



# Public opinion change after the Fukushima nuclear accident: The role of national context revisited



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## ABSTRACT

This study explores how national context moderated change in support for nuclear energy after the Fukushima accident. The following national contextual variables are tested: geographical distance, nuclear energy production status, freedom of the press, and the building of new nuclear reactors. The results illustrate that previous research has misunderstood the moderating role of national context on opinion change after the Fukushima accident. A survey conducted shortly after the accident with more than 23,000 respondents from 41 countries has shown that geographical distance from the accident mattered: Contradicting a previous study, the decrease in support for nuclear energy was stronger in countries closer to Fukushima. In addition, support for nuclear energy decreased more in countries where new nuclear reactors were under construction. The country's nuclear energy production status and press freedom did not determine opinion change after the Fukushima accident. The non-effect of freedom of the press on opinion change contradicts the role of media after a focusing event as described in the literature. Overall results demonstrate a limited effect of national context on opinion change following a focusing event. Hence, national context provides only limited information to policy makers on how to respond to a nuclear accident.

## 1. Introduction

Public opinion is affected by focusing events (Page and Shapiro, 1992). These are events that are “sudden, relatively rare, that can reasonably be defined as harmful [...] and that are known to policy makers and the public virtually simultaneously” (Birkland, 1997). Nuclear accidents are typical examples. Previous research has shown that focusing events play an important role in the political process because they have the capacity to direct public attention towards a specific issue (Baumgartner and Jones, 1991) and can cause a change in policy support on the issue (Page and Shapiro, 1992). In this paper, emphasis is on change in public opinion after the Fukushima nuclear accident, which started on March 11, 2011 when the Fukushima nuclear power plant was hit by a tsunami, caused by a major seaquake. Fukushima reminded the world again of the major risk inherent in nuclear energy production.

Public opinion studies conducted after Fukushima show that in most countries, support for nuclear energy decreased shortly after the accident. A decrease in support was observed not only in Japan (Poortinga et al., 2013), but also in countries such as Switzerland (Siegrist and Visschers, 2013), Belgium (Perko et al., 2012) and Italy

(Prati and Zani, 2013). Yet in other countries, such as the UK, no drastic change occurred (Jones et al., 2016). To understand these cross-national differences in public opinion change, contextual factors should be taken into account.

Bishop (2014) has shown that opinion change after a focusing event is moderated by context. His research has shown that the Deepwater Horizon oil spill induced self-interested responses from people living in communities whose economies were affected by the event. A moderating effect of context can also be expected after a nuclear accident. However, only few studies looked at the effect of national context on public opinion change about nuclear energy. Focus on national context is most relevant, as nuclear energy policy decisions are mostly made at the national level. In this case, national context seems to have affected public opinion both before (Pampel, 2011) and after the accident (Kubota, 2012). To our knowledge, only Kim et al. (2013) have conducted a comparative study on change after Fukushima, filling an important gap in the literature. Their results have shown that national context did indeed moderate change caused by the accident, meaning that the strength of the event's effect on public support for nuclear energy was determined by national contextual factors. Contrary to expectation, they found that support for nuclear energy decreased more

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if distance to the accident was greater. The impact of the accident was higher, when freedom of the press was more limited. A higher share of nuclear energy in the energy mix, on the other hand, reduced the negative impact of the accident on support for nuclear energy. This paper follows up on these findings to further refine current understanding of the effect of national context on public opinion after the Fukushima nuclear accident.

To study change in public support after Fukushima, the Win Gallup Snap Poll is used. This is the same data as used by Kim et al. (2013). Data were collected shortly after the Fukushima accident in over 40 countries. The aim of this study is twofold. The first aim is to test the robustness of the results of Kim et al. (2013) when more appropriate multilevel models are used to test the effect of distance, nuclear status (i.e., whether a country was nuclear active and what the share of nuclear energy was in the energy mix). This paper shows that Kim et al. (2013) overstated the importance of the national contextual factors as explanations for cross-national differences in public opinion change after the Fukushima accident. Of the contextual factors mentioned, only geographical distance from the accident significantly affected public opinion change: increasing distance reduced the effect of the focusing event on public opinion. The second aim of this study is to test the role of nuclear new build – whether a country was building new nuclear power plants – as moderator of public opinion change after the accident. This indicator is used as a proxy for the salience – i.e. relative importance – of the pre-Fukushima debate on nuclear energy. Results showed that new build had a significant and negative effect, which means it amplified the decrease in public support. Hence, policy makers should not overstate the relevance of national context when assessing opinion change following a focusing event.

## 2. Theoretical background

Previous research has demonstrated that focusing events affect the policy process (Birkland and DeYoung, 2013; Wittneben, 2012). Most research on focusing events has investigated their capacity to alter the political agenda and to initiate policy change (Baumgartner and Jones, 1993; Sabatier and Jenkins-Smith, 1999). Scholarly perceptions differ on how a focusing event affects the political process; however, they agree that such events guide attention towards a particular problem. Focusing events affect both political attention and public opinion with regard to an issue.

There has been a debate in the literature about whether public opinion is capricious or rational. Page and Shapiro (1992) have argued that public opinion is collectively rational, as aggregate public opinion is meaningful, generally stable, and forms coherent patterns. Changes in collective policy preferences are often initiated by events, and they follow understandable and predictable patterns. These understandable shifts in public opinion after an event are larger for low-salience policy domains and issues (Birkland, 1997), which are issues that are mostly not at the top of the political and public agenda (e.g. nuclear energy). With public opinion mostly stable on such low-salience issues, a sudden increase in media attention after a focusing event can sway public opinion (Page et al., 1987). Such event induced public opinion changes were observed in the aftermath of Chernobyl (1986) and Fukushima (2011). Studies on opinion change after these nuclear accidents show that public support for nuclear energy generally decreased shortly after the accident (e.g. Siegrist and Visschers, 2013; Verplanken, 1989). However, cross-national differences in opinion change were observed after the Fukushima accident. The accident reduced support for nuclear energy in some countries, for example Belgium (Perko et al., 2012), while in others, such as the UK, there was little or no change (Poortinga et al., 2013). To understand how a focusing event affects public opinion, the role of media should be considered (Page et al., 1987).

Media is the most important source of information on a distant focusing event (Shehata and Strömbäck, 2014). The Fukushima

nuclear accident received global media coverage because the accident met multiple news values such as importance, negativity, and unexpectedness (O'Neill and Harcup, 2009), qualities that have been found to be universal (Shoemaker and Cohen, 2006). Media studies on Fukushima confirm that the accident received extensive coverage in the first weeks after the accident (Perko et al., 2015). Hence, increased media coverage made the issue of nuclear energy salient to the public, as is suggested by public agenda setting theory (McCombs, 2004). However, to understand cross-national differences in opinion change, it is necessary to consider how the event was covered in the countries.

In order to capture and hold the interest of the audience when reporting about distant events, “contextualization” and “domestication” are used. Contextualization means that the event is presented with sufficient information about the broader context, whereas domestication is the search for the domestic angle of the story (Mujica and Hanitz, 2013). Domestication has been found in reporting about Chernobyl (Joutsenniemi, 1987; Rager et al., 1987) and Fukushima (Kepplinger and Lemke, 2015; Lazic and Kaigo, 2013; Perko and Turcanu, 2011). A high share of newspaper articles in some countries focused on the domestic implications of the Fukushima accident, for instance, Germany and Belgium, as opposed to, for instance, the United Kingdom. Hence, it can be assumed that changes in public opinion are caused by the national media (Page et al., 1987). This raises the question which national contextual factors were reflected in the media, and how they affected public opinion after the accident.

A first important contextual factor to consider is the impact of the accident. After the Deepwater Horizon oil spill disaster in the Gulf of Mexico on April 20, 2010, regions that were economically more dependent on the oil industry turned more positive towards oil drilling after the accident than regions less economically dependent on the oil industry (Bishop, 2014). A similar response was noted after the 2008 financial crisis, when the crisis response depended on the level of affluence and wealth (Newman, 2015). Both studies show that opinion change after a focusing event is determined by self-interest (Bishop, 2014). A similar reflex can be expected after a nuclear accident, because opinion on nuclear energy is affected by perceptions of the risks and benefits of nuclear technology (Visschers and Siegrist, 2013). After a nuclear accident, people fear exposure to radiation, and this fear affects how public opinion on nuclear energy changes due to the event. Distance is a possible proxy to capture fear of exposure to radiation in cross-national studies.

Previous research has included distance to explain how people respond to risks. Kim et al. (2013) found that the greater the distance from the accident site, the stronger the negative impact on support for nuclear energy. However, this finding contradicts earlier studies on the effect of distance on risk perception. After the attack at the World Trade Center in New York, September 11, 2001, people living closer to the towers perceived greater terror risk than those living further away (Fischhoff et al., 2003). A similar effect of distance is described in the construal level theory (CLT) of Trope and Liberman (2010). According to CLT, a higher psychological distance—spatial distance being one dimension of psychological distance—causes people to think more abstractly about a problem (Fujita et al., 2006). The concept of psychological distance has also been applied to understand how people perceive distant risks, such as climate change. People who perceive climate change to be more distant are less concerned about its risks (Spence et al., 2012). A similar response to Fukushima is conceivable, with people at a greater distance from Fukushima thinking about the event in more abstract and general terms. Distance affects not only a person's thinking about an event, but also his or her emotional reaction to it. People are more affected by others who are close than by those who are distant (Latane, 1981). Moreover, different studies, starting with Galtung and Ruge (1965), have stressed the role of proximity as a news value, proximate events having a higher chance to get covered. Nevertheless, in Europe Fukushima made it into the news because of the newsworthiness of the event, independent of its distance (Arlt and

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