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Is Slack Good or Bad for Organizational Performance? The Case of Danish Primary Schools.

Abstract

The impact of organizational slack on innovation and growth has been an unsolved question for decades and theorists continue to argue whether slack is good or bad for organizational performance (Nohria & Gulati 1997). Cyert & March (1963) are the classical proponents of organizational slack. They argued that slack plays an important and necessary role in mitigating the inherent conflicts in organization and facilitating organizational change and development. Later organizational theorists have refined this argument and argued that slack is a useful organizational buffer and a vehicle for change and innovation. On the other hand, organizational economists and public choice theorists argue that slack is an indicator of organizational inefficiency and not likely to improve organizational innovation and development (Williamson, 1963; Liebenstein, 1969; Migué and Belanger, 1974).

In this study, we consider the amount of organizational slack in 2100 Danish schools in conjunction with the ability of the schools to improve student learning when relevant background variables are taken in to account. In total, the study includes more than 200,000 students and student learning is estimated by considering the outcome of 1.4 million comparable tests. For each student we have data on their social background, which makes it possible to calculate the schools impact students average grad independent on the schools social composition and the students' social background. The measure of organizational slack is based on 53,500 teachers' work schedules.

The results are unequivocal: More organizational slack in the public school is clearly detrimental to the students learning outcome.

Introduction

The impact of slack on organizational performance has been debated for half a century. In the early 1960s Cyert & March embraced organizational slack as an important and necessary resource to mitigate the inherent conflicts in organization and facilitating organizational change and development. They argued that organizations basically are a coalition of political subgroups with competing interests and goals. Even though these interests and goals are generally aligned, they can diverge to a lesser or greater extent, and Cyert & March suggest that organizational slack is essential to resolve these conflicts (Cyert & March, 1963). Later, other organizational theorists have refined this argument and argued that slack is a useful organizational buffer and a vehicle for change innovation and other positive organizational phenomena (Nohria & Gulati, 1997). In general, organizational theorists argue that slack makes it possible for organizations to introduce new strategies, improve organizational learning and innovation and that slack eventually may lead to stronger organizational performance and profit (Nelson & Winter, 1982; Askim et.al. 2008; Moynihan & Landuyt; 2009).

On the other hand, organizational economists and public choice theorists argue that slack is an indicator of organizational inefficiency and not likely to improve organizational innovation and development (Williamson, 1963; Liebenstein, 1969; Migué & Belangér, 1974). Williamson argues that informational asymmetry makes it possible for agents to build up slack resources that are employed in their own interest rather than the interest of the organization (Williamson, 1986). In a similar vein, Migué and Belangér argue that slack is basically monopolist rents that are distributed within the firms rather than enhancing company or societal efficiency (Migué and Belangér, 1974). Niskanen (1975) that slack enables the fulfilling of a number of non-monetary perquisites in the bureaucrats' utility function like leisure time and social and physical amenities. In a similar vein Breton & Wintrobe (1982) and Liebenstein (1978, 1980) argue that organizational slack is converted in to on-the-job-leisure and other non-monetary requisites like travelling and company dinners. In sum, public choice theorists generally do not expect slack to further any organizational or societal good.

Nohria & Gulati (1997) take an intermediate position and argue that there may be an optimal amount of organizational slack because limited slack inhibits innovation by discouraging any experimentation whose success is uncertain while an abundance of slack also may inhibits slack by fostering complacency and lax controls. Also in the public choice camp, slack may be recognized as a vehicle for increasing societal

efficiency rather than decreasing overall x-efficiency when slack is trusted to people, like economists, who aim to change the world for the better (Caplan, 2010).

In this study, the impact of the amount of organizational slack is tested using data from 2100 Danish schools in conjunction with the ability of the schools to improve student learning when relevant background variables are taken in to account.

The study covers the years from 2007 to 2009. Each year ca. 65,000 students pass the final test, and the reported grade score is an average of the grades in seven identical national tests. Thus, in total the study include more than 200,000 students and around 1.4 million tests. For each of these students we have data on their social background, which makes it possible to calculate the grade impact of the schools independent on the schools social composition and the social background of the individual student. The measure of teacher resources devoted to classroom teaching and other tasks (i.e. “organizational slack”, see below) is based on ca. 53,500 teachers’ work schedules.

The study field: Danish Primary Schools

Public schools are one the main responsibilities of the Danish localities and within broad central government guidelines, the 98 localities can organize the local schools as the like. Most importantly, central government laws and regulations requires that every school offer a specific number of lessons in specified core subjects at different grades. This regulation also pertains to private schools. The limited central government regulation fosters substantial variation between localities and some variation within localities between different schools in the same locality in a number of ways. For example in terms of how much the localities spend on local schooling, how many lesson each school teach every year on top of the required national minimum, and to what extend other subjects than required by central government are taught in schools etc. Importantly for this study is that there is also variation in how many hours the teachers teach in classrooms vis-a-vis the hours per week for other tasks outside the classroom (preparation, cooperation with other teachers, pedagogical development projects, continuing professional training etc.).

The teacher’s time devoted to other tasks than classroom teaching is in the study used as an indicator of “organizational slack” in the schools. Measuring “organizational slack” is this way can of course be discussed given that the teachers actually often do something in the hours assigned to other tasks than classroom teaching, or at least in some of the paid hours out of the classroom, but it is to a large extent the teachers’ discretionary time. Teachers may spend these discretionary hours on leisure-on-job as

well as use these hours innovating teaching, improving coordination with other teachers and developing their professional skills as they are supposed to do. In any case, it seems reasonable to ask whether more hours of teacher time devoted to relatively unconstrained outside classroom activities are enhancing teaching quality and student learning as organizational theorists tend to assume - or whether it has no impact on teaching quality and student learning as public choice theorists would predict.

Measuring students learning outcome is not a trivial problem. However, as a by product of the national regulation of the school system in Denmark it is possible to evaluate the students learning comparatively well across different localities and schools because even though public schools are a main responsibility of the localities, the final grading of the students after 10 years of primary schooling is matter of national regulation. When the students are finishing primary schooling, they are all taking the very same exams. In the written exams, the students get the same kind of questions all over the country the very same day at the same time span in the same kind of settings where the student are not able to get help from teachers and fellow students. The subsequent grading of the students written exams are done by the students' teacher and a national appointed external examiner. As a result, the students' achievements are evaluated according to a fairly objective, national standard. In effect, an A in obtained in the final written exam at one the best and best funded schools in the suburbs are no more or no less than an A obtained at poorer, inner city school.

We do know, however, that the students' achievements are a matter of a number of factors and not only the result of the impact of the quality of teaching and the quality of the school. Notably, the students' socioeconomic background is an very important determinant of the student learning outcome together with the student's mother's birthplace (Denmark or a foreign country), the students' gender and the socioeconomic profile of the school (the peer effect) (Krevi, 2010b; Andersen, 2008; Andersen & Serritlew, 2007). Due to the national registration of the Danish students' final grades at the national exams and the nationwide, general registration of students' socioeconomic and parental background and the socioeconomic profiles of the schools, it is possible to estimate the independent impact of the schools on the students' learning outcome, the so-called "School Effect". Thus, the "School Effect" is a measure of what the school adds (or subtracts) to the student learning outcome when different social factors are taken in to account.

The "School Effect" is not trivial. An analysis of the Danish schools (Krevi, 2010b) shows that there is an independent school impact on student grading in the interval from -.832 to +.881 The Danish grading interval is -3 to 12 with an average of

approximately 6.5, so the school independent impact on the students' achievement are substantial: The worst schools subtract 15 % from the average student grade while the best schools add 15 % to the expected student learning outcome (table 1).

In the following, the measure of "slack", i.e. teachers' time devoted to other tasks than classroom teaching, is analysed in a regression analysis with the "School Effect" as the dependent variable.

Following the literature (Andersen, 2008; Andersen & Serritzlew, 2007), the size of the school may have an impact on student achievement (although there is some differences in the perceived impact of school size) and school size is included as a control variable in this analysis. Also, the teaching resources used for classroom teaching is likely to have an impact on student learning outcome and is also included in the analysis. Moreover, the social profile of the school is taken in to account as a control variable on its own because it's reasonable argued that the amount of resources devoted to other task outside the classroom is correlated with the social profile of the school.

Table 1: Descriptive Statistic

	Minimum	Maximum	Mean	Std. Deviation
"School Effect"	-.832	.881	.12137	.310979
Teacher classroom FTE per student	.006	.190	.03250	.008912
Teacher "other task" FTE per student ("Slack")	.01	.670	.0746	.02409
School Size (No. of Students)	6.33	1327.33	441.13	177.36
Schools social composition (index)	-2.1	3,25	.0539	.91808

The results of the study

The study covers the years from 2007 to 2009. Each year ca. 65,000 students pass the final test at 2100 schools, and the reported grade score is an average of the grades in seven identical national tests. Thus, in total the study include more than 200,000 students and around 1.4 million tests. For each of these students we have data on their social background, which makes it possible to calculate the grade impact of the schools independent on the schools social composition. The measure of teacher resources devoted to classroom teaching and other tasks is based on ca. 53,500 teachers' work schedules.

Table 2: The Impact of Teacher Resources on Student Learning Outcome (“School Effect”) in Danish Primary Schools (2007-2009)

	Unstandard. coefficient	Std. error	Beta	t-value	significance
Constant	.283	.047		5.982	.000
Teacher classroom FTE per student	13.195	2.053	.231	6.428	.000
Teacher “other task” FTE per student (“Slack”)	-7.520	.877	-.314	-8.573	.000
School Size	-	.000	-.037	-1.755	.079
Schools social composition	- .176	.008	-.480	-21.289	.000

Model Statistics:

N = 2087

Adjusted R Square = .23

F-value of full model = 160

The model is able to explain 23 % of the variation in the students' learning achievement (table 2). This implies that student abilities not related to the social profile of their parents and their school and the amount teacher resources devoted classroom and other activities explains the lions share of the student academic achievement.

Nonetheless, teacher resources have a strong and significant impact on student learning, but this impact is highly contingent on the kind of teacher resource. Thus, the amount of teacher resources spend in classroom has a strong significant positive impact on student learning outcome: More teacher resources spend on teaching in classroom increases significantly student achievement. On the other hand have resources devoted to other teacher activities outside the classroom is similar strong but negative impact on student learning: More teacher resources devoted to tasks outside the classroom decreases significantly student learning outcome.

Conclusion

The good news of the study is that the vast amounts of public money spend on primary education and teacher salaries have a significant and positive impact on the students learning outcome when these resources are canalised in to classroom teaching. The bad news is that the vast amounts of money spend on teachers to do other tasks than teaching in the classroom seems not only to be wasted but also to have an outright detrimental impact on student learning outcome.

It may be very difficult and likely unrealistic to wipe out all kind of teachers' time devoted to other tasks than classroom teaching taken the strength of the teachers unions in to account. It may also be unwise given that good teaching requires some amount of preparation and innovation. Nonetheless, this study warrants that more time for teacher preparation and innovation does not translate directly in to better teaching, and that we could achievement better student learning and societal efficiency by tilting the balance between classroom teaching and teacher preparation to the former.

From a theoretical perspective the results of this study do clearly not support the strand of organizational theory that argues that organizational slack is a vehicle for change and innovation. The results of the study support the organizational economists' and public choice theorists' argument that slack is an indicator of organizational inefficiency and slack does not promote organizational innovation and development. Perhaps, it is even worse: Organizational slack is not wasteful; it may also be outright detrimental to organizational innovation and development. To what

extend the results of the study can be generalized to other setting needs a more thorough discussion taken up in the final version of the paper.