

# Do citizens evaluate international cooperation based on information about procedural and outcome quality?

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## Abstract

Conventional wisdom holds that public support for international cooperation is crucial to its viability and effectiveness. Elite debates focus heavily on procedural and outcome characteristics of international cooperation when assessing the latter. However, we know very little about whether and how citizens' evaluation of international cooperation efforts are also based on such process and outcome considerations, as informed via cues they receive from various sources. Procedural characteristics pertain to how international cooperation and resulting agreements are established and implemented. Output characteristics pertain to how effective, costly, and advantageous international cooperation is. Based on three survey experiments in Germany and the United Kingdom ( $N = 3000$  each), and with an empirical focus on transboundary air pollution in Europe, we examine (1) to what extent information on process and outcomes of international cooperation matters for public support, (2) whether information on the prospect of effective and advantageous outcomes reduces public demand for process improvement in international cooperation, and vice versa, and (3) whether high process quality could make citizens more tolerant of lower quality outcomes, and vice versa? The results show that, from the viewpoint of citizens, both process and outcome characteristics matter. While process-related evaluations of citizens are hardly affected by information on the prospect of high or low outcome quality, citizens are less tolerant of low outcome quality when process quality is low. These results suggest that enhancing process quality is worthwhile, particularly for policy challenges requiring long-term and incremental efforts.

**Keywords** International cooperation · Public support · Environment · Air pollution · Experiment · Survey

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## 1 Introduction

Policy-making has become much more international over the past few decades. That is, many policy choices that used to be made entirely within the institutions of the sovereign territorial state are now being made in fora and through mechanisms that include representatives from several or many countries (Kriesi et al. 2013; Zürn 2000). While the ability of international cooperation to successfully address major policy problems hinges on support from governments and their electorates, there appears to be widespread popular discontent with many forms of internationalization of policy-making (e.g., Morse and Keohane 2014; Lavenex 2013; Margalit 2012; Cheneval 2011).

In this paper, we shed light on how informational cues about the procedural and outcome characteristics of international cooperation, which are central elements in public elite debates about the internationalization of policy-making, might affect how citizens form their opinions in this area.<sup>1</sup> When citizens reflect on how well their own country is governed, they are commonly assumed to evaluate the procedural quality and outcome-related quality of their country's political system and its institutions (e.g., Hibbing and Theiss-Morse 2001, 2002; Nye 1997; Dahl 1989). Process here relates to how political decisions are prepared and taken, and how policies are enacted and implemented. Outcomes relate to whether the system produces effective solutions to societal problems, and what the cost and distributional implications of such solutions are. Conventional wisdom holds that both dimensions are, and should, normatively, be relevant, and conceptual and theoretical studies on this issue are quite plentiful (e.g. Hobolt 2012; Risse 2006; Scharpf 1999). However, we know very little, particularly at the empirical level and with respect to international, rather than national policy-making, about the extent to which process and outcomes, in terms of information citizens obtain on them, matter per se when citizens form their opinions about international cooperation, and how they relate to one another.

Empirical insights into whether and how process and outcome characteristics, individually and jointly, affect public support for international cooperation are important not only academically, but are also relevant in practice. For instance, as policy-makers are struggling to find effective solutions to many societal problems that extend across national boundaries, e.g., environmental degradation, social inequality, unemployment, or immigration, it is important to know whether enhancing process quality in international cooperative efforts, and communicating this effectively to citizens, could help in ascertaining or maintaining public support, even in situations where such efforts, due to the complexity of challenges, are very slow in coming up with effective solutions.

Empirical research on this issue has thus far focused primarily on domestic politics (e.g., Hibbing and Theiss-Morse 2001, 2002) and the European Union (Sternberg 2015; Hobolt 2012; Boomgaarden et al. 2011; Lindgren and Persson 2010; Hooghe and

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<sup>1</sup> A large literature on legitimacy of international/global governance, which is a much broader concept than public support, on which we focus here, addresses this issue as well. See, e.g., Morse and Keohane (2014), Lavenex (2013), Margalit (2012), Cheneval (2011), Buchanan and Keohane (2006), Koenig-Archibugi (2004), Tallberg and Zürn (2017), Dellmuth and Tallberg (2015), Archibugi et al. (2012), Bernstein (2011), Johnson (2011), Scholte (2011), Keohane et al. (2009), Buchanan and Keohane (2006), Hooghe and Marks (2005, 2000), Bodansky (1999), Caldeira and Gibson (1995), Risse (2006), and Scharpf (1999).

Marks 2005; Rohrschneider 2002; McLaren 2002; Anderson and Reichert 1995). One prominent example is the “stealth democracy” debate, in which Hibbing and Theiss-Morse (2001, 2002) have argued that US citizens tend to care more about the results of policy-making (that is, outcomes) than about the process, as long as they are content with the outcomes produced by the political system and elected politicians taking the key decisions.

We pick up on this debate, take it to the international level, and examine how relevant process and outcome considerations are to public support for international cooperation. In particular, we address the following facets of this larger question: First, to what extent does information on process and outcome characteristics matter per se (that is, each on its own) for public support with respect to international cooperation? Second, does information on high process quality make citizens more supportive or accepting of low outcome quality? Conversely, does information on low process quality make citizens less tolerant of low outcome quality? Third, does information on the prospect of high outcome quality reduce public demand for high process quality, and vice versa? Conversely, does information on the prospect of low outcome quality increase public demand for higher process quality?

In addressing these three questions, we rely on an experimental study design, with three distinct but substantively related experiments fielded to nationally representative samples of citizens from Germany and the United Kingdom (total of 3000 participants per country, with each participant completing one experiment). Besides methodological advantages for drawing causal inferences, the usefulness of an experimental design in our context stems from the fact that it also allows for the analysis of “what if” scenarios; that is, it allows us to explore the implications of information on process and outcome properties of international cooperation that currently do not exist, but from a policy viewpoint are realistic and interesting to explore.

The empirical focus is on transboundary air pollution. Limiting the empirical analysis to a task-specific international cooperation effort, rather than focusing on some abstract, non-issue-specific cooperation scenario with a general purpose is useful because we wanted to make the experiments intuitive and tangible for participants (Hooghe and Marks 2015). This is clearly the case with air pollution, which is an issue that poses obvious international challenges, notably because pollution travels across national boundaries. For instance, a recent study<sup>2</sup> on the subject concluded that within Europe, air pollution from coal-fired power plants caused more than 20,000 premature deaths in 2013. For comparison, the study noted that 26,000 people died in road traffic in the European Union in the same year. The overall health costs due to coal burning in the EU are estimated at 32.4–62.3 billion Euros. In other words, transboundary air pollution is, at least in terms of fatal risks to human lives and economic burden on society, on par with risks associated with road traffic.

The survey-embedded experiments were carried out in Germany and the United Kingdom. These two countries are among the largest emitters of air pollutants in Europe, pollute each other, and are thus engaged in the same clean air cooperation efforts. In 2013, German coal-fired power plants were, according to the aforementioned study, responsible for an estimated 2490 premature deaths abroad (230 of which in the

<sup>2</sup> “Europe’s Dark Cloud: How Coal-Burning Countries Are Making Their Neighbors Sick” 2016, <http://wwf.fi/mediabank/8633.pdf>.

UK) and UK coal-fired power plants were responsible for an estimated 1350 premature deaths abroad (320 of which in Germany). Moreover, we opted for Germany and the United Kingdom also because the two countries have different political systems and different histories of EU membership. This allows us to explore how well our empirical findings travel across different political and economic contexts.

The results show that both information on process and outcome characteristics matters, although the effects of information on some process characteristics are not statistically significant. Furthermore, process related preferences are hardly affected by information on the quality of prospective outcomes, but citizens are less accepting of both high quality, and low quality outcomes when information indicates that process quality is low. These findings suggest that enhancing process quality and communicating this to citizens in effective ways is worthwhile, notably because it encourages and enables policy-makers to try to find solutions to problems that require costly and long-term policies and involve substantial risks of policy failure.

The following section develops the hypotheses to be tested, followed by a description of the empirical study design. We then present the empirical findings and end with a discussion of these, as well as options for further research and policy implications.

## 2 Arguments and hypotheses

As international policy-making has proliferated beyond the sovereign territorial state, academic and policy debates over procedural and outcome-related aspects of such cooperation have emerged and increased in intensity. While some debates are focusing primarily on outcomes of policy-making, others center on processes of decision-making and policy implementation (e.g., Hobolt 2012; Norris 2011; Scharpf 1999). There is very little scientific evidence, however, on whether and how such debates, and the information they generate, influence the formation of citizens' views and preferences with respect to international cooperation, generally and with respect to specific international efforts.

A large literature in political economy and political science argues and empirically demonstrates that public opinion is an important determinant of governmental policy-choices (Anderson et al. 2017; Wlezien and Soroka 2016; Burstein 2014; Shapiro 2011; Burstein 2003; Wlezien 1995; Page and Shapiro 1983). How, in turn, citizens evaluate international cooperation, and how in the aggregate public support or opposition develops, is less well studied, but appears to be driven at least in part by how citizens evaluate the procedural characteristics and outcomes of these cooperative efforts based on information they receive from various sources (Dellmuth and Tallberg 2015; Boomgaarden et al. 2011; Hooghe and Marks 2005; Banchoff and Smith 1999; Vliegthart et al. 2008; Bernauer and Gampfer 2013).

To what extent citizens are willing and able to evaluate international cooperation on their own, and to what extent such evaluations are driven by elite cues, remains subject to debate (e.g., Dellmuth and Tallberg 2016). We side with those presuming that most citizens do not have enough time and/or cognitive capacity to independently evaluate the process and outcome characteristics of international cooperation and form clear-cut opinions on that basis. Rather, we assume that such opinion formation occurs based on relatively simple informational cues, particularly with respect to process and outcomes

characteristics of cooperative efforts. The reason is that political discourses among elites, both at national and international levels, focus heavily on these two aspects, which generates information that citizens may, to varying degrees, pick up and use to form opinions. Our experimental design follows this logic by randomly exposing study participants to particular pieces of information on process and outcome characteristics of international cooperation and then estimating the effects of such exposure on support/opposition.

This means that we do not seek to test whether and how *de facto* procedural and outcome characteristics of international cooperation affect citizens' opinions. Rather, we use the macro-level literature in this area to identify process and outcome characteristics that could, potentially, be relevant, because they appear prominently in academic and policy debates among elites. In other words, our analysis provides insights into whether citizens care as much about particular process and outcome characteristics of international cooperation as elites appear to do when forming their views and preferences.

The existing literature on international cooperation focuses quite heavily on procedural aspects. It offers many innovative conceptual and theoretical insights into problems of transparency, participation, and accountability in domestic and international policy-making and also provides ideas on how procedural limitations or deficiencies could be addressed (Cheneval and Schimmelfennig 2013; Cheneval 2011; Chapman 2009; Black 2008; Bohman 2007; Buchanan and Keohane 2006). However, it offers only very limited empirical insights into the relevance of process and outcome characteristics from the perspective of public opinion formation (De Fine Licht et al. 2014; Doherty and Wolak 2012; Norris 2011; Hibbing and Theiss-Morse 2002; Tyler et al. 1997), nor does it tell us much about whether increased process quality could offset deficiencies in outcome quality, and vice versa, or whether the two might reinforce each other.

At the theoretical level, various authors have argued that both process and outcomes should matter for public opinion formation (e.g., Scharpf 1999: 43–48, 188). In addition, some scholars have noted that process- and outcome-related facets of public support could be mutually reinforcing (Sternberg 2015; Lindgren and Persson 2010; Verweij and Josling 2003; Zürn 2000). For instance, Sternberg (2015: 634) notes that “[process and output related performance] each make up for weaknesses at the other end of the spectrum, especially during periods of difficulty.” Similarly, Lindgren and Persson (2010) show that in the context of EU chemicals policy, the so-called REACH regulation, stakeholders who thought that the quality of the decision-making process was very good were also more likely to view the resulting outcomes in a more positive light. If citizens do form their opinions based on evaluating process and outcome characteristics and if the two were either perceived as supplementary or even mutually reinforcing, citizens might then be more accepting of low process quality (low outcome quality) if they perceive outcomes (process) as being of high quality.

However, some scholars have contested this rather optimistic notion (Greenwood 2007; Risse 2006; Höreth 1999). They argue that even those international policy-making efforts that score well on outcome grounds might receive little public support if they do not satisfy some process-related quality criteria, for instance transparency (Dahl 1998). This means that improving on outcomes, *per se*, may not help in increasing public support for international cooperation as long as process-quality is

unsatisfactory from the viewpoint of citizens. Conversely, increasing procedural quality – for instance through greater transparency and enhanced participation of civil society and business actors – may slow down governance efforts and reduce their outcome quality. To the extent, it is difficult to improve on process and outcomes at the same time, and citizens were aware of this potential dilemma based on information they are willing and able to obtain, they might be willing to accept lower process quality (lower outcome quality) in favor of higher outcome quality (higher process quality).

Furthermore, it has been suggested that the relevance of process and outcome characteristics for public support might differ across different types of international policy-making efforts, for instance task-specific versus general-purpose cooperation (Lenz et al. 2015; Hooghe and Marks 2015). Task-specific international cooperation, which seeks to achieve a solution to a narrowly defined policy issue, presumably gains in public support when cooperation contributes to solving the given problem. In contrast, process quality is presumably more important for more broadly designed international policy-making efforts. The main reason is, arguably, that broader policy-making efforts must simultaneously deal with a larger number of different and less precisely delineated policy issues. This makes their impact at the national level less predictable and involves more redistributive implications. This setting requires greater attention to procedural features that establish greater transparency, participation, and accountability. Given the complexity of the analytical task we face, our empirical analysis focuses on one policy-area. In the concluding section, we note, however, that further research should explore the relative importance of process and outcome characteristics across different policy areas to assess the empirical relevance of the aforementioned arguments on task-specific-vs-multipurpose policy-making efforts.

The arguments set forth above can be condensed into three hypotheses on how information about process and outcome characteristics of international cooperation could affect public support, and how process and outcomes relate to one another in affecting public support.

The first hypothesis, which serves as a starting point, focuses on the relevance of information on process and outcome considerations in an absolute sense. That is, we study the extent to which information on process and outcome characteristics of international cooperation, as discussed above, is relevant to citizens' evaluations of the cooperation effort as a whole. While we posit that both information on process and outcome characteristics is likely to matter for support, we remain agnostic as to whether one or the other matters more.

H1: Information on process and outcome quality both have a positive effect on public support for international cooperation.

Whereas the first hypothesis centers on whether information on process and outcome quality respectively is relevant independently of each other, we are also interested in their substitutability, meaning whether they are related, in the sense that one might make up for deficits in the other, or that one could reinforce the other. The very few studies on this subject in domestic politics suggest that such effects might exist (Sternberg 2015; Lindgren and Persson 2010). Translation of such arguments to international cooperation is straightforward and can be approached from two perspectives.

Reminiscent of the “stealth democracy” argument (Hibbing and Theiss-Morse 2001, 2002), we hypothesize that when citizens expect an international cooperation effort to produce positive outcomes, based on the information they receive, they are less likely to demand improvements in process characteristics. Conversely, when citizens are confronted with information leading them to expect international cooperation to perform poorly in outcome terms, we expect greater demand for improvements in process characteristics.

H2.1: Information on positive international cooperation outcomes reduces demand for improvements in process characteristics.

H2.2: Information on negative international cooperation outcomes increases demand for improvements in process characteristics.

Moreover, we expect that information on high process quality is likely to make citizens more accepting of low-quality cooperation outcomes. Conversely, information on low process quality is likely to make citizens less accepting of low-quality cooperation outcomes (e.g. Van den Bos et al. 1997; Tyler and Lind 1992).

H3.1: Information on high process quality is likely to make citizens more accepting of low-quality cooperation outcomes.

H3.2: Information on low process quality is likely to make citizens less accepting of low-quality cooperation outcomes.

### 3 Empirical study design

In the previous section, we have provided arguments and hypotheses in a very generic form. In this section, we translate the key theoretical concepts in our hypotheses (e.g. process, outcome, public support) into variables that will be manipulated experimentally and be observed empirically.

#### 3.1 Procedure and output

In principle, international cooperation procedures and outcomes, and their quality, could be characterized in many different ways. We will focus on three specific procedural and three outcome characteristics of international cooperation that, in the existing literature on domestic and international policy-making and in political discourses, are omnipresent in the mass media and regarded as potentially important in affecting public support (Tallberg and Zürn 2017; Gronau and Schmidtke 2016; Dellmuth and Tallberg 2015; Bernauer and Gampfer 2013; Hooghe and Marks 2005).

These procedural and outcome characteristics are the explanatory factors that are subject to experimental manipulation in the survey (see below). It is important to note at this point that we view these specific procedural and outcome characteristics as potentially relevant, albeit not capturing the full range of possible empirical expressions of our generic explanatory variables, as outlined in the hypotheses. While it might be worthwhile to develop more fine-grained theoretical arguments on how each specific process and outcome characteristic, on its own, could affect citizens’ evaluations of

international cooperation, we seek to keep the analysis at a level of complexity that enables us to implement the experiment, analyze the data, and communicate the findings in a meaningful way. We thus leave more nuanced theoretical arguments and empirical testing to further research. For these reasons, we offer only brief theoretical arguments on each procedural and outcome factor to justify our empirical design choices, acknowledging the great value of theorizing and empirically analyzing each of the procedural and outcome characteristics on its own at the macro- and the micro-level (e.g. how civil society involvement affects transparency of international cooperation and how information on the latter affects public support).

For process characteristics, we focus on institutionalized access to information on decision processes, involvement of civil society, and the need for approval by (democratically elected) national legislatures. Institutionalized access to information on decision processes is widely regarded as a factor that tends to increase confidence of citizens in policy-making processes, political institutions, and their outputs, particularly because it supports transparency and accountability (De Fine Licht et al. 2014; Archibugi et al. 2012; Grigorescu 2007; Held and Koenig-Archibugi 2005; Keohane and Nye 2003; Dickson et al. 2015).

Civil society involvement is regarded by many scholars as an important means of enhancing representation of otherwise underrepresented interests in society, increasing transparency and accountability, and enhancing problem solving capacity by adding know-how that is relevant to problem-solving (Buntaine 2015; Tallberg et al. 2013, 2014; Archibugi et al. 2012; Bernstein 2011; Lidskog and Elander 2010; Scholte 2011; Grigorescu 2007, 2015; Falk and Strauss 2001; O'Brien et al. 2000). Recent research in fact reaches diverging conclusions as to whether involving civil society groups tends to enhance public support for international cooperation (e.g., Bernauer et al. 2016; Bernauer and Gampfer 2013; Dellmuth and Tallberg 2015).

We are also interested in the implications of variation in decision-rules. The traditional principle of state consent holds that no country can be bound to international agreements and resulting legal obligations unless it accepts those. Treaty ratification requirements are the most prominent expression of this principle and appear prominently in public debates over sovereignty being diminished with growing international cooperation. Since this principle increases the transactions costs of international cooperation and tends to result in lowest common denominator solutions, which may be at odds with output quality (see below), majority decision-making in international policy-making and reduced domestic implementation hurdles (weaker or no ratification requirements) have been suggested (Bodansky 1999, 2013). However, whereas majority decision-making is standard in domestic law making, the implications of “more efficient” decision-modes in international policy-making remain subject to debate.

Empirically, we will focus on two decision-modes that represent the opposing ends of the debate: the traditional principle of state consent (domestic ratification required before an international agreement can be implemented domestically), and automatic implementation of an international agreement without the need for prior ratification by domestic legislatures if the majority of countries negotiating an agreement decides to adopt the agreement. We agree with those scholars who argue that shifting decision-making authority from the domestic to the international level along these lines may reduce public support, because it tends to take authority away from democratically elected national legislatures (Archibugi et al. 2012; Lidskog and Elander 2010; Hooghe



and Marks 2005; Dahl 1999; Banchoff and Smith 1999; Blondel et al. 1998). Presuming that it is difficult to replace the public support enhancing effect of national legislatures with some kind of international legislature (Boomgaarden et al. 2011; Rohrschneider 2002; Falk and Strauss 2001; Blondel et al. 1998), we expect that the process characteristic of state consent, as expressed by consensus decision rules at the international level and domestic ratification requirements, tends to enhance public support.

In summary, while process characteristics of international cooperation can empirically manifest themselves in multiple forms, based on a considerable amount of prior work we submit that the three procedural characteristics just discussed are, for theoretical and empirical reasons, particularly relevant to public opinion formation. Specifically, we expect informational cues on greater transparency, more civil society involvement, and more domestic democratic controls in the form of traditional state consent to have a support-increasing effect. Further research could of course examine additional procedural characteristics, though this might have to be done separately because experimental treatment designs also need to pay attention to what study participants can meaningfully grasp, process, and differentiate.

With respect to outcome characteristics, we concentrate on the effects of information on three characteristics that are widely regarded as potentially affecting public support: problem solving effectiveness, costs, and relative benefits. International policy-making efforts that are expected to, or do in fact, solve problems more effectively are likely to enjoy greater public support, all else equal (Dellmuth and Tallberg 2015; Scharpf 1999). Costs of international cooperation are likely to play a role as well, with public support declining with increasing costs (Bernauer and McGrath 2016; Steffek 2015; Boomgaarden et al. 2011; McLaren 2002; Anderson and Reichert 1995; Tyler 1990). Moreover, relative benefits are likely to affect public support too. As noted in the International Relations literature on relative gains, governments are likely to pay attention not only to absolute, but also to relative benefits, that is, how much their respective country would benefit from a cooperative effort, relative to other countries (Grieco et al. 1993; Powell 1991). To the extent citizens pay attention to relative gains as well, our presumption is that they are more likely to support international agreements producing more evenly distributed benefits and reject agreements that would result in lower benefits to themselves, relative to other states. Similarly, many studies on distributional fairness, social justice, and common pool resources (Brams 2008; Tyler et al. 1997; Van den Bos et al. 1997; Ostrom 1990) have noted that support is positively affected by an even or advantageous distribution of benefits.

Again, these three empirical manifestations of the theoretical construct (outcome characteristics of international cooperation) do not capture all possible facets of the construct. Yet, based on the existing literature, we think that all three are potentially important and generate unambiguous expectations. Information on greater effectiveness, lower costs, and higher relative benefits is likely to be associated with more positive evaluations of international cooperation.

### 3.2 Sampling and survey design

We used three distinct, but closely related experiments to test the hypotheses set forth above. The three experiments, each of which focuses on a specific subset of our

hypotheses, were embedded in population-based online surveys with samples of  $N = 600$  (experiment 1),  $N = 1200$  (experiment 2), and  $N = 1200$  (experiment 3) each in Germany and the United Kingdom (total  $N = 3000$  per country). Each survey participant was invited to one survey and thus to one experiment. The surveys including the three experiments together with socio-demographic items and items on political attitudes were designed by the authors and fielded by YouGov.<sup>3</sup> YouGov ensured socio-demographic representativeness for each of the six samples separately. Details on sampling can be found in Appendix A4.<sup>4</sup>

Each experiment started with a description of the international cooperation scenario. That is, it described the problem of air pollution in Europe, including a definition of air pollution, estimates of annual costs for European countries resulting from air pollution, negative effects of air pollution on public health in Europe, and identification of Germany, the UK, Poland, France, and Italy as being responsible for the largest share of air pollution in Europe. Participants were then asked to complete the experimental part of the survey. That is, they were exposed to randomly assigned treatment conditions and were then asked to provide responses to items that serve to measure public support for international cooperation in this area. Table 1 indicates the principle features of the three experiments.

Experiment 1, which serves to evaluate hypothesis 1, is a conjoint choice experiment that captures the salience of particular process and outcome characteristics of international cooperation when citizens evaluate the latter. We exposed study participants to pairs of proposals for an international agreement against air pollution and asked them to tell us which proposal(s) they prefer. The proposals differed with respect to the information on the agreement's expected consequences (outcomes), as well as negotiation and implementation procedures. This experimental design enables us to understand what types of process and outcome characteristics are more salient from the viewpoint of citizens when they evaluate international cooperation. As noted above, this experimental design is congruent with the notion that citizens are likely to evaluate international cooperation based on relatively simple informational cues they receive.

The key part of the experiment consisted of tables showing information on the characteristics of international agreements against air pollution that are likely to be associated with higher or lower process and outcome quality.<sup>5</sup> As can be seen in Table 2, we conceptualized process and outcomes with three characteristics each, as discussed above. Following the conceptual and theoretical literature on how international cooperation could be "democratized" (Buntaine 2015; Dellmuth and Tallberg 2015; Lavenex 2013; Bernauer and Gampfer 2013; Margalit 2012; Keohane et al. 2009; Held 1999), our empirical representations of process characteristics focus on institutionalized access to information on decision processes, involvement of civil society, and the need for endorsement by democratically elected domestic policy makers. Outcome characteristics are empirically represented along three dimensions, as noted above: effectiveness in reducing air pollution, costs of implementing the agreement, and benefits of the participant's country relative to other countries.

<sup>3</sup> <https://today.yougov.com/about/about/>

<sup>4</sup> The survey instruments are available from the authors on request.

<sup>5</sup> For details, see Appendix A1.1.

**Table 1** Design of the three experiments

Experiment No.	Treatment conditions	Response variables (dependent variables)	Sample size
1, focuses on hypothesis 1	Various process and outcome characteristics randomly allocated in conjoint choice experiment	Overall support for international cooperation	600 (6000 observations because of multiple choice tasks)
2, focuses on hypotheses 2.1 and 2.2	Randomly allocated information on (priming for) effective/favorable or ineffective/unfavorable cooperation outcome	Support for various process characteristics	1200
3, focuses on hypotheses 3.1 and 3.2	Randomly allocated information on (priming for) high or low process quality	Support for effective/favorable or ineffective/unfavorable cooperation outcome	1200

After familiarizing themselves with the six process and outcome characteristics (attributes), participants were asked to compare pairs of two proposals, with each participant completing this task five times. The values (expressions) on each attribute were inserted randomly into the tables. To avoid ordering effects, the order of the attributes was randomly assigned for each participant initially and then was held constant per participant for the following four choice tasks to avoid cognitive overload. Table 1 in Appendix A1.1 provides an example.

After having looked at a set of proposals, participants were asked to express their preference for one or the other and then to rate each proposal on a scale ranging from 1 to 7. The unit of observation in the resulting dataset is defined by the response variable, which is the response to each proposal. This generates two observations for each choice task (one per choice task per policy proposal), and a total of 10 observations per participant because of five choice tasks. For a sample of 600 participants, the number of observations is thus 6000.

We then assess the causal effects of the conjoint attributes (the six process/outcome characteristics) on support or opposition to a proposed international agreement. That is, we regress the binary choice or the rating variable on dummy variables for all values but one per conjoint attribute for all conjoint attributes. We interpret the estimated regression coefficients as the causal effects of conjoint attribute values on support for a particular agreement. These causal effects represent the average of all causal effects of a particular attribute value against a certain baseline value across all possible value combinations for the remaining conjoint attributes.<sup>6</sup> We cluster standard errors by respondent in order to account for the fact that each respondent evaluated multiple proposals (5 pairs of proposals, 10 in total) and that evaluations might be positively correlated within respondents because of individual characteristics we did not observe (Hainmueller et al. 2014).

<sup>6</sup> Hainmueller et al. (2014) list several conditions that must be met for interpreting linear regression coefficients as average marginal component effect (AMCE). We show in Appendix C1.2 that it is safe to assume that these conditions are met in our case. We also explain how the block randomization was carried out in Appendices C2 (experiment 2) and C3 (experiment 3).

**Table 2** Attributes and possible attribute values in the conjoint experiment, worded for the UK

<i>Attribute (ordered randomly for each participant; per participant this order was kept constant over all choice tasks)</i>	<i>Attribute values (randomly assigned)</i>
Process: Different types of non-governmental groups involved alongside government representatives in all aspects of the negotiations [ <i>Tgroups</i> ]:	<ul style="list-style-type: none"> <li>• environmental groups (e.g. the World Wildlife Fund (WWF), Greenpeace, or Friends of the Earth) [<i>environment</i>]</li> <li>• scientists without any conflict of interest (e.g. scientists from leading universities) [<i>scientists</i>]</li> <li>• business groups (e.g. British Chambers of Commerce, Confederation of British Industry, Association of Electricity Producers) [<i>business</i>]</li> <li>• none [<i>none</i>]</li> </ul>
Process: Public information about the negotiations [ <i>Tinfo</i> ]:	<ul style="list-style-type: none"> <li>• journalists have full access to all parts of the negotiation and can report freely, and all proposals in the negotiations are made public on the internet right away [<i>open to public</i>]</li> <li>• the negotiations and proposals are kept confidential and journalists do not have access to the negotiations; the public will be informed about the results once the negotiations are concluded [<i>closed doors</i>]</li> </ul>
Process: The agreement, once negotiated, will become law and will be fully implemented in the UK [ <i>Timplement</i> ]	<ul style="list-style-type: none"> <li>• only if the UK parliament has also approved the agreement [<i>national parliament</i>]</li> <li>• if the majority of negotiating countries, which may or may not include the UK, approves the agreement [<i>majority of negotiating countries</i>]</li> </ul>
Outcome: The agreement could reduce air pollution in the UK and other European countries by a [ <i>Teffective</i> ]	<ul style="list-style-type: none"> <li>• large amount (around 50% compared to today) [<i>50 perc.</i>]</li> <li>• medium amount (around 30% compared to today) [<i>30 perc.</i>]</li> <li>• small amount (around 10% compared to today) [<i>10 perc.</i>]</li> <li>• very small amount (around 2% compared to today) [<i>02 perc.</i>]</li> </ul>
Outcome: The costs of implementing the agreement in the UK could be [ <i>Tcosts</i> ]	<ul style="list-style-type: none"> <li>• very low (additional £5 for the average UK household per month) [<i>1 very low</i>]</li> <li>• low (additional £10 for the average UK household per month) [<i>2 low</i>]</li> <li>• moderate (additional £30 for the average UK household per month) [<i>3 moderate</i>]</li> <li>• high (additional £50 for the average UK household per month) [<i>4 high</i>]</li> <li>• very high (additional £100 for the average UK household per month) [<i>5 very high</i>]</li> </ul>
Outcome: The benefits for public health and the environment in the UK could be [ <i>Tbenefit</i> ]	<ul style="list-style-type: none"> <li>• at least as big and perhaps even bigger than in other European countries [<i>bigger</i>]</li> <li>• smaller than in other European countries [<i>smaller</i>]</li> </ul>

In square brackets, we show the variable and value labels used in the results section. Participants saw an overview table similar to this one before engaging in the experiment and were allowed to refer back to the table during the experiment. The overview the study participants saw had the attributes appear in random order and did not include the variable and value labels

We rely on experiment 2 to evaluate hypotheses 2.1 and 2.2. Experiment 2 is a framing experiment that serves to study the effects of information about outcome quality on support for process features that we regard as capturing low or high process quality. Within homogeneous blocks defined by gender and age group, participants were randomly assigned to one of two information treatments concerning prospects of either an advantageous or a disadvantageous outcome,

as defined by costs, effectiveness, and relative benefits, or to a control group receiving no information about the prospective outcome. For the UK sample, for instance, the high outcome quality treatment wording was (followed by a summary not shown here):

[*High quality outcome treatment:*] Most experts on air pollution believe that these negotiations will produce an effective agreement that reduces air pollution in the United Kingdom and other European countries by a large amount (reduction by around 50%). They also believe that the costs of implementing the agreement in the United Kingdom will be low (£5 per household per month), and that the benefits for public health and the environment in the United Kingdom will be at least as big and perhaps even bigger than the benefits in other European countries.

Participants were then asked to express their support for (or opposition to) seven procedural characteristics of the cooperation effort, the dependent variables in this experiment: participation of either environmental groups, scientists, or business groups in international negotiations; whether negotiations should be conducted in an open manner or behind closed-doors; and whether approval by the national parliament should be required, or whether a decision by the majority of the negotiating countries should automatically lead to mandatory implementation.<sup>7</sup>

Once support levels concerning process characteristics were measured, we asked participants to rate their expectations with respect to the outcome of international cooperation from a UK/German perspective. Four items were used with the intention of allowing us to check whether the information treatments effectively manipulated participant expectations as intended. We asked whether the participant thought the agreement was likely 1) to impose high or low costs on the average household in her/his country; 2) to reduce air pollution by a large or a small amount; 3) to be more or less beneficial for the UK/Germany when compared to other European countries; and 4) to be favorable or unfavorable for the UK/Germany?

With experiment 3, again a framing experiment, we evaluate hypotheses 3.1 and 3.2 and assess whether information about high or low process quality influences support for international cooperation with positive or negative outcome properties. To this end, we randomly assigned participants (again within homogeneous blocks defined by gender and age group) to information treatments concerning the negotiation and implementation process, or to a control group receiving no such information. For UK respondents, for instance, we used the following treatment text for high process quality:

[*High process quality treatment:*]

Negotiations conducted by government representatives, environmental interest groups, and scientists: Representatives of environmental interest groups (for example, the World Wildlife Fund (WWF), Greenpeace, Friends of the

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<sup>7</sup> For details, see Appendix A2.1.

Earth) and scientists without any conflict of interest (e.g. scientists from leading UK universities and research institutions) participate alongside government representatives in all aspects of the negotiations.

Full public information on the negotiations: Journalists have full access to all parts of the negotiation and can report freely, and all proposals in the negotiations are made public on the Internet right away.

Approval by UK parliament required: Once the agreement has been negotiated, it will become law and will be fully implemented in the United Kingdom only if the UK parliament has also approved the agreement.

The dependent variable in this experiment captures support for (opposition to) two versions of an international agreement against air pollution, one of which has advantageous outcome characteristics (low costs, high effectiveness, UK/Germany benefits more than other countries), and the other disadvantageous outcome characteristics (high costs, low effectiveness, UK/Germany benefits less than other countries). The two versions were presented in random order. The main reason for measuring support for two proposals, one with favorable and one with unfavorable outcome characteristics was to increase the validity of our measure for support of an unfavorable international cooperation outcome. We think that this approach makes participants more aware of the low outcome quality of the latter.

We also asked participants to rate the procedural aspects of international cooperation on four scales ranging from undemocratic to democratic, from unfair to fair, from bad for the UK to good for the UK, from inappropriate to appropriate, and from being the wrong way to do it to being the right way to do it. These ratings serve as manipulation checks for experiment 3.

## 4 Results

In this section, we present the main findings from each experiment, followed by a discussion of limitations, options for further research, and policy implications.

### 4.1 Relevance of process and outcome

With experiment 1 we examine whether information on process-related and outcome-related characteristics of international environmental cooperation has independent effects on support for (or opposition to) such efforts. Overall, we find that both outcome and process characteristics matter, although some process characteristics lack statistical significance. This finding is consistent across the two countries and lends support to the first hypothesis.

Figure 1 shows the treatment effects in the two samples (Germany, UK), applying weights that match the two national samples to the respective frame. It visualizes regression estimates as dots, with 95% confidence intervals shown as solid horizontal lines (Hainmueller et al. 2014b).

The effects of individual international cooperation attributes are partly in line with what we expected. Both process and outcome characteristics of international

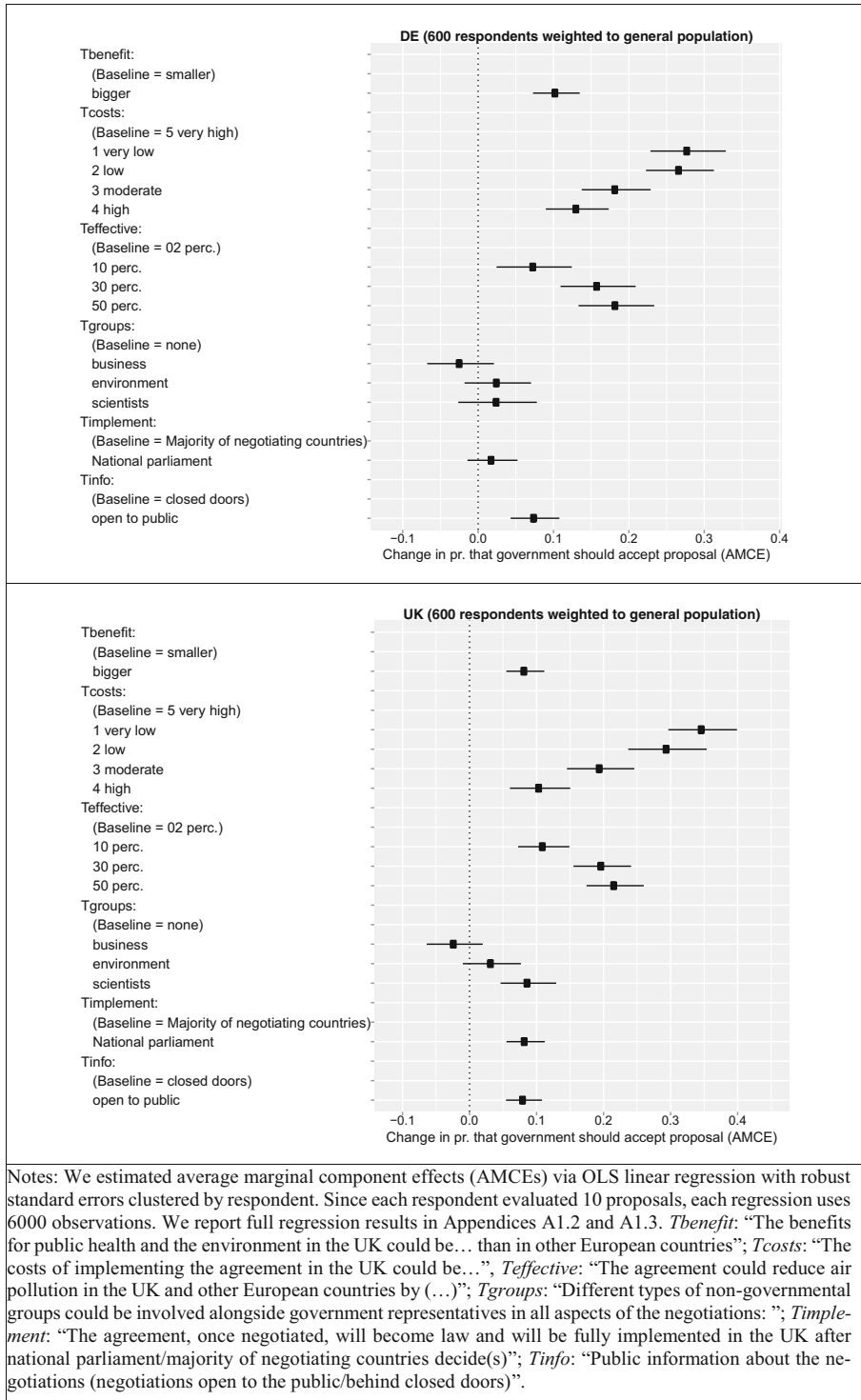


Fig. 1 Results from experiment 1 (Germany (DE) and UK)

cooperation matter. There are, however, differences in effect sizes across variables. Outcome-related international cooperation features appear more influential than process-related features, but these results could be influenced by specific definitions of the conjoint attribute values (see Table 2).<sup>8</sup> While we observe statistically significant results for all outcome-related international cooperation attributes, several coefficients for process attributes are not statistically different from zero.

Regarding outcome characteristics, information on higher relative benefits for the participant's own country, lower costs of the international cooperative effort for the average household and higher effectiveness in reducing air pollution increases the probability of a survey participant favoring such an international cooperative effort. Regarding information of process characteristics, involvement of business groups has a negative effect, and involvement of environmental groups and scientists has a positive effect. Yet, based on our data we cannot rule out that some of these effects are zero (with the exception of the positive effect of including scientists in the UK sample). Information on the approval by the national legislature before implementation, as opposed to automatic implementation, enhances support. However, this effect is statistically significant at the 95% level only for the UK sample. This difference between the two countries seems to be in line with greater public skepticism in the United Kingdom against international cooperation, above all the EU, relative to Germany, which has a longer history of EU membership and whose population appears to be more at ease with international cooperation – though our international cooperation scenario does not relate to the EU as such.<sup>9</sup> Finally, greater informational openness of international cooperative efforts increases support, as compared to negotiations behind closed doors.

A series of robustness checks<sup>10</sup> show that the key findings remain the same when pooling the data for the two countries, using the rating variable as the outcome to be explained, or adding further control variables<sup>11</sup> and interaction terms including interactions of each treatment dummy with a respondent's political efficacy or education.

## 4.2 Does information on low outcome quality increase demand for enhanced process quality?

Experiment 2 serves to examine whether citizens demand increased process quality when facing information on international cooperation that appears ineffective and disadvantageous, or whether they care less about process quality when the prospective

<sup>8</sup> For example, our attribute values differ in (numeric) precision. Regarding output characteristics, the conjoint attributes capture clearly specified percentage cuts, costs, and relative benefits, whereas the input characteristics are presented in a more qualitative way.

<sup>9</sup> We asked study participants in the UK and Germany whether their country should leave the EU. Slightly more than 40% of UK respondents wanted the UK to leave the EU while only about 20% of the German respondents wanted Germany to leave the EU.

<sup>10</sup> Results are reported in Appendices A1.5 and C1.1.

<sup>11</sup> These control variables items were placed in the survey before the experimental part (age, gender, left-right self-placement, city type, and region, all of which were required at this stage of the interview for matching and blocking) as well as afterwards (stealth and sunshine democracy, conflict aversion, environmental concern and environmental vulnerability, trust in government, political efficacy, and education). We are aware that interacting (randomly assigned) treatment dummies with post-treatment covariates can introduce post-treatment bias (Gerber and Green 2012: 296–305; Montgomery et al. 2018). Thus, we interpret these results with great caution. Our decision to place most of these items after the experimental part was motivated by seeking to avoid any unwanted priming effects (Gerber and Green 2012: 99).



outcome is effective and advantageous. Overall, we find that public demand for most process quality facets is not affected by whether the prospective outcome quality is high or low. The main reaction to prospective low outcome quality is increased support for a national parliamentary ratification requirement. That is, study participants resort to the traditional principle of state consent in order to safeguard against undesirable international cooperation outcomes. Our manipulation checks back the causal interpretation of these results.<sup>12</sup> Participants who received the “low quality outcome” treatment considered the potential agreement as costly, relatively ineffective, as well as less beneficial and simply “bad” for their country.

The coefficient plots in Fig. 2 summarize results from linear regressions of the seven dependent variables (support levels for different process characteristics) on dummy variables for the two treatments, with the control group as the baseline. The dots represent point estimates, which can be interpreted as causal effects. The horizontal lines are 95% confidence intervals. We use sample weights that match each of the three experimental groups separately to the sample frame (national adult population). The coefficient plots also summarize results based on pooled data combining the samples from the UK and Germany and estimating treatment effects without adding a country-dummy and without using sample weights.

As expected, information about prospective outcomes that are ineffective and disadvantageous (compared to no information regarding outcomes) reduce support for automatic implementation of international majority decisions.<sup>13</sup> We also find albeit weak evidence that information about prospective outcomes that are ineffective and disadvantageous result, as expected, in less support for carrying out negotiations behind closed doors.

Our results provide no support for the expectation that information about prospective outcomes that are ineffective and disadvantageous increase demand for higher process quality. Under conditions of low outcome quality, respondents from both countries show even less support for the inclusion of ENGOs or scientists. One interpretation of this result is that when facing an unfavorable prospective outcome, citizens may believe that involving additional actors might make it even harder to arrive at effective solutions. Conversely, we do not find evidence for the argument that information on high prospective outcome quality leads to greater tolerance of low process quality. High prospective outcome quality hardly changes support for any of the seven process characteristics. In our study design, low process quality means involvement of business groups, negotiations behind closed doors, and automatic domestic implementation subsequent to majority decision making at the international level. This setup was guided by empirical evidence showing that in the UK and Germany our survey participants do not like these three characteristics. In experiment 2, these characteristics receive less support than alternative ones.<sup>14</sup> In addition, we can see from our manipulation checks in experiment 3 that an information treatment combining these three characteristics induces participants to regard the respective international cooperation effort as undemocratic, unfair, and inappropriate. Finally, experiment 1 shows that these three characteristics are among the least favored for the three relevant conjoint attributes.

<sup>12</sup> See Appendix A2.4.

<sup>13</sup> This finding is backed by the estimation of treatment effects using the IPW difference in means estimator and its *p* value via randomization inference, taking into account that treatments were assigned with equal probability within homogeneous subgroups defined by gender and age group. See Appendix C2.

<sup>14</sup> These regression results are presented in Appendix A2.2.

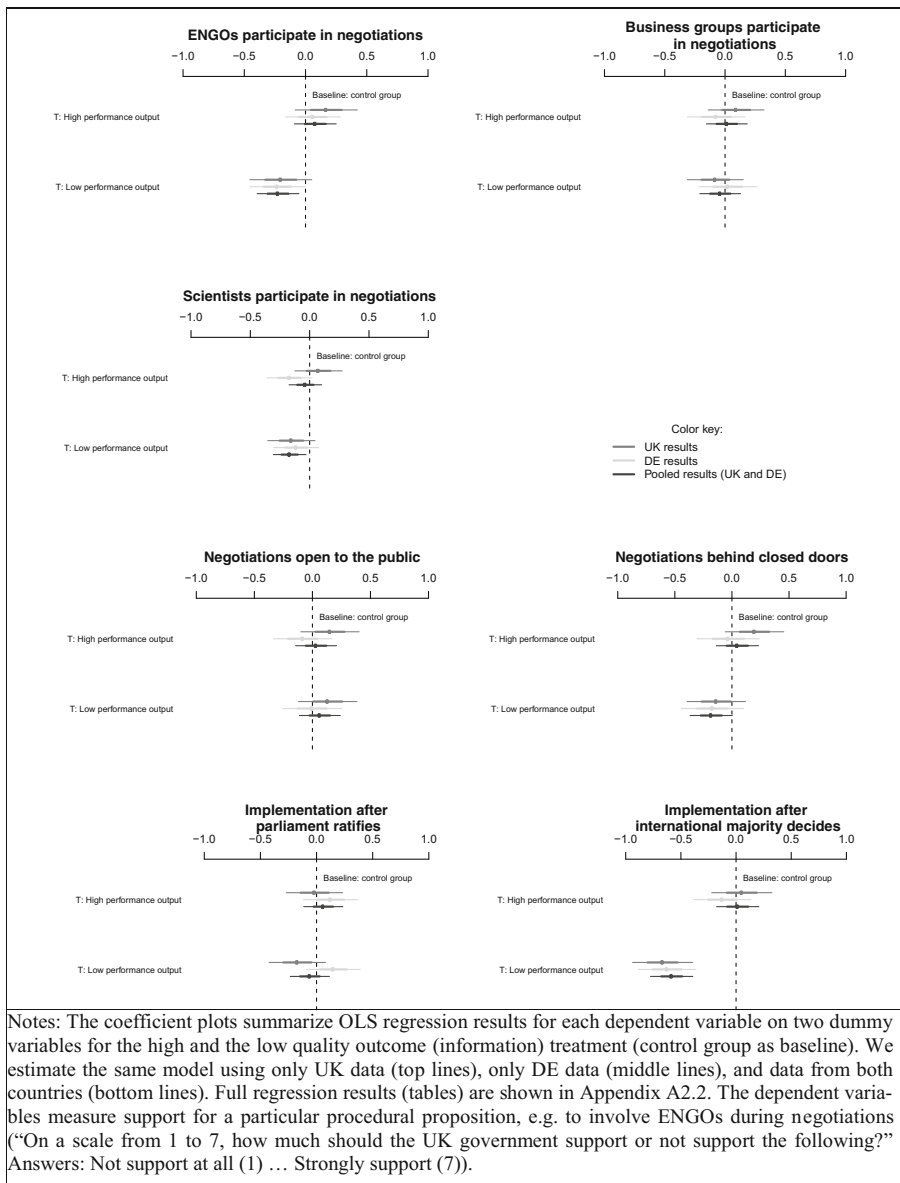


Fig. 2 Results of experiment 2

### 4.3 Does information on high process quality make citizens more accepting of poor outcome quality?

With experiment 3, we examine potential tradeoffs or synergies between process and outcome in the opposite direction, as compared to experiment 2. That is, we focus on whether information on high/low process quality makes citizens more/less supportive of international environmental cooperation characterized by ineffective and unfavorable outcomes. Overall, the results are partly in line with our expectation. Information on low

process quality of international cooperation induces less support for poor outcome quality. However, we only observe a significant difference in means for the low process quality treatment, and not for the high process quality treatment.

The manipulation checks back the causal interpretation of these results.<sup>15</sup> Participants who received the high/low process quality (information) treatment rated the international cooperation process as more/less democratic, more/less fair, and more/less appropriate. They also considered the procedure better/worse for their country and were more likely to describe the procedure as the wrong/right way to do things.

The coefficient plots shown in Fig. 3 summarize results from linear regressions of support for international cooperation with outcome defined by either high or low quality properties<sup>16</sup> on experimental group membership. Again, we use sample weights that match each experimental group to the sample frame (national adult population). The coefficient plots also show results based on the pooled UK and Germany samples, estimating treatment effects without adding a country-dummy and without using sample weights.<sup>17</sup>

As expected, information on low process quality decreases support for international cooperation characterized by low outcome quality (compared to the control group). Contrary to our expectations, however, information on high process quality does not increase support for international cooperation characterized by low outcome quality (compared to the control group). The reason might be that the low process quality treatment induces a larger absolute shift in assessments of the procedure being democratic or undemocratic than the high input quality treatment. Moreover, the low process quality treatment induced a similar decrease in support for any suggested policy regardless of whether the expected outcome was very advantageous or very disadvantageous. This is in line with experiment 2, where we find that citizens have stable preferences regarding procedural characteristics, which are, with only a few exceptions, unaffected by information on outcome quality.

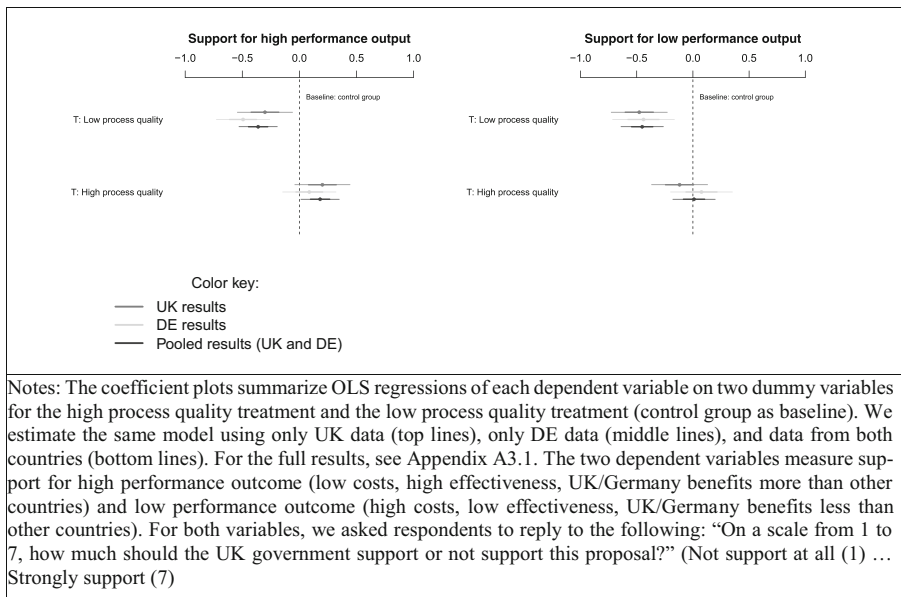
## 5 Discussion

Our motivation for studying how citizens evaluate international cooperation, in general terms and with respect to a specific issue area and particular characteristics of international cooperation, is twofold. For one, it is likely that international cooperative efforts that align better with what the majority of citizens want enjoy stronger public support, which is likely to make them easier to implement and more viable over the long run. Moreover, from a normative, democratic viewpoint we should be interested in understanding what criteria for “good” international cooperation are relevant from the perspective of citizens. Even though many “ordinary” citizens may not regularly pay much attention to international politics, our experiments can reveal citizens’ (otherwise latent) preferences under conditions where process and outcome features of

<sup>15</sup> See Appendix A3.3.

<sup>16</sup> See Appendix A3.1. Support was measured as the response to the following questions: “On a scale from 1 to 7, how much should the UK government support or not support this proposal?” Possible answers ranged from “not support at all” (1) to “strongly support (7).

<sup>17</sup> Robustness checks show that these findings remain stable when using the IPW difference in means estimator and its p value via randomization inference. See Appendix C3.



**Fig. 3** Results of experiment 3

international cooperation become salient in the public sphere and citizens are exposed to such information and cues it generates.

When citizens form opinions on and evaluate international cooperation efforts it is not clear, a priori, which aspects of such efforts they pay attention to and how this shapes the resulting views and preferences. However, information on the properties of international cooperative efforts is likely to come from elite cues and other sources (Dellmuth and Tallberg 2016; Hooghe and Marks 2005). In addition, because elite debate on international cooperation focuses heavily on process and outcome characteristics of international cooperation, we presume that these two facets are most likely to matter for public opinion formation. Consequently, we propose that citizens' evaluations of international cooperation are influenced by information they receive on process and outcome characteristics in this area.

Based on three experiments we find that citizens do pay attention both to information on process and outcome characteristics of international cooperation. Moreover, while information on prospects of reaching an effective/ineffective and/or favorable/unfavorable outcome does not significantly affect support for improvements in process quality, we observe that citizens are less tolerant (supportive) of poor outcome quality when this coincides with information on weak process quality. Interestingly, these findings are very similar for both countries, despite important differences in political, social, economic, and cultural circumstances. Hence, our results resemble Doherty and Wolak's (2012: 316) finding that people reject unfair political procedures independently of their evaluation of outcomes resulting from these procedures. Furthermore, given our empirical focus on a task-specific international cooperation effort (reduction of transboundary air pollution), our various findings regarding the importance of information on process-related quality of international cooperation deserves particular attention. Public support for task-specific international cooperation has been argued

to rely on effective problem solving and not as much on procedural aspects (Lenz et al. 2015). In light of our results, this claim's validity deserves further empirical investigation.

Even though we do not find significant evidence for the argument that information on high process quality makes citizens more tolerant of poor outcome quality, we think that our findings do speak to debates about procedural reforms in international cooperation (Stevenson and Dryzek 2014; Archibugi et al. 2012; Bernstein 2011; Zürn 2004). Citizens clearly pay attention to process characteristics as well as outcome quality. Our findings imply that process improvements, even if communicated effectively to citizens, are unlikely to compensate effectively for poor outcome quality. Nonetheless, they suggest that greater informational openness, involvement of civil society groups other than business, and greater involvement of national legislatures, could still be useful for ensuring higher levels of public support, independent of whether international cooperation is expected to be effective or ineffective. This applies particularly in the sense of making citizens more tolerant, and thus avoiding political backlash, in situations where finding effective solutions to international problems is very slow and tedious (that is, where high outcome quality is very difficult to achieve). Various international environmental and other challenges fall into this category, for instance climate change.

Further research could explore whether our main findings are relevant to other European countries that are not large-scale emitters of air pollutants, but nonetheless heavily affected by transboundary air pollution. In our study, we focused on two countries that contribute to air pollution in Europe to a similarly large extent and pollute each other about equally. Moreover, future research could address whether our findings are relevant to other policy areas. To this end, our experimental design could be adapted to scenarios that focus on different task-specific policy areas that vary in terms of salience, emotional appeal, economic and social implications, or the collective/public goods character of the issue. Examples include climate change, trade, immigration, arms control, or tax competition. In addition, one could adapt our design to general-purpose cooperation at the international level to explore the relationship between task-specific and general-purpose international cooperative efforts, on the one hand, and the relative importance of process and outcome quality for mass public support, on the other hand.

Further research could also examine various additional procedural reform options we did not study here, for instance increased involvement of national parliaments in international cooperation efforts (Cheneval and Schimmelfennig 2013) or private-public partnerships (Abbott and Snidal 2009). Future research could also test the robustness of our findings if respondents were left uninformed about the effects of the suggested international cooperation effort in other countries. The latter would be interesting because individuals tend to rely more on their evaluation of procedural qualities when evaluating their personal gain or loss from an allocation situation if they do not know what others have received (Van den Bos et al. 1997). Finally, we did not consider the possibility that citizens may obtain information (or cues) on process and outcome characteristics of international cooperation from different types of sources and from different types of actors. Such source effects could be examined in further research as well.

Overall, however, the research presented here shows that complementing existing conceptual and theoretical work on public support for international cooperation with empirical research based on an experimental design can provide new insights that are relevant both from an academic and policy viewpoint. Academically, such research can help us understand how citizens evaluate international cooperation and form opinions and preferences in this respect. From a policy perspective, it can generate insights into how international cooperation could be designed and communicated to citizens so that it enjoys sufficient public support for being politically viable and effective.

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