Between ‘scientisation’ and a ‘participatory turn’. Tracing shifts in the governance of policy advice

Eva Krick (University of Oslo), Johan Christensen (Leiden University), Cathrine Holst (University of Oslo)

Abstract:
This study traces the claims of a ‘scientisation’ and a ‘participatory turn’ in modern governance within the system of temporary policy advisory committees in Norway. It analyses whether there is evidence of the two claims in these key governance institutions, and to what extent these shifts are compatible with each other.
As expressions of a participatory turn, a growing emphasis on citizen involvement and transparency in the committee system is searched for. A growing relevance of researchers and of science-based claims in the committees’ reports are taken as indicators of scientisation.
The longitudinal study shows a clear overall shift towards science- and expertise-based governance. Yet, only on new policy issues has policy-making become clearly more open to the public by including more ‘ordinary citizens’, extending public data access and account-giving practices.

Key words:
scientisation, participation, governance, policy advisory committees, Norway

Introduction

This study traces two sweeping claims about shifts in modern governance practices – the claim of a ‘scientisation’ and of a ‘participatory turn’ in policy-making. These two claims are often repeated in studies of democracy, governance and politics, but rarely empirically assessed over time. What is more, they seem to draw into different directions and it is unclear in how far they are compatible.

Scientisation refers to the growing reliance on scientific expertise to back up political claims and draw up viable policy solutions, and it is believed to respond to the growing complexity of policy-making (see Christensen/Holst 2017; Kitcher 2011; Lentsch/Weingart 2011). The claim of a *participatory turn* refers to increasing openness and public involvement into policy-making as an answer to the legitimacy crisis of the representative model of democracy (see e.g. Fischer 2009; Hood 2006; Jasanoff 2003).

In this study, we assess these two claims by focusing on a key policy advice institution through which the input of external actors is channeled into political systems: ad hoc advisory

committees that are set up by governments, produce policy proposals in the form of final reports and assemble experts as well as civil society actors. These institutions are relatively flexible and have the double function of generating trustworthy policy expertise and integrating societal viewpoints. The shifts towards scientisation and more public participation can thus be expected to manifest themselves here.

We analyse whether there is evidence of the two claims in these key governance institutions, and to what extent these shifts are compatible with each other. We use the example of Norwegian advisory committees (*Norges offentlige utredninger* – NOU), which produce 'Official Norwegian Reports', a series with high status and a long tradition in Norwegian policy-making. We track changes over time by studying NOUs that have deliberated on similar issues but were set up at different times – and we do so by comparing three different policy areas: tax policy, climate policy and gender equality and family policy. In each policy area, we examine, on the one hand, changes over time in the reliance on scientific experts and expertise within advisory committees and, on the other hand, changes in the participation of citizens and the openness of the committee process.

In the next section, we outline 'scientisation' and a 'participatory turn' as two central trends in contemporary governance (section 1) and discuss their relationship. We then introduce the research design: a longitudinal analysis of scientisation and a turn towards public involvement in the system of Norwegian advisory bodies, reaching across a set of 'most different' policy areas. In this second section, we also present the data and indicators used in the study, describe the Norwegian system of NOUs, and justify our case selection. The sections that follow present the empirical findings, policy field by policy field (sections 3-5). We find that scientisation takes place, but that the tendency is not equally strong across policy areas, whereas a participatory turn can be traced, if not unambiguously, in two of the three areas. We subsequently discuss the findings (section 6) and suggest that the policy field variation reflects different degrees of (de)politicisation and flexibility of the policy fields' agendas and policy solutions. A brief concluding section succinctly summarises our findings, outlines the study's broader significance, discusses some of its limitations and points to future research agendas.

1. Pressures towards scientisation and a participatory turn in modern governance

Pressures to 'scientise' public policy-making have been traced back to modern governance's growing dependence on specialised, and in particular science-based, knowledge

(Christensen/Holst 2017; Kitcher 2011; Lentsch/Weingart 2011). The last decades have seen the emergence of 'knowledge societies', characterised by a sharp and steady increase of access to information, scientific knowledge and levels of education and attainment around the world (Bornmann and Mutz 2015; Meyer et al. 1997; OECD 2017), as well as increasing numbers of knowledge-producing institutions and 'depoliticised' expert bodies (Curtin 2007; Vibert 2007). Despite contestation of the authority and accountability of experts and disappointment about the sciences' failures to provide certainties, there is a widely held belief in modern societies that a sound knowledge basis and recourse to scientific insights help to ensure the quality of public policies. As Meyer et al. (1997, 152) observe, states 'make valiant efforts to live up to the model of rational actorhood' and build policies on expert knowledge to retain credibility and legitimacy, to justify choices and to find viable and trustworthy solutions. Being perceived as uninformed, irrational and not 'evidence-based' can become a strain on public institutions' reputation (Carpenter 2010). The 'ceremonial worth of expertise' (Meyer and Rowan 1977) not only pertains to state actors: In many policy fields, activists build their initiatives on robust scientific arguments to back up their demands (Yearly 2005).

While the relevance of expertise and a general rationality mandate for public policy-making may not be a new theme (Douglas 2009), some recent shifts have intensified these demands and particular importance is accorded to science as modern society's main provider of reliable knowledge. For one thing, the management of contemporary high-pace technological change and the regulation of risks associated with it make scientific expert knowledge ever more indispensable (Christensen/Holst 2017). For another, the ongoing expansion of state functions, the subsequently growing complexity of policy-making and a concurrent tendency to minimise state administration have extended the demand for external policy advice. This together with the relatively recent emergence of a science-based policy advice market (Lentsch/Weingart 2011) is likely to have accelerated scientisation tendencies during the last two decades. We can assume that these shifts have contributed to changes in ideas about what constitutes 'good governance' and pushed governance towards scientisation. We therefore expect scientisation to be reflected in the set-up and operations of policy advisory bodies. More specifically, we examine whether the relevance of researchers and of science-based claims in public advisory committees has increased during the last decades (see for more details section 2).

A second major trend, which partly responds to scientisation trends and partly to intensified criticism raised against representative democracy, is the pressure to 'open up' policy-making to the public and to tap new sources of legitimacy. Political recognition of and

commitments to a participatory turn have been codified in several key political agreements and proposals of the last two decades.[1] A common framing of these calls for more public participation has been to present the involvement of the less powerful, the non-professionals, the non-elites, of less established grass roots groups, 'the public' at large and the 'ordinary', 'lay' people – as an antidote to technocratic, expert- and elite-led governance.[2] Building on the direct model of democracy, emphasis is put on more immediate, issue-specific and deliberative forms of participation within 'mini publics' such as consensus conferences and online debate forums or through referenda (Fischer 2009; Fung 2006; Gora/Holst/Warat 2018). In addition to citizens' direct involvement in policy development, public access to information is considered a prerequisite for meaningful involvement and the doctrine of transparency has arguably attained 'quasi-religious significance' (Hood 2006, 3) in contemporary debates about legitimacy and good governance.

Although the highest-flying hopes connected to 'citizen participation' can often not be fulfilled,[3] increased access to information and more direct public involvement hold some normative potential: public participation is bound to increase public awareness of political issues and offers opportunities for those with little power to be heard, develop political self-efficacy and learn from the processes. In addition, broader public involvement can add to the accountability of public policy-making because those involved will have co-responsibility for the political solutions that were developed.

With concepts such as 'mode-2-knowledge production' or the 'co-production of knowledge', the sociology of knowledge and science has also pointed to possible *epistemic* merits of opening up policy development (see Jasanoff 2003; Nowotny 2001). The idea is that experts and policy-makers can learn about citizens' views and concerns by involving the public more broadly; from this perspective, the inclusion of 'local knowledge' or 'experts by experience' can also enrich the policy process with further viewpoints and generate 'socially

[1] See European Commission (2001), (2016), OECD (2016) and UN (1998). Interestingly, all these policy instruments emphasise transparency and citizen involvement, but they also stress the importance of efficient expertise and evidence-based decision-making.

[2] In these debates, 'public' and 'citizen' are often used as positive buzzwords, which are rarely clearly defined, yet seem to denote somehow more legitimate, more democratic political processes that are closer to 'the people'. Such a general way of speaking can be problematic, when it indicates a unified public will that is ignored by 'the elites' and altogether purer motives of 'ordinary' people. Of course, such normative concepts need to be substantiated, particularly when trying to grasp and trace them empirically, as we do here. We will define and discuss these notions in section 2, when we operationalise our key indicators.

[3] Meaningful citizen participation is not easy to realise and the inherent dilemmas of these practices are often overlooked. The most important one is the distorted representation that particularly innovative, deliberative forms of public participation tend to show and the resulting 'class bias' of such experiments (see Fung 2006; Krick 2018).

robust' or even more 'rational' solutions to collective problems (Nowotny 2001; Wynne 1992). In this study, we want to examine whether the participatory turn has reached the Norwegian advisory committee system. More specifically, we search for signs of a growing emphasis of citizen involvement and of transparency of committee decision-making.

A key question is how these two trends relate to each other and how well they go together (see also Krick/Holst 2018). Are these contradictory or complementary shifts in governance practices? Given the quite different rationales behind science- and research-based governance on the one hand and the inclusion of lay perspectives into policy-making on the other, it is easily conceivable that we get one at the expense of the other. Emphasis on public participation can push aside scientists in policy advice venues or weaken the legitimacy of science-based claims. In settings where science-based claims enjoy a high status, by contrast, lay involvement may be considered irrational or uninformed. Yet, a co-existence, compatibility and even a mutual re-enforcement is also thinkable. After all, scientisation can trigger calls for a 'democratisation' of public participation as compensation for technocratic developments. Similarly, in practices of 'co-production' of policy expertise, lay people may need to be supported, assisted and informed by scientists. In this paper, we will be able to judge these trends' compatibility, and so shed light on a decisive, but understudied question in discussions of trends in modern governance. Yet, with our research design we will not be able to tell in how far one development actually reacts to the other; on this issue, more research is needed over a longer period of time and with a focus on actor level strategies and justifications.

2. Research design

We trace the trends of scientisation and extended public participation within the Norwegian system of ad hoc public advisory committees, known as NOUs. These are central governance instruments and providers of policy expertise in the Norwegian political system. NOUs are usually publicly visible and it can therefore be costly for governments to ignore their advice. Their high status is reflected by the common practice of building on NOU reports in subsequent law proposals and official statements. NOU committees are furthermore hybrid advisory institutions (Krick 2015) that address both the government and the public; they provide information and guidance, but are also used for societal involvement and policy coordination; they assemble experts from different backgrounds alongside societal representatives and civil servants, and they tend to be open to public input.

NOUs are thus in several respect a suitable setting for examining possible shifts in the reliance on scientific expertise and citizen input, respectively, in governance. First, if the trends are salient we should be able to track them not only under special circumstances, but within the NOU system in general since it constitutes one of the key auxiliary governance structures of the Norwegian polity. Second, NOUs are relevant for the study of both our selected trends. If NOU committees were introvert committees producing purely expertise-based advice, with the bureaucracy as their exclusive addressee, a 'participatory turn' as described here would not be likely. Conversely, if the NOUs were simply public arenas for negotiations between societal interests, the scientisation expectation would be less obvious. However, since the NOUs have multiple, and both social and epistemic functions, both expectations seem to apply. Third, studies of the NOU system describe it as flexible and adaptive (Tellmann 2016), in contrast to more rigid and formalised advisory systems where governance trends of the kind we are interested in would less likely strike in. Finally, as the NOU system is comparably transparent with detailed public reports and additional material available on the government's official webpage, data availability for our longitudinal study is unusually high and allows us to cover a range of different policy fields and indicators.

At the same time, the results of our study are not confined to the Norwegian case, but speak to larger governance trends and shifts in the 'politics of expertise' and their effects on advisory mechanisms and committee systems. Importantly, the central role of the hybrid ad hoc advisory committee is not limited to the Norwegian political system, but is typical for compromise-based political systems with a corporatist legacy and consensus-oriented cultures of public sense-making and expertise-production, such as the Scandinavian, the German-speaking and the Low countries, as well as the European Union (see e.g. Christensen et al. 2017; Krick 2015; Krick/Holst 2018).

We examine the trends of scientisation and extended citizen participation by looking at advisory commissions within three 'most different' policy areas. The logic behind this 'most different systems design' is to assess whether scientisation and a participatory turn are trends that unfold across the board. By examining policy areas that are representative of the broader population on important dimensions, we are able to say something about the generality of these trends. For instance, if scientisation of advisory bodies is manifest across very different policy areas, this would indicate that this development is of a general character, rather than limited to specific domains.

The policy areas selected for study are climate change policy, taxation policy, and gender equality and family policy. These areas differ along a number of dimensions. First,

climate change policy can be described as primarily regulatory, but with clear distributive consequences in the longer run, family policy as primarily distributive,[4] while taxation policy is both redistributive (e.g. progressive taxation) and distributive (e.g. tax breaks for home-ownership) (Lowi 1979). Second, taxation is an old and well-established policy field, gender equality and family policy combines older and newer issues,[5] while climate change is a relatively recent concern, and as a result, cuts across established policy issues, government departments and sectors. Third, tax policy exemplifies the traditional materialist policy paradigm with the corresponding social cleavages and interest group constellations, while climate issues are related to the rise of post-materialist values and new social movements. Once more, gender equality and family policy constitute an in-between area (Fraser 2013). Fourth, tax policy falls under a 'strong' ministry (the Ministry of Finance), whereas family policy and climate change fall under 'weaker ministries' (the Ministry of Children and Equality and the Ministry of Climate and Environment, respectively). Finally, taxation and climate change policy are often treated as more 'technical' policy fields, while family and gender policy is often subsumed under 'social policy' in the broader sense.[6]

Within each policy area, we trace developments over time by examining all advisory commissions set up by a specific department that investigated a specific policy issue from the mid-1980s up until today. This includes four commissions appointed to investigate the climate change issue, five commissions examining the overarching features of tax policy and four commissions dealing with equal pay and policies for families with children. The commissions examined within each field are highly comparable, thereby allowing us to isolate and identify changes in the reliance on scientific knowledge and in citizen participation over time.

The analysis draws on data from official documents: commission reports and material available on commission websites. The documents have been analysed both quantitatively and qualitatively. We have traced scientisation and a participatory turn by looking at a series of indicators.

As signs of a *scientisation* of NOU governance we take an increasing involvement of researchers and a growing relevance of science-based claims. While the role of the expert is of

[4] The broader field of gender equality and family policy cuts across these distinctions, but the issues we will focus on in this paper – equal pay and families with children – are primarily distributive.

[5] Demography (fertility, birth control, marriage etc.), for instance, is an older issue, while women's equal opportunities is a more recent focus.

[6] Taxation issues are, however, not naturally more complex and less tangible than for example family policy issues. Rather, such framings are often politically motivated, reflect societal power relations and can be used to attract or deviate public attention.

course not confined to scientists, and while useful policy expertise can come from various sources, we want to grasp a possibly growing authority of scientific knowledge and therefore focus on academics and science-based validity claims. To capture scientisation, we analyse:

(a) *Composition*: To what extent do researchers participate on commissions as members and chairs? Researchers are defined as individuals who hold a PhD and professionally conduct research. In terms of their organisational affiliation, we distinguish between researchers located at independent research institutions (i.e. universities and (politically and financially) independent research institutes) and those at research-conducting public agencies ('research directorates' such as Statistics Norway (SSB) or the Norwegian Institute of Marine Research).

(b) *Citation patterns:* The citation analysis includes studies that were ordered by NOU commissions as input to its deliberations ('commissioned studies') as well as the literature referenced in commission reports. Here we take an increase of academic commissioned studies, of citations in general and of references to academic publications in the report as signs of scientisation. As *academic* studies we count those conducted by research institutions (universities and independent research institutes) and publications in peer-reviewed journals and academic publishing houses.

(c) *Epistemic language*: This part of the analysis traces the use of epistemic keywords in the terms of reference and reports of commissions, such as 'evidence', 'knowledge', 'data' and 'research'.[7]

As signs of a *participatory turn* of NOU governance we take a growing emphasis on public/citizen involvement and increasing transparency of the committees' work. While there are of course other forms of participation, most traditionally by established special interest groups such as trade unions, we here try to capture access channels for less established, less powerful societal voices and therefore primarily search for the involvement of 'ordinary', non-organised, lay citizens as well as public interest, human rights and non-established grassroots groups (such as citizens' initiatives).[8]

We analyse:

[7] The full list of epistemic keywords is: *Akademisk/akademia* (academic/academia), *Kunnskap* (knowledge), *Data* (data), *Valid** (valid*), *Vitenskap** (science), *Forsk(n)ing/forsker* (research/researcher), *Informasjon* (information), *Ekspert** (expert), *Undersøkelse* (investigation), *Metod** (method), *Hypotese* (hypothesis), *Modell* (model), *Eksperiment* (experiment), *Analys** (analyse/analysis), *Fag/lig* (scientific/professional), *Sakkyndig* (expert), *Teori/teoretisk* (theory/theoretical), *Empiri** (empirical), *Kvantitativ* (quantitative), *Kvalitativ* (qualitative), *Evidens* (evidence), *Bevis* (proof), *Inferens* (inference), *Signifikansnivå* (significance level), *Regresjon* (regression), *Reliabilitet* (reliability), *Korrelasjon* (correlation), *Survey* (survey), *Kausal** (causal).

[8] In the tables summarising the data of the case studies, we also mention stakeholder access channels where appropriate, but these do not count as indicators of a participatory turn from the perspective we take here.

(a) *Citizen inclusion*: To what degree are citizens included into the committee's work? Indicators are the participation of 'ordinary', non-organised citizens as well as ad hoc initiatives, public interest and grassroots organisations as committee members and their involvement through further open access channels (such as polls, email feedback, online debate forums, regional conferences, 'open hearings' that are open to the public). We qualify these channels of inclusion by asking in which roles citizens were engaged.

(b) *Transparency*: We further analyse the degree of transparency and data access by assessing, first, to what extent the NOU gives an account of its internal deliberations by making minutes, summaries of debates or interim results available. Second, we assess the accessibility of key material used and processed by the committees (commissioned studies and written opinions to the commission available in annex or on website). Third, we evaluate whether the NOU commits to transparent, participatory and responsive procedures. We see this indicated in a report that entails an explicit description of the NOU's participatory approach, of its dissemination efforts (through op-eds, newsletters, lectures, website etc.) as well as the content and processing of the input that the NOU received. It is important to note that we here rely mainly on information contained in the report itself, which does not allow us to capture all actual participation and dissemination. For instance, commissions may engage in dissemination without reporting it.

These indicators all capture theoretically important aspects of scientisation and a participatory turn. To be sure, each single indicator may not offer a perfect expression of the overarching phenomenon. For instance, measures of the degree to which reports use scientific language are sensitive to how the dictionary of keywords is compiled. However, taken together, we believe that the measures provide a valid expression of the phenomena we seek to examine. In the next section, we empirically trace scientisation and participatory shifts within advisory commissions, examining the three policy areas in turn.

3. NOUs on climate change policies

Four NOUs on climate change policies were set up by the environmental ministry since the climate change issue gained momentum in the mid-1990s: The 'Measures commission' ('Virkemiddelutredningen' NOU 1995:4) evaluated the efficiency of policies aiming at reducing environmental pollution and emissions, the 'Quota commission' ('Kvoteutvalget' NOU 2000:1) focused on the establishment of a quota system for greenhouse gases, the 'Low emissions commission' on the reduction of climate gas emissions ('Lavutslippsutvalget' NOU

2006:18) and the 'Adaptation commission' on adaptation measures to an already changing climate ('Tilpassingutvalget' NOU 2015:15).

3.1. Scientisation of climate change NOUs?

On the climate change issue, we see a certain tendency towards scientisation, reflected within the composition as well as the citation patterns (see table 1). Over time, NOUs assemble more academics in their ranks and they are more likely to be led by a researcher in the chair position. The general scope and the number of academic publications in the reports' reference lists also grows considerably over time. An interesting shift is also observable in the framing of the report. The use of epistemic language is particularly marked in the latest report and there is a clear tendency towards a more frequent use of the terms 'research' (forsk(n)ing) and 'knowledge' (kunnskap), while in older reports, the more general keywords 'analyse', 'data', 'modell', 'information', 'theory' and 'method' dominated.

Table 1: Results of the scientisation analysis (climate change NOUs)

Indicators	**NOU 1995:4**	**NOU 2000:1**	**NOU 2006:18**	**NOU 2010:10**
Composition				
Scientific chair	No	No	Yes	No
Number and share of researchers as members (including chair)	2 18%	3 27%	3 43%	2 24% (plus 2 in 'researcher' positions at research directorates = 48%)
Citation patterns				
Number and share of academic commissioned studies	1 13%	4 44%	2 50%	6 60%
Number of publications in reference list	54	30	93	208
Number and share of academic publications in reference list	22 43%	3 10%	21 23%	69 33%
Epistemic language				
Number of epistemic keywords used	1100	529	258	1374

Frequency of epistemic keyword	2,2 per page	1,7 per page	1,8 per page	5,2 per page
Number of epistemic keywords in the mandate	2	1	0	14
Most frequent keywords (used more than 50x)	Data, metod*, analys*, teori/teoretisk, fag*	Metod*, data, modell, informasjon, analys*	Forskning	Kunnskap, forskning, analys*, data, fag*, information, modell, undersøk*

3.2. A participatory turn on the climate change issue?

We see clear signs of a participatory turn amongst climate change NOUs, and this applies to both the citizen inclusion and the transparency criteria (see table 2). In the latest NOU, an environmental pressure group received a seat and, over time, non-organised, lay citizens were increasingly involved through various input channels in the role of input receivers and providers of fresh perspectives, but not as co-deciders or committee members. The NOU's internal deliberation is documented in more and more detail and public access to key documents is clearly increasing. Similarly, the newer reports describe their participatory approach in detail, account for their dissemination efforts, and increasingly summarise the public input they receive and the way the NOU dealt with it, although this feedback remains relatively vague. Yet, there is no linear rise, with the Low emissions commission (NOU 2006:18) standing out in several respects.

Table 2: Results of the participatory turn analysis (climate change NOUs)

Indicators	**NOU 1995:4**	**NOU 2000:1**	**NOU 2006:18**	**NOU 2010:10**
Citizen inclusion				
Citizens involved as committee members	No	No	No	1 environmental group No ordinary citizens as members
Channels of citizen input	No (not mentioned in report)	No (not mentioned in report or on website)	Yes 4 open access, regional, public conferences, public online debate forum and public survey	Fairly 1 open access 'dialogue conference'

Citizens involved in other roles than members	No (not mentioned in report)	No (not mentioned in report or on website)	Yes Information receivers and providers of fresh perspectives	Yes Mainly information receivers
Transparency				
Documentation of internal deliberation	No (not mentioned in report)	No (not mentioned in report)	Fairly Summaries of the NOU's debates on website lavutslip.no	Yes According to the report, minutes of committee meetings and conferences were available as electronic annex on the department's website
Easy access to key material used/processed by the committees	Barely Commissioned studies partly in annex	Fairly 9 written opinions annexed to report Only stakeholder advisory group had access to the commissioned studies	Yes 13 written opinions annexed to report Commissioned studies on website	Fairly 22 written opinions delivered, but not annexed to report Commissioned studies were published on Klimatilpasning.no
NOU's self-description as transparent, participatory and responsive	No	Fairly No explicit description of participatory approach Committee members attended external conferences Vague description of content and processing of the received input	Yes Explicit description of participatory approach Handouts, leaflets, newsletter, informative website Description of content and vague description of processing of the received input	Fairly No explicit description of participatory approach Pamphlets, committee members attending conferences and holding lectures Description of content of the received input

4. NOUs on tax policy

Five commissions in the period 1980-2018 examined overarching aspects of tax policy. All of these commissions submitted their report to the Ministry of Finance. The Commission on Personal Taxation (*Personbeskatning*, NOU 1984:22) examined the taxation of individuals; the Commission on Corporate and Capital Taxation (*Bedrifts- og kapitalbeskatningen – en skisse til reform*, NOU 1989:14) investigated the tax system for businesses and different forms of capital; the Commission on Flatter Tax (*Flatere skatt*, NOU 1999:7) looked at the possibilities

for more proportional taxation; the Tax Commission (*Skatteutvalget*, NOU 2003:9) examined all aspects of tax policy; whereas the Commission on Capital Taxation in an International Economy (*Kapitalbeskatning i en internasjonal økonomi*, NOU 2014:13) looked more specifically at the challenges of internationalization for the tax system.

4.1. Scientisation of tax policy NOUs

There are signs of a scientisation of NOU reports in the field of tax policy. In terms of composition, the first commission was a "broadly composed commission" that included a number of politicians but only one academic, whereas academics were well represented on the latest four commissions. However, we do not see a trend towards more scientific chairs. Citations in commission reports also suggest a scientific turn: the total number of references and the number and share of references to academic work increased over time. The use of epistemic keyword in reports was considerable throughout the period, with extensive use of keywords such as 'analyse/analysis', 'method', 'theory/theoretical', 'empirical' and 'data'. The use also increased somewhat over time according to our measures. However, it must be noted that these results are sensitive to the exact words included in the search dictionary. Some of the most commonly occurring keywords have multiple meanings in the context of taxation and do not always indicate scientific content (in particular 'model' and 'method'). When excluding these words, epistemic language still increases markedly between 1984 and 1999 but then drops in the latest two reports.

Table 3: Results of the scientisation analysis (tax policy NOUs)

Indicators	**NOU 1984:22**	**NOU 1989:14**	**NOU 1999:7**	**NOU 2003:9**	**NOU 2014:13**
Composition					
Scientific chair	No	Yes	No (SSB)	No	No (SSB)
Number and share of researchers as members (incl. chair)	1 6%	3 27%	2 29% (+1 SSB)	3 27%	3 38% (+1 SSB wo/ PhD)
Citation patterns					
Number and share of academic commissioned studies	5 71%	5 83%	3 43% (+ 4 SSB studies)	4 44% (+ 4 SSB studies)	2 66%
Number of publications in reference list	25	23	91	48	156

Number and share of academic publications in reference list	10 40%	2 9%	47 52%	28 58%	88 56%
Epistemic language					
Number of epistemic keywords	471	656	795	817	912
Frequency of epistemic keyword	0,87 per page	1,42 per page	1,90 per page	1,92 per page	2,45 per page
Number of epistemic keywords in the mandate	1	5	8	7	19
Most frequent keywords (used more than 50x)	Metod*, analys*	Metod*, analys*, teori/teoretisk	Analys*, empiri*, teori/teoretisk, metod*, data, modell	Metod*, analys*, empiri*, modell	Metod*, modell, analys*, informasjon, empiri*

4.2. A participatory turn in tax policy NOUs?

There are very few signs of a participatory turn in tax policy NOUs. In none of the commissions have citizens been involved as committee members or in other roles, nor has citizen input been sought through other channels. In terms of transparency, none of the commissions established separate websites or provided documentation on internal deliberations. However, every commission published the commissioned studies it relied upon as annexes to the report. One commission also published an additional appendix online. Few dissemination activities were described in the reports, with the exception of an open seminar organised by the latest commission. Furthermore, none of the commissions explicitly described its participatory approach.

Table 4: Results of the participatory turn analysis (tax policy NOUs)

Indicators	**NOU 1984:22**	**NOU 1989:14**	**NOU 1999:7**	**NOU 2003:9**	**NOU 2014:13**
Citizen inclusion					
Citizens involved as committee members	No	No	No	No	No
Channels of citizen input	No (not mentioned in report)	No (not mentioned in report)	No (not mentioned in report)	No (not mentioned in report)	No (not mentioned in report)

Citizens involved in other roles than members	No (not mentioned in report)	No (not mentioned in report)	No (not mentioned in report)	No (not mentioned in report)	No (not mentioned in report)
Transparency					
Documentation of internal deliberation	No (not mentioned in report)	No (not mentioned in report)	No (not mentioned in report)	No (not mentioned in report)	No (not mentioned in report)
Easy access of key material used/processed by the committees	Commissioned studies provided in annex to report	Commissioned studies provided in annex to report	Commissioned studies provided in annex to report	Commissioned studies provided in annex to report	Commissioned studies provided in annex to report + additional appendix online
NOU's self-description as transparent, participatory and responsive	No (not mentioned in report)	No (but describes how interest groups were involved through reference group)	No (not mentioned in report)	No (but describes how interest groups were involved through reference group)	No (not mentioned in report)

5. NOUs on gender equality and family policy

Several NOUs from the 1990s onwards were submitted in the gender equality and family policy area. In two sub-areas, both central to the policy field – equal pay and policies for families with children – there were 'NOUs with a history'. The mandate of NOU 2017:6 Public Support to Families with Children (The Ellingsæter Commission) refers to this commission as a follow-up to NOU 1996:13 Redistribution to Families with Children (The Longva Commission). On the issue of equal pay, NOU 2008:6 Gender and Pay (The Equal Pay Commission) is a continuation of the work of NOU 1997:10 Job Evaluation Schemes for Equal Pay (The Nybøen Commission). All the selected reports were submitted to the Ministry of Children and Equality.

5.1. Scientisation of gender equality and family policy NOUs

Both composition and citation patterns have features that confirm the scientisation expectation in the gender equality and family policy area (see table 5). There is a steep increase both in the number and share of researchers as commission members, in the number of publications included in the reference list, and in the number and share of academic publications referred to. The framing analysis also shows that *Forsk(n)ing/forsker* (research/researcher) is an epistemic keyword most often used by the most recent NOUs. However, some sub-area differences occurs, in particular in the framing analysis, where the frequency of the epistemic keywords

used and the number of epistemic keywords used in the mandate are consistently lower in the family policy NOUs than in the equal pay commissions.

Table 5: Results of the scientisation analysis (gender equality and family policy NOUs)

Indicators	**NOU 1996:13**	**NOU 1997:10**	**NOU 2008:6**	**NOU 2017:6**
Composition				
Scientific chair	No (SSB)	No	No	Yes
Number and share of researchers as members (including chair)	2 18% (+1 SSB)	2 15%	6 75%	7 78% (+1 SSB)
Citation patterns				
Number and share of academic commissioned studies	7 47% (+8 SSB studies)	0 0	1 33% (+ 1 SSB study and 1 study from other research directorate)	0 0 (+1 SSB study)
Number of publications in reference list	158	83	231	489
Number and share of academic publications in reference list	36 23%	14 17%	126 55%	317 65%
Epistemic language				
Number of epistemic keywords used	1742	1098	1413	872
Frequency of epistemic keyword	2,51 per page	3,88 per page	4,60 per page	2,39 per page
Number of epistemic keywords in the mandate	1	4	13	4
Most frequent keywords (used more than 50x)	Undersøkelse, Analys*, Modell, Data, Forsk(n)ing/forsker, Teori/teoretisk, Metod*, Fag/lig, Empiri*	Fag/lig, Metod*, Analys*, Informasjon, Kunnskap, Undersøkelse	Analys*, Fag/lig, Forsk(n)ing/forsker, Modell, Undersøkelse, Teori/teoretisk, Informasjon, Data	Modell, Forsk(n)ing/forsker, Data, Analys*, Kunnskap

5.2. A participatory turn in gender and family policy NOUs?

There are some signs of a participatory turn in the gender equality and family policy NOUs, even if the tendency is far from clear-cut (see table 6). It goes for all the studied reports that commissioned studies are accessible in the annex. The earliest NOUs score however negative or low on the rest of the citizen inclusion and transparency indicators. One of the most recent NOUs – The Ellingsæter Commission on family policy (NOU 2017:6) scores almost as low. However, the Equal Pay Commission (NOU 2008:6) has significant participatory features. This commission emphasised and specified a participatory approach laid out in the report. It had also channels of citizen input and involvement – a website and a public mid-way seminar – and scored higher than the other commissions on transparency.

Table 6: Results of the participatory turn analysis (gender and family policy NOUs)

Indicators	**NOU 1996:13**	**NOU 1997:10**	**NOU 2008:6**	**NOU 2017:6**
Citizen inclusion				
Citizens involved as committee members	No	No	No	No
Channels of citizen input	No (not mentioned in report)	No (not mentioned in report)	Yes, an open access public seminar and an online debate forum	No (not mentioned in report)
Citizens involved in other roles than members	No (not mentioned in report)	No (not mentioned in report)	Yes, primarily information receivers, but also providers of fresh perspectives	No (not mentioned in report)
Transparency				
Documentation of internal deliberation	No (not mentioned in report), apart from listing of visiting presenters (researchers/SSB)	No (not mentioned in report)	Limited, but commission chair and members presented at a public seminar organised a year before submission (2007)	No (not mentioned in report), apart from listing of visiting presenters (researchers, including international scholars/SSB)
Easy access of key material used/processed by the committees	Commissioned studies provided in annex to NOU report	Commissioned studies provided in annex to NOU report	Commissioned studies and inputs from organisations in reference group provided in annex to NOU report	Commissioned studies provided in annex to NOU report
NOU's self-description as transparent,	No explicit description of this sort	No explicit description of this sort	Explicit description of participatory approach	Limited description of this sort (but mentioned are a

participatory and responsive			The importance of broad dissemination and public debate is stressed Mentioned are a public meeting, website and reference group, media coverage, interviews/op-ed. (In addition, reference group inputs (unspecified) have been "used in the commission's work")	meeting with interest groups and these groups' invitation to provide additional written input)

6. Discussion

Our analyses confirm the expectation of scientisation across a set of 'most different' policy areas to a considerable extent. Our findings show how the notion of a 'knowledge society', with its growing focus on building public policies on scientific knowledge and 'evidence', has set its mark on temporary policy advice commissions: Academics are increasingly making up and chairing the committees we study; the reports have ever-growing reference lists and refer increasingly to academic literature. Commissions also make active use of epistemic language, although there is no uniform increase in the frequency of science-oriented keywords over time. At the same time, we see signs of a turn towards more participatory and transparent committee governance in two of our three selected policy areas: In the climate change and the family and gender policy fields, channels of lay citizen input are amplifying, citizens tend to be included in more active, responsible roles, the degree of documentation and data access grows and commissions increasingly express commitment to participation, transparency and responsiveness.

Yet, neither the scientisation tendency nor the participatory turn are unambiguous: In two of the policy fields we study, we do not see scientisation reflected in the terminology used by the NOU's reports. Besides, all the commissions we study, not only the more recent ones, include scientists as members, and the amount of academic references has also been significant in several of the early commissions. Thus, the scientisation trend we observe is taking place in a commission system where scientists, scientific knowledge claims and terminology have been playing a role for quite some time.

Our findings indicate that scientisation sometimes comes in tandem with an increased focus on citizen participation and transparency. Yet, we hardly see a full-fledged participatory turn. Lay citizens, if anything, are still mainly included in relatively passive roles and they are therefore unlikely to significantly shape public policies through these channels. That ordinary citizens are hardly included as a force to be reckoned with may have to do with the complexity of the commissions' mandates and the concomitant need for specialised expertise. The general idea of knowledge-based policy-making might be considered at odds with the idea of direct citizen participation because the 'lay citizens' targeted by these endeavours by definition are not specialists on the policy issue in question. The lack of a full-fledged participatory turn may also be explained in part by the corporatist tradition of the Norwegian political system and its system of hybrid ad hoc committees in particular. In these committees, interest groups have traditionally been involved as members, through additional external advisory panels ('reference groups'), more informal bilateral exchanges and as routine providers of written statements during the hearing process that takes place after submission of the report and lets affected interests have a say. In many of our cases, these corporatist channels of influence still play a pronounced role, despite the widespread evocation of an 'end of corporatism', and they may well fulfil the participatory functions that many expect from citizen inclusion. The limitations to data access and transparency could also be a path-dependent feature: the corporatist bargaining system is relatively closed during negotiations in order to facilitate concessions and package deals. 'Deliberation behind closed doors' can furthermore be conducive to the deliberative and epistemic quality of expertise production in committees because transparency and epistemic concerns can pull into opposite directions. There is a certain tension between the level of civility and the level of openness in deliberations (Mansbridge et al. 2012) and public gaze can nudge the involved stakeholders to follow a logic of interest-based bargaining instead of reason-based arguing (Gornitzka/Krick 2018).

There are moreover noteworthy differences between the policy areas. As for the scientisation of the committees' composition, this is less pronounced in the climate change policy area. This may be connected to the relatively young age and cross-cutting character of this policy field. The lack of fixed corporatist bargaining relations and institutions is likely to leave advisory structures flexible and open for competing knowledge actors and forms of expertise. Environmental groups have been shown to be amongst the most professionalised and knowledge-oriented, using information as 'access goods' to the policy process (Bouwen 2004; Yearly 2005). They also advocate public concerns, not special interests, and are thus likely to be considered relatively impartial. Their trustworthiness and professionalisation may have

equipped their representatives with the capacity to replace the input of scientists to a certain extent. Besides, the ministry that is primarily concerned with climate protection issues (currently called Ministry of Climate and Environment) is a relatively weak actor in bureaucratic politics, but has pronounced expertise on environmental issues and we can thus assume that scientific knowledge on climate issues is partly channeled into NOUs through the presence of expert civil servants.

Several scientisation indicators increase most steeply in the gender equality and family policy area. This is a policy area with a relatively weak ministry with limited budgets and considerably less agenda-setting power within economic and social policy than for example the Ministry of Finance or the Ministry of Labor and Social Affairs. The civil society and interest groups in this area are also relatively weak. Obviously, key issues in gender equality and family policy overlap with questions that are central to the social partners (pay, welfare services and benefits, etc.). However, in these organisations, gender perspectives are often trumped by other concerns, and the women's movement outside of political parties has in recent years become relatively marginal both in terms of members, budget and influence (Skjeie 2012). Overall then, gender equality and family policy is an area where ideas of knowledge-based policy-making are particularly likely to be embraced in order to increase salience and impact. The period we have studied is furthermore one where Norwegian women and gender studies have become more deeply institutionalised as an academic field, while preserving its relatively applied and policy-oriented orientation. These additional factors seem to sit well with high and increasing scores on scientisation variables.

We find indications of scientisation also in the taxation field, although the changes over time are moderate. In this area, there appears to be a movement towards commissions with substantial participation of academic experts, citation of academic literature and use of epistemic language – features shared by the three most recent commissions. Scientific knowledge seems to have found a rather stable position in this field – i.e. it has become institutionalised. This may be linked to the more settled character of the taxation field and the power of the administrative body in charge of tax policy, the Ministry of Finance.

As for the participatory turn, it turns out to be most pronounced in the climate change area. In this new policy field, power relations and bargaining structures are less fixed and there are fewer strong, resourceful pressure groups with pronounced ownership in the policy field. Institutional flexibility is likely to be higher and societal demands (such as for participatory governance) can be more easily incorporated. Besides, in the climate policy field, 'cause groups' dominate. In contrast to 'sectoral groups' that advocate special interests and are

established players in many of the traditional policy fields, cause groups represent post-materialist viewpoints, stand for collective concerns and human rights, and often radiate a certain moral authority (see Stewart 1958 and Klüver/Saurugger 2013 for these concepts). They are closely interlinked with social movements and typically promote more direct citizen participation. Besides, within environmental policy, political commitment to the openness of policy making seems particularly pronounced, reflected, for instance, by the ambitious Århus Convention (UN 1998), national legislation on Environmental Impact Assessments and the multitude of participatory experiments in this field (Lidskog 2008). The relative newness of the climate change issue also means that policy approaches, problem definitions and agendas are more dynamic (see also Rothstein 1998 on the distinction between 'static' and 'dynamic' policies). The NOUs on climate change policy we studied reflect this. Problem definition was not completed and policy solutions were not treated as known. In fact, these NOUs were relatively open to new perspectives and new actors. From this perspective, public inclusion into policy development may be more of an asset than a mere liability.

By contrast, no participatory turn was visible in taxation policy. This may be linked to the technical complexity of the tax system, which makes it more amenable to scientific analysis than to citizen input. However, this kind of argument should not be accepted too quickly: tax policy-making also involves important value choices, e.g. about the degree of redistribution. Rather, it can be argued that administrative and scientific actors have succeeded in progressively de-politicising tax policy preparation, pushing interest group to the margins of advisory commissions and making few efforts to actively involve citizens.

Gender equality and family policy falls here in an in-between category and the two sub-issues studied vary systematically. There are few signs of any increased concern for broad inclusion and transparency in the reports on policies for families with children. 'Families' were established as objects for technocratic policy interventions well before the rise of the feminist movement with its new actors and participatory approach to policy-making. In accordance with this legacy, family policy has been conceived of as a rather technical and settled field, with SSB, at least up until recently, as a dominant producer of policy-relevant knowledge. Hence, there is maybe not so much fertile ground for a participatory turn in this area. In contrast, the equal pay agenda is more closely connected to the new and more participatory grammar of politics introduced by the new women's movement.

7. Conclusion

Overall, our findings confirm a stronger reliance on science-based claims and on academics as policy advisors across the board of Norwegian temporary advisory committees and a turn towards openness and lay citizen involvement on those policy issues that are new and closely linked to social movements. We believe that such changes in the routines of policy-making reflect – and shape – our cultural understandings of democratic legitimacy and of the validity of public claims-making and that their analysis is therefore highly relevant for society and political decision-making. The actors involved and the perspectives included in advisory institutions make a difference for the substance of the policy advice generated and thus the way a problem is framed, addressed and eventually solved in a certain policy domain. Of prime importance here is the question of composition. Not accidentally are questions of composition often issues of fierce political struggle behind the scenes when advisory committees are set up. This is particularly the case when advisory institutions are of such central importance in a system of governance as the here-analysed NOUs. Virtually every important social reform, every new or especially contested issue has been taken up by an NOU in the past and these reports tend to be translated into a white book by the government. Key for their prime importance in a consensus-oriented knowledge society such as Norway is their double function and their traditionally hybrid composition (Arter 2004; Christensen/Hesstvedt 2018; Christensen/Gornitzka/Holst 2017; Krick/Holst 2018). They assemble both key holders of relevant knowledge and societal perspectives and thus generate 'negotiated expertise' (Krick 2015), that is knowledge-based as well as agreed upon by the main societal stakeholders and thus particularly implementable, usable and socially embedded. When the participation patterns of these important venues of policy development changes, this tells us something about shifting societal understandings of valid knowledge and of democratic legitimacy – and these institutional changes may then reconfirm such cultural shifts. When governments increasingly open up advisory processes to the public, they probably value this kind of input as such, or at least flag a commitment to public scrutiny and 'ordinary people'. When they build policy advice more substantively on research, they probably value this kind of knowledge as particularly helpful and valid – but they may also use the status of science for policy reforms to appear as particularly rational and objective.

Our analysis is an important first step towards tracing the two popular claims in real-life policy-making, not least since there is a pronounced lack of longitudinal analyses of these trends. Yet, our study clearly has several limitations. By focusing on specific policy areas, we

have ensured strong comparability between reports over time. However, this limits the number of reports analysed, which restricts our ability to draw firm conclusions. One direction for further research would be to apply the indicators of scientisation and a participatory turn to a larger number of commissions. Our indicators of scientisation are also sensitive to how they are specified. For instance, exactly which keywords are included in the dictionary of epistemic language matters for the scores and the trends over time. Furthermore, we draw on the commission reports as the primary source of data. Our indicators thus capture visible aspects of these reports and the reported behaviour of the commissions. They do not allow us to examine other 'hidden' aspects of the commission's work, such as the role of scientific arguments in the commissions' deliberations or commissions' actual engagement with citizen input. This could be an interesting path for subsequent research. Intensive case studies could also look into the question of why two of our cases, the Equal pay and the Low emissions commission, stuck out in participatory terms, although they were not the most recent ones. It would be interesting to see what explains these 'outliers' and what the participatory potential of these processes amounts to more concretely when analysed in qualitative terms.

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