One Size Fits All?
Facility Management in Norwegian Local Governments*

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Abstract. *Up to the mid-1990s almost all Norwegian local governments had a decentralized structure on their facility management. Over the following 15 years a swift centralization followed, and in 2010 roughly 85% of the local governments used a centralized structure. Centralization is in accordance with the recommendation from a government commission studying the topic, but the arguments are not unambiguous. This paper formulates a stylized model for the relationship between facility management and production of welfare services. The model suggests that it is not obvious that a centralized structure is superior for all local governments, but that this may depend on local factors. Consistent with the predictions from the stylized model, the empirical findings suggest that large local governments with a weak political leadership centralize their facility management, while small local governments with a strong political leadership prefer a decentralized structure.*

1   Introduction

During a period of 10–15 years starting in the mid 1990s a rapid change in the organizational structure of the facility management took place in Norwegian local governments. While almost all local governments had a decentralized structure on their facility management when entering the 1990s, a large majority had switched to a centralized structure by the mid 2000s (Haugen, 2003). The two structures are very different. In the decentralized framework, the service producing agencies are responsible for operating and maintaining their own facilities. In the centralized framework a central facility management agency holds this responsibility.

In 2003 a government commission was appointed to evaluate the facility management in the local public sector in particular. In its final report (NOU, 2004) the commission concluded that a vast majority of local governments had insufficient levels of maintenance and that this to some extent was due to the organizational structure of the facility management. The commission went on to recommend that the local governments should adopt a centralized structure. A similar conclusion is found in a report commissioned by The Norwegian Association of Local and Regional Authorities (Econ and Multiconsult, 2002). The Norwegian debate is related to the international debate on contracting out services and strategic facility management (see e.g. Krumm et al., 1998; Clark and Rees, 2000; Alexander, 2003; and Atkin, 2003).

Despite the recommendations in NOU (2004), a considerable number of local governments have kept a decentralized structure. In this paper I investigate under which circumstances a decentralized structure is optimal, within the framework of a stylized political economy model. Using survey data, I test a few implications of the model empirically. This enables a discussion about whether local governments choosing a decentralized structure make their choice based on a rational consideration of local conditions, or are lagging behind in the development of more efficient organizational structures.

The most commonly used arguments in favor of a centralized structure relate to building technical competence. It is expected that a centralized facility management agency will have higher technical competence than an agency with production of welfare services as its main purpose. Furthermore, whereas a central facility management agency has facility management as its sole purpose, the service producing agencies focus mainly on production of services.

This can cause two problems for local governments with a decentralized structure. It may be the case that important maintenance activity is neglected. This can be both because the service producers may choose to cut down on maintenance in order to boost other expenditures or that it lacks the competence to observe the actual need for maintenance. Further, it can also be that the maintenance activity is not effective in terms of preserving technical condition. This is for example the case if maintenance activity is focused on fixing highly visible, but not necessarily fundamental, problems rather than underlying problems that are hard to observe for an untrained eye.

One argument in favor of decentralization, on the other hand, is the possibility for utilization of local knowledge.[1] It may be that some parts of the maintenance activity have a larger impact on the service production in the facilities than others. If this is the case, a decentralized structure can be beneficial since it will be easier to relate maintenance activity to other operations when the decisions are taken at the local level. The local knowledge may also to some extent be tacit knowledge which can be unobservable for a centralized agency. Hence, the service producer

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[1]   Econ and Multiconsult (2002) mentions the tight connections between janitors and management in the service producing agency as an advantage with the decentralized model.

may to some extent compensate for lower building technical competence with higher local knowledge.

The stylized theoretical model has two implications. First, the local governments most able to establish a highly qualified central facility management agency will benefit most from centralization in terms of increased technical competence. Second, the more difficult it is for the local governments to monitor the activities of their service producer(s), the more they will benefit from centralization of the facility management.

Data limitations force me to take a descriptive approach in the empirical study, looking at only a few key characteristics of the local governments. I expect small and rural local governments to gain less in terms of technical competence from centralization. The reason is that rural areas have limited access to highly qualified personnel. Further, monitoring the activities of service producers is likely more difficult in (*i*) large municipalities, and (*ii*) local governments with a weak political leadership. The hypothesis is thus that large local governments with a weak political leadership are more likely to centralize, while small local governments with a strong political leadership may prefer a decentralized structure.

The results provide support for this hypothesis. The findings thus indicate that local governments are able to consider the different structures and choose the one that fits them best. This is in contrast to a widespread opinion that all should centralize and that the ones with a decentralized structure are lagging behind in the development. An alternative explanation is that small local governments that are not able to utilize the advantages of centralization are too small and should be merged with neighboring local governments. Local government amalgamation is, however, a huge topic in itself. In this paper I take the local government size as given.

In a broader context, this paper is related to studies of reforms in the public sector. In a recent study, Bonesrønning (2012) finds that public sector employees are reluctant to implement accountability reforms meant to enhance public sector productivity. Rattsø and Sørensen (2004) present similar findings. The skepticism is especially related to reforms which introduce competition in the production of public services. The two Norwegian studies are related to studies of how different interest groups can influence policy outcomes. Early contributions are Dubin and Navarro (1988) and Coughlin et al. (1990).

It is worthwhile noting that centralization of the facility management in Norway rarely involves privatization and increased competition. The reason is that centralization in most cases involves the establishment of a municipal agency for facility management (see Tables 1 and 2). Hence, there is probably less ideological dispute concerning centralization of the facility management than what is found in the earlier studies of public sector reforms in Norway. In fact, I fnd no trace of political preferences in the choice of structure in the empirical analysis.

The remainder of the paper is organized as follows. Section 2 presents a stylized model of facility conditions and production of welfare services, illustrating the decision problem for the local governments. Survey data on the organization of the facility management in Norwegian local governments is presented in Section

3 before the empirical specification is presented in Section 4. The main results from the empirical analysis are discussed in Section 5. Finally, some concluding remarks are offered in Section 6.

2   A Stylized Model of Facility Conditions and Production of Welfare Services

I study a simple organizational framework where a sponsor (i.e. the central organs of the local government) has to choose between a decentralized or centralized structure for its facility management. To simplify, I assume that there is only one public service, produced by a single service producing agency. Centralization involves the establishment of a centralized single-purpose facility management agency, while facility management lies under the service producing agency in the decentralized case. The sponsor has an exogenous income Y which is to be distributed between operational expenditures, r, and maintenance, m. The budget constraint is thus

$$Y = r + m \tag{1}$$

The important difference between the two structures is that in the decentralized case the service producer receives Y and decides the allocation between r and m. In the centralized case, the sponsor decides the allocation and grants r to the service producing agency and m to a centralized facility management agency. The sponsor has a utility function over production of services (X), while the production of services depends on operational expenditures and the usability of the facilities (K). The sponsor's utility function and the production function for services are given by (2) and (3), respectively.

$$w_s = u(X) \tag{2}$$

$$X = x(r, K) \tag{3}$$

As is standard in the economics literature, I assume positive and decreasing marginal utility and productivity, i.e. $x', u' > 0$ and $x'', u'' < 0$. The usability of the facilities depends on the maintenance expenditures and how efficiently these are spent as presented in (4).

$$K = \overline{K} + (\alpha_i + \beta_i)m, \; i = D, \; C \tag{4}$$

The constant $\overline{K}$ indicates that the facilities may still be used even in the absence of maintenance.[2] Usability is broadly defined as how well the facilities serve the purpose of producing services. Usability thus includes, but is not restricted to, technical condition. α_i is the building technical competence, while β_i gives how well the maintenance is related to the actual production of services (local

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[2]   This is a one-period model and does not take into account the obvious fact that too low maintenance over time will lead to deteriorated facilities.

knowledge). The footprint $i = D,\ C$ indicates whether a decentralized (D) or centralized (C) structure has been chosen for the facility management.

The competence is restricted to the interval $0 < \alpha_i + \beta_i \leq 1$, where 1 indicates perfect competence, i.e. that the maintenance expenditures are used as efficiently as possible. α_i and β_i capture commonly used arguments in favor of centralized and decentralized solutions, respectively. A centralized facility management agency should, due to its explicit focus on facilities, have a higher technical competence than the service producing agency. The service producer is, on the other hand, expected to have higher local knowledge. I.e. $\alpha_C > \alpha_D$ and $\beta_D > \beta_C$. Thus we have an ambiguity where $\alpha_C + \beta_C \gtreqless \alpha_D + \beta_D$. The sponsor's utility is maximized when the production is maximized. The first order condition (FoC) is

$$\frac{\partial x}{\partial r} = (\alpha_i + \beta_i)\frac{\partial x}{\partial K},\ i = D,\ C \tag{5}$$

Since the sponsor decides the allocation in the centralized case and has perfect information about the competence of the facility management agency, he will impose the first best solution in the centralized case.[3] The sponsor will choose to increase the grant to the service producer (r) at the expense of the grant to the facility manager (m) if he knows that some of m will be wasted due to imperfect competence.

The decentralized case is slightly less straightforward. Since the sponsor grants Y to the service producer and the service producer gets to decide the allocation between m and r, the sponsor has limited possibilities to impose the first best solution. I thus also have to take the incentives of the service producer into account. As the sponsor, the service producing agency has a positive utility of production. Importantly, it also has an additional utility from shifting its spending towards operational costs.[4] The spending bias may involve rent extraction, but can also be due to that the service producer perceives operational expenditures to be more closely linked to its core task of producing services.

$$w_D = u(X) + \gamma(r) \tag{6}$$

It is reasonable to assume that the sponsor is able to monitor the service producer

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[3]   Production of public services is a complex operation in itself, and adding facility management as an additional task will clearly add to this complexity. For the sponsor, monitoring of an agency's activities becomes increasingly difficult the more complex the operations of the agency become. Hence, it will be harder to monitor a complex service producing agency than an agency with facility management as its sole purpose. As a consequence, I simplify by disregarding the monitoring problem in the centralized case altogether. In a previous version of the model, I introduced limited monitoring of the centralized facility manager as well. However, as long as I assume the monitoring problem to be lower in the centralized case, the results are qualitatively the same. Likewise, it is a convenient simplification to assume that the sponsor has perfect information about the abilities of the agencies. Relaxing this (perhaps implausible) assumption would complicate the model, since we could then have a signaling game between the agency and the sponsor.

[4]   For a discussion about the incentives of public agencies, see for example Niskanen (1971).

and enforce its preferred allocation to some extent. I illustrate the monitoring problem by $0 \leq \theta < 1$. If $\theta = 0$, the monitoring is perfect and the service producer is totally unable to deviate from the sponsor's preferred allocation. Thus, I can formulate the utility of the service producer, given the level of monitoring

$$\overline{w}_D = u(X) + \theta\gamma(r) \tag{7}$$

Since the service producer decides the allocation in the decentralized structure, conditioned on the level of monitoring, we obtain the FoC in the decentralized case by differentiating through (7)

$$\frac{\partial x}{\partial r} = (\alpha_D + \beta_D)\frac{\partial x}{\partial K} - \theta\frac{\partial \gamma / \partial r}{\partial u / \partial x} \tag{8}$$

In a world of perfect monitoring ($\theta = 0$) this collapses to the first best solution. The sponsor should then choose to centralize if $\alpha_C + \beta_C \geq \alpha_D + \beta_D$, since this gives the best utilization of m. If the sponsor cannot monitor the service producer agency perfectly ($\theta > 0$), a second argument in favor of centralization arises. This is due to the second term which specifies a dead weight loss (from the view of the sponsor). The dead weight loss increases when the possibility to monitor is low and when the service producer puts much weight on operational spending relative to service production. The monitoring problem thus has the efect that the sponsor may gain from centralizing even in cases where the total competence of the service producing agency is higher than in the centralized facility management agency, i.e. $\alpha_D + \beta_D \geq \alpha_C + \beta_C$.

The very stylized model offers a few testable predictions. First, local governments with possibilities to establish a highly qualified central facility management agency will benefit more from centralization. I expect this to be the case in urban areas, because of better access to highly qualified personnel. Second, I expect that local governments that find it difficult to monitor the activities of their service producer(s) are more likely to centralize. I will consider two observable characteristics I assume to be related to the possibility of monitoring. I expect that the sponsor's ability to monitor the service producer is lower (i.e. θ is larger) in (*i*) large municipalities, since these have more and larger service producers than smaller local governments and (*ii*) in local governments with weak political leadership. A more precise specification of the hypotheses to be tested is presented in Section 4 where the empirical specification is discussed.

3   Survey data on the choice of organizational structure

As in other Scandinavian countries, Norwegian local governments provide important welfare services like child care, primary and lower secondary education, primary health care, and care for the elderly. After labor, facilities are probably the

Table 1. *Distribution of answers. 2004 survey.*

Category	School buildings (N=241)		Health care buildings (N=240)	
A. The individual user/institution is responsible for the management of their properties	21	8.71%	19	7.92%
B. The central agency (school, health care, etc.) manages the properties for their institutions	18	7.47%	18	7.50%
C. Municipal agency	181	75.10%	181	75.42%
D. Municipal enterprise	12	4.98%	13	5.42%
E. Share holding companies, partly (or fully) owned by the municipality	1	0.41%	1	0.42%
F. Inter-municipal collaboration	1	0.41%	1	0.42%
G. Other	7	2.90%	7	2.92%
Decentralized (A, B, G)	46	19%	44	18%
Centralized (C, D, E, F)	195	81%	196	82%

most important input in production of local public services.[5] In this paper I aim to study the facility management for the two most important building types, schools and health care buildings. The two make up close to 50% and well above 20% of the local government building mass respectively.

The first data source is from a government commission (NOU, 2004) that was set up to evaluate the facility management in the local public sector. The commission conducted a survey on building conditions, maintenance, and organization of the facility management. The survey was mailed to all local governments and achieved a response rate of 55%. Small local governments (population size below 5,000) are underrepresented in the sample. Unfortunately, this data set contains too little variation to be used in the formal analyses presented in this paper, but it can still be interesting to look at some descriptive statistics.[6]

As part of the survey, the respondents[7] were asked to classify their organizational framework for the operation and maintenance of their facilities. Table 1 presents the distribution of the responses to the 2004 survey. Note that the centralized and decentralized structures both have several sub-categories. For my purposes, however, it is only interesting to separate between a centralized or decentralized framework. The categories C, D and E represent the centralized categories. The others indicate different versions of the decentralized structure.

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[5]   For a discussion about the incentives of public agencies, see for example Niskanen (1971).

[6]   For an example, see Hopland (2012, 2013b) and references therein where the link between school facilities condition and student achievement is studied. Even though the link is weak, the sign of the coefficients indicate that good conditions may help to improve achievement.

[7]   For both surveys the respondents are in leading positions in the local government administration. In almost all cases the respondent serves as either the chief administrative ofcer (*Rådmannen*) or the chief facility manager

Table 2. *Distribution of answers. 2010 survey.*

Category	School buildings (N=380)		Health care buildings (N=380)	
A. The individual user/institution is responsible for the management of their properties	18	4.74%	20	5.26%
B. The central agency (school, health care, etc.) manages the properties for their institutions	7	1.84%	8	2.11%
C. Municipal agency	308	81.05%	307	80.79%
D. Municipal enterprise	22	5.79%	21	5.53%
E. Share holding companies, partly (or fully) owned by the municipality	0	0%	0	0%
F. Inter-municipal collaboration	2	0.53%	2	0.53%
G. Other	23	6.05%	22	5.79%
Decentralized (A, B, G)	48	13%	50	13%
Centralized (C, D, E, F)	332	87%	330	87%

We observe that more than 80% used one of the centralized structures, with the municipal agency as the far most common.

The second source of information is a survey from 2010/2011.[8] This was meant as a follow up to the government commission survey and the design is therefore very similar. The survey was initially e-mailed to all local governments and we received 145 answers, or roughly 34% of the local governments. Because of the limited number of responses on the full (and very comprehensive) survey, the non-respondents were contacted and encouraged to answer the specific question regarding their choice of organizational structure. This resulted in 235 additional responses so that I for 2010 have data for a total of 380 local governments (88% of the local governments). With such a large share of the local governments I am confident that I have a representative sample. The answers from this survey are summarized in Table 2.

Table 2 displays a picture which is fairly similar to that observed in Table 1. However, it is worthwhile noting that the centralized structures are even more frequently observed than in the data from the 2004 survey. This may indicate that we are still in a transitional phase where more local governments shift towards the centralized framework. The trend towards centralization is also observed when we look at the 214 local governments that participated in both surveys. We observe that around 25 local governments changed from one of the decentralized structures to a centralized structure during this period. However, the picture is not perfectly clear-cut. A few also report to have changed from a centralized structure to more decentralized structures. This suggests that the process of sorting local

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[8]   I refer to this as the 2010 data. The survey was conducted as a project at the Center for Real Estate and Facilities Management at NTNU, and was designed by the research group (including the author).

governments into the structure that they find to be most favorable goes both ways. Interestingly, those that changed to a decentralized structure are rural local governments, indicating that my hypotheses are not too far fetched. The time variation between the surveys is, unfortunately, too small for me to exploit the panel dimension[9] in the formal empirical analysis, so I use only the data from the 2010 survey. The following section outlines my empirical approach.

4   Empirical Specification

The aim of the empirical discussion is to investigate whether local governments with a centralized facility management differ systematically from those with a decentralized structure and if the observed differences are consistent with the hypotheses from the theoretical framework. The empirical discussion is based on the logit equation

$$\text{prob}(C_i^B = 1 \mid \text{Dem}_i,\ \text{Pol}_i,\ \text{Fiscal}_i) = \frac{1}{1 + \exp(-\lambda_D^B \text{Dem}_i - \lambda_P^B \text{Pol}_i - \lambda_F^B \text{Fiscal}_i)} \quad (9)$$

C_i^B is a dummy which equals one if local government i has chosen a centralized management structure for building type B (schools or health care buildings). The choice variables are summarized in Table 3. Dem_i, Pol_i and Fiscal_i are vectors consisting of demographic, political and fiscal variables respectively.

Table 3. *Descriptive statistics for the binary choices.*

Variable	Mean (st.dev)	Sample
Centralized management for school buildings	0.87 (0.33)	(N=380)
Centralized management for health care buildings	0.87 (0.34)	(N=380)

The demographic variables are the share of the population living in densely populated areas and the population. Since roughly 80% of the local governments with a decentralized structure have less than 5,000 inhabitants, I use three dummies that equal 1 if the population in a local government is either below 2,000, between 2,000 and 3,000 or between 3,000 and 5,000, rather than the number of inhabitants. Rural local governments may have problems attracting highly qualified personnel to the facility management agency. As a consequence the potential efficiency boost due to higher technical competence in a centralized facility manager is reduced. Further, large and urban municipalities will have a larger number of service producers, complicating the sponsor's monitoring. Hence, I expect the share of the population living in densely populated areas to come out as positive when estimating the probability of choosing a centralized structure. Likewise I expect the small local government dummies to come out as negative.

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[9]   More time variation would allow me to study variation within cross-sectional units, a method widely used in econometrics to reduce omitted variables bias.

I also expect political fragmentation to be associated with monitoring problems. The political system at the local government level is a representative democracy where the members of the local council are elected every fourth year. The national parties are important players, and the national struggle between the socialist and non-socialist camps is mirrored at the local level. Compared to national politics, a main difference is that the majority coalition does not form a cabinet. The typical organization is an alderman model with an executive board with proportional representation from all major parties. The executive board is led by the mayor, and the members of the executive board, including the mayor and the deputy mayor, are elected among the members of the local council.

Several studies of Norwegian local governments have emphasized the impact of political strength. Political strength is shown to reduce administrative spending (Kalseth and Rattsø, 1998), to increase efficiency (Borge et al., 2008 among others), to reduce the budget deficit (Borge, 2005) and to give better maintenance (Borge and Hopland, 2012). I expect that strong politicians will also be better suited to perform monitoring than their weaker counterparts. Hence, I expect that political fragmentation is positively associated with the probability to adopt a centralized structure. I use the efective number of parties (*EN OP*), which is the inverse of the traditional Herfindahl-Hirschman index

$$ENOP = \left(\sum_{p=1}^{P} SH_p^2 \right)^{-1} \tag{10}$$

where SH_p is the share of representatives from party p. In my sample, the effective number of parties varies from 1.7 to nearly 7, with an average just above 4. Since a higher value indicates more fragmentation, I expect it to come out as positive in the regressions. In Norway, the socialist camp is dominated by the Labor party, while the non-socialist camp is more fragmented. As a consequence, there is a negative correlation between party fragmentation and the share of socialists in the local council.[10] Since I cannot rule out that socialist influence has an impact on the choice of organizational framework, I will control for the share of socialists. Socialist parties are defined as the social democrats (The Labor Party) and all parties to its left.

In addition, I include a set of fiscal indicators. It is not given how fiscal conditions affect the choice of structure. One may have that local governments with low revenues are eager to reform because they hope to be able to reduce costs. On the other hand, one may have that local governments experiencing fiscal stress cannot afford to start the reform process, due to transaction costs. The main fiscal variable is local government revenue. I use an indicator of real per capita revenue published by the Ministry of Local Government, which is widely accepted as the most reliable indicator of fiscal capacity. While the local governments enjoy a fairly wide discretion as to deciding their expenditures, their revenues are to a

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[10]   The correlation between the effective number of parties and the share of socialists is –0.42.

large extent based on centrally set tax rates and grants. The starting point is the sum of block grants and local tax revenues. Most taxes are of the revenue sharing type, and the tax revenues comprise income and wealth tax from individuals, as well as the property tax. Since the block grant system provides compensation for high spending needs, the revenues must be "deflated" in order to capture the real differences across local governments. An index of spending needs from the spending needs equalization system is used as deflator. It captures unfavorable cost conditions related to population size, settlement pattern, the age composition of the population, and social factors.

In addition to per capita revenues as indicator of fiscal capacity, I have tried to include a number of indicators of fiscal distress. Fiscal distress is broadly defined as actual fiscal performance in relation to the balanced-budget-rule (BBR). The main requirement in the Norwegian BBR is operational budget balance. In the budget (or ex ante), current revenues must be sufficient to cover current expenditures (wages and materials) and debt servicing costs (net interest payment and net installment on debt). It turned out that only one measure of fiscal distress came out as significant, and I thus restrict the discussion to this. The variable captures whether the local government is included in the Register for State Review and Approval of Financial Obligations (ROBEK). The register lists local governments that have violated the BBR by passing a budget with a net operating deficit or have been unable to cover an actual deficit within two years.[11] The far most common reason for being in the register is that it has taken too long to cover a deficit. The consequence of being in the register is that the budget and resolutions to raise new loans must be approved by the county governor, the central government's representative in the county. Local governments in the register are subject to stronger central government control, and must tighten their budgetary policy in order to be removed from the register.

The local government revenue is measured as the average over the period 1998–2010, while the averages of the political variables capture average of the electoral periods 1995–99, 1999–2003, 2003–07 and 2007–11. The Robek variable is measured as the number of months the local government was listed in this register during 2001–2009.[12]

Table 4 presents descriptive statistics and a comparison of the local governments with a centralized and decentralized structure on their facility management. A few local governments have a decentralized structure on either schools or health care buildings and a centralized structure on the other. To keep the table easy to read, I only separate the local governments that have a centralized structure on either one of them from those which have a decentralized structure on both. This does not matter for the averages reported, since it regards very few local governments (see Table 1). From this raw comparison we observe that there are some interesting differences between the local governments with

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[11] An actual deficit is covered when future surpluses are at least as large as the deficit.

[12] The register was established in 2001. For a more thorough discussion about the register, see Hopland (2013a).

Table 4. *Descriptive statistics, explanatory variables.*

	Full sample avg. (st.dev.)	Avg. cent. (st.dev.)	Avg. decent. (st.dev.)	Difference in averages	
Share (%) of pop. living in densely pop. areas	51 (28)	53 (27)	37 (26)	16	***
No. of observations	380	334	46	380	
Pop. under 2,000	0.22 (0.41)	0.19 (0.39)	0.39 (0.49)	−0.20	***
No. of observations	380	334	46	380	
Pop. 2,000–3,000	0.14 (0.35)	0.13 (0.34)	0.24 (0.43)	−0.11	*
No. of observations	380	334	46	380	
Pop. 3,000–5,000	0.17 (0.38)	0.16 (0.37)	0.26 (0.44)	−0.10	*
No. of observations	380	334	46	380	
Efective number of parties	4.14 (0.95)	4.19 (0.94)	3.77 (0.95)	0.42	***
No. of observations	375	328	47		
Share of socialists in the local council	0.37 (0.13)	0.37 (0.13)	0.36 (0.15)	0.01	
No. of observations	377	330	47		
Local government revenue	106.69 (23.33)	105.61 (23.58)	114.32 (20.17)	−8.71	**
No. of observations	377	330	47		
Central government control (Robek)	23.88 (35.28)	22.65 (33.60)	32.55 (44.83)	−9.90	*
No. of observations	377	330	47		

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

a centralized structure and those that use a decentralized structure. It seems that the local governments that have a centralized structure on average have a higher share of their population living in urban areas, larger population, a higher degree of party fragmentation and lower revenues. Even though the observations from the descriptive statistics are in accordance with my hypotheses, I cannot make any conclusions before I have studied the results from the formal estimations. These are presented in the following section.

This paper studies the relationship between the choice of organizational structure and a very few key characteristics of the local governments. There can be a variety of different characteristics that are also of great importance for this choice. Such characteristics could for example include the technical competence among key persons in the political leadership or the top administration. The competence of key individuals such as janitors may also potentially be of great importance for the choices made, particularly in small and transparent local governments. Unfortunately, the available data limits the number of testable hypotheses.

I have, however, tried to include a variety of control variables in order to check the robustness of the estimates. These include variables capturing the age composition in the local governments. These may be interpreted as the relative strength of interest groups representing different service sectors. It is possible that a strong focus on certain services may also affect the choice of framework for the facility management. Similarly, I have also tried to control for the influence of different political parties (in addition to the control for the share of socialists). However, neither age composition nor political preferences seem to matter and I thus omit them from the analysis. As discussed in the Introduction, it is not very surprising that political preferences seem to play little role for this question.

5   Results

Because of the limited variation in the data I focus on the direction of the links rather than marginal effects when studying the empirical findings. This has two implications for the following discussion. First, I am careful not to interpret the findings as strictly identified causal relationships, since there may be characteristics that I am unable to control for. Second, as an extension of this I do not focus on a detailed discussion of marginal effects.

Rather I restrict myself to a discussion about the signs and significance of the coefficients and whether these are consistent with the predictions from the theoretical framework.

In the tables, each column presents results for a separate regression, each presenting slightly different versions of Equation (9). The different variations are

Table 5. *Estimation of probability of choosing a centralized structure for school buildings. Logit.*

Variables	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Share of pop. living in densely pop. areas	0.0198*** (0.00551)		0.00397 (0.00756)	0.0136* (0.00735)		0.0126* (0.00734)	
Pop. under 2,000		−1.927*** (0.470)	−1.761*** (0.606)		−1.628*** (0.552)		−1.580*** (0.582)
Pop. 2,000–3,000		−1.809*** (0.513)	−1.676*** (0.628)		−1.559*** (0.564)		−1.395** (0.559)
Pop. 3,000–5,000		−1.710*** (0.502)	−1.612*** (0.562)		−1.603*** (0.511)		−1.543*** (0.512)
Efective number of parties				0.434** (0.220)	0.259 (0.207)	0.483** (0.214)	0.357* (0.208)
Share of socialists				1.311 (1.410)	0.903 (1.395)	1.664 (1.443)	1.309 (1.420)
Local government revenue						−0.00816 (0.00498)	−0.00224 (0.00525)
Central government control (ROBEK)						−0.0104** (0.00452)	−0.00971** (0.00474)
Observations	380	380	380	374	374	372	372

Robust standard errors in parentheses. A constant term (not reported) included.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6. *Estimation of probability of choosing
a centralized structure for health care buildings. Logit.*

VARIABLES	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Share of pop. living in densely pop. areas	0.0182*** (0.00564)		0.00223 (0.00747)	0.0124* (0.00753)		0.0114 (0.00759)	
Pop. under 2,000		−1.858*** (0.447)	−1.764*** (0.565)		−1.606*** (0.523)		−1.615*** (0.558)
Pop. 2,000–3,000		−1.670*** (0.495)	−1.595*** (0.594)		−1.458*** (0.541)		−1.294** (0.542)
Pop. 3,000–5,000		−1.571*** (0.483)	−1.515*** (0.533)		−1.485*** (0.490)		−1.434*** (0.493)
Efective number of parties				0.431* (0.221)	0.229 (0.208)	0.495** (0.219)	0.340 (0.212)
Share of socialists				1.078 (1.420)	0.559 (1.377)	1.492 (1.464)	1.000 (1.423)
Local government revenue						−0.00794 (0.00492)	−0.00105 (0.00542)
Central government control (ROBEK)						−0.0116*** (0.00422)	−0.0111** (0.00447)
Observations	380	380	380	374	374	372	372

Robust standard errors in parentheses. A constant term (not reported) included.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

intended to shed light on which variables that seem to be most important, and to check how sensitive the results are to small changes in the model.

Table 5 reports results from estimations using school buildings, while Table 6 reports the results when studying health care buildings. Since the results are very similar, I discuss the tables jointly. Consistent with my hypothesis, we observe that the share of the population living in densely populated areas comes out as positive while the population dummies are negative. The population seems to be the most important determinant, since the population dummies are always highly significant, and very stable across the different specifications. The share of the population living in densely populated areas is significant as long as the population dummies are omitted, but loses its significance when these are included.

As expected, I also obtain positive coefficients for the party fragmentation. These are also fairly stable and mostly significant. The share of socialists comes out as positive but insignificant. Interestingly, income does not seem to matter for the choice of organizational structure. However, the Robek variable comes out as significantly negative.

This indicates that local governments that have been subject to fiscal distress over some time have not centralized their facility management. A possible explanation is that local governments in dire straits are worried about the transactional costs that follow from a change in organizational structure. However, if the decentralized structure is more costly than the centralized, the causality may actually be reversed. This correlation must thus be interpreted with particular caution.

6   Concluding Remarks

This paper has aimed to study the choice between a decentralized and centralized structure on the facility management in Norwegian local governments. Until the mid-1990s almost all local governments had a decentralized structure, but in 2010 the picture is opposite with more than 85% having a centralized structure. This trend is in accordance with the recommendations from a government commission (NOU, 2004) studying the topic and recommending centralization. Despite the recommendations in NOU (2004), however, a considerable number of local governments have kept a decentralized structure. In this paper I have asked whether this is necessarily because these local governments are lagging behind in the development, or if different structures may present the best fit for different local governments.

I discuss a stylized framework which suggests that a centralized structure not necessarily will be superior for all local governments. Rather, the prediction is that small and rural local governments may be better off with a decentralized structure. This is because such local governments are likely to have less gain in terms of high competence in a central facility agency. Further, local governments that are able to monitor their service producers effectively, can to a larger extent ensure that the service producer takes well care of its facilities, reducing the need for a separate facility manager. It is likely that monitoring is easier in small local governments. Finally, it is reasonable to assume that a strong political leadership will be more capable of monitoring their service producers than more fragmented ones. Hence, the empirical discussion was based on population, urbanity and political fragmentation.

The empirical findings are consistent with the predictions from the theoretical model. It seems that large local governments with a weak political leadership centralize their facility management, while small local governments with a strong political leadership prefer a de-centralized structure. The local governments thus seem to be able to consider the different structure and choose the one that fits them best. This is in contrast to a widespread opinion that all should centralize and that the ones with a decentralized structure are lagging behind in the development.

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