The hierarchy of public project governance frameworks

An empirical study of principles and practices in Norwegian ministries and agencies

Abstract

Purpose
The authors study public project governance frameworks in various ministries and agencies in Norway, following the introduction of such a framework on the topmost level (i.e. the Cabinet) which applies to the very largest projects.

Approach
The study is methodologically designed as a qualitative assessment of project governance frameworks that apply to state-funded investment projects in selected sectors, based on data gathered through document reviews and interviews.

Findings
The study finds that all of the agencies have introduced their own project governance frameworks, which are basically consistent with recommendations from the project management literature and with the Cabinet's overall requirements in Norway. By contrast, only one ministry has taken a formalized role as project owner. Governance tasks thus seem to be extensively delegated to the subordinate agencies. This even includes strategic tasks such as project selection and portfolio management, and implies there is a risk that public project governance has a narrow and internal focus.

Originality
The paper is a first step towards a better understanding of public project governance as a hierarchical system and the relationship between project owners on three levels, the Cabinet, the sectoral ministry and the government agency.

Keywords
project governance, governance framework, public projects, project owner, project sponsor

Introduction

Major projects are increasingly used for delivering public goods and services, such as transport infrastructure, defense acquisitions, public buildings, and major ICT projects. They amount to large sums of money and their scale tends to increase (Flyvbjerg, 2014). The McKinsey Global Institute (2013) estimated global infrastructure spending at approximately 4% of total global gross domestic product, mainly delivered as large-scale projects.

However, public investment projects face a number of challenges and have varying reputations. There is a wide literature on what Hall (1981) termed "great planning disasters," projects with cost overruns, time delays, and either none or very limited benefits. In one of the most extensive studies to date, Morris and Hough (1987) examined more than 3,500 major public projects across different sectors and countries. They found that cost overruns were typically in the range 40–200% and that very few projects were cheaper than budgeted. A number of more recent studies have confirmed that cost overruns are common in infrastructure projects in the UK (McDonald, 2002), Canada (Berechman and Wu, 2006), Australia (Love et al., 2012), Norway (Odeck, 2004), Sweden (Lundberg et al., 2011), Netherlands (Cantarelli et al., 2012), Slovenia (Makovšek et al., 2012) and China (Ansar et al., 2016). Flyvbjerg et al. (2003a) studied 258 transport projects from 20 countries over a period of 70 years and found that the problem of cost overruns was consistent and applied to nine out of ten projects. Some of the worst examples of overruns are found in sporting events. The authors of a review of all Olympic Games in the period 1960–2016 concluded that the average cost overrun was 156%, and that *all* games had overruns (Flyvbjerg et al., 2016). By contrast, in ICT projects, Flyvbjerg and Budzier (2011) found that the average overrun was moderate (27%), but there was a "fat tail," implying that one out of six projects were "black swans," with an average overrun of 200%.

Cost overrun is a widespread phenomenon. However, the more serious, but equally common problem is when projects do not meet the expectations of users and society. In extreme cases, the whole investment could be wasted. Samset (2003) argued that in order to be truly successful, projects must perform well tactically and strategically, not only operationally. Flyvbjerg et al. (2003b) and van Wee (2007) documented that in transport projects the demand estimates were of equally poor quality as the cost estimates, and that benefits were often overestimated. Pinto (2006) quoted from an Infoworld article describing how 29% of ICT projects were paid for but not delivered to the customer, 47% were delivered but not used, and 19% were abandoned or reworked; only a small share of projects was used as delivered or with minor changes. Flyvbjerg and Budzier (2011) referred to a German study that found that 34% of companies undertook projects that were not aligned with corporate strategy, and 67% of companies failed to terminate unsuccessful projects.

These problems are not limited to the public sector, as highlighted by, for example, Merrow (2011), who documented similar challenges in the private sector. However, the public sector faces some special challenges, including multiple objectives, difficulties in measuring success, and having to deal with a wide array of external stakeholders in the democratic

decision-making processes (Klakegg and Volden, 2017). Public projects are the outcome of a political tug-of-war between stakeholders in society, whose needs and priorities will concur or conflict to varying degrees. The outcomes of such processes are unpredictable, as is well illustrated in a study of 60 international projects (Miller and Lessard, 2000). We could also add that the public sector often has internal challenges, such as a weak capacity for designing a strategic vision, lack of skills, and lack of coordination among levels and actors, as noted by the OECD (2015).

Cantarelli et al. (2010) offered four explanations for project failures, each of which may be relevant to varying degrees in specific projects, but generally they may reinforce each other: technical, psychological, economic, and political. The *technical explanation* is related to poor project design, incomplete estimation, and lack of tools, methods, and experience. The *psychological explanation* is based on the concept of planning fallacy and optimism bias, and involves people's cognitive bias and cautious attitude towards risk. The *economic explanation* has to do with lack of time and resources invested in the planning phase. The *political explanation* is closely related to stakeholders' incentives and may cause deliberate manipulation of estimates in order to increase the chance that a specific project will be selected.

Special measures are therefore required to ensure that the right projects are selected and efficiently implemented. In line with the four explanations for project failure, a wide range of measures may be relevant, such as training and improved estimation techniques to avoid technical problems, independent reviews to prevent optimism bias, enough time and resources for early planning, and economic incentives for "true speech" and accountability. A number of organizations, particularly in the private sector, have introduced project governance frameworks in recent years, and the literature on project governance is growing. Some governments have even established an overarching governance scheme that applies to the largest investment projects across ministries and sectors, to deal with common challenges and to ensure project success. Norway was an early mover in this respect and since the year 2000 the country has required external quality assurance of decision documents, and that key decisions are elevated to the highest political and administrative level (i.e., the Cabinet and Parliament). The scheme and preliminary effects, some of which are very encouraging, are presented and discussed in works by Samset et al. (2006), Williams et al. (2010), and Volden and Samset (2017a).

However, the Norwegian and similar frameworks introduced at the topmost level of the hierarchy apply only to the largest, most complex and/or highly innovative public projects, and they focus only on the most critical decision gates, while leaving it to the various ministries and agencies to define the more specific governance arrangements necessary to ensure the success of *all* projects. In this paper, we explore the scope of project governance frameworks on these subordinate levels, including their main components, their comprehensiveness, and their differences and similarities. We are particularly interested in the hierarchy of the project governance frameworks, with the Cabinet at top, the sectorial ministries on the next level, and below them the agencies in which the projects are actually implemented.

We start by reviewing the relevant literature concerning public project governance schemes, and conclude that the hierarchy of such frameworks is an under-researched topic. Thereafter, we present our research questions, methodology and data, before we present and discuss the findings from seven government agencies and seven ministries in Norway. The final chapter offers some conclusions and recommendations, including the need to strengthen the strategic focus of the public project owner role.

Extant research

Governance in relation to projects

In general terms, *governance* relates to "all processes of governing, whether undertaken by a government, market or network, whether over a family, tribe, formal or informal organization or territory and whether through the laws, norms, power or language" (Bevir, 2013, p.1). Governance can thus be studied at different levels and in different fields, such as public governance, corporate governance, global governance, and project governance. A key governance issue is that the interests of the implementing agent will not necessarily be aligned with those of the financing party (Tirole, 2001). Principal–agent theory has been useful to understand this constellation (Eisenhardt, 1989).

The term *project governance* has only recently become an important issue in the project management community and literature. It refers to the processes, systems, and regulations that the financing party (the project owner) must have in place to ensure that relevant and sustainable project alternatives are chosen and delivered efficiently (Volden and Samset, 2017a). Project governance is thus a system of appropriate checks and balances that enables transparency, accountability, and defined roles in the project, while at the same time supports project managers in delivering their objectives. This corresponds well with what Morris and Geraldi (2011) defined as the institutional level of managing projects, which focuses on shaping the context and conditions to support and foster projects.

When a project is being undertaken by an organization (which is normally the case), a related term is *corporate governance*, which refers to the mechanisms, processes, and relations by which the corporation is controlled and directed. A much-cited textbook by Müller (2009), defines project governance as a subset of corporate governance, wherein the project governance framework is established to allow projects to achieve organizational objectives and foster implementation that is in the best interests of all stakeholders and the corporation itself. The Project Management Institute (PMI) defined project governance in a similar way, as "an oversight function that is aligned with the organization's governance model and that encompasses the project life cycle [by providing] a comprehensive, consistent method of controlling the project and ensuring its success by defining and documenting and communicating reliable, repeatable project practices" (PMI, 2013).

Project governance is a relatively new topic of the project management community, and the literature on the topic is fragmented (Ahola et al., 2014). Different conceptual models have

been suggested to categorize the various streams of the literature. Williams et al. (2010) distinguished between governance *of* projects, which aims at efficient delivery, and governance *through* projects, which aims at choosing the right concepts and ensuring that effects are realized and are sustainable. This corresponds well with Samset's (2003) levels of project success (i.e., operational success defined by efficiency and cost compliance, and tactical and strategic success in terms of impact on users and society).

Müller et al. (2015) made a distinction between *project governance* on the one hand and *governance of projects* on the other hand. *Project governance* refers to the governance of a single project, and includes such topics as the project manager's sovereignty and authority, involvement of various stakeholders, and the use of project boards. By contrast, *governance of projects* refers to governance of groups of projects within an organization, and includes questions such as the institutionalization of project management methodologies, reporting systems, project selection techniques and program and portfolio management (Müller et al., 2015). A similar categorization was made by Too and Weaver (2014) and by Ahola et al. (2014).

Most of the project governance literature has its origins in the private sector, but the findings and recommendations are also relevant to the public sector. Some studies focus on governance of state-funded projects at country level, in relation to political processes and policy forming. Their perspective is on overarching institutional arrangements established by central governments to ensure that projects succeed across different public organizations (Williams et al., 2010; Klakegg et al., 2015; Volden and Samset, 2017b).

Project governance frameworks

The project governance scheme should be established by the topmost level of the organization, to set the context and the regulatory frameworks within which projects are implemented. In the following, we will briefly summarize some key findings and recommendations from the literature concerning project governance frameworks and their components. The authors of various studies have emphasized different aspects, depending on their level of analysis, but also on which explanations for project failure they support (cf. Cantarelli et al., 2010). Some authors, such as Flyvbjerg et al. (2003b), who believe project failure is caused by strategic misrepresentation and irresponsible behavior, highlight economic incentives, accountability, and transparency, whereas others emphasize better tools, techniques, training, and support. In most cases, a combination of measures is recommended. For example, Siemiatycki (2015) discusses remedies to prevent cost overruns and recommends performance monitoring and pay-for-performance contracts as well as better training of project leaders and forecasting techniques that are more precise.

Haanæs et al. (2006) reviewed different models for decision-making in major public projects based on best practice in Norway and other countries, and suggest the following minimum requirements:

- Clearly defined project phases
- Clearly defined decision points between the phases
- Quality-assured basis for the decisions
- Simplicity
- A certain standardization and common terminology.

Likewise, Narayanan and DeFillippi (2012) suggest that project governance schemes incorporate five elements:

- Stage-gate approval processes
- Formal roles and responsibilities
- Stakeholder representation
- Quality assurance
- Contracts and sign-offs.

Certain project phases are more critical and in need of governance arrangements than others. A number of authors have highlighted the crucial role of the front-end phase (Shenhar, 2004; Williams and Samset, 2010; Whist and Christensen, 2011; Morris, 2013; Samset and Volden, 2015). This is the stage from when the idea is conceived until a final implementation decision is made, and during which it is still possible to make changes or to terminate the project, at an affordable cost. Many of the factors that later create problems in the construction phase, leading to cost overruns and other problems, are typically present early in the project definition stage (Morris, 2009). Williams and Samset (2010) note that the choice of concept has the largest impact on strategic project success and is thus highly critical. Similarly, Müller (2009) emphasize that the selection and prioritization of projects is a key issue in a project governance scheme, and that it is closely related to the organization's portfolio management.

A number of standards and guidelines have recently been developed to address project governance models further, in particular as part of corporate governance. For example, the Association for Project Management (APM) has established 13 principles for the governance of project management and defined four main components of such schemes: portfolio management, project sponsorship, project management capability, and disclosure and reporting (Association for Project Management 2011).

Such principles and guidelines may be more or less detailed and more or less mandatory. Some project governance models are behavior oriented (i.e., require that certain detailed rules are followed, such as common project management methodology), whereas others are outcome oriented and thus give more autonomy to the project manager. These two "paradigms" may also be denoted as bottom-up and top-down (Müller, 2009). Each organization should establish a project model according to its needs, but some standard models exist. For public organizations, the most commonly used scheme internationally is

PRINCE2® (Projects IN Controlled Environments, see www.axelos.com). The scheme was developed in the UK, originally for ICT projects, but has since been developed into a more general framework, integrating the governance of projects, programs, and portfolios and with an associated certification scheme.

Some organizations have established Project Management Offices (PMOs) that often have a central role in a project governance scheme (Hobbs and Aubry, 2008; Morris and Geraldi, 2011; Müller et al., 2014). Other institutions commonly used in the governance of individual projects are the project sponsor, the project board (or steering committee), and various advisory groups and quality committees (Müller et al., 2016).

Independent quality assurance is an important element of a project model too, as it may ensure more realistic estimations of cost, risk, and benefits, as well as a transparent planning process. All four explanations for project failure identified by Cantarelli et al. (2010) suggest that independent reviews should mitigate the problem, as they ensure that sufficient competence, experience, and resources are brought in, they provide an outside view, and they provide disincentives to manipulate estimates. Volden and Samset (2017b) studied project models at country level and found that in five of the six schemes there were truly independent reviews of decision documents at key decision gates—in two countries by external consultants from the private sector and in three cases by a designated government agency.

Flexibility is crucial. Although it may be useful to have a common project governance scheme for all projects in the organization, the scheme should not be static, as the need for governance may vary across projects and project phases (Miller and Hobbs, 2005). Müller et al. (2014) identified "organizational enablers" for good governance and governmentality, and their most prevalent finding was the importance of flexibility.

It should be mentioned that although we here focus on governance frameworks, with its formal roles and regulations, there is also a human side of governance. Müller et al. (2015) introduced the term *governmentality*, which is a combination of "governance" and "mentality," and addresses such aspects as top management's attitudes and ambitions regarding project work, support and confidence in the project manager, and more generally the cultural values that members of an organization share and respect. The two types of governance, structure-based and relationships-based, will interact and strengthen each other (Klakegg and Meistad, 2014).

The ambiguous project owner role

Project governance and project ownership are closely related, as it is the owner who should be responsible for introducing a project governance scheme to ensure that projects are successful. However, there is much confusion in the literature about this role. In large public projects, the government (i.e., the Cabinet) may be seen as the owner, ultimately on behalf of all citizens. Similarly, in private projects, the board of directors is the project owner on behalf of all shareholders (Klakegg and Shannon, 2013). In the next step, the role of project owner may be

delegated from the true owners to individuals or groups, so-called "governance agents," according to clear instructions defined by the project governance scheme. In the project management literature, the role of the project sponsor is often highlighted (Helm and Remington, 2005; Kloppenborg et al., 2009). The APM (2009) has defined a long list of responsibilities for sponsors, reflecting the multifaceted nature of the role. The responsibilities include, for example, owning the business case, keeping the project aligned with the organization's strategy and portfolio direction, focusing on realization of benefits, clarifying the decision-making framework, providing resources, supporting the project manager, and engaging other stakeholders.

Project owners as well as sponsors may face a conflict of interest regarding the "governance perspective" and the "support perspective", also referred to as the external and the internal perspective on the project (Ahola et al., 2014; Crawford et al., 2008). On the one hand, project governance should have an external focus, representing the organization and the client's interest, and on the other hand, it should have an internal focus, providing project managers with support so that they fulfill their role efficiently. Olsson and Berg-Johansen (2016) studied seven Norwegian projects and found that the "support perspective" was present in all projects, whereas the strategic and external perspective, focusing on the business case and benefits realization, was more or less absent.

We have already defined the project owner as the financing party. It should be added that the owner is also the ultimate commissioner of the investment, and the one who will control the asset in the operational phase. PRINCE2® distinguishes between three project owner roles, that should all be represented in the project board: (1) the executive, who takes care of the business perspective and provides the funding; (2) the user who establishes whether the project is meeting the needs of the people who will be directly working with the outputs; and (3) the supplier or "do-ability perspective," which provides confidence that the project's outputs will be achieved with available resources. Similarly, Klakegg and Olsson (2010) distinguish between three strategic owner functions (financing, commissioning, and judicially administering) and six tactical owner functions (controlling, broker/facilitator, planning, executing, and operating).

Governance hierarchies – an under-researched topic

A clear recommendation from the literature is that a project governance framework should be established by the financing party (i.e., the topmost level of the organization) and be aligned with the organization's strategies and corporate governance model. Several authors have noted that the task is multifaceted, and that different perspectives must be balanced, such as, inter alia, the operational project perspective (governance of projects) and the tactical-strategic perspective (governance through projects), as well as the control and the support perspectives. Some have suggested that different governance functions be filled by different individuals. However, very few studies have related this discussion to the levels of the hierarchy and discussed how to allocate project owner responsibilities optimally across the levels of an organization.

As noted by Too and Weaver (2014), a governance framework is hierarchical in the same way as a management system, where the top level is accountable for the whole system, but delegates responsibility and authority for defined actions to subordinate levels. Naturally, different levels of project success require different governance mechanisms, which in turn will have different target groups. One out of very few studies that have explored this topic is Zwikael and Smyrk (2012), who showed that there are principal-agent relationships at multiple levels of the organization, with the funder (the true owner) on top, who hires a project owner to be accountable for benefits realization, who in turn hires a project manager to be accountable for efficient output. Each level must evaluate the performance of the level below, and for this task he or she needs the right success criteria, governance arrangements, and authority to make decisions. All these elements should be determined by the project governance framework. Depending on the organization's strategy and contextual factors, we would expect that most governance frameworks include more focus on tactical-strategic success on the higher levels, as opposed to a more narrow focus on operational success on the lower levels. Further, that more weight is placed on control on the higher levels, as opposed to support on the lower levels, and that the governance mechanisms are more related to outcome on the higher levels, as opposed to behavior on the lower levels. But again, our knowledge is limited since there is a gap in the literature concerning these issues.

Furthermore, the above-mentioned authors discuss projects that take place within the framework of a single organization. We have not identified any studies that explain the allocation of project governance responsibilities *across different organizations* in the way it occurs in government-funded projects. The ultimate owner of a project funded by the national government is the Cabinet, led by the Prime Minister, who is de facto responsible for all projects under the various Ministries. However, this responsibility may be delegated to the sectoral Ministry, and in turn to the relevant subordinate agency where the project is implemented. Each level may want to introduce their own project governance scheme which is aligned with their strategies, project portfolio, competence level, etc. An interesting question is whether these project governance frameworks on various levels are consistent with each other. This is the topic that we seek to explore in this paper, and we find Norway to be a suitable case since a project governance scheme introduced at the topmost level (the Cabinet) is already in place.

This study and the Norwegian public project context

The model which forms the basis for our research is shown in figure 1. As illustrated, there are project owners on three levels of the government hierarchy: (1) the Cabinet, (2) the responsible ministry, and (3) the agency. Certainly, it is the Parliament, and ultimately the people as voters and taxpayers, who are the real owners of public projects. However, here we limit our attention to the executing power, which, in a parliamentary system, emanates from Parliament. Furthermore, we focus only on the state and not on local and regional authorities.

Each gray-colored field defines an organization, with its own goals, strategies, types of projects and contextual factors, and associated project governance framework. All the three levels can be said to have ownership in, at least, the largest projects executed by the agencies. In this paper, we investigate to what extent the various levels actually exert project ownership in terms of introducing a stage-gate model or other governance arrangements, and engaging in key decisions concerning projects, programs, or portfolios.

There is a principal–agency relationship between each level. The ministry's goals and strategies will normally be broader than those of the agency. For example, whereas a public roads agency may wish to build as many highways as possible, with the most fancy and high-tech (and expensive) bridges, subsea tunnels, and so forth, the Ministry of Transport is responsible for all modes of transport, and should balance the need for mobility against life-cycle cost, the environment, and other concerns. A ministry cannot and should not be involved in all individual projects executed by the agencies, but it should require that the most critical decisions are elevated to ministry level, and it should ensure that the agencies have the necessary competence, capacity, procedures, and processes. At top of the hierarchy is the Cabinet. The overall allocation of the government budget among ministries should of course be determined on this level. Major public projects may have impacts that extend beyond a single ministry's field of responsibility. Certain project decisions may therefore be so important, or involve such a high level of conflict or risk that they should be elevated to the topmost level of the governmental system.

(Figure 1 here)

The picture may be more complex than the "pure" structure shown on the left-hand side of Figure 1, with only one ministry and one agency involved. In reality, many different variants exist, where various *other* ministries and/or agencies are among the most important stakeholders in the project (e.g., in the role of user or regulator). We would like to highlight one model in particular, as shown on the right-hand side of Figure 1, where two different ministries are shown as having ownership interest in the project: one ministry (Ministry 1) is formally responsible for the executing agency (providing the general mandate to operate its business), and another ministry (Ministry 2), which commissions the particular project. Ministry 2 will then be expected to take more of a user/customer perspective. As we will come back to, this is the case with building construction projects in Norway, and it implies a strong need to coordinate the exertion of ownership.

In Norway an overarching project governance framework was established by the Cabinet in the year 2000, and extended in 2005. This scheme represents the "top layer" of the project governance hierarchy. It applies only to projects exceeding an expected cost of NOK 750 million, and comprises only two decision points in the front-end of projects. The decision documents to be produced before these two decision gates must have a certain content and they must be subject to an external Quality Assurance (QA):

- QA1 – Quality assurance of choice of concept before Cabinet decision to start detailed planning. The basis for the QA1 exercise should be a needs analysis, the project goals and overall requirements, a possibility study and a cost-benefit analysis of at least three alternative solutions. The reviewer should give recommendations regarding the ranking of alternatives and the decision strategy.
- QA2 – Quality assurance of the management base and cost estimates before the project is submitted to Parliament for approval and funding. The cost estimate must be based on stochastic estimation techniques, where two figures should be calculated, the P50 and the P85 (Px implies that there is x% probability that the actual cost will be at or below this level, given the uncertainty in the project). The recommended budgeted cost should be set at or close to P85 whereas the target cost for the agency should be around P50. The difference between the two numbers is the uncertainty provision. On the portfolio level, it should be expected that the projects hit P50 on average so that no provision is spent.

The Ministry of Finance has entered into framework agreements with private consultants who perform the QAs. The final decision is of course a political one. The scheme is shown in Figure 2.

(Figure 2 here)

The QA scheme ensures that the project is well prepared and at a sufficient level of maturity when it is approved, and it ensures legitimacy for the final decisions. QA1 concerns the choice of concept and thus the tactical-strategic level of project success, whereas QA2 is intended at efficient project implementation (i.e., operational success). Volden and Samset (2017a) present and discuss the Norwegian scheme and preliminary effects. Generally, it adheres to the recommendations from the literature concerning the components of a project governance framework (stage-gate approval process, clearly defined responsibilities, quality assurance, etc.). It is also a transparent system, as all the QA reports are made publicly available.

Other countries have introduced similar schemes in recent years. In the UK, the Cabinet Office and HM Treasury introduced a similar scheme in the year 2000, and other countries have followed in subsequent years. The authors of several studies (Williams et al., 2010; Klakegg et al., 2015; Volden and Samset, 2017b) compare the Norwegian and the UK governance frameworks with each other and with those of other countries. Generally, they conclude that it is too early to determine the schemes' effect on project success, but that there is much to suggest that it has been positive. The schemes have much in common, and those that were first to be implemented have inspired the followers. There are a number of differences between the schemes: Volden and Samset (2017b) conclude that there are two main types of schemes: the schemes in the Scandinavian countries, which are simple in terms of the number of intervention points and which do not intervene significantly in existing processes and practices in the agencies; and the schemes of the Anglo-American countries, which are more extensive and behavior-oriented, with follow-up points also in the implementation phase, and which exert more centralized control.

The Norwegian QA scheme applies only to the largest projects— approximately 20–30 projects each year. It applies only to the front-end phase, with no instructions concerning the implementation phase. It should also be noted that the QA scheme does not include a decision-point between the idea phase and the conceptual phase. Furthermore, there are no instructions regarding project organization (such as the use of governance agents), nor about portfolio management. It is therefore implicitly assumed that the scheme is supplemented by more specific governance arrangements in ministries and agencies. By demanding high quality from the top of the pyramid, a trickle-down effect should be expected, in the form of higher standards at the lower levels. There should also be consistency between the three project governance schemes, in the sense that schemes on the lower levels include the requirements on the higher levels, and specify, refine, and adapt them to the specific sector or project type, to the extent necessary.

For the empirical part of this study, we raise the following research questions:

1. Have Norwegian ministries and agencies introduced project governance frameworks, following the introduction of such a framework at the topmost level? If so, describe the content of the schemes, including any differences and similarities across sectors.
2. Which level, agency or ministry, takes the most active role as project owner and initiator of governance arrangements?
3. Are these frameworks consistent with recommendations from the project governance literature?
4. Are the schemes in the hierarchy (Cabinet, Ministry, agency) internally consistent?

Data and methodology

In this study, we investigate project governance arrangements on the ministry and agency levels in seven government agencies and seven ministries in Norway. The study is methodologically designed as a qualitative, case-based assessment of project governance frameworks that apply to state-funded investment projects in the selected sectors, based on data gathered through document reviews and interviews. We consider this to be a well-suited approach as the study has a descriptive and exploratory purpose rather than to draw universal conclusions. In line with Yin (2013), we believe that the concrete, context-dependent knowledge that can be obtained from case studies is highly valuable and that precisely because of the detailed understanding that is obtained, the results are often relevant to other contexts. We consider this an important step towards a better understanding of how public projects are governed and how project governance arrangements on lower levels underpin and reinforce the QA scheme on the topmost level. This knowledge should also be relevant to other countries with similar project governance frameworks on Cabinet level.

The included agencies and ministries are shown in Table 1. The seven agencies were selected because they have had the most projects covered by the QA scheme. Samset and Volden (2013) documented that the projects that undergo external QA are divided as follows: 43%

road projects, 9% rail projects, 14% defense projects (material projects and construction), 11% ICT projects, 18% civil building construction projects, and 5% others. All of the agencies are largely project-based organizations. Total investment volumes per year[1] in the sectors follow from Table 1.

Note that three of the ministries are included twice because they are responsible for more than one agency. Further, a special comment regarding the ownership of civil building construction projects is required (cf. the right-hand side of Figure 1). Statsbygg is a government agency specializing in providing facilities for various public institutions. The ministry responsible for providing the financial resources for Statsbygg is the Ministry of Local Government and Modernisation. However, there is typically a second ministry involved, namely the one that owns the institution that will use the building (e.g., in the case of a prison, the Ministry of Justice). Hereafter, we refer to this ministry as the "client ministry."

(Table 1 here)

Project governance arrangements can be more or less formalized. For example, a high level of trust and/or frequent communication with the subordinate level may reduce the need for formal requirements. However, as these projects take place within the state bureaucracy, we expect a certain degree of formalization. We therefore focus primarily on the structural aspects of project governance.

The empirical investigation covers the following main topics, which are extracted from literature and underpin the research questions. The list largely corresponds to our interview guide:

- **Stage-gate models:** Have schemes or models defining project phases and decision-points, been introduced for projects implemented by the agencies? If so, what characterizes them in terms of, for example, their comprehensiveness or the phases they cover?
- **Ministry involvement:** What level of involvement have the ministries chosen for projects implemented by their subordinate agencies?
- **Roles in governance:** Are formalized governance agents appointed, such as project sponsors or project boards? Who fill these roles and what are their mandates?
- **Quality assurance**: To what extent is independent quality assurance of decision documents an integrated part of the schemes?
- **Threshold:** Which criteria (threshold level or other) are used to determine when decisions are to be elevated to a higher level and/or specific requirements must be adhered to? How flexible are such requirements in response to individual projects' needs and properties?

[1] Including not only the largest projects for which external quality assurance is required, but also smaller investment projects.

- **Uncertainty provision:** Who controls the provision for uncertainty in the project budget? Do smaller projects not covered by the QA scheme also have project budgets that include a provision for uncertainty?
- **Portfolio management:** To what extent is project portfolio management an integrated part of the scheme, at each level?

This study builds on document reviews and semi-structured interviews with key interviewees from all of the included ministries and agencies (Table 1), a total of 31 people. A challenge during data collection, and a finding in itself, has been the great variability in the availability of written descriptions of the project governance schemes. The Ministry of Defense stands out, with its' comprehensive descriptions of its project governance scheme Prinsix, including templates and guidelines, which are openly available on the Ministry's website. Other institutions have provided more or less detailed documentation at our request. Yet others have provided little information, mainly because such written documentation does not exist. This was particularly the case for the ministries' involvement in the projects and for governance arrangements in the earliest project phases. In these cases, data collection was based on oral sources. Generally, the document review was conducted *before* the interviews, and the interviewees were asked to verify our understanding of the model and explain some of its elements further when necessary. In a few cases it was an iterative process where we were given access to new documents after the interviews, in which case we were able to contact the interviewees again for subsequent follow-up questions.

All the ministries and agencies with projects that undergo the Cabinet's QA scheme has appointed a contact person, who is available for questions about the quality assured projects and processes. We used this list as basis for contacting the ministries and agencies, and the contact persons helped us identify interviewees. We were looking for interviewees who were highly experienced in project work in general, and had high knowledge of the ministry's/agency's project governance arrangements , in addition to having special knowledge of their sectors. Some of the contact persons were themselves among the interviewees. The interviews were in most cases conducted with individuals, but in a few cases more than one person from the same agency or ministry was present simultaneously.

As indicated, the interviews were open and semi-structured, and based on a list of topics which largely followed the one presented above. We used the stage-gate model as a starting point and asked the interviewee(s) to explain the life-cycle of a typical project in their sector, from the first idea arose until the operational and maintenance phase. We also asked questions like "what would happen…" and "who would react…" when something does not go according to plans. The interviewees were encouraged to talk freely, based on their own personal experiences and knowledge of the various topics. Each interview lasted 1–2 hours, with one or two researchers present. The researchers prepared a comprehensive interview report following each interview. Data were collected between February and December 2016. Data from different sources were subsequently compiled and systematized by the researchers, topic by topic. Since the objects of study were few and the topics covered fairly broad, we did not use any formal content analysis, coding or other quantitative or qualitative analysis software, neither for the document analysis not the interview analysis. We simply constructed a large table with the type of project (i.e. the sectors) along the x-axis and

the selected topics along the y-axis, with comprehensive descriptions in the cells. We placed great emphasis on ensuring comparability across sectors, also in cases where varying terms were used.

A challenge when using interviews as a data collection method is that the information is inevitably affected by the interviewees' interpretations and subjective assessments. In our case, there was a potential risk that some of the interviewees might have had a self-interest in portraying their own efforts, competence, and project practice in a good light. We therefore emphasized triangulation of the information obtained from different sources (written documentation versus oral sources, and ministry versus agency). In a few cases, we discovered information that we perceived as inconsistent, and then had to go back to the interviewees and/or check a third source, to clarify the issues.

More generally, case studies are often considered "weak evidence" and biased towards verification. But as noted by Flyvbjerg (2006), the question of bias applies to all methods, including, for example, the choices of categories and variables in a quantitative study and the structure of a questionnaire. Experience indicates that case studies actually contain a greater bias toward falsification of preconceived notions. Our study, although not intended to test a set of hypotheses about cause and effect, rested implicitly on a set of assumptions, and we tried to be open to the fact that they might not hold. For example, even though we assumed that the topics drawn from the extant literature were the most important ones in describing these particular governance frameworks, we also searched actively for other aspects. Similarly, we tried in various ways to questions the assumption that any improvements in ministries and agencies' governance schemes after the year 2000 can be traced back to the introduction of the Cabinet scheme. Yet we can of course not assert that these assumptions are confirmed.

Presentation and discussion of findings

In this section we present and discuss the most important findings from our study. The presentation is basically structured according to the predefined list of topics from the data and methodology section, but more interesting and/or surprising findings are highlighted.

Stage-gate models

A key finding in the study was that all or most of the agencies seem to have invested heavily in their project competence and capacity in recent years. All of the agencies in the study have introduced formalized stage-gate project models and many of them update and improve their models regularly to ensure that they are consistent with best practice. Most of the project models were introduced during the last 15 years, some even more recent, and our interviewees believed that the QA scheme introduced in year 2000 on the topmost level had been a major trigger. "The OA scheme taught us which requirements we should ask in the planning of projects", said one agency interviewee. All of the models are well adapted to the QA scheme

and ensure that the largest projects are well prepared for the two control points. The models also seem to have become increasingly comprehensive over time, with associated guidelines, templates, and procedures, and some interviewees were of the view that future improvements should be in the form of simplifications.

The two agencies with many ICT projects have both introduced a variant of PRINCE2® in recent years. The other agencies have introduced similar models, but without referring to any particular international model. Generally, there are many similarities between the models. They have between four and six project phases, with decision points between each phase. The names of the phases are fairly similar (but not identical) across agencies, and cover the conceptual phase, the detailed planning phase, and the construction phase, as a minimum. By contrast, the idea phase is included only in one of the project models. The two included agencies with ICT projects stand out for highlighting benefits realization (i.e., the operations and maintenance phase) in their project models.

The models are, with one exception, introduced and managed on the agency level. Only one of the ministries, the Ministry of Defense, has established its own formalized stage-gate model, which applies to defense material projects and is consistent with what happens at the agency level. The interviewees from the ministries generally referred to the QA scheme when asked about project models. The ministries see it as their responsibility to ensure that the subordinate agencies prepare their largest projects according to the Cabinet's requirements, but otherwise there are few regulations from the ministries' side. Table 2 shows the project models by project type.

(Table 2 here)

The earliest phase

As mentioned above, the project models generally do not cover the earliest phase, where the idea occurs and is developed into a conceptual solution. Some of the interviewees referred to this phase as "the political or strategic phase, which is beyond the project". Only the Ministry of Defense has introduced a clear instruction as to how project ideas should be treated and who can approve an idea before transferring it to the conceptual phase. "We always approve the idea before any start-up activities on agency level can be initiated". The Ministry of Defense is clearly responsible for this phase, in close cooperation with the agency.

According to our interviewees, the project ideas occur in various ways. "It is not always clear where they come from", said an interviewee. In some cases, the idea is identified on the political level, or follows from a new policy or reform. An example provided by one of the respondents was the Pension reform in 2011, which implied a need for a renewal of the ICT systems in the Labor and Welfare Administration. Equally often, however, the idea "occurs" on the agency level, sometimes in close dialogue with internal or external user groups, and based on more or less systematic needs assessments. For example, the National Public Roads Administration has five regional departments, each of which is in close contact with

municipalities and other stakeholders, and "picks up" user needs in various informal ways. In the case of civil building construction projects, the idea will often arise at the user agency level (e.g., a prison or a museum), which may start to explore alternatives, sometimes in consultation with Statsbygg (Norwegian Directorate of Public Construction and Property), and eventually the ministry will become involved and the building will be formally commissioned.

The QA scheme is meant to ensure that the choice of concept is elevated to the Cabinet level in the largest projects, but not even the QA scheme covers the earliest decision to develop a project idea. It is a well-known critique against the QA scheme that projects sometimes have developed too far when they reach the Cabinet after QA1, by which time it is difficult to stop them.

Ministry involvement

The ministries are formally responsible for all projects implemented by subordinate agencies. For the largest projects, the ministries formally submit the decision documents to QA1 and thereafter to the Cabinet for approval. However, for smaller projects and for all other project phases, the ministries' formal involvement is limited in most cases.

The Ministry of Defense stands out for being strongly involved in the projects in all phases, formally as well as informally, particularly in the front-end. The Ministry defines itself as the project owner of all projects in subordinate agencies, and it designates a person in the Ministry to act as project sponsor, regardless of project size and complexity. Projects exceeding a certain threshold have to be elevated to the Minister (i.e., the political level in the Ministry) for approval. An agency interviewee was not always satisfied with the extensive involvement. "The Ministry is quite detail-oriented, and always tells us which form to fill in", the person said. But also, "if the documents are of good quality they normally listen to us".

The other ministries do not use formal project models or assign themselves formal roles in relation to projects. They may however govern projects in informal ways to the extent that they find it necessary, typically depending on scope, complexity and political risk. The Ministry of Transport, as owner of large, project-based agencies within road and rail, sees no reason to get involved in individual projects "as long as everything goes according to plan and the project is not politically critical" as one interviewee put it. Often, the subordinate agencies drive the process, even in the early phases. In civil building construction projects, the client ministry takes responsibility for the conceptual solution, but leaves the detailed planning to the implementing agency, Statsbygg. This is somewhat surprising, given that many strategic decisions and clarifications are needed in this phase as well. Some of our interviewees from the client ministries expressed the view that they, and their user agency, should be more involved. But they find it difficult in the face of Statsbygg as the professional government construction agency, who "asks for our opinion only when its stage-gate model says so", as one interviewee put it.. The sponsoring ministry on the other hand, gets involved once the building is formally commissioned. Thereafter, the sponsoring ministry follows the projects,

individually and as a portfolio, through the implementation phase, mainly with a cost control perspective.

The two ministries responsible for ICT projects have both appointed senior experts in the ministry to monitor the largest projects closely. "After all, the minister is the ultimate responsible, and he/she needs to know what is going on", said a ministry interviewee. This is not surprising, as these agencies have experienced serious problems with some ICT projects in the recent past. And also, to quote an interviewee, "because ICT projects change so rapidly that we may have to change the conceptual solution several times along the way". However, rather than taking a formal project sponsor role, the ministries rest on informal meetings, and the purpose of such activities is to obtain information early. The ministries may request information at a fairly detailed level if they find it necessary, and they sometimes do. If serious problems arise, they will be addressed in the regular meetings between the ministry and the agency's director general.

The project sponsor role

Our study confirms that the project sponsor role is commonly used in Norwegian public projects. All of the project models included in this study highlight this role. The responsibilities, tasks, and competencies required for the role are defined by the models. They normally state that the project sponsor has ultimate responsibility for the project, is the leader of the project board (if used), and the one who defines the project goals, appoints the project manager, initiates quality assurance, and makes decisions beyond the projects managers' defined authority. However, our data also show that in many cases the sponsor is positioned at a low level in the hierarchy, and thus cannot be expected to take the strategic and high-order perspective on the project that he or she should. Again, the Ministry of Defense stands out in requiring that the project sponsor is located in the Ministry, with an additional "local" sponsor in the agency. In all the other sectors, the project sponsor is located only at the agency level. Most of the project models require the role to be filled by a senior manager or even someone from top management. However, as noted by several interviewees, "it is a big challenge that top managers do not have the time and capacity to follow the projects sufficiently closely". Therefore, in practice, the role is habitually delegated further down in the organization, to a subordinate manager (typically the project manager's supervisor). Two agencies emphasized that the project sponsor should be someone who is also responsible for benefits realization (e.g., the department that will reap the benefits from an ICT project).

Another observation is that the project sponsor is often appointed rather late in the project life cycle, after the project has been formally approved for funding, while having no role in the front-end phase, and sometimes not in the operational and maintenance phase either. In some agencies, the project sponsor role is transferred from one person to another as the project enters new project phases and the responsibility changes from one department to another.

Generally, our findings indicate that there is a risk that the governance tasks will be handled from an internal perspective, rather than actually representing user groups and the broader

society. This is in line with the above-mentioned study conducted by Olsson and Berg-Johansen (2015) who distinguish between project owner *type 1*, with an external perspective, in line with recommendations in the literature, and project owner *type 2*, with an internal perspective, which is what they observed in practice.

Project boards

There is an extensive use of project boards in the agencies. Most of the project models recommend or require the use of boards for projects that are large, complex, or have interfaces with other agencies or key stakeholders, in which case these stakeholders should be represented.

However, an interesting finding is that many of these institutions bear more resemblance to advisory groups and project reference groups than to real steering groups. They often have a large number of board members, including user groups and various other internal and external stakeholders, who are there to obtain information and give advice, but do not necessarily have a mandate to make decisions on behalf of their organizations. To quote one interviewee, "we tend to include the whole list of stakeholders, so that we do not need a supplementary consultation process." Another interviewee said "unfortunately, few decisions are made in these meetings. It is sometimes more like a tea party."

The ministries are normally not involved in such project boards at all. In civil building construction projects, an external advisory committee is sometimes used, on which the sponsoring ministry and the client ministry are both represented. Such committees do not make binding decisions; only recommendations. Traditionally they have been established after the project has been approved, to follow up during project implementation, but the trend is now that they are established at an earlier stage. According to our interviewees, experiences are mainly positive, and the committees are found to strengthen the client perspective in the project.

Quality assurance

As described above, the overarching project governance scheme on the top level, with its two mandatory quality assurance reviews, applies to all the largest projects, independent of sector and agency—about 20–30 projects per year.

On the ministry level, there are few additional requirements for quality assurance. The exception is, again, the Ministry of Defense, which uses "red teams" on certain high-risk projects. Furthermore, some ministries routinely consider whether the Cabinet's QA scheme should be applied to projects just below the QA threshold. This has happened in several cases. As noted by one of the ministry interviewees, "the need for QA does not only depend on size, but a broader set of criteria". For example, ICT projects may be smaller than the other project types in terms of monetary values, but their complexity is often considerably higher.

On the agency level, all project models have requirements in place concerning independent QA. The scope and content of such reviews, and the extent to which they involve truly external experts, varies significantly. In most cases, the QA is performed internally in the agency by people who are independent of the particular project.

Uncertainty provisions and change management

Project budgets may include a provision for uncertainty. As noted, for the largest projects (covered by the Cabinet's scheme), the cost estimate must be based on stochastic estimation techniques, and the budgeted cost is set at or close to P85 while the target cost for the agency is set at P50. Our data show that probability-based cost estimation has spread to smaller projects as well. All the studied projects models include requirements regarding cost estimation and uncertainty provisions, applying not only to QA projects, with budgeted costs and target costs expressed in terms of probabilities, i.e. Px.

There is assumed an inherent incentive for the implementing party to increase scope and quality and/or to add some slack to the project implementation. Therefore, an effective way to avoid unnecessary spending may be to retain most or all of the provision at a higher level in the project hierarchy. However, our findings show that most of the agencies are given authority to spend the budgeted cost, even for the largest projects. Only three ministries delegate a lower target cost to their subordinate agencies, which must apply to their ministry to spend the provision. In the case of civil building construction projects, the external advisory committee will normally discuss the need to spend the uncertainty provision before it is approved by the sponsoring ministry.

On the agency level, the project models define how the provision is delegated further to lower levels in the project hierarchy. The target cost for the lowest level, the project manager, is generally between P35 and P45. However, there are considerable variations in how the decision hierarchy is defined and how the mandates are given, not least to what extent the project sponsor and/or board is given authority to make decisions concerning the provision.

Portfolio management

Volden and Samset (2017a) note that the Norwegian QA scheme focuses primarily on governance of individual projects and does not include explicit portfolio evaluation requirements. This is in contrast to, for example, the UK scheme, in which quality assurance is required not only for individual projects but also at the program and portfolio levels at regular intervals.

Our study confirms that portfolio management is not considered an important issue in the ministries. An exception is, again, the Ministry of Defense, which takes an active role, not least in the project selection phase. The ministry regularly updates and manages its long-term investment plan for the sector and new projects are assessed against this project portfolio. The two ministries with many ICT projects have also been concerned with project portfolio management in recent years. However, instead of taking care of portfolio management

themselves, the ministries require that high-quality portfolio management takes place in the agencies. In the transport sector, a national transport plan is updated by the Ministry every four years, and includes all modes of transport (i.e., road, rail, sea, and air). However, the way this has been practiced so far is that the national transport plan is the sum of four independent portfolios, governed by the four agencies, rather than being managed as one holistic plan for the whole transport sector.

By contrast, the portfolio perspective is prominent in all the agencies. The agencies manage their respective investment plans, they compile data on progress and performance for the portfolio, and most of them have some flexibility to re-allocate funds between projects if necessary. However, the extent to which portfolio management is an explicit part of the project model varies. The agencies with many ICT projects stand out as rather advanced. No agencies have established Project Management Offices with portfolio management responsibilities.

Key characteristics of the project governance arrangements in the various sectors are summarized in Table 3.

(Table 3 here)

Assessments and conclusions

Public investment projects in Norway and worldwide have traditionally been burdened with problems, to the extent that Flyvbjerg (2014) proposed an iron law: "over budget, over time, over and over again." There is no easy solution to these problems. In public sector projects, people rarely put their own money at stake, goals are often multifaceted, goal achievement is not easily measurable, and there are many stakeholders within and beyond central government who have opinions on the project. Over time, we have gained a better understanding of the challenges that arise in these political administrative processes, but we still have a long way to go before we fully know how to solve them. What we do know from the existing literature is that having a project governance framework in place will at least make the processes more predictable, and hopefully will result in a decision basis of higher quality, and more legitimate decisions. The Norwegian Government introduced a QA scheme in the year 2000. The scheme ensures that the basis for two key decisions in the front-end of the largest projects is quality assured by truly external experts and that decisions are elevated to the highest level in the political system. The scheme is very simple, and applies only to the very largest projects and constitutes the "top layer" of a hierarchy of governance arrangements. Clearly, the success of public projects depends heavily on what happens in the ministries and agencies in which projects are actually implemented. The hierarchy of governance that surrounds public projects has not been thoroughly discussed in the literature. In this paper, we have explored this topic and provided some empirical findings in a Norwegian context.

The first research questioned posed earlier in this paper, was to what extent Norwegian ministries and agencies have introduced project governance frameworks. The findings clearly show that the ministries and agencies in the studied sectors have invested heavily in their project competence and capacity since the turn of the millennium. All the agencies (and one ministry) have introduced a comprehensive project model with, for example, clearly defined phases, decision points, roles, responsibilities, and quality assurance. There are more similarities than differences between the models, in terms of phases, decision points, roles, and requirements.

These findings indicate that Norwegian public projects are fairly well governed, first and foremost on the agency level. In light of the general "projectification" of society, it is difficult to determine whether the improvements on agency level are caused by the Cabinet's QA scheme, but at least it seems to be an important triggering factor. Clearly, the threat of the project being critiqued by external quality assurers, and possibly rejected by the Cabinet on their advice, provides an effective incentive for the agencies to work hard with the decision documents. Our study also confirms that the ministries relate strongly to the QA scheme and see themselves as responsible for ensuring that the requirements are met in the largest projects.

The second research question was which level, agency or ministry, takes the most active role as project owner and initiator of governance arrangements. Our findings show that with one exception (the Ministry of Defense), it is the agency level that takes the most active role as project owner and initiator of project governance arrangements. Admittedly, the ministries see themselves as owners of projects implemented by their subordinate agencies, and may be involved in various *informal* ways. The degree to which they do, seems to depend on, inter alia, project size, political risk, and the agency's experience and track record regarding project delivery.

The third research question was whether the governance frameworks adhere to the recommendations from the project governance literature. Our findings show that they largely do. They include stage-gate models with clearly defined phases, decision points, roles and responsibilities, and quality assurance of decision documents. The agencies regularly use stochastic cost estimation techniques as basis for determining budgets and target costs, even for smaller projects.

However, we also see deviations from literature recommendations. Generally, the project owner role should be executed more actively and with a focus that is more strategic (the exception being the defense sector). The project sponsor is mostly located at the agency level and is often an individual at a fairly low level in the organization. Furthermore, in most cases, there is no role for the project sponsor in the crucial front-end phase, where project ideas arise and are selected for development into a concept. Thus, our study findings seem to support those made by Olsson and Berg-Johansen (2016), who only observed the more narrowly oriented "project owner type 2" in Norwegian public projects. Furthermore, project boards are widely used, but more often than not they are not truly boards, but rather advisory groups, and

they are normally established late in the project life cycle, after the crucial choice of concept has been made.

The final research questions was whether the schemes in the hierarchy (Cabinet, Ministry, agency) are internally consistent. We have not found any obvious inconsistencies between governance arrangements on various levels in the hierarchy. Particularly, the schemes on the lower levels are well adapted to the Cabinet's scheme and ensure that the largest projects are well prepared for the two control points. But again, the strategic and external perspective on project governance, which should be taken by the ministry level, is often missing or handled very informally.

Overall, it is our view that these project models have a somewhat narrow and internal focus, securing governance *of* projects, but not necessarily governance *through* projects, in Williams et al.'s (2010) terminology. At best, they ensure governance through projects in the *agency's* perspective, but the impact of the project normally goes beyond the agency. As discussed by Klakegg and Volden (2017), Norway has a strong democratic tradition, an egalitarian culture, and a high level of education, which makes a strong platform for organizing tasks as projects and for delegating authority downwards in the hierarchy. The introduction of the QA scheme was controversial in the beginning, and the introduction of formalized regulations from the ministry level would probably be controversial too. We still consider it a serious weakness that some ministries take such a limited role in the governance of projects, even when it comes to strategic activities such as project selection and portfolio management. It is our recommendation that the ministries should become more involved and actually play the role of "project owner type 1," formally or informally.

It should be noted that the research topic of this paper was the formal aspects of project governance. Müller et al. (2015) introduced the term governmentality and were concerned with finding the optimal balance between formal and informal governance. The interviewees from the ministries in our study declared that their ministries had an *informal* dialogue with their agencies. This may very well be sufficient in some cases, but the interviews have also given us an impression that ministry involvement is ad hoc, not always early enough, and that many strategic decisions are, in practice, left to the agencies. A suggestion for future research could be to study these informal processes in more detail, preferably by following specific projects through the various phases, and revealing whether they actually compensate for the lack of formal processes and requirements.

Moreover, it is important to note that the ministries' governance of *projects* in subordinate agencies is part of their *general* governance of the agencies. The ministries set goals for the agencies and may give more or less detailed instructions with regard to, for example, activities and processes, depending on scope, risk, or political aspects. Traditionally, the ministries have not treated the agencies as project-based or governed them in terms of their projects, programs, and portfolios. The findings from our study suggest that they still don't. A relevant topic for future research could therefore be to take a closer look at how project governance could become a more integrated part of public governance.

As noted earlier in this paper, the top-level scheme in Norway and the other Scandinavian countries is very simple compared to, for example, in the UK, where the Cabinet has introduced a more comprehensive model on top, including for example detailed processes, templates, and a common project management methodology. We have shown that a simple model on top does not necessarily imply that the governance framework is simple overall, since comprehensive governance models may be introduced by the lower levels. An interesting topic for future research could be to extend the international study conducted by Volden and Samset (2017b) to include *all* levels of the hierarchy, not only the top level. A more *comprehensive* governance scheme on top could be expected to result in harmonization of project practices across sectors and to strengthen public sector competence within project management and project governance. However, the result could also be a more bureaucratic system with less flexibility and autonomy available for the agencies.

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