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From Collaboration to Policymaking: How Collaborative and Participatory Decisions Actually Change Policy (or not)

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Abstract

Citizen and stakeholder participation are often expected to improve the outcomes of public governance. Little attention has been paid so far to whether and under what circumstances the outputs of participatory processes are actually taken up by policy decisions and get implemented. This study reports on findings from a case survey meta-analysis of 143 cases of public environmental decision-making across Europe, North America, Australia and New Zealand. The paper asks: (1) What kinds of outputs do participatory decision-making processes produce? (2) What are the key contextual conditions under which binding political decisions take up the outcomes of participatory processes? (3) What are the key process features that determine whether binding policy outputs emerge? This study takes us further towards understanding the 'fate' of participatory decision making in environmental governance and beyond.

Keywords

decision-making, participatory democracy, policy outputs, environmental governance

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Introduction: From Collaboration to Policymaking?

Democratic innovations, such as various forms of collaborative governance and citizen and stakeholder participation are often credited with producing better environmental policy outputs and outcomes than top-down, technocratic decision-making (Emerson and Nabatchi 2015; Koontz and Thomas 2006; Newig and Kvarda 2012; Jager et al. 2020). However, relatively little attention has been paid so far in the literature to how far collaborative and participatory outputs actually inform policy decisions and get implemented (Birnbaum 2016; Font et al. 2018, Koontz 2005). This study contributes to addressing this gap, and asks if, how, and under what conditions the outputs of collaborative governance processes are taken up in politically binding decisions and policy. The study analyzes 143 cases of participatory environmental governance, examining key aspects of the socio-political context in which processes occur, the characteristics of processes themselves, and the nature of the outputs produced, in order to trace the fate of participatory outputs. With this analysis we seek to build on the work of Font and colleagues (Font et al. 2018; Font et al. 2016), who examined the fate of proposals originating from 39 participatory processes across 25 Spanish municipalities. Drawing inspiration from this research, and from the work of others who have studied the policy impacts of participation processes (e.g. Busenberg 2000; Koontz 2005, 2006; Koontz et al. 2019), we take in a wider variety of participatory decision-making processes that have played out in a range of national settings, addressing diverse environmental issues.

We find that it tends to be participatory outputs that draw heavily on knowledge and the experiences of participants, and in which participants have a strong say in the content and shape of the output, that are taken up in political decisions. Our results also suggest that high levels of communication alone, controlling for participant influence and knowledge integration, have a negative effect on the political uptake of participatory outputs. These findings (1) provide additional nuance and insight on the fate of outputs generated by means of public participation, thus (2) contributing new empirical evidence to inform ongoing debates about the legitimacy and instrumental value of participatory governance and democratic innovations (see Newig and Fritsch 2009a).

Conceptual framework

In this study, our unit of analysis is the public environmental decision-making process (DMP). We are interested in processes that are to a greater or lesser extent participatory or collaborative (Newig et al. 2013), and which aim to reach a collectively binding decision on issues concerning

the environment. A DMP may be initiated in a 'top-down' or a 'bottom-up' fashion, and may comprise a single process or several related (sub-) processes (e.g. public hearings, task forces, round tables, citizen advisory committees etc.). This broad framing intentionally captures a wide variety of governance modes and 'degrees' of participation or collaboration in planning, licensing, rule-making, impact assessment and other forms of public policy-making.

We understand public and stakeholder *participation* as a multi-dimensional concept that may vary along at least three dimensions (Fung 2006; Newig et al. 2018):

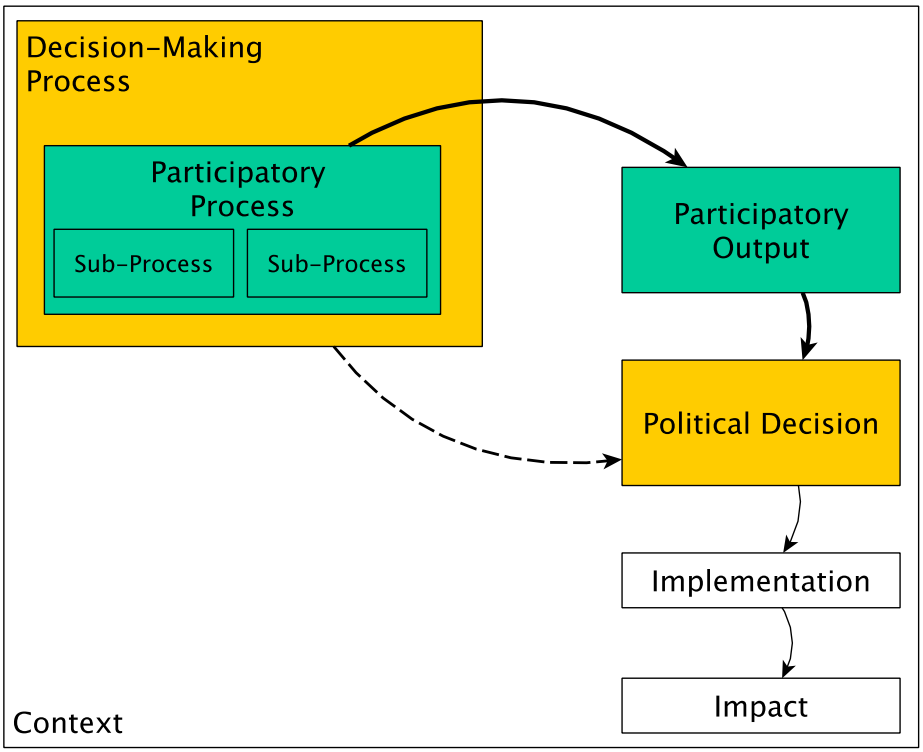
- *Communicative intensity*: The nature, direction and intensity of information flows (e.g. one-way provision of information or consultation versus two-way dialogue and collaborative development of preferences);
- *Participant influence*: The extent to which participants are able to shape or determine the decisions taken – i.e. the 'participatory output';
- *Access*: The extent to which a range of stakeholders and other actors are included in, or are able to participate in, the process (e.g. participation by a small number of selected experts, representatives of organized groups, or citizens versus participation by the general public).

In this sense, a policymaking or planning process involving some form of public or stakeholder participation may be understood as producing a sequence of outputs (e.g. decisions, plans, proposals) with more or less binding character that may in turn be implemented and subsequently have some impact on the environment (see Figure 1). According to this conceptual model a *participatory process*, which may itself comprise multiple sub-processes or fora, is embedded within a wider public DMP. This wider DMP of course plays out in a particular socio-political and environmental context, aspects of which are likely to shape the dynamics of participation and decision-making. For the purposes of the present analysis, we identify the end of a participatory process as the point at which a participatory output is produced.

This participatory output (which could be a decision, a proposal, or a set of recommendations) may have varying degrees of legal bindingness, ranging from a simply informative character, to semi-binding forms of commissioned advice, to legally binding resolutions or decisions. In many cases, however, participatory processes have a consultative or advisory character (Bingham 2010; Fung 2006; Klijn et al. 2012; Koontz 2005) without a direct legal mandate. Eventually, the political decision itself may or may not be implemented. Factors that can hinder implementation include a lack of cooperation among implementing actors, and the overruling of political decisions through litigation and court rulings (Coglianese 1997;

Kochskämper et al. 2016). Where a political decision is implemented, the environmental impact of this in terms of actual observable change in environmental quality may be delayed or difficult to recognize, and attribution of environmental change to a specific political decision is not straightforward (Ferraro 2009; Koontz et al. 2019).

Figure 1: A participatory decision-making process model including outputs and implementation



While implementation and subsequent impact of environmental policy are important areas of research, we focus in this study on a critical and under-researched intermediate step between participatory or collaborative governance, and the adoption of policy – namely, the uptake of participatory outputs in political decisions. In particular, we analyze how and under what conditions participatory outputs are taken up in political decisions. Evidence on factors influencing the uptake of participatory decisions in the political process is sparse (Font et al. 2018). Building on Font et al. (2018), we distinguish potential influencing factors in three categories: contextual, process-related, and output-related factors.

Contextual factors

Contextual factors relate to socio-political and environmental aspects of the policymaking setting within which a given process takes place (Ingram 2011). Different societies and communities have different dispositions towards public participation in political processes,

influenced by the *political culture* of the decision-making environment. While some communities may be very amenable to and familiar with public participation, others may be less accustomed to participation, and less comfortable with the idea of involving the wider public directly in the political process (Newman et al. 2004). It is plausible that in places with a more established culture of participation, participatory decisions will be taken more seriously and accepted to a greater degree by the authorities. We therefore test the following hypothesis:

H1: Where there is a political culture of participatory decision-making, participatory outputs are more likely to be taken up in political decisions.

Apart from the political culture towards participation, *social capital* within a given community – in terms of the degree of shared norms and trust among government actors and the public (Newig et al. 2013) – may play an important role in the adoption of a participatory output (Klijn et al. 2010; Oh and Bush 2014). Close, trustful relationships among networks of stakeholders, authorities and the wider public may foster sincere engagement and collaboration, enhance mutual monitoring and social control, and increase the detection of non-compliance (Leach and Pelkey 2001; Ostrom 1990). In light of this, we therefore hypothesize that:

H2: Where social capital among authorities and the public is high, participatory outputs are more likely to be taken up in political decisions.

A further contextual factor, which we expect to be related to the foregoing factors, is connected to the *decision-making level* in the sense of the administrative level at which a given process plays out. This administrative scalar dimension has been identified as influential in shaping how participation plays out (Newig, Schulz and Jager 2016). As Dahl (1994) argued, participation may be easier to organize on more local levels, which potentially allow for the representation of a larger proportion of the community. In such a local-level setting, the adoption of participatory outputs may be more likely given closer relations between the public and the responsible authorities. We therefore test the following hypothesis:

H3: Where a participatory process takes place at a lower, more local level, participatory outputs are more likely to be taken up in political decisions.

Beyond the aforementioned contextual factors, and relating more to the particular decision-making environment, we suggest that certain problem settings will have a bearing on the success of participatory processes and the adoption of participatory outputs. In particular we assume that so-called *NIMBY* (not in my backyard) situations represent a specific kind of problem setting that implies considerable barriers to rational dialogue and consensus building (Schively 2007).In such contexts, the interests of a particular group of actors are to be weighed against a wider collective interest, often leading to highly contentious proposals and intractable situations (Fischer 1993). Under these circumstances, two trajectories appear possible: On the one hand, a participatory output may entail a mutually acceptable solution to the tensions between particular and collective interests, which may make adoption of the output more likely. On the other hand, a participatory output may emerge out of a conflictual process, which proposes a sub-optimal or unworkable solution. This participatory output may then be overruled or disregarded by a subsequent political decision if it reflects too strongly the particular interests of a few affected parties or otherwise fails to overcome deadlock or deliver progress on an urgent or important issue. While both general scenarios may be plausible, we test here the following negative hypothesis, given the often particularly challenging nature of NIMBY settings:

H4: Where a NIMBY situation characterizes the issue at stake in a participatory process, participatory outputs are less likely to be taken up in political decisions.

Process-related factors

A second set of variables that might help explain the fate of participatory outputs relates to key features of the participatory process itself. It is reasonable to assume that the qualities of a participatory process will impact on the uptake of the output to emerge from the process in a subsequent political decision (Beierle and Cayford 2002; Font et al. 2018; Koontz 2006). We assess the qualifying characteristics of participatory processes according to the three dimensions identified above – i.e. communicative intensity, participant influence, and access to the process. In terms of *communicative intensity*, it is possible that a process characterized by intensive two-way dialogue among participants, and free flow of information, will deliver an output that is more reflective of the shared interests of participants, and more likely to be accepted by all parties, including the responsible authority. However, there is also potential for highly intensive processes to arrive at proposals or decisions that are not feasible for authorities

to adopt in a given political or economic climate. For the present analysis, however, we test the following hypothesis:

H5: Where communication in a participatory process is more intensive, participatory outputs are more likely to be taken up in political decisions.

The second feature of participatory processes that may affect the uptake of participatory outputs relates to *participant influence*, in the sense of the degree to which participants are able to shape or determine the participatory output (Newig et al. 2018). A high degree of participant influence may have a positive effect on uptake of the output if the output reflects the values and interests of participants and stakeholders, and therefore commands widespread public acceptance and approval (Kochskämper et al. 2018). This is perhaps even more likely where authorities have deliberately delegated authority to participants and afforded influence. In cases where participants may have asserted a high degree of influence against the intended or anticipated function of the process, it is possible that this relationship could work in the opposite direction against uptake of the participatory output. Here we test the following positive hypothesis:

H6: Where participants have more influence in determining the participatory output, participatory outputs are more likely to be taken up in political decisions.

Access to the participatory process is a further process-related factor that might influence uptake of the output. Participants may be recruited into a decision-making process – or gain access to a process – in a variety of ways. Some processes may involve participation by a small number of strategically selected experts or representatives of key groups who are invited to be part of the process (Fung 2006). Other processes may be relatively open and inclusive, whereby participants self-select and freely opt in to the process. While both modes of participant selection can be effective depending on the nature of the issue at hand and the purpose of the participatory process, we suggest that a more targeted participant selection, wherein the responsible authority maintains control over who participates, may be more likely to generate an output that is consistent with the aims and priorities of the CA and is therefore subsequently taken up or adopted (Koontz & Moore Johnson 2004). We hypothesize that:

H7: Where access to a participatory process is more open or unrestricted, participatory outputs are less likely to be taken up in political decisions.

As the decision-making processes analyzed in this study are oriented towards addressing an environmental problem, we also investigate the importance of relevant *knowledge* provided, elicited, and aggregated during the process. The knowledge in question may relate to the resource or issue at hand, or to the socio-political context in which the decision will need to be implemented (Ulibarri 2015). The key factor of interest here, though, is the extent to which the process involved structured methods for the incorporation of knowledge relevant to addressing the environmental issue at hand. A participatory output that is produced through such knowledge integration methods is likely to be more fit-for-purpose (Newig et al. 2018), and therefore more likely to be taken up in a political decision. We test the following hypothesis:

H8: Where participant knowledge is deliberately integrated into a participatory process, participatory outputs are more likely to be taken up in political decisions.

Beyond key characteristics of the process itself, we suggest that the *commitment of the responsible authority* to supporting and maintaining the process may be a decisive factor in the fate of process outputs (Busenberg 2000). Greater commitment on the part of the authority is likely to mean that the process is sufficiently resourced and supported to reach a solution that is acceptable from the perspective of the responsible authority. In general, we contend, an authority that is highly committed to a participatory process is more likely to also be committed to adopting the output of that process. We hypothesize that:

H9: Where the responsible authority is more committed to maintaining the participatory process, participatory outputs are more likely to be taken up in political decisions.

Output-related factors

Finally, the nature of the participatory output itself may impact on its uptake in a political decision. Following Font et al. (2018), we assume that an output that implies *divergence from the status quo* may have a lower chance of being taken up in political decisions. This is plausible because adoption of such outputs may demand that authorities acknowledge a need to change (or even admit to being out of step with public sentiment), and because departure from business

as usual typically requires considerable investment in new expertise, systems and processes (Barbier 2011). In contrast, outputs that mainly reiterate existing policies (Fischer 2014), or reinforce decisions that have effectively already been taken (Cooke and Kothari 2001; Hoppe 2011), may be easier for authorities to adopt. We hypothesize that:

H10: Where the output of a participatory process diverges from the status quo, participatory outputs are less likely to be taken up in political decisions.

Methodology

This study builds on a database of 307 participatory environmental decision-making processes (see Newig et al. 2013), which covers a variety of more- and less-participatory public decision-making procedures (from administrative decision-making to highly collaborative processes) and environmental issues (e.g. water management, waste facility siting, land use planning). The data were generated via a case study meta-analysis (case survey method) (Larsson 1993; Newig and Fritsch 2009b) of published case studies. The case survey is a meta-analytical method that involves the conversion of rich, qualitative information from narrative case studies into quantitative data, representing a numeric interpretation of the case study texts. The method is particularly suited to aggregating data and synthesizing emergent finding in fields where empirical evidence is mainly scattered among numerous single or small-N case studies, as is the case in public participation research.

We define a case as an instance of public decision-making, which can vary in the degree to which it is participatory in the previously defined sense, but is aimed at reaching a collectively binding decision ('participatory output'). Our case survey involved the following steps (see Figure 2):

1) Case identification and selection: Faced with the broad variety of terms used to describe and analyze participatory processes in the literature, we decided against relying on a single search string, but rather opted for a number of combinations of search terms in several iterations. We conducted a thorough search of several library catalogues and scientific databases[1], considering studies published up until 2014 in English, French, German, or Spanish language,

[1] Sources searched include: BASE; Google Books; Google Scholar; GVK+; Science Direct; SciVerse Hub; Scopus; SpringerLink; SSRN; Web of Science; Wiley Interscience.

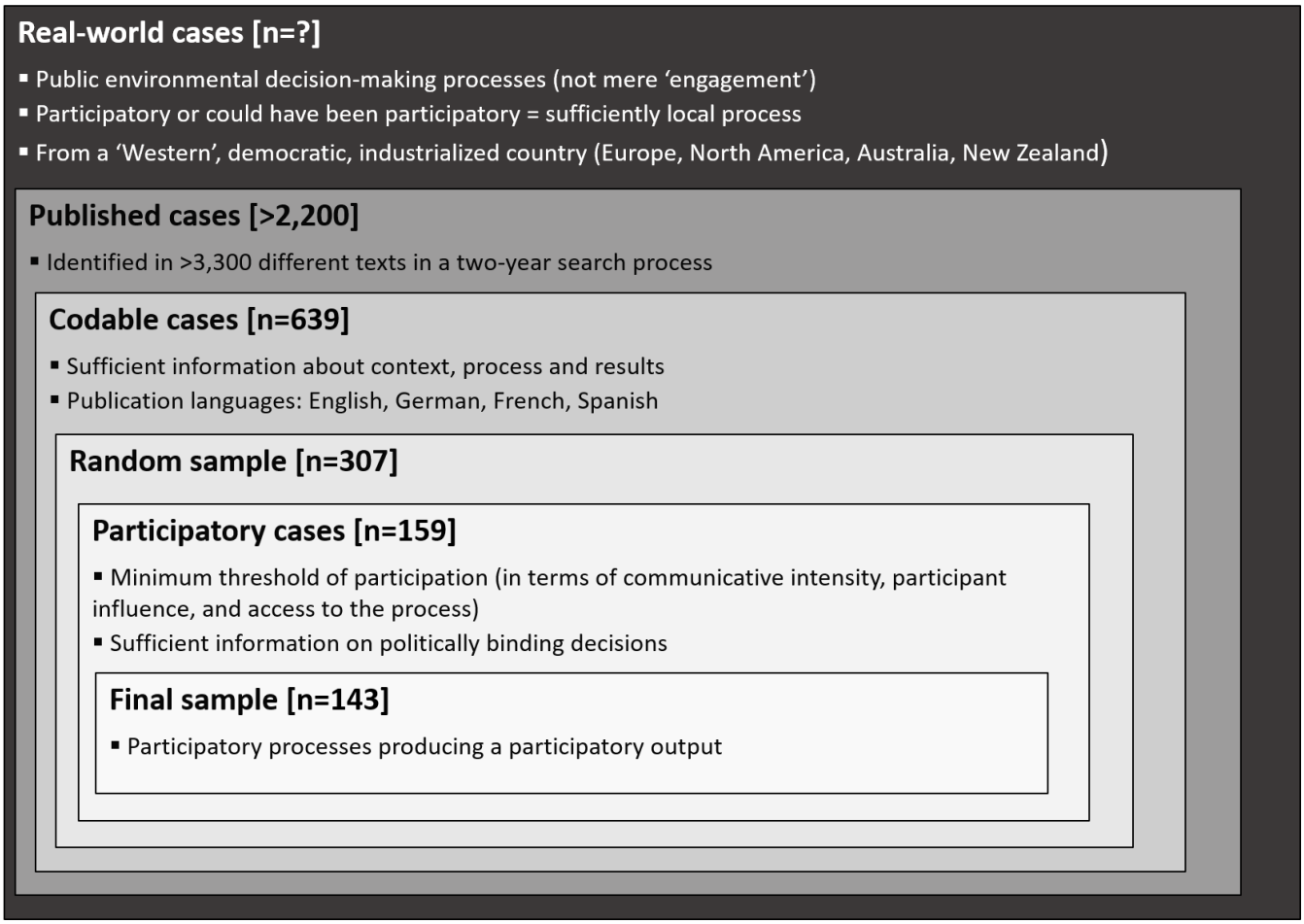
in publicly available outlets including books, peer-reviewed journals, edited volumes, theses, working papers, and various forms of grey literature. Geographically, for reasons of comparability, cases were limited to Western democratic countries – i.e. from Europe, North America, and Australia and New Zealand. In this way, we identified more than 2,200 single cases, described in over 3,300 texts. We continued to search until saturation was reached and no new cases were being discovered, at which point we assumed that we had covered a comprehensive set of relevant, publicly available cases. Identified texts were screened for suitability, and those containing insufficient information for analysis were eliminated, resulting in a database of 639 'codeable' cases. We then randomly sampled 307 cases for full coding.

2) Coding scheme development: On the basis of our conceptual understanding of participatory decision-making processes, we developed an analytical coding scheme [ANONYMOUS] containing 256 quantitative variables to measure the process, context, outputs and outcomes of decision-making. Measures mostly employed 5-point scales from 0..4.
3) Case coding: Each case was independently read and coded by three trained coders. In addition to the coding of actual variables, coders specified the reliability of the information underpinning their coding decision for each variable (on a 3-point scale, 1 = enough information for an informed guess, 3 = explicit, detailed and reliable information). After initial independent coding, data for each case were collated and coders met to discuss the case in order to address coding mistakes and explore divergent interpretations. However, in accordance with the case survey method, and to allow for different interpretations of the case material, coders were not required to reach consensus on codings (Kumar et al. 1993). Despite this explicit provision for divergent codings, inter-coder reliability, assessed through G(q,k) (Putka et al. 2008), was 0.77, and interrater agreement (r_{WG}, James et al. 1984) was 0.73, indicating high validity of the data overall. The final data set was generated by averaging the three coders' scores, weighted with the respective information reliability scores (see Bruggen et al. 2002).

Given the aim of this analysis was to explore the fate of outputs of participatory processes, we further limited our data set to those cases that displayed a minimum degree of participation. We applied a minimum threshold value of 1 (with a maximum of 4) for each dimension of participation discussed above: communicative intensity; participant influence; and access to the process. This yielded 183 cases, and after excluding a further 24 cases due to lack of information

on politically binding decisions, we arrived at 159 participatory cases. Finally, a further 16 cases were excluded for lack of a participatory output, which left us with a final sample of 143 cases for analysis.

Figure 2: Case identification, screening and sampling process



We operationalized the dependent variable – that is, the uptake of a participatory output in a subsequent political decision – by assessing the similarity between the former and the latter (10 cases did not lead to a political output). We measure this in a binary way, with 1 indicating full adoption of the participatory output into the political output, and 0 everything below (e.g. adoption of an altered proposal, or outright rejection). We rely on this rather crude, binary measure, sacrificing some information and detail about cases, as case study records usually do not focus on this step of participatory governance, and hence, provide very little information on this step of implementation. While this may not yield highly nuanced insights, it will provide a robust, conservative estimate of the fate of these participatory decisions.

For the independent variables, we drew on the conceptualization provided in the SCAPE codebook (Newig et al. 2013) or aggregates thereof (e.g. through Principal Component Analyses (PCA)). Detailed variable descriptions can be found in table 1. For the analysis, we applied descriptive statistics, as well as regression analyses (logistic regression).

Table 1: Explanatory factors for the uptake of a participatory output

Cluster	Variable	Operationalization
Context	Participation culture	Degree to which participation and cooperation were accepted as appropriate means to resolve social and political conflicts and make public decisions, at the scale of the DMP (56), scale: [0..4].
	Social capital	Resulting PCA 1, trust in government (51), trust in governmental actors (52), trust among stakeholders (53), shared values and norms among stakeholders (56), Cronbach's Alpha=0.75
	Decision-making level	Binary variable (derived from 50) 1: County-level or below 0: Above county level
	NIMBY	Binary variable (79): 1: Existence of a NIMBY situation 0: Absence of a NIMBY situation
Process	Communication	PCA2: Dialogue (231), face-to-face communication (169), consultation (230), information provision by authorities (229), Cronbach's Alpha=0.9
	Participant influence	Degree to which the participants (excluding the CA) actually developed and determined the output (232), scale: [0..4]
	Access	Degree to which participant selection was designed in a controlled way (161), scale: [0..4], with 0 being completely unrestricted
	Knowledge	PCA3: structured information elicitation (165) and aggregation (166), usage of methods for knowledge integration (170), Cronbach's Alpha=0.87
	Commitment responsible authority	Degree to which the responsible authority was committed to (maintaining) the DMP (184), scale [0..4]
Output	Divergence from status-quo	Degree to which the output diverges from the status-quo. Calculated by taking the absolute value of the degree to which the environmental output aimed at a change (for the better or the worse) of environmental conditions in terms of natural resource protection (261), human health (260), and conservation (259), scale [0..4], Cronbach's Alpha=0.87

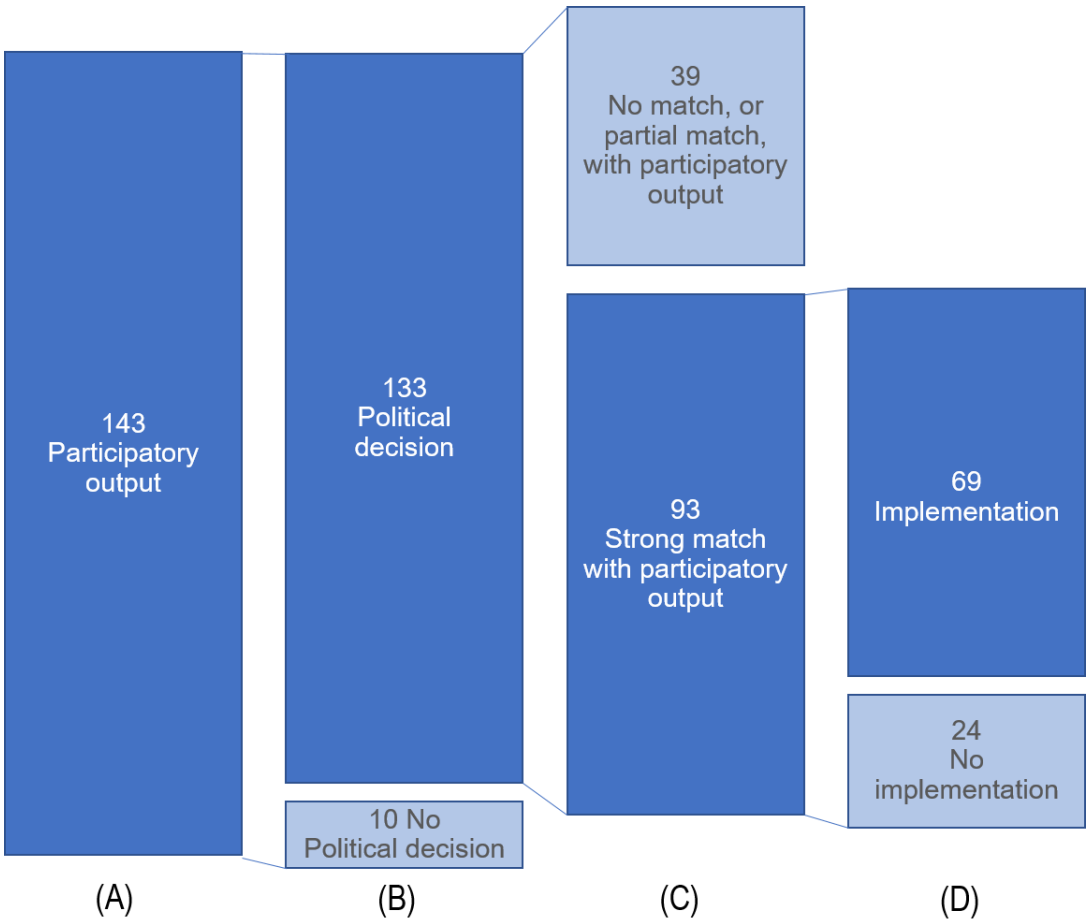
NOTE: Numbers in brackets indicate the original variable numbers from the SCAPE coding scheme (Newig et al. 2013).

Results

Overview

As depicted in figure 3, we traced the fate of outputs from 143 participatory/collaborative processes (A). 133 of the 143 processes that produced participatory outputs were then followed by politically binding decisions (B). Of these, in 93 cases the political decision completely adopted the participatory output, whereas in 39 cases, the political decision was quite independent of the participatory output, i.e. they aligned only partially or not at all (C)[2]. Of the 93, 69 were implemented (at least to some degree), whereas 24 were not (at the respective time of writing) (D). In total, eight decisions were challenged in court, but none was substantially changed or repealed (see figure 3).

Figure 3: The 'fate' of participatory outputs



Note: The numbers reflect the decision-making processes in our sample.

[2] In one case, data was not sufficient to assess the match.

When do participatory outputs get taken up in politically binding decisions?

On the basis of the factors identified in section 2 above, we executed a regression analysis, and compared several models. Table 2 presents the estimates for these models on the similarity between participatory and political output.

The role of the participatory process: Model (1) includes only those variables that describe the qualities of the participatory process. It shows particularly pronounced effects for *participant influence* and *knowledge integration*. This indicates that processes that allow participants particular influence in shaping the output, as well as those that have a particular focus on knowledge elicitation, aggregation and integration, have a high likelihood of delivering outputs that will be adopted in a political decision. These effects are robust throughout our analysis as the subsequent models, including further controls, show. On the 0.1 level, *communicative intensity* also appears significant. Interestingly, the sign is not in the assumed direction, but rather suggests that processes with higher communicative intensity generate outputs that are less likely to be taken up in political decisions (and vice versa). This effect is robust, when controlling for additional factors in models (2) to (4).

The role of commitment by the responsible authority: In model (2) we introduce *authority commitment*, which describes the commitment of the responsible authority (i.e. the authority that has legal responsibility for the issue and is therefore responsible for the DMP) towards maintaining the process. Indeed, we observe that this factor is significant. However, in subsequent models, which control for further contextual variables, the direction of the effect remains positive, but its significance drops below conventional thresholds.

The role of context: After considering the main process factors, model (3) introduces the contextual factors into the analysis. This model reveals a significant negative effect for NIMBY situations. This means that participatory outputs generated in a NIMBY context have a lower likelihood of being adopted as, or taken up in, political decisions. Social capital, while also displaying the hypothesized positive sign, is only significant at the lower 0.1 level. The signs of participatory culture and local level are negative, but effects are not significant. The explanatory power of the model increased considerably, as overall model parameters show an improved model fit, as the AIC dropped from 161.086 to 155.377 and McFadden's R-square increased up to 0.27.

Table 2: Model estimates for logistic regression models

	Dependent variable: Similarity Participatory Output – Political Output			
	(1)	(2)	(3)	(4)
Social_Capital			0.453*	0.460*
			(0.244)	(0.259)
Participation_Culture			-0.503	-0.590
			(0.351)	(0.375)
Local_Level			-0.304	-0.462
			(0.460)	(0.473)
NIMBY situation			-1.155**	-1.256**
			(0.586)	(0.634)
Communicative Intensity	-0.589*	-0.703**	-0.795**	-0.782**
	(0.322)	(0.327)	(0.365)	(0.370)
Access	0.005	-0.015	-0.095	-0.152
	(0.205)	(0.212)	(0.226)	(0.236)
Participant influence	1.023***	0.996***	1.112***	1.079***
	(0.325)	(0.327)	(0.365)	(0.377)
Knowledge Integration	0.584**	0.567**	0.596**	0.714***
	(0.231)	(0.285)	(0.249)	(0.263)
Authority Commitment		0.564**	0.528	0.465
		(0.285)	(0.307)	(0.309)
Output Divergence				-0.154
				(0.404)
Constant	-1.982**	-3.257***	-2.004	-1.164
	(0.922)	(1.166)	(1.342)	(1.423)
Observations	141	137	135	132
Log Likelihood	-79.258	-74.543	-67.689	-65.4381
AIC	168.516	161.086	155.377	152.761
McFadden R^2	0.144	0.195	0.269	0.293

Note: *p<0.1; **p<0.05; ***p<0.01; Standard errors in parentheses.

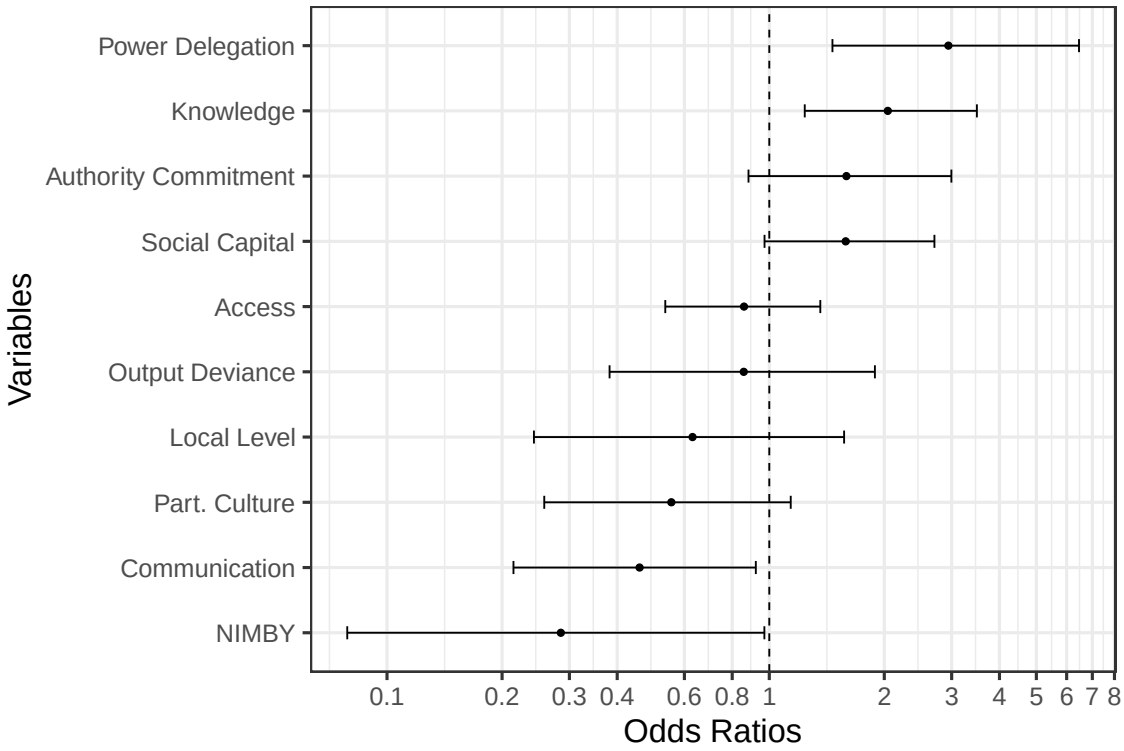
The role of output characteristics: Finally, model (4) includes all factors previously identified as well as the characteristics of the participatory output[3]. However, the output's *divergence from the status-quo*, while displaying the assumed negative sign, does not show a significant effect. In

[3] For this final model, we also ran standard diagnostic tests, to assess the validity of the model. Tests for multicollinearity, linearity, heteroscedasticity, the influence of outliers, and for overdispersion did not yield problematic results.

this, final model, the effects of knowledge integration, communicative intensity, participant influence and NIMBY situations remained robust. Model parameters again show an improved model fit with the AIC being 152.761 and McFadden's R-square rising to 0.29 indicating an acceptable model fit.

For model (4), we also calculated the odds ratios for all predictors – that is, the likelihood of a change in the dependent variable occurring with a unit of change in the independent variable. Figure 4 displays these, together with 95%-confidence intervals. The figure supports the model's results in that Knowledge, Participant influence, Communication, and NIMBY situations do not cross the value of 1 (meaning that the odds for the dependent variable to occur are the same as for the null model, i.e. without any intervention), indicating a clear effect. The model suggests that the odds of a participatory output being taken up in a political decision are two times higher if knowledge elicitation and integration increases by one unit, and 2.66 times higher for every unit change in participant influence. Communication intensity has a log-odds of 0.46, while changes from a non-NIMBY (0) to a NIMBY situation (1) results in a change in odds of 0.27 for the participatory output being adopted in a political output – i.e. it becomes almost four-times less likely.

Figure 4: Odds ratios (OR) of independent variables (model 4)



Note: Dots mark the odds ratios derived from model 4, bars indicate 95%-confidence intervals.

Discussion and conclusions

This study provides an overview of the 'fate' of outputs from a large number of participatory decision-making processes in environmental governance. In our sample, most participatory or collaborative governance processes aiming to produce a politically binding decision, or to be taken up in a political decision, did in fact succeed in this. Quite clearly, the degree of knowledge integration built into a participatory process serves as a predictor for whether or not a resultant outcome is taken up in a subsequent politically binding decision. This suggests that those processes, where participants are genuinely included as co-creators of knowledge, will also more likely feed into a political program than those where participants do not have this active role. The positive effect of power delegation to participants could be interpreted as a further indication of this.

The communicative intensity shows a significant negative effect on the uptake of participatory outputs in political decisions. Seen in the context of the analysis conducted here, the results suggest that communication, controlling for its role in knowledge elicitation and integration and in executing participants' influence, does have a negative effect. This can be seen as an indication that high levels of communicative intensity (by itself), beyond its actual instrumental value for other variables, may mean that processes are occupied with a lot of discussion and negotiation, but not so much with consequential decision making.

Overall, our analysis suggests that particularly those traits characterizing the instrumental value of participation (such as its value for knowledge generation and direct decision) facilitate the uptake of decisions; while on the other hand, variables that capture input legitimacy (e.g. access), empowerment and societal context do not show the same effect. This suggests that overall, participation is especially impactful when used as a tool.

However, we do find an interesting significant effect where the environmental issue at hand is characterized by a NIMBY situation, that is, where particular interests have to be weighed against wider benefits. In such contexts, political decision-makers were less likely to adopt the recommendations developed through a participatory process to address these situations. We can, based on the present analysis, only speculate as to the reasons for these findings. Further analyses may specify the characteristics of these cases and their outputs in more detail. But these insights also highlight that NIMBY situations pose particularly challenging problem settings for environmental and participatory decision-making, where decision-makers are faced with strong tensions between individual and wider societal interests and the difficulty to balance these. This

has especially important implications for the democratic legitimacy of decisions and the question of which interests are more highly valued in these situations.

This study has provided some early findings on the fate of the outputs generated in participatory governance processes. It relied on an analysis of 143 participatory processes and their outputs, coded through a case survey meta-analysis. It is our hope that the analysis has contributed to a foundation for future research to inform a deeper understanding of the processes at play in collaborative and participatory environmental decision-making processes. More attention needs to be paid to the context and procedural features that shape the fate of a participatory output and the wider role of democratic innovations within the policy process. For example, building on this study, research might ash what precisely are the factors that make NIMBY situations so particular in that the chances of a participatory output being adopted are so much lower? How exactly are the tensions between particular and collective interests negotiated and accommodated? What happens further along in the implementation process, and are participatory decisions more likely to lead to changes in environmental quality on the ground?

These are just a few seemingly important questions, given the current popularity of collaborative and participatory environmental governance in Europe, North America, and beyond. Major pieces of environmental legislation, such as the European Water Framework Directive, and the Floods Directive attach considerable importance to public participation, prescribing the involvement of non-state actors and stakeholders in environmental planning and decision-making. Insights into the fate of the outputs of these processes are therefore relevant, first, from an instrumental perspective, to understand how the 'instrumental claim of participation' (i.e. that participation enhances the environmental quality of political decisions) translates on the ground; and, second, from a democratic perspective, tracking the embedding of participatory processes in the wider political process and its implications for the democratic legitimacy of decisions.

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