by election results or by approval rates. Citizens' approval for a government can be measured on a daily basis and is often measured weekly or monthly and, thus, data are often collected close to natural disaster events. Therefore, effects can be measured even if an election is not close (Albrecht, 2017). Popularity/satisfaction ratings, voting intentions, or trust measures are often used as indicators to display the current support for a government based on individual survey data (Albrecht, 2017; Arceneaux & Stein, 2006; Bytzek, 2008; Forgette et al., 2008; Lay, 2009; Nicholls & Picou, 2012). Results from studies that empirically investigate changes in those variables are therefore included in this overview.

This article also includes studies that analyze whether natural disasters and some of the discussed factors affect voting decisions. Therefore, empirical studies that look at a government's vote share in elections after a natural disaster are included. Such studies deal with the issues that elections are less frequent than approval polls. Further, some elections are held many months or even years after a natural disaster. However, these studies can reveal information about how long natural disasters and governmental crisis management are able to affect election results. Thus, they can add valuable information to studies that only focus on the effects of natural disasters on popularity.

This article only includes studies that investigate consequences of natural disasters in democratic countries, as it has already been elaborated that general democratic conditions alter both the scope of action for governments and the scope of evaluation for citizens. As the theoretical considerations showed, governments on all federal levels may be affected by a natural disaster, and the interaction of different governmental levels may change the effects. Therefore, the included studies take a look at single or several governmental levels in an affected country.

Studies that empirically analyze the consequences of natural disasters for governments usually look at disasters that caused severe or extremely severe damages. As the severeness of the disaster itself may impact the empirical findings, as argued before, all studies that analyze the described nexus are included, regardless of the damage the analyzed disaster caused. Moreover, only peer-reviewed articles and articles published after 2000 are included here, to look at studies that comply with a comparable and a more current scientific standard.

The review of the empirical findings allows for deeper insights in the empirically supported knowledge about the consequences of random and exogenous natural disasters. While such random events can provide valuable insights into modern politics, the analyses of such events come with some drawbacks. Some of those will be discussed later, but one aspect must be mentioned here, because it is relevant for both the interpretation and the comparison of the empirical studies. The randomness of a natural disaster forces researchers to use the data that is available by chance. Therefore, the effects of many random natural disasters around the globe are investigated by using varying datasets and methods, usually with varying time lags between the event and the collection of data, which limits comparison of the magnitude and longevity of disaster effects. Those dimensions of the results will only be discussed briefly. Rather, the systematic review allows for an overview of the empirical evidence for the presented, theoretically conceivable factors that can be expected to affect whether a government benefits from a natural disaster.

A list of all peer-reviewed and published studies that are discussed in the following sections can be found in the appendix.

4.2 General findings

As argued in the previous chapter, one can ask whether citizens generally blame politicians for a disaster and the state of the world. Therefore, before looking at the empirical findings regarding the effects of governmental disaster reactions and citizens' perceptions of the governmental work on incumbents' popularity in detail in chapter 4.3 and 4.4, it is interesting to see whether the empirical literature generally identifies significant effects of natural disasters and disaster damage on governmental popularity.

Various studies show significantly negative effects for incumbent governments. Nicholls & Picou (2012) showed that negative experiences with a disaster go along with lower trust in all levels of government. The authors analyzed the effects of Hurricane Katrina, which hit the United States in 2005. Using bivariate and correlation analyses, they concluded that various negative experiences with the storm, such as financial losses, the experience of damages and property losses and deaths among family members, are significantly correlated with low levels of political trust in the government. Similarly, Eriksson (2016) analyzed the effect of Storm Gudrun in 2005 on subsequent incumbent vote shares in parliamentary elections in Sweden using a difference-in-differences design. The findings suggest that the storm induced a significant drop of the vote shares for the incumbent national government in the affected regions. In conservative estimations, the effect amounted to an average 3.8 percentage point drop in vote share. Achen & Bartels (2017) supported this notion, showing that droughts and wet spells in the United States have had negative effects for incumbent presidents in elections throughout the 20th century. They estimated that extremely wet or dry weather can induce a loss of on average 1.5 percentage points of incumbent votes. Gasper & Reeves (2011) investigated the effects of extreme weather (damages in counties in the United States) on gubernatorial and presidential elections between 1970 and 2006 by using linear regression models. Generally, they found that incumbents of different governmental levels lose votes when severe weather damages occur, i.e., a disaster damage of about $1,950 per 10,000 citizens costs one percentage point of votes for the governor, while $20,000 per 10,000 voters can cost a president .25 percentage points of the vote share. Thereby, Gasper & Reeves (2011) showed that these citizens actually punish incumbents for the event and the worsened state of the world. Similar results were provided by Cole et al. (2012), who used panel data to analyze the effect of monsoon rains on incumbent vote shares in India from 1977 to 1999. The authors showed that voters generally punish the incumbents for weather events, whereby a decrease of one standard deviation of rainfall induces a vote decrease of 2.6 percent.

Yet, some empirical studies have found that natural disasters increase governmental popularity. Bechtel & Hainmueller (2011) showed that the national incumbent party (then SPD) benefited in flooded areas after the Elbe Flooding in Germany in 2002. The authors analyzed the incumbent's vote share by using the difference between flooded and not-flooded areas like a natural experiment, exploiting a difference-in-difference strategy, and found that the vote share for the incumbent party increased by 7 percentage points in affected areas in the national election that took place a few months after the disaster.

Similarly, Velez & Martin (2013) showed that Hurricane Sandy in the United States in 2012 increased the vote share for the incumbent president Barack Obama by about 4 percentage points in areas that were affected by Sandy. The authors exploited a natural experiment to estimate this effect.

One empirical study concluded that natural disasters hardly have any significant effect for governments. Albrecht (2017) analyzed the effects of ten natural disasters in Europe, exploiting a quasi-experimental setting by comparing respondents who answered survey questions before the disaster to those who answered the same questions after the disaster. The events happened between 2002 and 2012 and included storms, extreme temperature events or floods; the natural disasters were of national interest or at least major local interest. The author focused on effects on the satisfaction with national governments or trust in politicians at the national level. While political trust in this study design remained widely unaffected, the effects on government satisfaction were insignificant in most analyzed cases. The only two significant effects were found in the aftermath of two analyzed events that were not among the severest in the analyzed set of disasters, i.e., storms in the United Kingdom 2005 and cold snaps and floods in Germany in 2012. Both identified effects were positive for the national government.

To summarize this first overview, many empirical studies have found that natural disasters negatively affect governments' popularity (Nicholls & Picou, 2012; Eriksson, 2016; Gasper & Reeves, 2011; Achen & Bartels, 2017; Cole et al., 2012), but some also find completely opposing evidence, i.e., governmental popularity increased after a natural disaster (Bechtel & Hainmueller, 2011; Velez & Martin, 2013). One study hardly found any significant effects (Albrecht, 2017).

Considering the theoretical arguments, this mixture of findings it not surprising. Indeed, some studies have stressed that people blame governments for a disaster that is beyond the government's control (Gasper & Reeves, 2011; Achen & Bartels, 2017; Cole et al., 2012), but the theoretical expositions in chapter 3 have shown that governmental reactions and citizens' perceptions of governmental work may have an impact on the direction in which a disaster affects government popularity. As several studies have found positive and others negative effects, it is conceivable that in the study that did not identify significant effects, the positive and negative effects canceled each other out. Albrecht (2017) also stated that governmental reactions or the media reporting about the governmental disaster management may drive the varying effects. Similarly, other authors who have found positive or negative effects on governmental popularity have

mentioned that governmental reactions and citizens' perceptions need to be included to evaluate the direction of disaster effects on popularity. In her arguments, Eriksson (2016) linked the negative effect of a disaster on governmental popularity to a poor governmental disaster response. Bechtel & Hainmueller (2011), also argumentatively, linked their findings of positive effects of a natural disaster on governmental popularity to good disaster management in the form of massive aid provision.

Thus, those studies suggest that governments are not only blamed for an event beyond their control but that they may actually be able to affect whether they gain or lose popularity after the natural disaster. Several studies have empirically analyzed the concrete effects of governmental reactions and citizens' perceptions on governmental popularity after a natural disaster, as discussed in the previous theoretical chapters. Those studies' findings are discussed in detail in the following two sections.

4.3 The effects of governmental (re)actions

In the next section, I describe the empirical evidence regarding various governmental options for disaster reactions and their effect on a government's popularity. This discussion shall assess whether the theoretically discussed reactions increase or decrease a government's popularity.

The first general way a government can react after a natural disaster is to provide material and financial aid. Response and relief spending amounts have been directly investigated in empirical analyses by Healy & Malhorta (2009) and Cole et al. (2012). Healy & Malhorta (2009) analyzed the effects of relief spending on vote shares for incumbent presidents, taking into account relief spending in the United States from 1984 to 2004. The authors' results indicate that about $27,000 in relief spending wins an additional vote for the incumbent. Furthermore, Cole et al. (2012) showed that governments can mitigate the negative effects they face due to natural disasters by providing financial support. While not reacting to a natural disaster can lead to a vote share loss of 4.25 percentage points for the incumbent, incumbents that respond to the disaster by increasing their disaster aid only lose 3.75 percentage points of the vote share (Cole et al., 2012). Even though the authors stated that this effect is small and does not outweigh the negative effect of the natural disaster itself, they showed that voters reward the financial governmental reaction.

These findings are indirectly supported by Gasper & Reeves (2011), who showed that local governments that ask the President of the United States to grant additional financial resources by means of a so-called disaster declaration are rewarded by their voters. In their study, the governmental actions can even outweigh the negative effects of the disaster itself: While a natural disaster costs a governor about 1 percentage point of his or her vote share, a disaster declaration increases the governor's vote share by 4 percentage points. And even a request that is turned down increases a governors' vote share by 2.7 percentage points. If the president grants the resources, he is also rewarded: While a natural disaster costs a president .25 percentage points of the vote share, a disaster declaration brings him or her about .5 percentage points of the vote share, but a president is also punished if he denies assistance (which costs about 1 percentage point of the vote share). Forgette et al. (2008), who investigated government satisfaction levels after Hurricane Katrina in the United States in 2004, also found that storm victims attributed more blame to incumbents when they received less aid. Empirical studies have shown that relief spending is significantly more often directed to areas where incumbents had stronger support in the previous elections (Healy & Malhorta, 2009). Whether such allocation strategies are actually beneficial for governments has only been investigated in a not-yet peer-reviewed working paper (Chen, 2008). The author investigated the effects of relief spending in the hurricane season 2004 in the United States and concluded that relief spending in regions where the incumbent party was especially strong is more beneficial in terms of the vote share than in regions where oppositional parties were strong.

Besides studies on the mere provision of financial aid, studies have also empirically investigated the meaning of symbolic reactions. One empirical study directly aimed to determine whether information about operational reactions or symbolic reactions is more beneficial for governments. Bytzek (2008) investigated government popularity after the Elbe flooding in Germany in 2002 by means of time-series analyses. The author found that the reporting on operational actions (defined as, e.g., the building of dikes, evacuations or concrete financial aid) had little impact on national government popularity, even though this information was present in media reports about the flood. Media reporting about incumbents' symbolic actions (defined as, e.g., politicians' presence in concerned areas or promising financial aid), however, had stronger positive effects. Moreover, the author provided evidence that media reports on disaster victims and their fates and losses significantly reduced the incumbents' popularity. As Bytzek's (2008) results relate to the popularity of a national government after a local natural disaster, this study

provides important insights into the relevance of crisis communication for how unaffected people who learn about the event in the media evaluate the government. The author also investigated whether, besides the other described effects, the media's framing of the event matters for governmental popularity, but the author could not obtain a significant result.

Further evidence is provided in the sense that the use of institutional avenues matters for governments. The use of a disaster declaration, which goes along with the institutional financial support provided by another governmental level, also exhibits symbolic characteristics, as a local government turns to a higher administrative level to request assistance. Gasper & Reeves (2011) empirically demonstrated that governors that turn to the national government to ask for a disaster declaration benefit from this action. They found that the effects hold regardless of whether the request is successful, underlining the merely symbolic effect of this action, even though the reward, measured by the incumbent vote share, is bigger when the declaration is granted. Similar evidence has been provided by Healy & Malhotra (2010), who investigated electoral outcomes after a tornado incident in the United States and found that incumbents may win voters by making a disaster declaration but lose them in cases where no disaster declaration is made. Unfortunately, besides evidence of the effects of disaster declarations in the United States, no further empirical evidence exists regarding the beneficial effect of leaders making use of other institutional tools or the delegation of responsibility.

It has already been argued that governmental failures in preventing a disaster, especially those that have become more obvious due to a natural disaster, can reduce a government's popularity after a disaster. Arceneaux & Stein (2006) showed that citizens who hold politicians accountable for disaster prevention especially tend to punish those politicians more strongly for natural disasters. This contributes to the notion that governmental pre-disaster management mistakes can seriously backfire.

In sum, the empirical findings show not only that governments are blamed for an event beyond their control, but that the citizens also base their evaluations of the government on how well the government manages the disaster. Empirical evidence suggests that the direct provision of financial aid benefits governmental popularity, while only little direct evidence suggests that providing resources for members of one's own party especially increases governmental popularity. No study has yet considered the effect of delayed aid on governmental popularity. However, evidence does suggest that symbolic actions increase a government's popularity more strongly than operational actions. There is

also some evidence that failure to prevent a disaster can indeed decrease governmental popularity.

4.4 What matters for citizens' evaluation of disaster management

Here I describe the empirical evidence regarding various factors on the citizen level and their effect on a government's popularity after a natural disaster, with the aim of determining whether the theoretically discussed factors regarding citizens' perceptions of governmental disaster management increase or decrease a government's popularity.

Theoretical propositions have shown that citizens who are directly affected by a natural disaster likely perceive and evaluate the governmental disaster management differently than those who are unaffected, as they, e.g., have a greater incentive to be informed about aid programs. Arceneaux & Stein (2006) analyzed the effect of tropical storm Allison in Houston, Texas, in the US in 2001 and showed, using logit and multinomial logit regression models, that those living in areas hit hard by the storm rather tended to blame all levels of government. Further studies that include subjective damage measures, such as perceived damage, have shown that when individuals perceive there to be more damage, the government's popularity is affected negatively (Nicholls & Picou, 2012; Lay, 2009). Yet, Forgette et al. (2008) found little evidence that the individually perceived extent of damage increases dissatisfaction with the government, but they did show that those who lost their jobs due to the natural disaster were significantly less satisfied with their governments.

Above, I discussed whether relief spending in areas with strong support for the incumbent party is beneficial for incumbents. Empirical evidence at the citizen level indirectly contributes to this line of argument. Some empirical analyses stress that citizens tend to put less blame on leaders who belong to their preferred party. Malhotra & Kuo (2008) analyzed the consequences of Hurricane Katrina by conducting a survey experiment in which they manipulated information about politicians and provided it to their respondents. They found that citizens who got information about a politician's partisanship were significantly more likely to blame the politicians of their less preferred party. This party clue heuristic had a smaller impact on respondents for whom the natural disaster was personally important. This observation suggests that personal involvement reduces

the need for people to use heuristics for evaluating the government, as these citizens may be more aware of key facts and information. In line with that, findings by Forgette et al. (2008) and Gomez & Wilson (2008), who also investigated the consequences of Hurricane Katrina, and Arceneaux & Stein (2006), who analyzed the consequences of storm Allison in Houston 2001, support this partisanship bias in people's evaluation of governmental crisis management.

Lay (2009), using logistic regressions, added racial identity as an important factor for voting decisions in the aftermath of Hurricane Katrina. The author argued that the retrospective evaluations of disaster management mattered for vote intentions in an earlier phase of the campaign but were outweighed by racial identity at a later time. However, the author linked this finding to a highly racially polarized campaign in the later phase and special local conditions before the mayoral election. Meanwhile, the impact of race in the aftermath of natural disasters has not been supported by all empirical studies. While Arceneaux & Stein (2006) reported that those of the same ethnicity as the mayor tended to vote for him, two further studies found no such evidence, both of which investigated the effects of Hurricane Katrina with different data from polls conducted in 2006. Gomez & Wilson (2008) found no support for racial differences, and Forgette et al. (2008) showed that factors often associated with race, such as vulnerability, individual socioeconomic context and party identification, were more important for people's evaluations.

Because the need to rely on heuristics likely decreases with citizens' knowledge about politicians' roles and responsibilities, citizens with knowledge about politics should make more realistic judgements of the government's disaster management. As mentioned above, empirical evidence suggests that knowledge reduces the partisan bias in blame attribution (Malhotra & Kuo, 2008; Malhotra, 2008). Supporting this, Arceneaux & Stein (2006) showed that respondents who knew more about the responsibilities of different governmental levels were more likely to blame those politicians that were in fact responsible for flood preparations. This notion is empirically supported by Gomez & Wilson (2008) and Forgette et al. (2008). Their empirical findings at least indirectly provide evidence that shifting the responsibility for damages to other governmental levels or institutions only works if the net of true responsibilities is not transparent to citizens. Similarly, other symbolic actions or cheap talk may work especially well for incumbents when the true accountability structures and the incumbents' scope of operational actions are not fully understood by citizens.

In sum, empirical evidence indicates that governments have an advantage in increasing and preserving their popularity in areas where their own party is generally supported after a natural disaster. No such clear evidence has been found regarding race as heuristic tool. Other factors that have been theoretically suggested to serve as heuristics, such as general pre-disaster trust, have not yet been investigated empirically in this nexus. Empirical evidence also indicates that those who are hit hard by a disaster generally tend to blame incumbents. Additional evidence also suggests that knowledge on politics helps people to detect governmental management mistakes and distinguish cheap talk from the true provision of aid. Therefore, political knowledge among citizens likely reduces the government's ability to increase popularity by symbolic means or cheap talk only.

4.5 Sustainability of effects

So far, nothing has been said about the longevity of the described empirical findings. The presented studies that looked at various effects on government satisfaction and trust have used surveys or experiments that were conducted one to three years after the respective natural disaster (Nicholls & Picou, 2012; Malhotra & Kuo, 2008; Forgette et al., 2008; Gomez & Wilson, 2008). However, as all survey studies reminded the interviewed respondents of the natural disaster and its circumstances, i.e., the disaster is made (more) vivid in people's memories, one cannot derive sound information regarding the longevity of the presented effects. Bytzek (2008), who investigated a government's popularity depending on media reporting about the disaster shortly after the disaster and within the few days before the surveys, only provided evidence for such effects in the short run.

The most interesting question is how long natural disasters are able to affect vote choices. The study that investigates the electoral consequences of storm Sandy in affected counties in the United States in 2012 suggested that a short-term influence is possible (Velez & Martin, 2013). Further studies found that severe weather and disaster damages of only up to one year before an election can significantly affect incumbents' vote shares (Healy & Malhotra, 2010; Gasper & Reeves, 2011; Cole et al., 2012). Yet, Healy & Malhorta (2009) showed that governmental relief spending within three years before an election can significantly affect incumbents' vote shares. Regarding an even longer time frame, Bechtel & Hainmueller (2011) and Eriksson (2016) found that election effects can last up to nine years after a natural disaster. Specifically, Bechtel & Hainmueller

(2011) observed that the positive effects on incumbents' vote shares in flood-affected areas occurred three and even seven years after the disaster. Eriksson (2016) supported this, suggesting that negative effects may even impact elections up to nine years after the event.

All events that have been investigated by empirical studies with the objective of analyzing the effect of the natural disaster on governmental popularity have looked at severe natural disasters. Therefore, the presented studies do not allow for conclusions about the longevity of effects for smaller-scale disasters. Regardless, the presented studies show that governments need to expect that severe natural disasters and the governmental crisis management will not only have short-lived effects but may be able to affect elections up to nine years after an event.

5 Discussion and conclusion

This article addresses which factors affect whether a government in a democratic country gains or loses popularity after a natural disaster. How do various governmental disaster reactions affect whether a government gains or loses popularity, and how do citizens' perceptions alter the effects of the natural disaster and the governmental management on an incumbent's popularity? The review of theoretical propositions and empirical analyses suggests that operational reactions (e.g., the provision of financial aid) and symbolic reactions (e.g., politicians' presence in concerned areas) increase governmental popularity after a natural disaster. Empirical findings suggest that symbolic actions increase a government's popularity more strongly than operational reactions. Additionally, empirical studies also suggest that governments have an advantage in increasing and preserving their popularity in areas where their own party is generally supported. On the contrary, the theoretical and empirical literature suggests that disaster prevention failures can indeed backfire and decrease governmental popularity. Moreover, evidence shows that those who are seriously affected by the disaster generally rather tend to blame incumbents. Yet, knowledge on politics helps citizens detect governmental management mistakes as well as identify cheap talk. Thus, political knowledge among citizens reduces the government's ability to increase popularity by symbolic means or cheap talk only.

However, not all theoretical propositions are supported empirically. How severe must a disaster be to affect citizens' opinions about the government? And, as a natural disaster seldom affects a whole country, one can also ask what level of severeness of a regional

event is required such that the disaster affects the national government. Most of the published and presented analyses deal with popular major and severe natural disasters. No study has provided empirical evidence that allows one to predict what level of severeness causes significant effects and what level does not. Only Albrecht (2017) compared different natural disasters in a comparable analysis setting, but no clear correlation was found between the effects and the event's severeness. The most critical aspect here, one aspect that limits all disaster research, is the rarity of such extreme events. This limits the data availability and opportunities for more comprehensive empirical investigations. To investigate, e.g., the effect of events' gravities on governmental popularity requires homogenous survey or vote data as well as a homogenous measurement of events' gravities. This would allow for an analysis using identical methods to obtain results about the effects of various events' gravities on governmental popularity. This, however, is only possible when sufficient data is available. The same holds true for the analyzing repeated natural disasters with repeated management failures and their effects on incumbents.

One must also be aware of the relevance of the publication bias phenomenon, as one might expect that those studies showing empirically verifiable effects are published more often than studies that cannot observe significant effects for incumbents' popularity (Klomp & Valckx, 2014; Sutton, 2009). Such studies generally face greater barriers to being published, even though their empirical strategies may be sound. Such publication bias may lead to an over-estimation of the meaning of natural disasters in general.

Another limitation to analyzing natural disasters is the measurability of symbolic reactions. More detailed evidence about their effects on governmental popularity would be helpful, but operational and symbolic actions cannot be analyzed wholly on their own independently. Mere operational reactions can be presented using various framing means, which is hard to distinguish in empirical analyses. Moreover, the role of the media, the internet and their framing behavior after natural disasters deserve further analyses.

References

Abney, F. G., & Hill, L. B. (1966). Natural disasters as a political variable: The effect of a hurricane on an urban election. *American Political Science Review*, *60*(4), 974–981. https://doi.org/10.2307/1953770

Achen, C. H., & Bartels, L. M. (2017). Blind retrospection: Electoral responses to droughts, floods, and shark attacks. In C. H. Achen & L. M. Bartels (Eds.), *Democracy for realists: Why elections do not produce responsive government* (pp. 116–145). Princeton University Press. https://doi.org/10.1515/9781400888740-007

Albrecht, F. (2017). Government accountability and natural disasters: The impact of natural hazard events on political trust and satisfaction with governments in Europe. *Risk, Hazards & Crisis in Public Policy*, *8*(4), 381–410. https://doi.org/10.1002/rhc3.12122

Apolte, T. (2019). *Der Mythos der Revolution*. Springer. https://doi.org/10.1007/978-3-658-27939-4

Arce, M. E., & Carrión, J. F. (2010). Presidential support in a context of crisis and recovery in Peru, 1985-2008. *Journal of Politics in Latin America*, *2*(1), 31–51. https://doi.org/10.1177/1866802x1000200102

Arceneaux, K., & Stein, R. M. (2006). Who is held responsible when disaster strikes? The attribution of responsibility for a natural disaster in an urban election. *Journal of Urban Affairs*, *28*(1), 43–53. https://doi.org/10.1111/j.0735-2166.2006.00258.x

Bali, V. (2007). Terror and elections: Lessons from Spain. *Electoral Studies*, *26*, 669–687. https://doi.org/10.1016/j.electstud.2007.04.004

Barnhart, J. D. (1925). Rainfall and the populist party in Nebraska. *American Political Science Review*, *19*(3), 527–540. https://doi.org/10.2307/2939131

Bechtel, M. M., & Hainmueller, J. (2011). How lasting is voter gratitude? An analysis of the short- and long-term electoral returns to beneficial policy. *American Journal of Political Science*, *55*(4), 851–867. https://doi.org/10.1111/j.1540-5907.2011.00533.x

Besley, T., & Burgess, R. (2002). The political economy of government responsiveness: Theory and evidence from India. *The Quarterly Journal of Economics*, *117*(4), 1415–1451. https://doi.org/10.2139/ssrn.319012

Birkland, T. A. (2006). *Lessons of disaster. Policy change after catastrophic events*. Georgetown University Press. https://www.jstor.org/stable/j.ctt2tt2sn

Boin, A.,, McConnell, A., & 't Hart, P. (2008). Governing after crisis. In A. Boin, A. McConnell, & P. 't Hart (Eds.), *Governing after crisis* (pp. 3–30). Cambridge University Press. https://doi.org/10.1017/CBO9780511756122

Boin, A., & 't Hart, P. (2003). Public leadership in times of crisis: Mission impossible? *Public Administration Review*, *63*(5), 544–553. https://doi.org/10.1111/1540-6210.00318

Boin, A.,, 't Hart, P., & McConnell, A. (2009). Crisis exploitation: Political and policy impacts of framing contests. *Journal of European Public Policy*, *16*(1), 81–106. https://doi.org/10.1080/13501760802453221

Brändström, A.,, Kuipers, S., & Daléus, P. (2008). The politics of tsunami responses: Comparing patterns of blame management in Scandinavia. In A. Boin, A. McConnell, & P. 't Hart (Eds.), *Governing after crisis* (pp. 114–147). Cambridge University Press. https://doi.org/10.1017/CBO9780511756122

Bueno de Mesquita, B.,, Morrow, J. D.,, Siverson, R. M., & Smith, A. (1999). Policy failure and political survival: The contribution of political institutions. *Journal of Conflict Resolut*, *43*(2), 147–161. https://doi.org/10.1177/0022002799043002002

Bytzek, E. (2008). Flood response and political survival: Gerhard Schröder and the 2002 Elbe flood in Germany. In A. Boin, A. McConnell, & P. 't Hart (Eds.), *Governing after crisis* (pp. 85–113). Cambridge University Press. https://doi.org/10.1017/CBO9780511756122

Chatagnier, J. T. (2012). The effect of trust in government on rallies 'round the flag. *Journal of Peace Research*, *49*(5), 631–645. https://doi.org/10.1177/0022343312440808

Chen, J. (2008). Buying votes with public funds in the US presidential election: Are swing or core voters easier to buy off? *Stanford University. Working Paper.*

Chowanietz, C. (2010). Rallying around the flag or railing against the government? Political parties' reactions to terrorist acts. *Party Politics*, *17*(5), 673–698. https://doi.org/10.1177/1354068809346073

Cohen, C., & Werker, E. D. (2008). The political economy of "natural" disasters. *Journal of Conflict Resolution*, *52*(6), 795–819. https://doi.org/10.1177/0022002708322157

Cohen, G. L. (2003). Party over policy: The dominating impact of group influence on political beliefs. *Journal of Personality and Social Psychology*, *85*(5), 808–822. https://doi.org/10.1037/0022-3514.85.5.808

Cole, S.,, Healy, A., & Werker, E. D. (2012). Do voters demand responsive governments? Evidence from Indian disaster relief. *Journal of Development Economics*, *97*(2), 167–181. https://doi.org/10.1016/j.jdeveco.2011.05.005

de Vries, M. S. (2004). Framing crises: Response patterns to explosionsin fireworks factories. *36*(5), 594–614. https://doi.org/10.1177/0095399704268622

Downton, M. W., & Pielke, R. A. (2001). Discretion without accountability: Politics, flood damage, and climate. *Natural Hazards Review*, *2*, 157–166. https://doi.org/10.1061/(ASCE)1527-6988(2001)2:4(157)

Eisensee, T., & Strömberg, D. (2007). News droughts, news floods, and U.S. disaster relief. *The Quarterly Journal of Economics*, *122*(2), 693–728. https://doi.org/10.1162/qjec.122.2.693

Eriksson, L. M. (2016). Winds of change: Voter blame and storm Gudrun in the 2006 Swedish parliamentary election. *Electoral Studies*, *41*, 129–142. https://doi.org/10.1016/j.electstud.2015.12.003

Forgette, R.,, King, M., & Dettrey, B. (2008). Race, Hurricane Katrina, and government satisfaction: Examining the role of race in assessing blame. *Publius: The Journal of Federalism*, *38*(4), 671–691. https://doi.org/10.1093/publius/pjn017

Garrett, T. A., & Sobel, R. S. (2003). The political economy of FEMA disaster payments. *Economic Inquiry*, *41*(3), 496–509. https://doi.org/10.1093/ei/cbg023

Gasper, J. T., & Reeves, A. (2010). Governors as opportunists: Evidence from disaster declaration. *APSA 2010 Annual Meeting Paper*. Retrieved October 12, 2021, from https://ssrn.com/abstract=1642672

Gasper, J. T., & Reeves, A. (2011). Make it rain? Retrospection and the attentive electorate in the context of natural disasters. *American Journal of Political Science*, *55*(2), 340–355. https://doi.org/10.1111/j.1540-5907.2010.00503.x

Gomez, B. T., & Wilson, J. M. (2008). Political sophistication and attributions of blame in the wake of Hurricane Katrina. *Publius: The Journal of Federalism*, *38*(4), 633–650. https://doi.org/10.1093/publius/pjn016

Healy, A., & Malhorta, N. (2009). Myopic voters and natural disaster policy. *American Political Science Review*, *103*(3), 387–406. https://doi.org/10.1017/S0003055409990104

Healy, A., & Malhotra, N. (2010). Random events, economic losses, and retrospective voting: Implications for democratic competence. *Quarterly Journal of Political Science*, *5*(2), 193–208. https://doi.org/10.1561/100.00009057

Hood, C. (2011). *The blame game: Spin, bureaucracy, and self-preservation in government*. Princeton University Press.

Klomp, J., & Valckx, K. (2014). Natural disasters and economic growth: A meta-analysis. *Global Environmental Change*, *26*, 183–195. https://doi.org/10.1016/j.gloenvcha.2014.02.006

Kuipers, S., & Brändström, A. (2020). Accountability and blame avoidance after crises. In *Oxford research encyclopaedia of politics*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190228637.013.1498

Kuipers, S., & 't Hart, P. (2014). Accounting for crises. In M. Bovens, R. Goodin, & T. Schillemans (Eds.), *The oxford handbook of public accountability* (pp. 589–602). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199641253.013.0006

La Porta, R.,, López-de-Silanes, F.,, Pop-Eleches, C., & Shleifer, A. (2004). Judicial checks and balances. *Journal of Political Economy*, *112*(2), 445–470. https://doi.org/10.2139/ssrn.410821

Laffont, J.-J., & Martimort, D. (2002). *The theory of incentives: The principal-agent model*. Princeton University Press. https://doi.org/10.2307/j.ctv7h0rwr

Lambert, A. J.,, Scherer, L. D.,, Schott, J. P.,, Olson, K. R.,, Andrews, R. K.,, O'Brien, T. C., & Zisser, A. R. (2010). Rally effects, threat, and attitude change: An integrative approach to understanding the role of emotion. *Journal of Personality and Social Psychology*, *98*(6), 886–903. https://doi.org/10.1037/a0019086

Lay, J. C. (2009). Race, retrospective voting, and disasters. *Urban Affairs Review*, *44*(5), 645–662. https://doi.org/10.1177/1078087408326900

Malhotra, N. (2008). Partisan polarization and blame attribution in a federal system: The case of Hurricane Katrina. *Publius: The Journal of Federalism*, *38*(4), 651–670. https://doi.org/10.1093/publius/pjn018

Malhotra, N., & Kuo, A. G. (2008). Attributing blame: The public's response to Hurricane Katrina. *The Journal of Politics*, *70*(1), 120–135. https://doi.org/10.1017/s0022381607080097

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, *50*(4), 370–396. https://doi.org/10.1037/h0054346

Miller, R. C. (1925). The background of populism in Kansas. *The Mississippi Valley Historical Review*, *11*(4), 469–489. https://doi.org/10.2307/1895909

Mueller, J. E. (1970). Presidential popularity from Truman to Johnson. *American Political Science Review*, *64*(1), 18–34. https://doi.org/10.2307/1955610

Nicholls, K., & Picou, J. S. (2012). The impact of Hurricane Katrina on trust in government. *Social Science Quarterly*, *94*(2), 344–361. https://doi.org/10.1111/j.1540-6237.2012.00932.x

Olson, R. S., & Gawronski, V. T. (2010). From disaster event to political crisis: A "5C+A" framework for analysis. *International Studies Perspectives*, *11*(3), 205–221. https://doi.org/10.1111/j.1528-3585.2010.00404.x

Ostrom, C. W., & Simon, D. M. (1985). Promise and performance: A dynamic model of presidential popularity. *American Political Science Review*, *79*(2), 334–358. https://doi.org/10.2307/1956653

Park, J., & Bali, V. (2017). International terrorism and the politcal survival of leaders. *Journal of Conflict Resolution*, *61*(7), 1343–1370. https://doi.org/10.1177/0022002715613139

Persson, T.,, Roland, G., & Tabellini, G. (1997). Separation of powers and political accounatability. *The Quarterly Journal of Economics*, *112*(4), 1163–1202. https://doi.org/10.1162/003355300555457

Preston, T. (2008). Weathering the politics of responsibility and blame: The Bush administration and its response to Hurricane Katrina. In A. Boin, A. McConnell, & P. 't Hart (Eds.), *Governing after crisis* (pp. 33–61). Cambridge University Press. https://doi.org/10.1017/CBO9780511756122

Quiroz Flores, A., & Smith, A. (2013). Leader survival and natural disasters. *British Journal of Political Science*, *43*(4), 821–843. https://doi.org/10.1017/s0007123412000609

Rudolph, T. J. (2003). Who's responsible for the economy? The formation and consequences of responsibility attributions. *American Journal of Political Science*, *47*(4), 698–713. https://doi.org/10.1111/1540-5907.00049

Rudolph, T. J. (2006). Triangulating political responsibility: The motivated formation of responsibility judgments. *Political Psychology*, *27*(1), 99–122. https://doi.org/10.1111/j.1467-9221.2006.00451.x

Schmitter, P. C., & Karl, T. L. (1991). What democracy is ... and is not. *Journal of Democracy*, *2*(3), 75–88. https://doi.org/10.1353/jod.1991.0033

Simon, H. A. (1972). Theories of bounded rationality. In C. B. McGuire & R. Radner (Eds.), *Decision and organization* (pp. 161–176). North Holland Publishing Company.

Sutton, A. J. (2009). Publication bias. In H. Cooper, L. v. Hedges, & J. C. Valentine (Eds.), *The handbook of research synthesis and meta-analysis* (pp. 435–452). Russell Sage Foundation.

't Hart, P. (1993). Symbols, rituals and power: The lost dimensions of crisis management. *Journal of Contingencies and Crisis Management*, *1*(1), 36–50. https://doi.org/10.1111/j.1468-5973.1993.tb00005.x

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, *185*(4157), 1124–1131. https://doi.org/10.1126/science.185.4157.1124

Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, *211*(4481), 453–458. https://doi.org/10.1126/science.7455683

Velez, Y., & Martin, D. (2013). Sandy the rainmaker: The electoral impact of a super storm. *PS: Political Science & Politics*, *46*(2), 313–323. https://doi.org/10.1017/S1049096513000139

Appendix

Table I: Overview: peer-reviewed and published studies that are included in the review

Author, year	Event, country, year	Dependent variable	Main explanatory variables (effects)
Achen & Bartels (2017)	Droughts and floods, United States, 1900 to 2000	Incumbent vote share	Drought index (-)
Albrecht (2017)	Ten extreme weather events in Europe, 2002 to 2012	Political trust, government satisfaction	Before and after the events (largely no effects)
Arceneaux & Stein (2006)	Storm Allison, United States, 2001	Vote preferences for mayor and responsibility attribution	Vote preferences: attribution of responsibility (-), same party (+), same ethnicity (also black) (+), responsibility attribution: knowledge about responsibility (blame of truly responsible persons), perceived personal damage (+)
Bechtel & Hainmueller (2011)	Elbe Flooding, Germany, 2002	Incumbent vote share	Affected (+) vs. unaffected areas
Bytzek (2008)	Elbe Flooding, Germany, 2002	(National) government popularity	Media reporting about operational actions (small +), media reporting about symbols (great +), framing by the media (none), dramatic media reporting about suffering people (-)
Cole et al. (2012)	Rainfall in India, 1977 to 1999	Incumbent vote share	Rainfall (-), relief expenditure (+)
Eriksson (2016)	Storm Gudrun, Sweden, 2005	Incumbent vote share (in parliamentary elections)	Local wind speed (-)
Forgette et al. (2008)	Hurricane Katrina, United States, 2005	Satisfaction with incumbents	Perceived extent of damage (-), job loss due to Hurricane (-), received aid (+), same party (+), same ethnicity (none)

Gasper & Reeves (2011)	Extreme weather damage, United States, 1970 to 2006	Gubernatorial and presidential incumbent vote share	Both: Weather damage (-), granting of disaster declaration (+), gubernatorial: request for disaster declaration (+), presidential: turn down of disaster declaration (-)
Gomez & Wilson (2008)	Hurricane Katrina, United States, 2005	Blame attribution	Same party (-), same ethnicity (none), political sophistication (blame of truly responsible persons)
Healy & Malhorta (2009)	Disaster damages, United States, 1988 to 2004	Presidential incumbent vote share	Damage (none), relief spending (+)
Healy & Malhotra (2010)	Tornado damage, United States, 1989 to 2004	Presidential incumbent vote share	Disaster declaration (+), no disaster declaration (-)
Lay (2009)	Hurricane Katrina, United States, 2005	Vote intentions for mayor	Perceived personal damage (-), same ethnicity (+), positive evaluation of crisis management (+)
Malhotra (2008)	Hurricane Katrina, United States, 2005	Blame of government officials	Information about officials' job titles is used to change the attribution of blame in the same direction, even if respondents belong to opposing parties
Malhotra & Kuo (2008)	Hurricane Katrina, United States, 2005	Blame of incumbent officials	Different partisanship (+, knowledge of true responsibility and being directly concerned reduce effect)
Nicholls & Picou (2012)	Hurricane Katrina, United States, 2005	Political trust in the government	Negative experience with the hurricane (-), only correlation analyses
Velez & Martin (2013)	Storm Sandy, United States, 2012	Incumbent vote share	Affected (+) vs. unaffected areas

Center for Interdisciplinary Economics
Discussion Papers

DP-CIW 1/2011: Die Gemeinschaft der Lehrenden und Lernenden: Festvortrag zur Promotionsfeier der Wirtschaftswissenschaftlichen Fakultät am 24. November 2010 in der Aula des Schlosses
Alexander Dilger
January 2011

DP-CIW 2/2011: Plädoyer für eine problemorientierte, lerntheoretisch und fachlich fundierte ökonomische Bildung
Gerd-Jan Krol, Dirk Loerwald und Christian Müller
February 2011

DP-CIW 3/2011: Gefangen im Dilemma? Ein strategischer Ansatz der Wahl und Revolutionsteilnahme
Marie Möller
April 2011

DP-CIW 4/2011: Overconfidence and Team-Performance: An Analysis of NBA-Players' Self-Perception
Hannah Geyer, Hanke Wickhorst
April 2011

DP-CIW 5/2011: Kompetenzziele für das allgemein bildende Fach „Wirtschaft/ Ökonomie" in der Sekundarstufe I
AGOEB – Arbeitsgruppe Ökonomische Bildung
May 2011

DP-CIW 6/2011: Coping with Unpleasant Surprises in a Complex World: Is Rational Choice Possible in a World with Positive Information Costs?
Roger D. Congleton
June 2011

DP-CIW 7/2011: Warum der Baseler Ausschuss für Bankenaufsicht mit seinem antizyklischen Kapitalpuffer falsch liegt
Björn Ludwig
July 2011

DP-CIW 8/2011: Bestimmungsgründe für die Beschäftigung und Rekrutierung von Älteren sowie für das Angebot an altersspezifischen Personalmaßnahmen
Christian Lehmann
August 2011

DP-CIW 9/2011: Das „Bruttonationalglück" als Leitlinie der Politik in Bhutan - eine ordnungspolitische Analyse
Tobias Pfaff
September 2011

DP-CIW 10/2011: Economic Voting and Economic Revolutionizing? The Economics of Incumbency Changes in European Democracies and Revolutionary Events in the Arab World
Marie Möller
October 2011

DP-CIW 11/2011: Geschlechtsspezifische Verdienstunterschiede und Diskriminierung am Arbeitsmarkt
Nele Franz
November 2011

DP-CIW 1/2012: Toward a More General Approach to Political Stability in Comparative Political Systems
Thomas Apolte
January 2012

DP-CIW 2/2012: An Empirical Study of the Limits and Perspectives of Institutional Transfers
Marie Möller
February 2012

DP-CIW 3/2012: Wie (un-) fair sind Ökonomen? Neue empirische Evidenz zur Marktbewertung und Rationalität
René Ruske, Johannes Suttner
September 2012

DP-CIW 1/2013: Zur Ethik von Rankings im Hochschulwesen
Eine Betrachtung aus ökonomischer Perspektive
Harry Müller
February 2013

DP-CIW 2/2013: Which Qualifications Does a Minister of the German Federal Government Need to Be Reoccupied?
Katrin Scharfenkamp
March 2013

DP-CIW 3/2013: Unkonventionelle Geldpolitik – Warum die Europäische Zentralbank ihre Unabhängigkeit nicht verloren hat
Carsten Schwäbe
March 2013

DP-CIW 4/2013: Testing the Easterlin Hypothesis with Panel Data: The Dynamic Relationship Between Life Satisfaction and Economic Growth in Germany and in the UK
Tobias Pfaff, Johannes Hirata
April 2013

DP-CIW 5/2013: Income Comparisons, Income Adaptation, and Life Satisfaction: How Robust Are Estimates from Survey Data?
Tobias Pfaff
May 2013

DP-CIW 6/2013: The Supply of Democracy: Explaining Voluntary Democratic Transition
Thomas Apolte
October 2013

DP-CIW 1/2014: Maternity Leave and its Consequences for Subsequent Careers in Germany
Nele Franz
January 2014

DP-CIW 2/2014: Youth Bulges, Insurrections, and Politico-Economic Institutions
Thomas Apolte
February 2014

DP-CIW 3/2014: Sensitivity of Economists during Market Allocation
Johannes R. Suttner
March 2014

DP-CIW 1/2015: Abused Rebels and Winning Coalitions: Regime Change under the Pressure of Rebellions
Thomas Apolte
February 2015

DP-CIW 2/2015: Gordon Tullock's Theory of Dictatorship and Revolution
Thomas Apolte
March 2015

DP-CIW 3/2015: Youth Bulges, Insurrections, and Politico-Economic Institutions: Theory and Empirical Evidence
Thomas Apolte, Lena Gerling
March 2015

DP-CIW 4/2015: Überschätzen sich Schüler?
Fabian Schleithoff
August 2015

DP-CIW 5/2015: Autocracy and the Public
Thomas Apolte
September 2015

DP-CIW 6/2015: Social Market Economy: Towards a Comprehensive Composite Index
Helena Helfer
October 2015

DP-CIW 1/2017: I Hope I Die Before I Get Old: The Supply Side of the Market for Suicide Bombers
Thomas Apolte
January 2017

DP-CIW 2/2017: Riots and the Window of Opportunity for Coup Plotters: Evidence on the Link between Urban Protests and Coups d'État
Lena Gerling
January 2017

DP-CIW 3/2017: Minimum Wages and Vocational Training Incentives in Germany
Kim Leonie Kellermann
February 2017

DP-CIW 4/2017: Political Participation and Party Capture in a Dualized Economy: A Game Theory Approach
Kim Leonie Kellermann
August 2017

DP-CIW 1/2018: A Theory of Autocratic Transition
Thomas Apolte
January 2018

DP-CIW 2/2018: Fiscal Disparity, Institutions and Yardstick Competition
Alfa Farah
April 2018

DP-CIW 3/2018: Radioinactive: Are nuclear power plant outages in France contagious to the German electricity price?
Sonja Rinne
May 2018

DP-CIW 4/2018: An Empirical Investigation on the Distributional Impact of Network Charges in Germany
Lisa Schlesewsky, Simon Winter
June 2018

DP-CIW 5/2018: Immigration and Anti-Immigrant Sentiments – Evidence from the 2017 German Parliamentary Election
Kim Leonie Kellermann, Simon Winter
December 2018

DP-CIW 5/2018 Immigration and Anti-Immigrant Sentiments – Evidence from the 2017 German Parliamentary Election
Kim Leonie Kellermann, Simon Winter
December 2018

DP-CIW 6/2018: You failed! Government Satisfaction and Party Preferences Facing Islamist Terrorism
Anna Nowak
December 2018

DP-CIW 1/2019: The Dynamics of Political Myths and Ideologies
Julia Müller, Thomas Apolte
April 2019

DP-CIW 2/2019: Winning a District Election in a Clientelistic Society: Evidence from Decentralized Indonesia
Alfa Farah
September 2019

DP-CIW 3/2019: The Impact of Election Information Shocks on Populist Party Preferences: Evidence from Germany
Lena Gerling, Kim Leonie Kellermann
September 2019

DP-CIW 4/2019: Fiscal Decentralization and Electoral Participation: Analyzing Districts in Indonesia
Alfa Farah
October 2019

DP-CIW 5/2019: Rally Around the EU Flag! Supra-Nationalism in the Light of Islamist Terrorism
Anna Nowak
November 2019

DP-CIW 1/2020: Why so negative? Negative party positioning in spatial models of voting
Felix Hoch, Kim Leonie Kellermann
November 2020

DP-CIW 1/2021: Die Konjunkturreagibilität öffentlicher Investitionen am Beispiel der deutschen Schuldenbremse
Isabel Boldrick
October 2020

DP-CIW 2/2021: Die Pandemie verschiebt die Dringlichkeiten in der Infrastrukturpolitik
Anna Kindsmüller
January 2021

DP-CIW 3/2021: Trust we lost: The Treuhand experience and political behavior in the former German Democratic Republic
Kim Leonie Kellermann
February 2021

DP-CIW 4/2021: Building Bridges: Bilateral Manager Connections an International Trade
Felix Hoch, Jonas Rudsinske
December 2021

DP-CIW 1/2022: A chance to win or lose it all? A systematic literature review on the consequences of natural disasters for governments
Anna Kindsmüller
May 2022

Herausgeber:
Westfälische Wilhelms-Universität Münster
CIW – Centrum für Interdisziplinäre Wirtschaftsforschung
Scharnhorststr. 100
D-48151 Münster

Tel: +49-251/83-25329
Fax: +49-251/83-28429

www.wiwi.uni-muenster.de/ciw