

PROJECT GOVERNANCE IN A NORWEGIAN MUNICIPALITY

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ABSTRACT

Project governance is crucial for the success of projects as it balances benefits, costs, and time. This study examines governance practices in a school project through Halsen Primary School. As the lean philosophy gains traction in project management, this paper explores project governance through the lens of lean construction. The research identifies key tools: clear organizational frameworks, strategic contractor selection, robust risk management, and building trust. While collaborative contracting enhanced cooperation and flexibility, it revealed gaps in accountability, potentially leading to cost overruns. This necessitates the establishment of a clear project owner role, the strengthening of value-focused risk management, and the tailoring of strategies to project-specific contexts. Early user and contractor involvement was crucial for efficiency and long-term benefits. These findings offer actionable insights and a foundation for improving project governance in public projects.

KEYWORDS

Project governance, benefits realization, IPD, lean governance, and value.

INTRODUCTION

This paper examines project governance with a focus on benefit realization, contract mechanisms, and collaboration in Integrated Project Delivery (IPD) models. As projects grow increasingly large and complex, effective governance is essential to ensure societal value and control costs (Vennemo et al, 2020; Rahmani, 2014). Koskela and Ballard (2011) highlight that value is often lost in projects due to inadequate control of handoffs between design, supply, and construction, as well as adversarial relationships that contribute to inefficiency and waste. Lean offers a solution by emphasizing continuous learning, prioritizing value-driven goals, and addressing all stages of a project's lifecycle (Ballard and Howell, 2003).

Design-build contracts where contractors control both design and execution are common. When the owner's control is reduced, tools to safeguard long-term value become important (Olsson, 2018; Welde et al, 2015). In Norway, most public project owners have started to use design-build contracts, which sets a key premise for project governance. Rather than entering into multi-party relational agreements—like in Integrated Project Delivery (IPD) models—these owners typically seek a single contract with a contractor. As Darrington (2011) notes, whether this preference stems from legal restrictions or institutional factors, public owners still aim to implement Lean by adopting relational design-build contracts and complementing them with other measures to foster collaborative governance beyond the contract itself.

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RESEARCH QUESTIONS

The purpose of this paper is to provide governance tools. To achieve this objective, we conducted a case study guided by the following research questions:

RQ1. What tools do public project owners use for project governance?

RQ2: How should the project governance tools be used?

Our analysis is composed of a literature review and a case study of the Halsen Primary School, which uses a collaborative delivery model. The scope includes governance tools applied in the early project phase and their impact on execution, focusing on the school construction sector and project-specific governance from the owner's perspective.

THEORY

GOVERNANCE FRAMEWORK

Governance frameworks are systems of rules and processes that ensure projects achieve their objectives (Klakegg et al., 2008, Volden & Samset, 2017). This paper adopts the Norwegian governance framework due to its clarity and broad applicability, utilizing a general model rather than client-specific frameworks (Volden & Klakegg, 2024)). This approach ensures greater generalizability and relevance across different contexts. The model divides projects into four phases: idea, pre-study, pre-project, and project (Regjeringen, 2023).

IPD AND PARTNERING

Project delivery models that favor collaboration, such as IPD, aim to alter the traditional contractual and governance structures, encouraging more efficient creation and capture of value (Hall & Bonanomi, 2021). Using collaborative methods aligns well with lean principles by promoting integrated governance structures that enhance collaboration and support the collective pursuit of **value generation** across diverse stakeholders (Tillmann et al, 2012). Partnering refers to the collaborative relationship between client and contractor in construction projects (Kadefors & Eriksson, 2014). The concept emphasizes shared goals and fostering cooperation and trust, which are critical for effective partnering and project success (Engebø, 2020). A key point is that delivery models that foster integration contribute to the application of lean principles. Rather than distinguishing between forms of integrated models, the emphasis should be on enhancing value creation for clients (Smith, Mossman, & Emmitt, 2011).

PROJECT GOVERNANCE

Project governance ensures that projects align with the organization's overarching governance framework (Muller et al, 2014). The project owner's primary role involves defining project parameters and deciding resource allocation. Olsson (2018) discussed that project owners in practice have different strategic goals differing from theory where owners have specific mandates. Benefit realization is a process that spans the entire project lifecycle, aiming to achieve the desired outcomes (Olsson, 2018, Larsen et al, 2024).

Lean governance is closely tied to IPD, which Tillmann et al. (2012) describe as integrated governance. These approaches promote decision-making through consensus with the complementary knowledge of both suppliers and consumers. It fosters open channels for value co-creation and ensures that the responsibilities of all parties in generating value are clearly defined (Tillmann et al, 2012).

TOOLS FOR PROJECT GOVERNANCE

Project governance tools ensure effective management and alignment with organizational goals, addressing challenges in complex projects. These tools are the result of our literature study and case study, this is further described in methods.

Table 1: Project governance tools with descriptions and sources

Tool	Description	Source
Project Scope	What is the purpose and what is the initial need of the project?	(Klakegg et al, 2008), (Volden & Samset, 2017) (Musawir, 2015)
Owners Organization	How are the owner's resources structured and why?	(Liu & Xie, 2014), (Volden & Samset, 2017), (Olsson, 2018), (Waseem, 2022)
Project Goals	Defining the project's goals: time, cost, and benefits.	(Larsen et al, 2024), (Musawir, 2015), (Waseem, 2022)
Procurement Strategy	How to select a strategy to engage the best contractor?	(Klakegg et al, 2008), (Lædre, 2006) (Volden & Samset, 2017), (Klakegg O. J., 2017)
Shareholder Involvement	How are shareholders involved in the project, and to what extent?	(Rahman et al, 2024) (Volden & Samset, 2017) (Joslin & Müller, 2016)
Project Organization	How is the project organization structured, and how is the project owner integrated?	(Klakegg et al, 2008), (Laine et al, 2020), (Liu & Xie, 2014), (Volden & Samset, 2017)
Risk Management	How is risk managed in the project?	(Bekker & Steyn, 2008), (Klakegg et al 2008), (Rahman et al, 2024), (Volden & Samset, 2017)
Quality Assurance	What quality assurance is done between phases of the project?	(Alalyani & Lee, 2024), (Rahman et al, 2024)

Our work will seek to refine and contextualize these tools in an actionable framework tailored to specific project phases and types, bridging the gap between theory and practical application.

KNOWLEDGE GAPS

Our literature review revealed knowledge gaps in project governance. Many recommendations suffer from **overgeneralization** (Volden & Samset, 2017; Klakegg et al, 2008), making them too broad to provide actionable insights. Additionally, there is a **lack of guidance on when** or during which project phase-specific governance mechanisms should be applied (Muller et al, 2014; Volden & Samset, 2017; Rahman et al, 2024). Furthermore, concepts such as project governance and related terms are often **ambiguous** or inconsistently defined. Practical advice on lean governance and collaborative models for project owners is also limited in literature, leaving room for further development.

METHOD

The study adopts a bilateral approach, combining a literature review and an empirical case study. The literature review provides an overview of existing research and identifies knowledge gaps. To gain empirical insights into project governance, an in-depth case study was conducted.

LITERATURE REVIEW

A systematic literature search was conducted using Scopus to identify key studies, employing the search strings “project governance” and “tools, principles, organization, mechanisms”. This yielded a broad selection of articles, which we refined by reviewing abstracts for relevance and alignment with RQs, assessing validity by prioritizing journal articles. Additionally, we explored literature from Concept, a research program focused on improving projects, and its researchers. This review provides a broad understanding of project governance.

CASE STUDY SELECTION

To gain empirical insight into the studied phenomenon and collect data to answer the research questions, we conducted a qualitative case study based on both semi-structured interviews and document analysis. The Halsen Elementary School project in Stjørdal municipality, Norway, was selected for its alignment with the research scope as a project utilizing collaborative delivery model, culture and lean principles integrated in the process. The analysis of Halsen Elementary School is part of a bigger case study that contains five cases.

The case study was conducted through semi-structured interviews and document study. A total of five in-depth interviews were conducted with the municipalities' project owner, project manager, the user's representative and two consultants specialized on collaborative models and project governance. The interviews were conducted using a interview-guide that was structured after the research questions. Relevant documents such as contracts, project and organizational plans, and progress reports were analysed.

ANALYTICAL PROCESS

The analytical process is illustrated in Figure 1 showing how we started the process with a large pool of 50 highly specific tools from our literature review and ended up with a final set of tools through council from supervisors and interviews. This allowed an exploration grounded in existing literature and further refined through case study data.

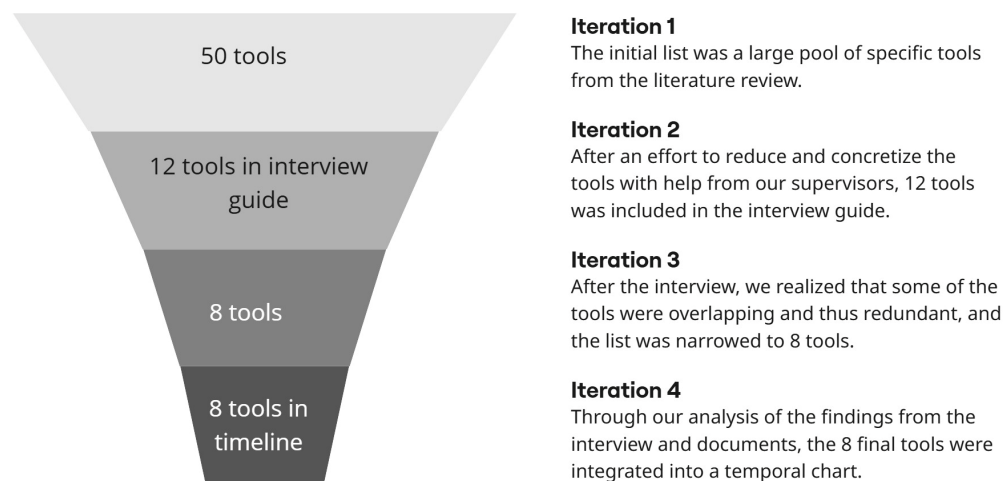


Figure 1: Visual description of the analysis as a funnel narrowing down during the process.

RESEARCH LIMITATIONS

The research is limited by its single-case focus, affecting generalizability. The case study is part of a larger study involving 5 cases. Findings are influenced by data availability, potential informant biases, subjective interviews, filtered secondary sources, and time constraints restricting further data collection. In addition, one of the authors worked part-time for the main contractor and gained practical insight into the case and access to interviewees. However, there was no further obligation towards the contractor nor the municipality.

RESULTS

As detailed above, our list of project governance tools stems from reviewing the literature, consulting supervisors, and conducting interviews. Below, we describe each tool.

Internal organization

The municipality divided their departments into welfare (containing education), public affairs, and finance. The project owner was stated to be the director of public affairs who oversees the

construction unit and others, focused on aligning the project with municipal goals, prioritizing benefits. The steering committee, a constant across welfare projects, oversees goals and constraints but was minimally involved and informed unless issues arose.

The project manager was chosen by the head of construction due to extensive experience. He closely monitored progress and led collaboration with contractors and the partnering committee. A user's representative was included to keep the initial benefits and project scope constant during the project execution. Together, these roles balance value, time, and cost for effective project governance.

Project Scope

The municipality's welfare department evaluates its infrastructure through external assessments, school plans, and demographic analysis to outline budgets and prioritize projects of the municipality. This is presented to the city council, which evaluates the business case. This approach often prioritizes new construction over rehabilitation due to insufficient maintenance, making demolition more cost-effective.

Since 2017, the city council has mandated partnering as the standard delivery method for large projects without specific limitations. The municipality values this method for its flexibility and has successfully applied it to all projects since its introduction.

Project goals

In the project's early phase, collaborative *Integrated Concurrent Engineering* meetings were held to define functional needs and establish project goals. The discussion included user representatives and members of the construction department. This resulted in an initial project description with functional requirements, forming the foundation for development. Their experience with this is that the foundation was often short-sighted by the presence of the user.

Halsen revised its goals in collaboration with the contractor, sub-contractor, and architect and noted that this brought clarity and alignment. The respondents noted that this shift allowed the project to focus on the benefits, prioritizing the foundational need. Respondents noted that the contractor and architect were aligned with the goal hierarchy. From the document study, Halsen had a clear goal hierarchy and had well-defined goals on benefits but lacked a benefit realization plan.

Procurement strategy

The construction unit managed the procurements, and the municipality had a politically stated strategy, where all projects were to be performed using collaborative models. The choice was made, stating that collaborative methods would enable successful projects without requiring capacity. The project owner stated that "collaboration is not for the impatient". At Halsen, a two-step contract was used: early contractor involvement NS 8402 (consultant contract) for the pre-project phase and NS 8407 (design-build) for execution, featuring a pain/gain share on the target price to motivate members of the tri-party contract by having profit at risk. The tri-party contract consists of the contractor, sub-contractor, and municipality; the sub-contractors are included because of their expertise and to foster cost-effective technical solutions. Advisors were excluded because their payment model conflicted with the incentive structure. The architect did not have the financial capacity to withstand a malus, thus, they could not participate in the multiparty contract.

Contractor selection emphasized price, execution plan, and project organisation, with this collaborative method placing significant weight on personal qualities. The reasoning was that collaborative models demand more from the contractor, demanding the capability of trust, collaboration, and commitment to the project scope. According to the project manager, this was a long, exhaustive process, but was crucial to the selection of the right project team.

Stakeholder involvement

End-user perspectives were integrated parallel with the project design phase orchestrated by the architect and contractor. This sequence involved the pupils, principal, and operating personnel. Notably for Halsen the user representative was a former teacher and had a strong presence in the design phase, prioritizing user needs. The project manager noted that key shareholders had seemed pleased with the amount of shareholder involvement. The only problem raised during the interviews was the need to be aware of the short-sightedness some users may have during involvement. The interviews brought up that users will often only see their own current needs in the project, which may not perfectly align with the needs of the building's life cycle.

Project organization

The municipality has a core team of two: the user representative and the project manager on the project. For all projects, the municipality had a long-term contract with an external advisor on collaboration-based contracts to ensure the full effect of collaborative project delivery models. The project used a "collaboration committee" which consisted of the contractor with the project manager, design manager and operations manager, external advisor, and the municipality core team. The interviewees stated that this had been a productive arena to make consensus-based decisions in collaboration. The project manager led the committee and had the last say. The project manager noted that because of co-working at the construction site, most discussions were settled before coming to the committee; only the documentation and formalized parts remained.

Risk management

The respondents seem to have allocated much of the risk management to the contractor, and the management seems to mostly cover cost and time usage. The weekly meetings had an allotted slot for risk concerning time and cost. One of the respondents commented on a lack of awareness around the risk of lost value for the end user. The user representative stated that some of the risk was managed through the incentive structure of the delivery method. One of the consultants advocated for a risk register that can record most or all risks, given that it is used correctly.

Quality assurance

Thorough quality assurance policies are in place and are reported through a common file system, open book financials. The respondents notated the importance of transparency. A major part of the quality assurance comes through the choice of contractor, prioritizing the right team and the best personal competencies.

ANALYSIS OF RESULTS

Internal Organization

The internal organization described earlier integrated financial and benefits perspectives, leveraging specialized expertise through the project manager's experience in school construction projects and the user's representative focus on benefits. The user coordinator and manager worked collaboratively rather than hierarchically. This coordination aligns with literature emphasizing the importance of harmonizing organizational goals with project objectives (Volden & Samset, 2017).

Challenges stem from the steering committee's static nature, limiting its involvement in project specifics. However, its role as a resource strikes a balance between autonomy and accountability, offering stability while empowering project managers. The literature emphasizes the importance of clear separation between project organizations and commissioning bodies (Liu & Xie, 2014), which this project partially achieves by maintaining

distinct roles for the project manager and user representative, but the project owner operates as the leader of the steering committee challenging this. The steering committee's role as a commissioning body lacks clarity, and unclear mandates reinforce the need for **clearer project role definitions**, as noted by Klakegg et al. (2008).

Project Scope

While governance models, as those outlined by Klakegg et al. (2008) and Volden and Samset (2017), advocate for user-centered approaches and external quality assurance to define projects, their recommendations often remain high-level and lack concrete guidance for specification processes. In this case, the municipality carried out external building evaluations, internal reviews, and engaged key stakeholders, including school administrators, to define the project requirements. The external evaluations were infrequent and lacked standardization. **Standardization of building evaluation** can improve the long-term life cycle plan of buildings.

The resulting specifications were deemed overly general and short-sighted, particularly regarding the building's pedagogical functions and long-term value. The findings underscore the importance of structured and detailed specifications and meaningful user engagement to align project outcomes with strategic goals and user needs.

Mandating collaborative delivery methods as a standard can increase the risk of being taken advantage of by opportunistic contractors and might not always be worth it despite its flexibility as discussed by Klakegg (2017). A potential countermeasure is to apply greater stringency during the procurement and contractor selection phases, and, in addition, to include an option to terminate the collaboration between the design and construction phases.

In spite of this the municipality values this method for its flexibility and has successfully applied it to all projects since its introduction.

Project goals

Goal formulation is central to benefit realization, requiring clear, actionable objectives and **consistent follow-up** (Larsen et al, 2024). Initially, project goals were based on identified needs, later collaboratively revised with the contractor to enhance clarity and redistribute resources toward critical objectives. The **initial functional description** was too general and short-sighted, indicating an area of improvement. This process aligns with literature emphasizing the importance of user involvement but highlights room for improvement in establishing well-defined ordering processes to achieve both functional and long-term goals (Larsen et al, 2024). This was an important collaborative tool, enhancing trust, decision-making, and resource efficiency. Such collaboration introduces the risk of opportunistic behavior by contractors, who may manipulate goals to maximize their benefits, as noted by Musawir (2015). Balanced oversight through trust is crucial to safeguard the integrity of project objectives in such partnerships in collaborative models.

Procurement strategy

The literature emphasizes the importance of tailoring project delivery models to specific needs (Klakegg et al, 2008; Volden & Samset, 2017). This project adhered to a municipal mandate requiring partnering, which can impact future projects negatively. While collaboration is well-suited for complex projects with significant uncertainty, it overlooks market dynamics, such as rising contractor margins in an improving market (Lædre, 2006). While effective in a slow market, this approach may allow contractors to exploit alliances in stronger markets, risking inefficiency and highlighting the need for periodic policy reviews. This gives the need to revise partnering as the **standard delivery model**, since one delivery model won't fit all project cases (Klakegg O. J., 2017). Partnering should however be a strong contender, given that the municipality has in-house experience and expertise at this point.

A trust-based environment was created through collaborative mechanisms such as early involvement of the contractor and design manager, shared goals, target pricing with pain/gain structures, and joint decision-making within the collaboration committee, as highlighted by Engebø (2020). The municipality invested significant effort in selecting the right contractor, prioritizing personal traits and competence, which accounted for 30% of the evaluation criteria. Project insights suggest this was a well-founded decision, as strong collaboration between the architect and contractor proved crucial throughout all phases of the project.

User involvement

The findings indicate that user involvement positively impacted the project processes, aligning with prior research on effective stakeholder management (Rahman et al, 2024). Key measures included “speed-dates” with teachers, students, and staff, as well as the integration of a project owner and principal with educational experience. These approaches ensured the project addressed user needs while fostering a sense of ownership. Challenges arose from users’ short-term focus, highlighting the importance of clear communication to align user input with the project’s long-term goals (Volden & Samset, 2017). Balancing relational and structural governance was crucial for success.

Project organization

The project organization effectively balances control and collaboration, with the municipality’s core team and partnering committee facilitating decision-making and strong cooperation. This aligns with Volden and Samset (2017) and Klakegg et al. (2008), emphasizing governance systems that balance flexibility and structures. The collaboration committee shown in Figure 2, including diverse stakeholders and a third-party advisor, supports swift problem-solving and collaboration, as Liu and Xie (2014) recommend. The collaboration committee is largely dependent on trust and cooperation, which somewhat weakens the control of the municipality.

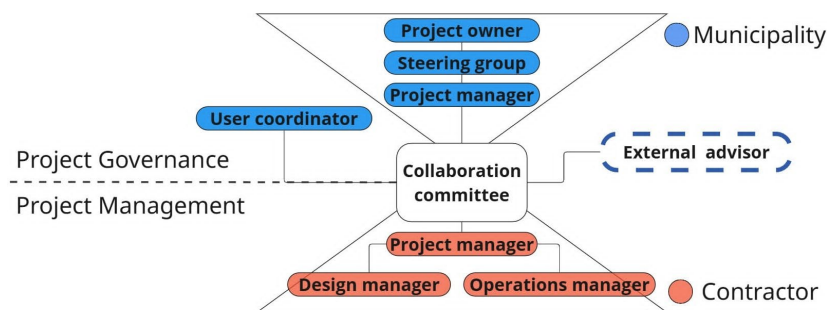


Figure 2: How the project organization is structured. Based on Klakegg (2020)

The municipality prioritized establishing a culture of collaboration that actively included designers and architects. Soft tools, such as co-location and structured collaboration efforts, played a key role in integrating key stakeholders into the project organization. The architect was particularly engaged in the early phases, with the project manager emphasizing their intensive involvement and commitment. These findings align with those of Engebø et al. (2020), which highlight that true collaboration cannot be achieved solely through contractual measures—it requires a dedicated organizational culture and commitment to collaborative strategies.

The **steering group’s role should be more clearly defined** and better integrated into the project to effectively address potential disagreements within the organization. The contractor’s penalty for key personnel changes ensures stability, as noted by Laine et al. (2020). Clear responsibilities and a conflict resolution mechanism have maintained stability without escalation, demonstrating the value of strong governance and adaptability.

Risk management

Risk management in the project focused primarily on time and cost, following systematic processes like worst-case analyses updated by the contractor. This aligns with Bekker and Steyns (2008) emphasis on formalized risk management and regular reporting. Transparency through the “open book” principle further reduced risks by fostering trust between stakeholders (Klakegg, Williams, Magnussen, & Glasspool, 2008). One respondent noted a **lack of focus on risks related to long-term value** for end users, such as functional limitations arising from design trade-offs. This challenge reflects findings by Rahman et al (2024), who highlight that value-related risks are often overlooked in early project phases. Integrating value-focused risk assessments into decision-making processes, as suggested by Volden and Samset (2017), could mitigate this gap. The municipality would benefit from a dedicated risk register enveloping all risks, as advocated by one of the consultants. Despite the project’s strengths in managing financial and temporal risks, broadening the scope to include long-term value would improve the project’s ability to meet diverse user needs over time.

Quality assurance

The project implemented robust quality assurance measures, including digital tools, systematic safety inspections, and thorough contractor selection processes. These align with the literature, which emphasizes the importance of quality strategies in improving project outcomes by strengthening organizational resources (Alalyani & Lee, 2024). Digital platforms allow real-time monitoring of quality metrics, enabling quick responses to deviations (Rahman et al, 2024). Additionally, the early selection of qualified contractors simplified later quality assurance tasks, as noted by both respondents, reflecting the value of strategic early decisions (Alalyani & Lee, 2024). Although current quality measures appear effective, maintaining high standards requires consistent monitoring, staff training, and collaboration.

DISCUSSION AND CONCLUSION

The paper answers RQ 1: What tools do public project owners use for governance? Through our literature review and case study, these tools were uncovered: internal organization, project scope, procurement strategy, user involvement, project organization, risk management, and quality assurance. RQ 2: How should project governance tools be used? Answered with Table 2 containing actions to improve project governance based on literature and case-study.

Collaborative models with incentives to align goals can help clients realize benefits and, with early contractor involvement, give the flexibility needed for the lack of information in the pre-project and concept phase. The selection of the contractor was crucial, and the importance of the weighting cannot be understated. Effective collaboration requires that all members of the project organization are both willing and able to extend trust and commit to common project goals—a principle firmly rooted in the lean literature..

The role of the project owner is central in this context, encompassing responsibilities for realizing benefits, managing finances, and establishing effective contract strategies. Collaboration between project owners and contractors is crucial for managing risks, fostering cost-effective solutions, and increasing quality.

Table 2 presents five actionable recommendations for enhancing project governance in the municipality. By implementing these targeted actions, the project can achieve better alignment with user needs, optimize resource allocation, and reduce life-cycle cost. Each recommendation includes detailed actions, such as defining clear project ownership, standardizing building evaluations, involving stakeholders earlier in the process, carefully selecting delivery models, and emphasizing long-term value realization. These practical, project-specific measures are designed for straightforward implementation, directly addressing identified gaps and fostering more effective governance.

Table 2: Actions for improved project governance for the municipality

Recommendation	Specific actions
1. Clearer project role definitions	- Establish a clear project owner with accountability and ownership for the project (temporal, cost, and value) - The project owner should have the authority to make strategic decisions - Inform the steering committee more regularly so that they can be proactive instead of reactive in case of conflict
2. Improved existing building evaluation	- Standardized processes for building evaluation, preferably with a non-biased advisor (ex. every 5 years) - Long-term rehabilitation plan based on evaluations and future needs
3. Improved functional description	- Involve teachers and employees earlier to specify needs - Involve an external advisor for a more detailed description - Focus on pedagogical needs and the school environment
4. Adjust delivery model according to project	- Each project should be evaluated before choosing a delivery model - Partnering if the project requires it by complexity, scope, or capacity
5. Risk related to benefit realization	- Benefits realization plan with concise benefits and specific actions - Make a risk register on the overlying risks in the project

Figure 3 illustrates when the actions should be taken and which tool category the action impacts. From our analysis of the interviews, we plotted the tools against the Norwegian project governance model. The green spaces indicate when the tools are critical, and the action with corresponding number from Table 2 indicates where Stjørdal municipality could improve its governance. The actions are a response to the governance tools that were underdeveloped and had room for improvement in the municipality, and sufficient tools were not included.

Norwegian project model	Idea phase	Concept	QA1	Pre-project	QA2	Project
Tool:						
Internal organization		1				
Project scope		2, 3				
Project goals						
Procurement strategy		4				
Stakeholder involvement						
Project organization					1	
Risk management						5
Quality assurance						

Figure 3: Actions plotted against phases with numbers corresponding with Table 2

Collectively, these visuals address RQ1 through the insights presented in Figure 3 and RQ2 through the conclusions on each tool, with detailed pointers described in Table 2 and Figure 3. These findings underscore the significance of tailored governance mechanisms to effectively balance efficiency, quality, and value in public construction projects.

Further Work and Limitations

Future research on project governance could explore the role of lean governance in enhancing value and productivity. As a representative collaborative project, it provides a valuable example for examining project governance in municipal contexts. This study is limited to one country and its educational public projects.

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