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Political pressure, conformity pressure and performance information as drivers of public sector innovation adoption

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ABSTRACT

Why public organizations adopt and abandon organizational innovations is a key question for any endeavor to explain large-scale developments in the public sector. Supplementing research within public administration on innovation with the related literature on policy diffusion, this article examines how external factors such as conformity pressure from institutionalized models, performance information from other organizations, and political pressure affect innovation adoption. By the use of two survey experiments in very different political contexts – Texas and Denmark – and a difference-in-differences analysis exploiting a reform of the political governance of public schools in Denmark, we find that public managers respond to political pressure. We find no indications that they emulate institutionalized models or learn from performance information

from other organizations when they adopt organizational innovations. The results thereby point to political pressure as an important factor behind large-scale adoptions of organizational innovations in the public sector.

KEYWORDS: diffusion, innovation, learning, public management

Introduction

Public sector development often happens through waves of adoptions or abandonments of organizational innovations as, for instance, in the case of New Public Management or liberalization (Levi-Faur 2003; Pollitt and Bouckaert 2011). To understand such developments at the micro-level of managerial decisions, we need to look for external factors that can explain concurrent adoptions by many individual organizations (Levi-Faur 2005). That is, top-down factors such as political pressure from higher-level political principals and horizontal factors such as conformity pressures from models that are considered appropriate within an institutional field, or the performance experiences of other organizations that facilitate learning (Braun and Gilardi 2006; Walker 2006). The impact of such factors tells us not only something about the factors driving large-scale public sector development but also how attempts to make large reforms should be designed. More specifically, it tells us whether we can put our faith in top-down pressures working through coercion, the institutionalization of models leading to their emulation, or if we can rely on public organizations to search out the best models themselves through learning from others.

This study examines such drivers of public sector development in relation to the adoption of organizational innovations; i.e., innovations in the organizational processes, structures, and strategies of public organizations (Armbruster et al. 2008, 646) through which public services are developed and produced. Such innovations are central to the workings (though not necessarily the

scope) of the public sector. Organizational innovations empirically examined in this article are the adoption of a new strategy of innovation (the strategy of innovation is in itself an innovation) as well as the New Public Managements concepts of company contracts and management by objectives. The empirical focus is hence on two highly salient aspects of current public sector governance, namely innovation (Osborne and Brown 2013) and performance management (Moynihan 2008).

The adoption of organizational innovations has also become a topical issue within public administration research, where a distinct subfield on public sector innovation has evolved (Borins 2014; Osborne and Brown 2013; Walker 2014). This literature, however, mainly consists of cross-sectional studies focused on the internal organizational determinants of organizational innovativeness (Walker 2006, 314), i.e., organizations' propensity to innovate. Such internal factors may be important, but different characteristics of individual organizations can hardly explain how individual organizational innovations are adopted by many public organizations within a short time frame. Instead, external factors such as political pressure, conformity pressure from institutionalized templates of innovations, and performance experiences from other organizations call for attention. Studies of the external drivers of the diffusion of innovations have taken place within the public sector innovation literature (Berry and Berry 1990; Bhatti, Olsen, and Pedersen 2011). We supplement this literature with the sophisticated modelling of external factors such as learning and methodologies such as survey experiments of the policy diffusion literature (Butler et al. 2015; Elkins and Simmons 2005; Meseguer and Gilardi 2009; Shipan and Volden 2008).

Substantially, we examine top-down and horizontal drivers of change. Our results consistently show that public managers react to top-down political pressure rather than to

conformity pressure from institutionalized models or performance information when deciding on innovation adoption and abandonment. This indicates a continued importance of traditional hierarchical relationships in the public sector as regards large-scale reforms.

Methodologically, by employing survey experiments from two national settings combined with longitudinal observational data exploiting a structural reform of Danish municipalities, we use methods that allow for a more valid causal analysis of factors driving changes in public organizations than in previous studies of innovation diffusion in the public sector. The research design consists of two survey experiments of school principals in Denmark (study I) and in Texas (study II). The chosen jurisdictions have highly different political and administrative systems (Meier et al. 2015). Replicating the results in such different contexts speaks to the generalizability and robustness of the results. The external validity of the experimental results are then supported by a difference-in-differences analysis of changes in performance management innovations at Danish public schools (study III).

The next section combines findings from research on public sector innovation and policy diffusion in order to develop our hypotheses. After an introduction to data and methodology, the empirical analysis follows with the survey experiment and the observational data. The article ends with a discussion and conclusion.

Theoretical Framework

Innovation adoption can be broadly defined as “the implementation of an idea – whether pertaining to a device, system, process, policy, program, or service – that is new to the organization of the time of adoption” (Damanpour 1987, 676). Innovation adoption is thus a key element of

public sector development because it implies a break with past practices in public organizations, which is not only symbolic but also behavioral since the adopted ideas must be put into practice.

In this article, we focus on a specific type of innovation which we term organizational innovation. Following Armbruster et al. (2008, 646), this can be defined “as the use of new managerial and working concepts and practices”. Prominent examples of organizational innovations in the public sector are New Public Management reforms such as performance management, liberalization, and strategic management which all imply new managerial behaviors as frameworks for the work within the organization. This also includes organizational strategies such as prospector strategies (Boyne and Walker 2004) as long as they are new to the adopting organization. Organizational innovations come in many sizes from the adoption of specific and narrow concepts such as a new technique used in recruitment interviews to general and broad concepts such as strategies and general management concepts for the entire organization. Specific and narrow innovations could thereby be the (outcome) of general and broad innovations that furthers innovation throughout the organization. Organizational innovations are hence a form of process innovation understood as the use of new ideas in production methods and forms of organization (Armbruster et al. 2008, 645; Walker 2014, 24) with an emphasis on the latter organizational part. They also closely resemble what Walker has termed organizational process innovations which relate to innovations in “structure, strategy and administrative processes” (Walker 2008, 593).

Organizational innovations can be adopted by organizations in several ways. Our approach – like other innovation adoption studies – focus on adoptions that are intentional and conscious – resembling rational top-down processes of strategy formulation (Ashworth, Boyne, and Delbridge 2009, p. 173) – and not slow, unintentional adoptions unguided by an original goal – resembling

emergent processes of strategy formulation (Mintzberg and Waters 1985). Such slow and unintentional process of adoption are hard to measure and are not directly linked with the question about what drives managerial decisions to adopt organizational innovations.

Our concept of organizational innovation is, however, clearly distinguished from product innovations that relate to what services are delivered; e.g., health care and education (Damanpour 1991, 561). Such innovations relate to the development in the scope of public sector activities (expansion and contraction) but not the development of the managerial and work concepts and practices used in public organizations. Studying organizational innovations hence provides us with some key lenses on the drivers of the development in administrative and managerial practices in the public sector.

Two Literatures: Public Sector Innovation and Policy Diffusion

Explanatory factors behind the diffusion of an innovation can be categorized in three groups: (1) Internal factors such as size, structure, and the organizations' own performance (from which organizations can learn); (2) top-down factors such as political pressure; and (3) horizontal factors such as institutionalized models (which can be emulated) and the performance experiences of other organizations (from which an organization can learn) (Levi-Faur 2005; Walker 2006, 314). Top-down and horizontal factors are the most likely explanations for sweeping developments in the public sector with waves of adoptions and abandonments of innovations while internal factors are more likely to explain variation in innovation adoption. The literatures on public sector innovation and policy diffusion are our starting point for the development and examination of hypotheses on the impact of external factors.

The literature on public sector innovation has a long history (Mohr 1969) with a recently regained momentum (Borins 2014; Osborne and Brown 2011). A key question in this literature is what factors determine innovation in public organizations, with a strong but not exclusive focus on organizational innovations (Walker 2008, 2014). Focus has mainly been on the innovativeness of organizations; i.e., organizations' propensity to adopt innovations (Damanpour 1991). However, there are also studies focusing on external factors and the adoption of individual innovations (Berry and Berry 1990; Bhatti, Olsen, and Pedersen 2011). One benefit of focusing on innovativeness is that it reduces the random noise surrounding the adoption of individual innovations. However, it is not focused on the causal impact of external factors behind the adoption of individual innovations across organizations.

That is, however, very much the focus in the policy diffusion literature, which examines how policies and innovations diffuse among political units (Elkins and Simmons 2005; Gilardi 2005; Levi-Faur 2005; Meseguer and Gilardi 2009; Shipan and Volden 2008). The policy diffusion literature is mainly focused on countries and states within federal structures, but it shares some units of analysis in terms of local governments with the public sector innovation literature. This literature is, however, also focused on organizations further down the formal chain of hierarchy such as schools, executive agencies, and hospitals, where decisions to adopt and abandon innovations are not formally made by elected politicians. Here, we combine the public sector innovation literatures' knowledge of public sector organizations with the policy diffusion literatures' theoretical and methodological strengths by studying the causal impact of external factors on innovation adoption.

For the public sector innovation literature, a recent meta-review by Walker (2014)¹ found administrative capacity and organizational size to be strong and robust predictors of organizational

innovativeness. Organizations' capacity to learn, which is the "collective knowledge stimulating organizational change" (Walker 2014, 26), did not have a systematic impact on innovation (Walker 2014, 33).

Moving to external top-down and horizontal factors, the policy diffusion literature provides strong theorization drawing on sociological institutionalism, resource dependence theory, and theories about learning, as well as empirical examination of these explanatory factors (Braun and Gilardi 2006; Volden, Ting, and Carpenter 2008).

Political pressure

Political pressure is a top-down factor based on coercion or normative authority (Braun and Gilardi 2006, 309–310; Shipan and Volden 2012, 791). It makes organizations either adopt or abandon innovations by linking such decisions to the organizations' dependency on political principals' resources in a broad sense including, of course, financial resources, but also resources such as democratic legitimacy and juridical-based power (DiMaggio and Powell 1983, 152). Failure to comply with pressures for adoption or abandonment leads to (or is threatened to lead to) fewer resources. Within the public sector innovation literature, Walker (2006) has studied the impact of political pressure on the adoption of organizational innovations in English local government. He found no effect. The study was based on self-assessments of the external pressure by survey respondents and not on independent measures of pressure. Within the policy diffusion literature, a longitudinal study by Gilardi (2005) which was not based on respondents' self-assessment of the establishment of independent regulatory agencies among OECD countries, however, found that even weak EU demands for liberalization furthered the establishment of independent, national regulatory agencies.

Learning from performance information

One horizontal factor is the performance information that is produced by other organizations and from which organizations can learn (Braun and Gilardi 2006, 306–308). Learning is a process where decisions about whether to adopt or abandon an innovation is based on information about the performance consequences of such decisions (Cyert and March 1963; Greve 2008). Learning from others happens when the performance experiences of other organizations change the perception of the effectiveness of an already adopted organizational innovation or some alternative organizational innovation, or both. Learning can thus lead both to the adoption and abandonment of organizational innovations (Volden 2010, 4). Such a learning mechanism draws on a “logic of consequentiality” (March and Olsen 2005).

The policy diffusion literature has a strong focus on how performance information affects innovation adoption through learning (Meseguer and Gilardi 2009, 528). Gilardi, Füglistler, and Luyet (2009) have shown that the likelihood of adopting Diagnosis Related Group (DRG) hospital financing systems in OECD countries increased when the existing reimbursement system was ineffective, and when the experiences of countries adopting such systems were positive. In the same vein, Gilardi (2010) has shown how the adoption of welfare state retrenchment policies are shaped by electoral and policy results of adopting similar policies in other countries. Volden (2006, 2010) has also shown that the propensity not only to adopt but also to abandon welfare policies among U.S. states is related to the failure or successes of the policies in other U.S. states.

Emulation of institutionalized models

Another horizontal factor arises from the institutionalization of models for organizational innovations (Braun and Gilardi 2006, 310–312). Institutionalization is a process, where a model

becomes infused with value beyond its direct effect on performance (Selznick 2011) and becomes a myth that “take on a rule like status in social thought and action” (Meyer and Rowan 1977, 341). This involves a normative element where the model provides legitimacy by being considered “the right thing”, and a cognitive element where it sets out specific expectations (Meyer and Rowan 1977, 341) for instance in the form of a given performance outcome. The basic logic linking an institutionalized model to organizational decisions is “a logic of appropriateness”, where organizational decisionmakers seeks to do what is considered “true, reasonable, natural, right, and good” (March and Olsen 2005). This leads to a pressure for conformity to the model, which can make the organization emulate the model. We distinguish conformity pressures from political pressure. Conformity pressure makes managers react out of a sense of appropriateness, whereas political pressure make managers react because of resource dependency (in a broad sense including democratic legitimacy). The two kinds of pressure may interact if managers react because they perceive that their political principals want them to emulate other organizations. We return to this in our formulation of an interaction hypothesis below.

With regard to conformity pressures from institutionalized models, the public sector literature has some relevant studies. A Danish study has for instance shown that the share of nearby organizations adopting an innovation is positively related to innovation adoption, which the authors interpret to be at least partly due to learning and partly due to emulation (Bhatti, Olsen, and Pedersen 2011, 583). Still, no information on the performance effects of the innovation is included in the study, making it problematic as a measure of learning. In the policy diffusion literature, a study of policy abandonments in U.S. local governments has found that abandonments by other nearby jurisdictions increase the likelihood of abandonment, but also without being able

to distinguish between emulation of institutionalized models and learning from performance information (Lamothe and Lamothe 2015).

Within the policy diffusion literature, Gilardi (2005) has explicitly studied institutionalization of models and how it creates emulation. He shows that the establishment of independent regulatory agencies in Western countries was positively affected by the establishment of such agencies in other countries. This should indicate a process of emulation from an institutionalized model because the adoptions of some countries bestow the adoption of the innovation with a symbolic value that makes it more likely to be adopted by other countries.

Combined studies

The only study to date that tries to study political pressure as well as learning and emulation mechanisms simultaneously is Shipan and Volden's (2008) study of the adoption of anti-smoking policy choices by U.S. cities from 1975 to 2000. They find a positive impact of political pressure. They use, however, a rather weak indicator of political pressure, since pressure is measured by whether higher levels of government have preempted adoption of an anti-smoking policy by the city by adopting a similar state-wide policy (Shipan and Volden 2008, 842). They also find such adoptions by other jurisdictions to matter positively for adoption of anti-smoking policies, supporting emulation (Shipan and Volden 2008, 842). Furthermore, they find evidence of learning, but unfortunately not based on information of the performance effects of the adoptions by other cities (Shipan and Volden 2008, 842).

In sum

In order to study large-scale adoptions of organizational innovations in the public sector, we supplement the public sector innovation literature with insights from the policy diffusion literature. This literature provides valuable input in two ways.

First, while the public sector innovation literature is mainly based on cross-sectional designs (Damanpour, Walker, and Avellaneda 2009, 652; Walker 2014, 28), the policy diffusion literature is mostly based on longitudinal research designs, which are better suited for the analysis of causal processes unfolding over time such as learning and emulation. Still, even such designs face challenges from uncontrolled variation and endogeneity. To mitigate this, the policy diffusion literature has recently also engaged with survey experimental methods that solves such problems through randomization (Butler et al. 2015).

Second, the policy diffusion literature has a stronger theoretical focus on the top-down and horizontal factors of political pressure, emulation, and learning than the public sector innovation literature. The policy diffusion literature provides us with explanations based on resource dependency theory, institutional theory, and learning theory. This implies a contrast between adaptive (learning) and less adaptive (political pressure and emulation) drivers of large scale adoptions of organizational innovations in the public sector.

Hypotheses

The literatures on public sector innovation and policy diffusion provide us with the theoretical basis to formulate hypotheses about the top-down and horizontal factors driving adoption or abandonment of organizational innovations across many public sector organizations.

The first hypothesis relates to external political pressure. Organizations at lower levels of government are dependent on the resources from higher levels of government in the form of

democratic legitimacy, legal mandates, and financial means. Resource dependencies based on hierarchy – which are normal for public organizations – are typically also stronger than resource dependencies of national governments embedded in a world of at least formally equal nation states, which is the prime focus of the policy diffusion literature (Braun and Gilardi 2006, 309). In a resource-dependency perspective, this can give rise to coercive pressure because the wishes of the political principals are directly or indirectly linked to the organization's dependency on financial, legislative, or hierarchical resources from the political principals. Based on such dependencies, political principals can make it very costly (or very beneficial) to not adopt (or adopt) a specific organizational innovation (Braun and Gilardi 2006, 310). On this basis we formulate a *political pressure hypothesis*:

The more pressure from political principals for adoption of an organizational innovation, the more likely an organization is to adopt the innovation.

The second hypothesis relates to institutionalization. When a model for an organizational innovation becomes institutionalized, it makes emulation of the model likely. Such emulation can be based on two different mechanisms: 1) Symbolic imitation (Braun and Gilardi 2006, 313) that draws on normative elements of institutionalization; organizations choose to adopt legitimate models as they are symbols that bestow legitimacy on the organization (DiMaggio and Powell 1983, 152); 2) taken for grantedness, which is based on the cognitive element of institutionalization where an innovation becomes the “natural choice” (Braun and Gilardi 2006, 313), because taken for granted causal beliefs ascribe the innovation a high positive impact on performance. Both mechanisms contrast with learning from performance effects; they are based on the symbolic properties of the innovation as it is expressed in collective myths about what is right and efficient (Levi-Faur and Vigoda-Gadot 2006, 253). Based on the assumption from institutional theory that

actors in organizations seek legitimacy and taken for granted causal beliefs that help them grasp a complex world, we formulate a *conformity pressure hypothesis* as follows:

The more a model for an organizational innovation is institutionalized in a given organizational field, the more likely an organization in the field is to adopt the innovation.

The third hypothesis relates to the performance information generated by experiences of other organizations. In contrast to the logic of appropriateness on which emulation is based, this hypothesis hence focuses on the actual performance consequences of innovation adoption. Fully or boundedly rational actors will *ceteris paribus* seek to learn from the performance information they receive (Braun and Gilardi 2006; Greve 2008, 200). More positive relative to negative performance information about an innovation model should thus increase the inclination to adopt the policy. On this basis we formulate a *performance experience hypothesis* as follows:

The better the experiences of other organizations that have adopted an organizational innovation, the more likely an organization is to adopt the innovation.

Despite their distinct logics, learning, and emulation is, in contrast to political pressure, voluntary and not based on coercion. The resource-based power logic behind political pressure is, however, quite likely to interplay with both learning and emulation (Levi-Faur 2003). Political pressure that challenges already adopted organizational innovations makes organizations face uncertainty about their political support and their future model of organization. This triggers search processes for new information, which can be used for learning, and focuses on appropriate models in the environment. Furthermore, an external challenge to an already adopted innovation is also likely to create a sense of performance gap in the organization requiring a search for new solutions. Based on this argument we formulate two pressure *interaction hypotheses* as follows:

The more an organization is exposed to political pressure to change, the more it learns from the performance experiences of other organizations.

The more an organization is exposed to political pressure to change, the more it emulates institutionalized models of innovations.

We now describe how we test these hypotheses.

Data and Design

We test our hypotheses in three separate empirical studies. In Studies I and II, we examine how public managers respond to information about other organizations' use of an organizational innovation as well as information about the political pressure from a higher level. To study how conformity pressure from institutionalized models through emulation and performance information through learning affects innovation adoption based on observational data is notoriously challenging because emulation and learning are endogenous processes. If organizations learn from each other or emulate institutionalized models, any correlation between a single organization and organizations in its environment can be the result of one affecting the other or vice versa – or unobserved variables affecting all of them. Similarly, political pressures about the need for change may respond to previous changes – or the likelihood of future changes – rather than cause these changes themselves. To identify the causal effect of signals from the environment on performance information, institutionalized models, and political pressure on managers' propensity to adopt organizational innovations, we use a survey experiment in Studies I and II on Danish and Texan school principals.

By combining Study I and Study II, we examine the robustness of the findings. Replicating the results in a completely different political context is a hard test of the hypotheses. Meier et al.

(2015) demonstrate how the fragmented, adversarial political system of Texas provides much different opportunities for managing organizations compared to the unitary and corporatist Denmark. Replicating results from the Danish experiment in a Texan political context speaks to the strength of our findings.

The weakness of survey experiments is their generalizability to real world behaviors. In Study III, therefore, we examine whether the relationships found in the experiments can be found in observational data. To do so, we exploit a structural reform of the political system in Denmark. Schools in Denmark are politically governed by multipurpose municipalities that besides schools hold responsibility for childcare, elder care, social security, cultural and business development. In 2007, a reform of these local governments was implemented meaning that some municipalities were amalgamated, others were not. It has previously been shown that this reform came as an exogenous shock to the municipalities (Bhatti, Gortz, and Pedersen 2015; Blom-Hansen, Houlberg, and Serritzlew 2014; Lassen and Serritzlew 2011). For schools within the municipalities, this meant that some of them, those in amalgamated municipalities, got a new local government in a larger municipality, while the other schools continued with the same government.

We use a panel data set measuring schools' use of organizational innovations before and after this exogenous shock. Hereby we examine, first and foremost, whether the main results found in the survey experiments – that public managers to some degree respond to political pressure – can be found in the observational data. We do so by observing whether schools that have a new political leadership are drawn towards the average behavior of the other schools in the municipality. Second, we also use this panel data set to examine if there are correlations that support the performance information or conformity pressure hypotheses even though the data is less suited for this due to the long period between the first and the second measurement (7 years).

It is not possible to model learning from others' performance information within the dataset. Instead, we examine whether the schools learn from their own performance experiences. Below, we present the design of Studies I, II and III in more detail.

Studies I and II

For studies I and II, we embedded an experiment in self-administered surveys sent to all school principals in Denmark and Texas using lists of all schools from official records. School principals are managers of public organizations with a varying number of middle managers and employees below them in the hierarchy. Response rates were 50% in Denmark (N=488 out of 983) and 11% in Texas. Attrition analysis on the Danish survey showed no significant differences between participating and non-participating schools in terms of average exam grades, school size, or a socioeconomic index summarizing information on parental education, parental income, family status, and immigrant status (Pedersen et al. 2011: 23). In Texas, responding and non-responding schools are similar in terms of exam pass rates of all students (including Black, White, Latino and low-income students' exam pass rates), number of students enrolled, and the percentage of White students and low-income students. Responding schools have slightly fewer black students (11% vs. 13%), lower student-teacher-ratio (14.3 vs. 14.8), lower teacher salary (\$47.6K vs. \$48.5K), and higher average teacher experience (11.6 vs. 11.2 years). Despite these rather minor differences, the low response rate on the one hand means that results do not necessarily generalize to the rest of the population. On the other hand, the fact that we are able to replicate our main results in two very different political contexts may provide stronger evidence of the generalizability of the findings than a higher response rate in one data collection.

Respondents were presented with a vignette asking them to imagine that they were hired for a position as school principal in another school district. The hypothetical situation is used for ethical reasons to make sure that the respondents did not misinterpret the information provided in the vignette as facts about their own situation. This of course makes the situation less realistic than if they had to consider their own organization or if we had studied actual real world decisions. That would, however, be either ethically problematic or make the design non-experimental hurting internal validity. In study III we examine the external validity of the experimental results.

The vignette further informed all respondents that their new school had no “strategy for innovation (e.g., development of new teaching methods, new curricula, or cooperation with local businesses).” and asked in different ways (we return to the question wordings) whether they would adopt such a strategy. Important to note here is that a strategy for innovation is itself an innovation that can be adopted. As mentioned, we define organizational innovation adoption “as the use of new managerial and working concepts and practices” (Armbruster et al. 2008, 646). A “strategy for innovation” is an example of a managerial working concept that is new to the organization but not necessarily invented by the organization. It combines three key elements of contemporary governance: the focus on innovation (Osborne and Brown 2011); the New Public Management call for organizational strategies; and the governance call for cooperation with external stakeholders. The full wording of the vignette can be seen in the Appendix.

The strategy for innovation resembles what in the literature is called a prospector organizational strategy that seeks to proactively develop the organization. The innovation approach is the overall stance, and the examples (new teaching methods, new curricula, and cooperation) are specific actions (Boyne and Walker 2004). These actions examples are mentioned to illustrate the implications of adopting the strategy. The innovation strategy is hence a meta-

concept (Simon 1993) in the sense that it should further the adoption of more specific and narrow organizational innovations.

That strategies for innovation are themselves innovations that spread across the public sector in Denmark is demonstrated by a recent study. The study shows that the share of local governments that have adopted such a strategy increases by around 9 percentage point a year from 12% in 2010 to 47% in 2014 (Center for offentlig innovation 2015).

To measure the managers' preference for adopting this organizational innovation, we asked them to what extent they agreed or disagreed with the following statement: "My new school should have such a strategy." Response categories were standard 5-point Likert scale. To further examine whether they would be ready to invest in implementing such a strategy, they were asked to state to what extent they agreed/disagreed that "I will devote some time and resources to develop and implement such a strategy." This is important, since organizational innovation implies not only formal adoption but also actual use of the innovation, which this question about implementation seeks to tap. Finally, to test whether managers perceived a tactical advantage in adopting the organizational innovation, we asked them to respond to the statement as follows: "It would be tactically wise in relation to the school board to develop such a strategy." Factor analyses of the three variables produce a single factor solution with a high Cronbach's alpha (0.87 in Study I and 0.81 in Study II), which indicates that the three items together measure a general inclination to adopt organizational innovations. We therefore analyze the items both separately and combined in an adoption index based on the standardized factor scores, which can be expected to have a higher reliability than individual items.

We examine what factors affect managers' inclination to adopt organizational innovations by randomly assigning one or two cues to some of them using a 2x3 factorial design as presented

in **Table 1**. Half of the respondents were provided a political cue stating the following: “Politicians in the municipality show concern for the development of schools in the district and have clearly expressed that they want to see some change.”² The cue does not present managers with a direct order but it clearly indicates some level of political pressure on the manager from his or her political superiors for change.

To test the Conformity pressure hypothesis, we informed one third of the managers that “very many schools have developed such a strategy.” This cue contains no information that other organizations benefitted from this strategy – only that they have adopted one. It is however a widely used way to operationalize whether an innovation has been institutionalized to measure the number or share of organizations that have already adopted the innovation (Gilardi 2005; Mintrom 1997). As stated by Gilardi (2005, 90–92), the rationale is that the more widespread the innovation, the more appropriate it will be perceived within the given field of organizations. Another operationalization – not pursued in this article – would be to inform the managers that a school considered a role model had adopted the innovation, which would then signify the institutionalization of the model.

Yet, from the institutionalization cue, we cannot know for sure whether managers potentially respond because they assume that the organization benefits from the strategy. Therefore, to test the Performance experience hypothesis directly, we present another third of the respondents with the cue that “some schools have experienced that such a strategy helps some of their students attend college.” We thereby explicitly include the performance experiences of existing adopters in our measure of learning, which is also done in studies on policy diffusion (Gilardi 2010).

To test the Pressure interaction hypotheses that the more organizations are pressured to change, the more they respond to performance information from others with learning or to institutionalized models with emulation, we provided some of the respondents with the Political pressure cue and the institutionalization or the performance information cue. A control group was provided with no cues (see **Table 1**).

Study III

We examine whether the causal effects found in the survey experiments can also be found in observational data. For this purpose, we have assembled a panel data set using two self-administered surveys on Danish school principals from before and after a structural reform of the local government system in Denmark in 2007. The managers on all schools were asked in 2004 (response rate 71%) and 2011 (response rate 57%)³ whether they had adopted “Company contracts,” which are contracts between the school (“the company”⁴) and the local government, and “Management by Objectives”. Both types of management practices are part of a performance management approach – or more broadly New Public Management – as they typically set up performance targets for the organizations and standards for evaluating whether the organization meets the targets (Andersen 2008). Company contracts and Management by Objectives are typical examples of an organizational innovation within the public sector innovation literature (Hansen 2011; Walker 2014, 22), as they have constituted new managerial concepts and practices in the adopting organizations. Company contracts are non-legally binding agreements between the school and the school administration in the municipality. There is just as much variation within as between municipalities in the use of the contracts in 2004 (std. dev. within=1.17; std. dev. between=1.11).

We look for indications of emulation of institutionalized models by investigating whether managers' adoption of Company contracts and Management by Objectives in 2011 are correlated with the share of schools within the municipality that had adopted the contracts in 2004. Again, this is a standard way of examining emulation (Gilardi 2005; Mintrom 1997). Nevertheless, it is a difficult test because of the long time distance between 2004 and 2011. Many things may have changed in the meantime.

To measure learning from performance information is quite challenging. To make a proper evaluation of whether the introduction of an organizational innovation improves organizational performance would require managers to establish a valid counterfactual. This is not always an easy task for researchers, and probably more than what public managers will be able to do in most cases. It would be less demanding to compare either own performance before and after the introduction of an innovation, or to compare the performance organizations that have adopted the process to organizations that have not. Even then the question remains what aspect of performance should be measured. Public organizational performance is multifaceted (Boyne 2003). We are not able to test all of the potential ways managers may try to learn. In particular, our setup does not allow us to examine whether the principals learn from performance information from other schools.

Instead, we examine what is most available and probably most salient to the school principals in this setting: Their own performance on one of the most central dimensions of their performance; namely the performance of their own students at the final exams. If organizations experience high performance in the time after they have implemented the organizational innovation, they may "learn" that the innovation is beneficial to performance. In that case, we should expect it to be more likely that they also use the innovation at a later point in time. On the contrary, if they do not use the innovation and experience high performance, they may conclude

that the process is not necessary to their performance, which should decrease their likelihood of using the process later. We test this by regressing the use of the company contracts in 2011 on an interaction between the school's use of the contracts in 2004 and the school's average exam grades the year after in 2005.⁵ If we do not find evidence of learning from performance information in this case, it is less likely that we would find it in more sophisticated ways of evaluating the effect of organizational innovations, even though we cannot rule out that it could be the case.⁶

Political pressure is examined by comparing schools in municipalities that were amalgamated due to the reform to schools that were not. The reform did not concern the school system but rather the local governments running the schools. If changing the political body controlling the school affect schools' use of organizational innovations, it indicates that schools respond to some kind of pressure from the political body. Furthermore, we interact the amalgamation variable with the variable measuring the use of the organizational innovation at other schools in the same municipality. We would expect that if amalgamation makes schools respond to a pressure, it would draw them towards the average within the municipality. Due to the structural reform, we are able to test the political pressure hypothesis more rigorously using a difference-in-differences model that controls for unobserved time-invariant school effects and for time trends (e.g., Pischke and Angrist 2009, chapter 5).

The survey data is merged with administrative data on student exam grades and other characteristics of the schools and the municipalities in which they are embedded. We include control variables that may affect organizational performance and innovation. That is factors such as size and resources, competition from private schools (proportion of private school students), and user resources (education of the parents at the school). **Table 2** provides a list of descriptive statistics on the variables used in Study III.

We use a linear probability model to analyze the data, because interaction coefficients in non-linear models cannot be interpreted directly (Ai and Norton 2003). However, we get similar results when using a logit regression model. Standard errors are clustered at the municipal level in order to take into account that schools within the same municipality may be correlated.

Results of Studies I and II

In the survey experiments, we examine how managers' inclination to adopt organizational innovations is affected by cues about political pressure, the institutionalization of the innovation and the effect of the innovation in other organizations. Results are presented in **Table 3**. We see that the political pressure cue makes the managers more ready to invest resources in implementing a strategy for innovation. They are also more likely to find it tactically wise to adopt such a strategy when there is a pressure for change among their principals. The results are remarkably similar in Denmark and Texas. The replication of the results not only speaks to the robustness of the findings, but also to their generalizability. Indications of political pressure apparently affect managers in very different political contexts in similar ways.

The political pressure cue does not have a statistically significant effect on managers' preference for adopting the strategy, however. This may seem to contradict the result that they are more ready to invest resources in implementing it. One interpretation would be that the political pressure does not change the managers' preferences for a strategy for innovation, but despite their own preferences they think that the political pressure would make them invest the resources. From a normative point of view, this may be what is expected of public managers in a democracy. Regardless of their personal preferences, they will react to signals from their principals. The effect on the tactics question suggests that this effect on investment in expertise comes exactly because

they evaluate that the net benefit of implementing the strategy would exceed the (political) costs of not doing it. When the three outcomes are joined in one adoption index, the effect of the political pressure is significant.

We find almost no significant effect of the institutionalization cue. Informing the managers that very many schools have developed such a strategy does not significantly change how much they will invest in implementing it, how tactically wise, they perceive it to be or how inclined they overall are to adopt such strategy. In Texas there is at the 10%-level of significance a negative effect on the preference for developing such a strategy, but no significant effect in Denmark and a much smaller point estimate.

The performance information cue does not have any effect in Denmark. The point estimate oscillates between positive and negative across the four outcome measures. But in Texas, the performance information cue has a negative impact on both inclination to adopt and inclination to implement the strategy and an even stronger effect on the joint adoption index. We cannot know what produces the effect in this case but it definitely does not support the Performance information hypothesis suggesting that managers adopt innovation processes when they learn that other organizations benefit from an innovation.

We do not find support for the Interaction hypotheses either (results presented in **Table A1** in the appendix). There is a tendency in Denmark that, when faced with political pressure, managers become inclined to imitate other organizations as suggested by the hypothesis but this effect is only significant at the 10%-level, and it is not found in the Texas case.

In sum, Studies I and II provide support for the hypothesis that public managers respond to political pressure when they evaluate whether it would be tactically wise to adopt a new strategy

and invest in implementing it. But there is no support for the hypothesis that such innovations will spread among organizations because the innovation becomes an institutional myth or generates positive performance information making managers emulate or learn. The question for Study III is whether we find similar results in observational data.

Results of Study Iii

Company contracts and management by objectives have been used in public schools in Denmark for many years. They were more frequently used in 2004 than in 2011 (see **Table 1**). In Study III, we examine whether adoption or abandoning of these contracts are related to conformity pressure from institutionalized models, learning from performance information and political pressure in the same way as found in the survey studies of the causal effects of these variables. **Tables 4** and **5** present the result of a model that regresses the use of company contracts and management by objectives in 2011 on the use of the contracts in 2004 and other explanatory variables.

We do not find indications that managers learn from their own performance experiences with the organizational innovations with either company contracts or management by objectives (Model 1 in **Tables 4** and **5**). Better performance in 2005 does not strengthen the relationship between use of the contracts or management by objectives in 2004 and subsequent use in 2011. The same result is found for the institutionalization of the innovations within the municipality: There is no significant correlation between the use of company contracts in neighboring organizations in the municipality and subsequent adoption (or abandonment) of either company contracts or management by objectives (model 2). There could be many reasons for not finding these relationships – not least the long time distance from 2004 to 2011. Thus, we cannot conclude

from this null finding that learning from performance or emulation of institutionalized models does not take place. We do note, however, that the lack of relationship resembles the results of Studies I and II.

On the other hand, we find that organizations that are subject to a new political principal due to the reform in 2007, become more likely to adopt the organizational innovations in the case of company contracts, although not in the case of management by objectives (model 3). Schools are 22 percentage points more likely to use company contracts in 2011 if they are in a municipality with a new political principal. This result for company contracts is consistent with the theory that public managers respond to pressures from their political principals, corroborating the findings of Studies I and II.

It cannot directly be deduced whether new political principals would induce the organization to increase or decrease the use of these contracts. This question can be examined by looking at the interaction between the institutionalization variable of the average level of adoption in the municipality and the amalgamation variable (model 4 in **Table 4**). What we see is that when municipalities are not amalgamated, individual organizations are less inclined to adopt the company contracts when more of the organizations in their local surroundings are using them. The coefficient of $-.877$ shows that non-amalgamated municipalities are 88 percentage points less likely to use company contracts if all other schools in the municipality do – relative to the situation when no other schools are using them. The interaction coefficient of $.991$ shows that this negative “reaction” to other schools in the municipality is more than counteracted if the school is in an amalgamated municipality. Here, they are about 11 percentage points ($.991 - .877$) more likely to use company contracts, if all others do relative to if no others did. The amalgamation seems to draw the organizations closer to the municipal average than what is reported in non-amalgamated

municipalities. The negative correlation in the non-amalgamated municipalities resembles the results from the survey experiment in Texas (study II) where school managers tend to react contradictorily to their colleagues in other schools. Study III here suggests that this tendency can be counteracted by political pressure. Changing this correlation from -88 percentage points to +11 percentage points seems to be a relatively strong effect of the political level.

Due to the structural reform that affects some but not all municipalities, we can make a stronger test of the political pressure hypothesis by using a difference-in-differences model that essentially controls for general changes in the use of company contracts and for initial differences between schools that do and do not experience a new political leadership. Results presented in **Table 6** confirm the result of the simpler model in **Table 4**. Schools that get a new political principal in amalgamated municipalities are drawn more towards the average use of company contracts in the municipality. This is seen from the positive and significant three-way interaction term in model 1 (Amalgamation X Time X Contract, municipal average).

To support interpretation of the model, **Figure 1** presents how the municipal average use of company contracts predicts the use of contracts in the individual school in amalgamated and non-amalgamated municipalities in 2011, after the municipal reform. The figure confirms the results from **Table 4** showing that in non-amalgamated municipalities, higher use of company contracts in the municipality *reduces* use in non-amalgamated municipalities. Changing from 0% to 100% use in the municipality reduces the probability by 50 percentage points, whereas this effect is neutralized in amalgamated municipalities.

These results support the external validity of what was found in the survey experiments, although it should be noted that we do not find the same result for management by objectives. We discuss these findings in the concluding section.

Conclusion and Discussion

This article has examined how top-down political pressure, conformity pressure from institutionalized models, and performance information from other organizations affect public organizations' decision to adopt and abandon organizational innovations. The question is important not only because it confronts the issue of why we see waves of adoptions and abandonments of organizational innovations in public organizations, but also because it tells us something more general about the fundamental drivers of public sector development.

Two survey experiments with school principals in Denmark and Texas consistently show that political pressure and not emulation of institutionalized models or learning from performance information has the biggest and most consistent effect on managers' willingness to invest resources in the adoption of organizational innovations. The fact that this result is so consistent across two very different political contexts speaks to the robustness of the finding. We supplement the experimental studies with observational data from Danish public schools. The internal validity of the observational study is weaker than the experiment, and the operationalization of performance information, institutionalization of models and political pressure is not straightforward in practice (what other schools does one school learn from? what pressure is coming from a new political principal?). Yet, the fact that we find that schools react to new principals by sticking closer to the level of adoption of other schools in their municipality does support the external validity of the survey experiments. The treatments we test are relatively weak in both the survey experiment and in the observational data, where the structural municipality reform does not focus on the use of Company contracts. We would, therefore, expect to find stronger effects of political pressure in settings where political principals more directly ask managers to adopt specific innovations.

However, it is also important to note that we cannot distinguish between mere symbolic adoption (or intentions to implement) and full implementation in the organization.

Before discussing and outlining the broader implications and perspectives of the article, we consider its limitations. One key limitation in terms of generalizability is that we have only examined schools. In many ways, schools are classical public organizations because they have a high level of publicness in terms of ownership, funding, and regulation. They are also typical public service-producing organizations characterized by many front line employees who are co-producing services (education) with users (students and their parents). For organizations with less publicness, it would be fair to expect that in particular learning is relatively more important and top-down pressures relatively less important because resource dependencies with political authorities are weaker while the organization is more dependent on other stakeholders: the users. Compared to agencies working with regulation and its enforcement, we should on the other hand expect top-down political pressure to matter even more since the enforcement of unpopular regulation would often require an even clearer mandate from higher level. This of course assumes that the agency has not been granted credible autonomy from higher-level organs.

Other limitations related to generalizability should also be considered. One is the ability to generalize to other countries based on survey experiments in Denmark and Texas, and a panel study in Denmark. By using two systems as different as the Danish and Texan system, our findings should be applicable to similar policy sectors in most developed countries. Another issue is to generalize to other types of innovations such as technological process innovations and product innovations, which have been shown to have partly different determinants (Damanpour 1991). In terms of the latter, we should expect top-down political pressure to matter even more because in general political principals, like their voters, care more about the services and products that public

organizations deliver to the citizens than they care about the internal processes through which these are produced. For technological innovations, it is difficult to make any general *a priori* expectation as to whether these should be more or less susceptible to the different explanatory factors.

A last limitation of the study is the assumption that adoption and abandonment can be explained through the same theoretical model. Students of historical institutionalism point to the sunk cost of once adopted innovations that are hence rarely abandoned but instead gradually evolve through processes of layering and displacement (Streeck and Thelen 2005) – a perspective that has only recently been introduced to the study of public administration (Kelman and Hong 2015). In such a perspective, abandonment and adoption are hardly the same phenomena. The fact that organizational innovations can change their form and effect over time as an organization evolves cannot be explained in a study such as this, which seeks to identify general processes across many organizations. If, however, it is more difficult to abandon than to adopt an organizational innovation, it means that the results of study III which primarily investigates the abandonment of company contract and management by objectives should be interpreted as an even harder test.

Despite these limitations, the study has several relevant implications and perspectives. It points to the importance of political pressure for explaining large scale developments in the public sector. In a study comparing the distribution and effect of performance management in public and private organizations, Hvidman and Andersen (2014) find that public organizations are faster to adopt performance management techniques despite the fact that these techniques are less effective in the public sector than in the private sector. Our results provide an explanation of such patterns: In the public sector, organizational innovations are adopted because of political pressure rather than because organizations learn what works from neighboring organizations' experiences.

The results thereby raise an important challenge to arguments about learning and emulation, not only by showing weak effects but also because the effects actually identified seem to run counter to the logics underlying the two factors. In the Texas experiment, organizations have a tendency to not only go against the stream – which can be sensible given that fashionable solutions do not necessarily solve problems – but also to be less inclined to adopt organizational innovations once they receive information about the positive experiences of other organizations. This questions the public sector's ability to improve from within. Theoretically, such reactions could be interpreted as a boomerang effect, which has previously been found when individuals comprehend the intention of a message but become angry, experience reactance, and react contrary to the intent (Byrne and Hart 2009). This article points to the importance of further research on this issue not only in relation to individuals but also in relation to public organizations.

A null finding does not disprove a hypothesis and the test of learning from performance information and emulation from institutionalized models on observational data was rather conservative. Consequently, we cannot make firm conclusions about the absence of emulation and learning in public organizations. This is particularly the case since many studies, as presented in the literature section, have found some empirical support for learning and strong support for emulation. We do find strong support, however, both in experimental and observational data for the influence of political pressure. From a democratic point of view, this could be seen as an edifying result, since it demonstrates that elected politicians do have an influence on how the public sector develops.

From the perspective of the public sector innovation literature, these results point to the importance of a much stronger focus on factors that can affect innovation adoptions and abandonments across many organizations. Focusing on internal factors and innovativeness does

have its merits, but the article demonstrates how this literature needs to expand its theoretical modelling of innovation processes to include factors cutting across units to get a more comprehensive view of public sector innovation. This cannot be reserved for the policy innovation literature, which is not intrinsically focused on the public sector context of innovation diffusion. This could also bring the public sector innovation literature into a much stronger dialogue with the study of performance management (Moynihan 2008), which is strongly interested in the way public organizations respond to information about the behaviors and results of other organizations.

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Notes

¹The review is based on the following studies: (Bhatti, Olsen, and Pedersen 2011; Bingham 1978; Boyne et al. 2005; Brudney and Selden 1995; Damanpour 1987; Damanpour and Schneider 2006, 2009; Damanpour, Walker, and Avellaneda 2009; Fernandez and Wise 2010; Hansen 2011; Jun and Weare 2011; Kwon, Berry, and Feiock 2009; Morgan 2010; Perry and Kraemer 1978; Teodoro 2010; Walker 2006; Walker 2008).

²As mentioned, in Texas schools are governed by school boards, not by multipurpose local governments. The wording of the vignette in the Texas survey therefore says "The school board shows concern..."

³Attrition analysis of the 2011 survey showed no significant differences between participating and non-participating schools in terms of average exam grades, school size, or a

socioeconomic index summarizing information on parental education, parental income, family status, and immigrant status (Pedersen et al. 2011). Attrition analysis of the 2004 survey showed that responding and non-responding schools were very similar on 14 background variables including average exam scores, socioeconomic status indicators, school size, and school district budgets (Andersen 2006).

⁴In this relative early phase of the New Public Management way some local governments wanted to adopt the concept companies (in Danish “virksomheder”), when making performance contracts with them. The widespread term in Denmark now is “Quality reports.”

⁵The exam grades are based on an average of written and oral exams. Written exams are standardized tests. Oral exams may differ in content between schools, but external examiners are used in order to standardize grading between schools.

⁶In fact, we have also examined whether change in performance from 2004 to 2005 predicts use of company contracts in 2011. It does not.

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Table 1. The six experimental conditions in Studies I and II

	Political pressure cue	
Learning/emulation cue	Control	Political pressure
Control	[No cues]	Politicians in the municipality ¹ show concern for the development of the schools in the district and have clearly expressed that they want to see some change.
Emulation	Very many schools have developed such a strategy.	Politicians in the municipality ¹ show concern for the development of the schools in the district and have clearly expressed that they want to see some change. (...) Very many schools have developed such a strategy.
Learning	Some schools have experienced that such a	Politicians in the municipality ¹ show concern

	strategy helps some of their students attend college.	for the development of the schools in the district and have clearly expressed that they want to see some change. (...) Some schools have experienced that such a strategy helps some of their students attend college.
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1. In the Texas survey "Politicians in the municipality" is substituted by "The school board".

Table 2. Descriptive statistics

	Mean	Std.dev.	Min	Max	N
Company contracts 2011	0.76	0.43	0	1	223
Company contracts 2004	0.93	0.26	0	1	223
Company contracts, municipal average 2004	0.93	0.21	0	1	223
Goal management 2011	0.58	0.49	0	1	202
Goal management 2004	0.73	0.45	0	1	207
Goal management, municipal average 2004	0.74	0.28	0	1	221
Average grade scores	5.84	0.79	3.47	8.34	223
Budget per student 2004	7.77	10.05	1.40	109.65	223
Share of private school students 2004	11.89	5.57	1.40	26.87	223
Class size	19.75	1.00	17.37	22.07	223
Inhabitants	95,928	110,833	3,188	501,160	223
Share with high level of education	20.05	7.25	11.07	45.27	223
Share with no qualifying education	27.83	5.68	11.63	37.70	223
Student teacher ratio	11.64	2.09	4.73	17.70	223
School size	41.27	16.43	9	112	223

Table 3. Regression analysis of inclination to adopt organizational innovations

	Preference: My new school should have such a strategy		Implementation: I will devote some time and resources to develop and implement such a strategy		Strategic: It would be tactically wise in relation to the school board to develop such a strategy		Adoption index	
	Denmark	Texas	Denmark	Texas	Denmark	Texas	Denmark	Texas
	1	2	3	4	5	6	7	8
Political pressure	0.0970	0.0217	0.136+	0.0976*	0.282**	0.171**	0.169*	0.132*
	(0.0691)	(0.0507)	(0.0745)	(0.0473)	(0.0767)	(0.0524)	(0.0812)	(0.0656)

Emu lation	– 0.0207	– 0.100 +	0.0335	–0.0590	–0.0298	0.0283	– 0.0006 0 4	– 0.0009 0 4
	(0.0854)	(0.060 5)	(0.0921)	(0.0565)	(0.0948)	(0.0627)	(0.100) 6)	(0.100 7 8 6)
Lear ning	– 0.0575	– 0.162 *	0.0616	–0.153*	–0.0769	–0.0551	– 0.0054 3 *	– 0.0021 3 *
	(0.0869)	(0.063 9)	(0.0937)	(0.0596)	(0.0965)	(0.0660)	(0.102) 7)	(0.102 8 2 7)

Con stant	4.448* *	4.434 **	4.271**	4.396**	4.206**	4.135**	— 0. 00 25	0. 0 3 3 1
	(0.0725)	(0.051 5)	(0.0782)	(0.0480)	(0.0805)	(0.0533)	(0 .0 85 1) 8)	(0 .0 6 6 8)
Obs erva tion s	481	747	481	743	481	742	48 0	7 3 9
R- squa red	0.005	0.009	0.008	0.016	0.028	0.017	0. 01	0. 0 1 5

Standard errors in parentheses.

** p<0.01, * p<0.05, + p<0.1.

Table 4. Adoption and abandoning of company contracts

	(1)	(2)	(3)	(4)
Company contracts 2004	0.684	0.015 4	0.027 8	– 0.036 5
	(0.76 4)	(0.19 1)	(0.11 5)	(0.20 6)
Performance 2005	0.143			
	(0.12 1)			
Learning from own experience: Company contracts 2004 X Performance 2005	– 0.124			
	(0.12 6)			
Imitating others: Company contracts, municipal average 2004		– 0.029 1		– 0.877 **
		(0.22 8)		(0.36 5)

Political pressure: Amalgamated municipality			0.223 **	— 0.734 *
			(0.11 0)	(0.38 5)
Political pressure in the direction of the municipal average Amalgamated municipality X Contract, municipal average				0.991 **
				(0.45 3)
Class size	0.057 8	0.059 6	0.097 2**	0.105 **
	(0.04 24)	(0.04 25)	(0.04 31)	(0.04 40)
Share of parents with high education	0.005 92	0.006 33	0.003 73	0.006 59
	(0.01 11)	(0.00 995)	(0.01 04)	(0.01 02)
Share of parents with no qualifying education	0.008 32	0.007 42	0.002 49	0.005 33

	(0.01 56)	(0.01 52)	(0.01 53)	(0.01 49)
Student/teacher ratio	– 0.017 3	– 0.016 5	– 0.014 8	– 0.015 1
	(0.01 25)	(0.01 29)	(0.01 17)	(0.01 24)
School size	0.000 230	0.000 500	0.001 03	0.000 803
	(0.00 191)	(0.00 201)	(0.00 195)	(0.00 197)
Budget per student	– 0.001 67	– 0.001 98	0.001 20	0.001 19
	(0.00 333)	(0.00 324)	(0.00 389)	(0.00 398)
Share of private school students	0.001 44	0.000 732	0.002 47	0.000 539
	(0.00 663)	(0.00 636)	(0.00 615)	(0.00 644)

Inhabitants	1.73e -07	1.29e -07	4.72e -07	3.92e -07
	(2.81 e-07)	(2.52 e-07)	(3.10 e-07)	(3.08 e-07)
Constant	— 1.359	— 0.574	— 1.451	— 0.783
	(1.52 3)	(1.28 4)	(1.19 4)	(1.15 7)
Observations	223	223	223	223
R-squared	0.036	0.031	0.055	0.063

Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 5. Adoption and abandoning of Management by objectives

	(1)	(2)	(3)	(4)
Management by objectives 2004	0.862	0.170	0.159 *	0.166
	(0.55 4)	(0.112)	(0.086 5)	(0.11 2)
Performance 2005	0.021 8			
	(0.08 55)			
Learning from own experience: Management by objectives 2004 X Performance 2005	– 0.122			
	(0.09 87)			
Emulation Management by objectives, municipal average 2004		– 0.013 8		– 0.299
		(0.155)		(0.28 3)

Political pressure: Amalgamated municipality			0.112	– 0.159
			(0.109)	(0.24 9)
Political pressure in the direction of the average Amalgamated X Management by obj., municipal average				0.340
				(0.29 1)
Class size	0.004 78	0.009 39	0.026 2	0.024 7
	(0.04 56)	(0.044 7)	(0.048 0)	(0.04 88)
Share of parents with high education	0.030 5***	0.022 7**	0.021 6**	0.025 1**
	(0.01 04)	(0.009 65)	(0.010 0)	(0.01 01)
Share of parents with no qualifying education	0.021 0	0.016 9	0.014 4	0.017 6
	(0.01 36)	(0.013 4)	(0.013 7)	(0.01 37)

Student/teacher ratio	0.009 72	0.005 90	0.007 51	0.008 49
	(0.00 839)	(0.008 48)	(0.008 75)	(0.00 858)
School size	— 0.000 780	— 0.001 25	— 0.000 909	— 0.000 944
	(0.00 232)	(0.002 15)	(0.002 17)	(0.00 216)
Budget per student	0.004 08**	0.004 40***	0.005 93***	0.004 70**
	(0.00 172)	(0.001 66)	(0.002 20)	(0.00 195)
Share of private school students	0.002 54	0.004 90	0.005 74	0.005 18
	(0.00 732)	(0.007 06)	(0.006 90)	(0.00 681)
Inhabitants	— 3.88e -07	— 2.60e- 07	— 9.00e- 08	— 1.95e -07

	(2.53 e-07)	(2.36e -07)	(3.12e -07)	(2.87 e-07)
Constant	– 1.073	– 0.753	– 1.149	– 1.028
	(1.23 3)	(1.129)	(1.152)	(1.22 1)
Observations	203	203	203	203
R-squared	0.090	0.076	0.080	0.085

Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6. Difference-in-differences model

	(1) Company contracts	(2) Management by objectives
Amalgamated municipality	0.0349	0.00939
	(0.0805)	(0.0410)
Time (2011)	1.620***	0.651***
	(0.335)	(0.212)
Amalgamation X Time	−0.869**	−0.224
	(0.362)	(0.235)
Company contracts, municipal average 2004	0.996***	
	(0.0756)	
Amalgamation X Contract, municipal average	0.0191	
	(0.0775)	
Time X Contract, municipal average	−1.920***	
	(0.416)	
Amalgamation X Time X Contract, municipal average	0.941**	
	(0.442)	

Management by objectives, municipal average 2004		1.000***
		(0.0398)
Amalgamation X Objectives, municipal average		0.00805
		(0.0409)
Time X Objectives, municipal average		-1.028***
		(0.268)
Amalgamation X Time X Objectives, municipal average		0.216
		(0.297)
Class size	0.0269**	0.00774
	(0.0118)	(0.0132)
Share of parents with high education	0.00201	0.00662**
	(0.00290)	(0.00279)
Share of parents with no qualifying education	0.000869	0.00524
	(0.00420)	(0.00355)
Student/teacher ratio	0.000912***	0.00119***

	(0.000182)	(0.000248)
School size	5.14e-05	3.91e-05
	(0.000654)	(0.000842)
Budget per student	0.000236	0.00188***
	(0.00178)	(0.000650)
Share of private school students	0.000270	−0.000109
	(0.00168)	(0.00171)
Inhabitants	1.18e-07	−7.43e-08
	(8.55e-08)	(7.35e-08)
Constant	−0.659**	−0.470
	(0.326)	(0.300)
Observations	836	794
R-squared	0.366	0.313

Figure 1. Marginal influence of municipal average in amalgamated and non-amalgamated municipalities.

Appendix

The full wording of the vignette used in Studies I and II

<p>“Imagine that you are hired for a position as school principal in another school district.</p> <p>[Political coercion cue] Your new school has no strategy for innovation (e.g., development of new teaching methods, new curricula or cooperation with local businesses).</p> <p>[Learning/emulation cue]</p> <p>To what extent do you agree or disagree with each of the following statements:</p> <p>-My new school should have such a strategy</p> <p>-I will devote some time and resources to develop and implement such a strategy</p> <p>-It would be tactically wise in relation to the school board to develop such a strategy.</p> <p>Response categories</p> <p>(5-point Likert scale:) Strongly agree; tend to agree; neither agree nor disagree; tend to disagree; strongly disagree; Don’t know.</p>
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Table A1. Interaction effects in Studies I and II

	Adoption: My new school should have such a strategy	Implementation: I will devote some time and resources to develop and implement such a strategy	Strategic: It would be tactically wise in relation to the school board to develop such a strategy	Adoption index
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	Denmark	Texas	Denmark	Texas	Denmark	Texas	Denmark	Texas
	1	2	3	4	5	6	7	8
Political pressure	0.156	– 0.038 0	0.217*	0.0135	0.169	0.147	0.225 + 2	0.038
	(0.0998))	(0.0881) 1)	(0.106)	(0.0824)	(0.112)	(0.0914)	(0.17))	(0.15)
Emulation	– 0.0481	– 0.139	–0.00369	–0.118	–0.164	0.0333	– 0.0571	– 0.152

	(0.100)	(0.087 1)	(0.106)	(0.0811)	(0.112)	(0.0899)	(0 .1 17)	(0 .1 1 3)
Lear ning	0.0302	– 0.216 *	0.0620	–0.222**	0.00260	–0.0994	0. 05 07	– 0. 2 9 5 *
	(0.101)	(0.089 3)	(0.107)	(0.0831)	(0.113)	(0.0922)	(0 .1 18)	(0 .1 1 5)
Press ure X Emul ation	0.0472	0.074 3	–0.0173	0.115	0.260+	–0.0117	0. 05 81	0. 1 1 9
	(0.139)	(0.121)	(0.147)	(0.113)	(0.155)	(0.126)	(0 .1	(0 .1

							63)	5 7)
Press ure X Lear ning	– 0.0738	0.108	–0.0182	0.139	0.00672	0.0949	– 0. 04 70	0. 1 6 7
	(0.140)	(0.128)	(0.149)	(0.119)	(0.157)	(0.132)	(0 .1 64)	(0 .1 6 6)
Cons tant	4.328* *	4.466 **	4.180**	4.440**	4.164**	4.148**	– 0. 11 9 5	0. 0 8 2 5
	(0.0703)	(0.064 2)	(0.0746)	(0.0597)	(0.0787)	(0.0664)	(0 .0 82 3)	(0 .0 8 3 0)

Obse rvati ons	791	747	791	743	791	742	79 0	7 3 9
R- suar ed	0.010	0.010	0.016	0.018	0.026	0.018	0. 01 6	0. 0 1 7

Standard errors in parentheses.

** p<0.01, * p<0.05, + p<0.1