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# **Performance Information and Citizen Service Attitudes: Do Cost Information and Service Use Affect the Relationship?**

## **Abstract**

Performance information has been suggested as a means to increase the capacity of decision makers and citizens to make informed decisions. This paper studies the impact of performance information on citizens' attitudes to whether service programs should be expanded. Service programs are generally highly demanded by citizens and some – but not all – citizens are active service users.

By nesting two experiments in a survey responded to by 1,866 Danish citizens, the research shows that performance information matters more to service attitudes if allocated in conjunction with cost information and that performance information is more important to the attitudes of service users than to those of non-users. These findings suggest that information on performance for specific services should be presented simultaneously with information on costs in order to create more nuanced attitudes among citizens and that this is of particular importance on service areas with major groups of core users.

## **Introduction**

From both a democratic and economic perspective it is important that citizens are informed about the performance of their government. Uninformed citizens might not opt for the exit behavior suggested by Tiebout (Tiebout 1956) and Hirschman (Hirschman 1970; Dowding and John 2012) and therefore the allocative efficiency gains from Tiebout sorting might not take place. Also, the performance management doctrine suggests that performance information may foster accountability in the public sector by creating the precondition for citizens to be able to reward and punish the incumbent (Moynihan 2008; Boyne et al. 2009; James 2011a) and allow citizens to deliver valuable inputs to political decision makers (Moynihan 2008: 35f; Ho 2011).

Generally, research has produced evidence that citizens are not fully informed about government performance. For instance, Lyons et al. (1992), in an analysis of two US metropolitan areas, find that citizens commonly assign responsibility of tasks to the wrong level of government. Moreover, experimental research has shown that pieces of information about performance may affect citizens' performance perceptions and satisfaction with public services (James 2011a, Olsen 2013, James and Moseley 2014). It follows from this research that performance information may provide citizens with important and unknown information if designed in the right manner.

In a citizen context the impact of performance information has primarily been tested on variables related to political participation like satisfaction (James 2011a; James and Moseley 2014), support for the incumbent party in government (2011a), and exit and voice behavior (James and Moseley 2014). However, in order for political decision makers to be able to respond to performance information in a manner consistent with citizen preferences, knowledge is also needed about how citizens adjust their attitudes to services in response to performance information. Core welfare services like public schools, day care, and elderly care are distinguishable from other government programs like public roads, household waste recycling, and foreign aid in that they are used by

some but not all citizens. Furthermore, citizens generally express a higher demand for these particular services than for other programs (Wlezien 1995; Mortensen 2006). These characteristics should be taken into consideration when examining the impact of performance information for such services.

Building on literature on framing and attention effects (Chong and Druckman 2007; 2013; Slothuus and de Vreese 2010) and literature on public service use (Poister and Henry 1994; Kelly and Swindell 2003; Brown 2007; van Ryzin and Charbonneau 2010) the paper makes two claims about the impact of performance information. First, it argues that citizens are generally unaware of the costs associated with public services and therefore tend to prefer more of a service regardless of how the service has performed if they do not receive information about the costs of expanding the service. Hence, performance information will tend to have a stronger impact on citizens' attitudes and perceptions if accompanied by cost information. Second, it argues that service users to a higher extent than non-users are responsive to performance information because the benefits of the services are concentrated on the users while, on the other hand, costs are dispersed.

The claims are examined by experimentally manipulating the extent to which people are informed about performance and costs of public school services, respectively, in two randomized survey experiments. Comparing the impact of performance information on people who are exposed to cost information and people who are not allows for an analysis of whether performance information has a different impact depending on whether cost information is also provided.

The paper proceeds with discussing how citizens' service attitudes – that is, their attitudes about whether the service level should be kept at the same level or increased – are linked to the performance of public services. The subsequent section discusses why and how cost information is important in order for performance information to have an impact on citizen service attitudes. Also, the section discusses differences and similarities in user and non-users responses to performance

information. Based on these considerations, three hypotheses are developed about the impact of performance information on citizen service attitudes. Next, I present the contextual background and research design. This is followed by a presentation and discussion of the empirical findings. The final section concludes and discusses theoretical and practical implications of the research.

### **The impact of performance information on citizen service attitudes**

The idea that performance information has an impact on citizen service attitudes is based on the presumption that citizens possess incomplete knowledge of performance. Performance information therefore helps them to update their knowledge and enables them to bring their perceptions of performance more in alignment with actual performance. Accordingly, we should expect a stronger relationship between performance and attitudes among recipients of performance information than among non-recipients.

Existing research has primarily been concerned with the relationship between (perceived) performance and citizen satisfaction. The literature on antecedents of citizen satisfaction suggests a positive link between citizens' performance perceptions and their satisfaction with public services (van Ryzin 2004; James 2007; Morgeson 2013). This expectation has found support in experimental studies of the impact of disclosed government performance on satisfaction (James 2011a; James and Moseley 2014).

It is, however, by no means certain that performance information has a similarly positive and continuous impact on service attitudes as on satisfaction levels. As noted by Moynihan (2006), a potential ambiguity exists in linking performance assessments to decisions about resource allocation. Hence, different rationales are likely to be in play and suggest different responses to performance information. According to one rationale, more resources should be spent in case of low

performance in order to raise future performance for the particular service in question while the same or even fewer resources should be spent in case of high performance. According to another, resources are better spent on services where performance is high because history has shown that value for money is created here while low performing services on the other hand should be cut.

Recent empirical evidence suggests that both rationales are in play simultaneously and that they in conjunction are responsible for a u-shaped relationship between disclosed performance and attitudes. In a study of how political decision makers respond to information about the performance of public schools, Nielsen and Baekgaard (2013) thus find that information on both high and low performance lead to preferences for more spending on public schools whereas information on average performance is associated with preferences for less spending. Similar rationales may apply to citizens who may be likely to reward high performance while they on the other hand also feel that more resources are needed in case of low performance to raise future performance.

Thus, if citizens to a large extent lack knowledge about actual performance and performance information accordingly has an impact on their performance perceptions as indicated by previous studies (James 2011a; James and Moseley 2014), we should expect a u-shaped impact of performance on service attitudes among citizens who have received performance information, while performance has little or no impact on the attitudes of citizens who have not received such information. In terms of the impact of performance information on service attitudes, I thus hypothesize that:

*H1: Information on high and low performance has a positive impact on citizen attitudes to service expansion while information on average performance has a negative impact on citizen attitudes.*

## **The impact of cost information and service use on performance information effects**

Performance information directs attention to either the absolute or relative performance of public organizations or services, whereas typically less emphasis is placed on why the organization or service performed as it did (Moynihan 2006: 156f). It is thus usually designed to emphasize the quality of public organizations and services whereas little or no emphasis is given to the costs of such services. This is likely to have implications for citizen responses to the information.

It is well known from public opinion research that the way information is presented may heavily influence citizens' attitudes to a given policy issue (Chong and Druckman 2007; 2013; Slothuus and de Vreese 2010). According to framing theory citizens' attitudes depend on both the evaluation and salience of different attributes of the policy issue (Chong and Druckman 2007: 105). Quality and costs are two examples of attributes of public services. Sometimes, however, some attributes, are not considered because, for instance, citizens fail to give proper attention to them. In such cases the attribute will have no impact on attitudes. Studies have found evidence that citizens are generally not aware of the costs of public services. Specifically, citizens' support of political proposals involving better services at the expense of higher costs tends to be strong if they are not simultaneously presented with information on the actual costs of the proposal, while it is much less strong among those citizens who receive information about the costs (Welch 1985; Simonsen and Robbins 2000; Winter and Mouritzen 2001; Howell and West 2008). Moreover, the size of costs being mentioned appears to have little impact on citizen support. What matters is whether costs are mentioned at all as part of the policy proposal (Baekgaard et al. 2013).

It follows from this discussion that costs appear to be an attribute of public services which citizens generally fail to pay proper attention to. Hence, if not presented with information on costs, citizens are likely to prefer more of a given service regardless of whether they are presented with information that performance is high, average, or low. On the contrary, if presented with cost

information, performance information is more likely to have the impact on citizen attitudes suggested by hypothesis 1 because the cost information allows the citizens to make a proper tradeoff between costs and quality. Thus, cost information offers a context within which performance information can be given sense. Combining this perspective with the expectations from hypothesis 1 I therefore hypothesize that:

*H2: Performance information has a greater influence on citizen attitudes to service expansion if they are also presented with cost information.*

For many services some citizens are users while others are not. Non-use can either be the result of an active decision to exit public services (Dowding and John 2012) or simply because a given service is not relevant. While research on the link between public service use and citizen satisfaction yields mixed findings (Poister and Henry 1994; Kelly and Swindell 2003; Brown 2007; van Ryzin and Charbonneau 2010), expectations are straightforward when it comes to the impact of performance information on service attitudes for users and non-users. For services where some citizens are users while others are not, the benefits of the services are concentrated while the costs, on the other hand, are dispersed. This implies that service users will tend to attach more importance to performance than non-users. Cost information, on the other hand, is expected to have the same impact on user and non-user attitudes since users and non-users carry the costs of the services to the same extent. Provided that users and non-users have the same initial knowledge about performance and costs<sup>1</sup>, I thus expect that:

*H<sub>3</sub>: Performance information has a greater influence on service users' attitudes to service expansion than on the attitudes of non-users.*

## **Research design**

The context of the empirical research is Danish municipalities. The 98 municipalities are multi-purpose entities responsible for a vast number of services used by citizens on a daily basis, including public schools, day care, roads, and elderly care. The services are funded in part by local income taxes, and the costs of running public services are often subject to public debate. The research question is thus examined in a setting where performance and costs are of great importance to citizens.

The hypotheses are tested using data from an email-based survey sent to a sample of members of an internet panel run by Userneeds. In total, 1,866 responses were gathered in February 2013. The sample was stratified by municipality size, gender, age, and education. Within each stratum, random sampling was used in order to assure that the final sample was approximately representative of the Danish population at large on these characteristics. Internet panel members are presumably not representative of the population with regard to, for instance, their interests. It is, however, not obvious why they should differ from other people in their responses to performance and cost information. Moreover, representativeness is only of secondary importance here since the main aim is to establish a causal link between performance information and service attitudes.

Selection and endogeneity bias are highly likely to systematically affect the findings in cross-sectional studies of how information shapes attitudes (Nielsen and Baekgaard 2013). Moreover, it is difficult to find real-world cases where citizens are exposed to comparable information.

Randomized survey experiments are increasingly used in public administration and public management to deal with these problems (see, e.g., James 2011a; James 2011b; Boeri and Tabellini 2012; Nielsen and Baekgaard 2013; van Ryzin 2013; Kroll forthcoming). Randomization creates groups that are probabilistically similar on average except from the exposure to different treatments, entailing that any differences in outcomes between the groups reflect causal effects of the treatments used (Shadish et al. 2002: 248-253; McDermott 2005). In the survey, all respondents were exposed to two separate experiments; both containing one treatment and one control group. In the first experiment respondents in the treatment group were presented with performance information while respondents in the treatment group in the second experiment were presented with cost information. The respondents were randomly assigned to the treatment and control groups meaning that four groups of respondents were effectively created.<sup>2</sup> One group received both performance and cost information, another performance information only, a third cost information only, while the fourth group received neither performance nor cost information. By varying respondents' exposure to performance and cost information, the research design allows for an examination of whether the impact of performance information is conditional upon whether respondents have also received cost information.

In contrast to other studies of the impact of performance information on citizens' attitudes and behavior (James and John 2007; James 2011a) focus is on one specific service, public schools, rather than the service and performance of local governments in general. This allows for an examination of whether users and non-users respond in the same way to performance information. Schools are highly salient and many people engage with public schools either as parents or relatives to children enrolled in public schools, meaning that performance information presumably matters more than on less salient service areas. From a practical perspective, public schools offer excellent and valid performance data on grades and there is evidence that the media and the public pays

attention to the performance of public schools and have a basic understanding of such data (Moynihan and Hawes 2012).

The performance information treatment presented the respondents with information about how the public schools in their municipality perform compared with public schools in all other Danish municipalities. The information is based on true school performance, and the treatment contained information that the schools in the citizens' municipality performed among the best, the middle, or the worst third of Danish schools regarding their grades when taking the pupil composition into account. This piece of information bears much in resemblance with the performance information that citizens and politicians are presented with on a regular basis in the form of benchmarks of school performance produced by for instance the Danish Ministry of Education (Nielsen and Baekgaard 2013).

Previous research has shown that the source of information is likely to substantially affect responses to frames and information (Slothuus and de Vreese 2010; Stubager and Slothuus 2012). These findings might also apply in this case. The experiment therefore used information that is conceived of as being neutral in political terms. The information was produced by KREVI, an independent government agency working to provide neutral and reliable information on how municipalities perform relative to one another.

The cost information treatment presented treated individuals with information about the costs of intensifying teaching in public schools, the idea being that more teaching may lead to higher performance but that this comes at a price. The costs mentioned in the treatment of 2,800 DKK per pupil (approximately 500 USD) each year for an extra hour of teaching are based on an average calculation across all Danish municipalities and thus constitutes a fairly realistic price. The two experiments are presented in Table 1. As can be seen the only difference between the treatment and

control groups is that the former received an additional piece of information as part of the question wording.

*Table 1 about here*

The dependent variable was measured using a single-item question in which the respondents were asked to consider a hypothetical case: “Imagine that a proposal is made that pupils in public schools should receive an extra hour of teaching each week. To what extent do you agree with this proposal?”. The answers were given on a scale ranging from 1 to 5 with the value 1 corresponding to “totally disagree”, and 5 to “totally agree”. Extra teaching is often mentioned in the Danish public debate as a means to increasing performance in public schools. Hence, the idea was that respondents should associate more teaching with higher performance and moreover – in case they also received cost information – acknowledge that this comes with a price.

One drawback of this operationalization of service attitudes is that the question is not balanced, since it does not allow respondents to prefer less of the service. From an empirical point of view the lack of balance is a lesser problem because answers to the question were unevenly distributed with approximately 60 per cent responding that they either totally agree or agree while only 16 per cent disagree or totally disagree. Hence, only respondents among the 16 per cent might have preferred even less of the service. The mean value is 3.69 with a standard deviation of 1.18. The limited variation means that significant effects all other things being equal are harder to detect than if the variation had been greater. Since the dependent variable is based on an ordinal scale, ordered logistic analysis is used to estimate the statistical models.

The order of questions in the survey is presented in Table 2. The performance information treatment was placed after a question about performance perceptions but prior to a question about citizen

satisfaction and a number of other questions that are irrelevant for the purposes here. This was followed by the cost information treatment and the dependent variable.

*Table 2 about here*

### **Manipulation checks**

While the questions on performance perceptions and citizen satisfaction shown in Table 2 are not relevant to the test of any of the hypotheses they do allow us to conduct two manipulation checks (Mutz 2011: 86). The first manipulation check has to do with the potential of the performance information treatment with regard to its impact on the dependent variable, the idea being that experimental treatments are only likely to have an effect if they present respondents to new information. As can be seen in Table 2 all respondents were asked about their performance perceptions prior to the experimental questions. The performance perception question therefore makes it possible to test whether citizens' pre-treatment performance perceptions correspond with actual performance (as measured in the performance information treatment). The test shows that only 35 per cent of the citizens placed their municipality in the same third of the Danish municipalities as suggested by the performance statistics used in the performance information treatment. This is not significantly different from blind guesses and suggests that the performance information treatment used in this experiment has a great potential for informing citizens due to their lack of knowledge of knowledge of actual performance

The second manipulation check uses the citizen satisfaction question to test whether performance information has a continuous positive impact on citizen satisfaction with public school services as found in previous studies (James 2011a; James and Moseley 2014). This manipulation check thus tests whether responses to the performance information treatment behaves like in other studies. Examining the impact of performance on citizen satisfaction for those who were and those who were not exposed to performance information in the experiment, the analysis in Table 3 indeed

shows a continuous positive relationship between performance and satisfaction among respondents who received performance information (Model 1). The differences between performance categories are considerable. A calculation of predicted probabilities based on the model shows that 50 per cent in high performance, 47 per cent in medium performance, and 36 per cent in low performance municipalities are either 'very satisfied' or 'satisfied'. On the other hand, no relationship is found between performance and citizen satisfaction among respondents who were not presented with performance information (Model 2). Hence, the treatment behaves like in previous studies.<sup>3</sup> Model 3 and 4 furthermore offer a first hint about the impact of performance information on citizen attitudes as suggested by hypothesis 1, the only statistically significant finding being that citizens in high performance municipalities report service attitudes that are statistically different from those in medium performing municipalities. Again, the difference is substantial. Among recipients of performance information, almost 9 percentage point more in the high performing municipalities report that they either 'totally agree' or 'agree' that the number of teaching hours should be increased. Since the table does not test whether the findings are statistically significantly different between respondents who receive and respondents who do not receive performance information further analyses are necessary before we can arrive at a definitive conclusion about hypothesis 1.

*Table 3 about here*

## **Analysis**

Because the level of performance reported in the performance information treatment is based on true performance, there is no variation in the performance reported within municipalities. This effectively means that the performance information experiment itself is based on three separate experiments where the effect of receiving, for instance, information showing high performance

should only be estimated within high-performing municipalities. However, in order to maintain the statistical power of the entire sample a municipality fixed effects regression was used. The fixed effects absorb the variation between the three treatment groups, thereby ensuring that the treatment effects are only estimated within each performance group (Allison 2009; see also Nielsen and Baekgaard 2013). This means that the effect of being given, for instance, positive information is estimated by comparing treated and non-treated citizens from the same municipality. Thus, municipal unobservables are effectively controlled for.

The hypotheses suggest that performance information has different effects depending on whether the information provided shows high, medium, or low performance. The hypotheses are therefore tested by interacting the information treatment with dummies describing the content of the information (high/medium/low performance). As municipality fixed effects are used to control for all factors that are constant within municipalities, the constitutive terms describing municipality school performance are not included in the regression analysis (Allison 2009; Wooldridge 2009). Table 4 examines H<sub>1</sub> and H<sub>2</sub>.

*Table 4 about here*

In all analyses, the effect of information showing medium performance follows readily from the main term of the information variable, while the impact of information showing either high and low performance can be calculated as the sum of the information variable and the relevant interaction term. H<sub>1</sub> is analyzed in model 1. The analysis shows that information on high performance has a positive impact on citizen service support for more services corresponding to a seven percentage point difference in the number of respondents who report that they ‘totally agree’ or ‘agree’ with the proposal about expanding services, while information on average and low performance has no impact. Hence, H<sub>1</sub> is only partly supported. This might suggest that citizens in general are inclined to follow a simple “reward high performance”-approach while they are less certain how to react to

average or low performance. However, the analysis shows an average picture across citizens who received and citizens who did not receive cost information as well as across users and non-users. This average picture might be misleading because of important differences between recipients and non-recipients of cost information and between users and non-users as suggested by H<sub>2</sub> and H<sub>3</sub>, respectively.

H<sub>2</sub> is analyzed in Model 2 and 3 by means of two split-sample analyses of the impact of performance information for recipients and non-recipients of cost information. The analysis lends support to the expectation that performance information has a greater influence on citizens' service attitudes if they have also received cost information. Among those respondents who received cost information, performance information largely has the expected impact. As can be seen in Model 2, information on high performance is associated with support for more services (the average difference on the five-point scale between recipients and non-recipients of performance information is 0.22) whereas information on average performance is associated with less support (the average difference is 0.20). Finally, and in contrast to the hypothesis, information on low performance does not have any impact on the support for more services. The findings might be taken as evidence that citizens in general are inclined to reward high performance in case they receive cost information while the money to do so is taken from average performers.

Moving to Model 3, performance information has no impact on attitudes for non-recipients of cost information regardless of the performance level reported in the performance information. The discussion on which H<sub>2</sub> is based suggests that this is so because support of service improvements is generally very high if people do not receive cost information. Descriptive statistics support this interpretation as 68 per cent of the respondents who did not receive cost information either agreed or totally agreed with the proposal. In conclusion, the findings largely lend support to H<sub>2</sub> the sole

exception being that low performance does not have the hypothesized positive impact on service attitudes among recipients of cost information.

H<sub>3</sub> posits that performance information has a different impact on users' and non-users' service attitudes. This hypothesis is based on the assumption that users and non-users have approximately the same level of knowledge of performance before being presented with information. This assumption is tested by examining to what extent users' and non-users' performance perceptions correspond with the performance measure used. The test shows a slight tendency for non-users' perceptions to correspond more often (36 vs. 32 per cent).<sup>4</sup> Although this difference is of minimal size, it may suggest a slight tendency for performance information to have less impact among non-users because they to a higher extent possess the information and hence on average to a lesser extent are informed by receiving the performance information than are users. The analysis is shown in Table 5.

*Table 5 about here*

First, it is worth noting that the analysis like other research (Winter and Mouritzen 2001; Baekgaard et al. 2013) finds that people become more skeptical about public service spending when presented with information about costs. This is evidenced by the statistically significant negative coefficient of the cost information variable in both models. The negative impact of the cost information treatment corresponds to a ten percentage point difference between recipients and non-recipients in the number of respondents who report that they either 'agree' or 'totally agree' with the proposal in Model 1 and a twelve percentage point difference in Model 2.

Second, the analysis shows that performance information has an impact among users only. Looking solely at the group of users, the analysis shows a non-linear relationship between the level of disclosed performance and attitudes. In contrast to what was expected in H<sub>3</sub>, performance

information has no impact on service attitudes for those who are presented with information showing either high or low performance (in both cases, the sum of the interaction terms and the information coefficient are close to zero and in real numbers the average difference in responses between recipients and non-recipients of performance is less than 0.1) but a negative impact among those who are presented with information showing medium performance. The impact among recipients living in medium performance municipalities is substantial in real numbers as the average support drops from 4 to 3.18 if the respondents receive performance information. To help the interpretation of these findings it is important to mention that the support for the policy proposal about increasing the teaching time with one hour is generally supported among those users who do not receive the cost information (average values for the three groups on the dependent variable are: 3.9, 4.0, and 3.7 for respondents coming from high-, average-, and low-performing municipalities respectively). Accordingly, one possible interpretation is that information on high and low performance supports the users' initial beliefs that more teaching time is preferable. In case of high performance because the extra teaching is worth the money, in case of low performance because it is necessary in order to increase future performance. Finally, the negative impact of information showing medium performance may indicate that performance is found largely acceptable and that the users therefore see no need for expanding services given that they are not able to produce extraordinary performance.

In conjunction, the findings imply that users are concerned both about service performance and costs whereas non-users are primarily interested in the cost dimension. Still, non-users on average support the proposal to intensify teaching in public schools (60 per cent either agree or totally agree with the proposal and even when looking at those non-users who were presented with cost information only, 53 per cent either agree or totally agree) and accordingly the findings cannot be taken solely as evidence of rational behavior in an economic sense among non-users. Rather, the

findings may be interpreted as evidence that users and non-users alike have ideological values about public services and that users are more susceptible to performance information because they care more about the topic. The findings thus likely reflect an interplay between normative considerations about the ideal level of services and positive information about how the services perform.

## **Conclusion**

Performance information has been suggested as a means to increase the capacity of decision makers and citizens to make informed decisions. The analysis in this paper, however, shows that it matters more to citizen service attitudes if allocated in conjunction with cost information. Moreover, performance information is more important to the attitudes of service users than to those of non-users, while cost information is of about equal importance to users and non-users.

From a practical perspective the study thus has implications in relation to when and how performance information is likely to have an impact. First, performance management frameworks have been introduced within, for instance, the area of public education in an attempt to increase the capacity of citizens to make informed decisions by making performance data publicly available (Van de Walle and Roberts 2011: 222). Such performance data are, however, seldom accompanied by cost information and the findings do suggest that more nuanced opinions will arise if performance data are accompanied by cost data. Second, the finding that non-users do not respond to performance information might be taken as evidence that performance information matters less on areas without large groups of core users. Further research across services with different levels of core users is however needed to establish this claim with certainty.

The findings also raise a number of questions. First, in contrast to what was expected only information showing medium performance had the expected negative impact on attitudes to whether

services should be expanded. It is difficult to provide a definite conclusion about why information on medium performance works differently than information on high and low performance but it is striking that respondents who are presented with either information on high or low performance on average support service expansion. The findings thus reinforce the idea that the public responds to both high and low performance by demanding more resources while average performance is associated with less demand. A similar pattern was identified in a recent study of political decision makers (Nielsen and Baekgaard 2013). This suggests that performance information is not merely ambiguous but that systematic response schemes are driving this pattern across various groups of respondents. Yet, more knowledge is needed about the rationale guiding this pattern. Research that combines experimental and qualitative research is called for to deal with this topic.

Another question concerns the finding that performance information on the one hand does not affect non-users' attitudes while they, on the other hand, on average prefer service expansions even though they will not themselves benefit directly from this. Providing an explanation for these responses is not easy. The finding suggests, however, an interesting interplay between performance concerns, cost concerns, and ideological viewpoints which should be uncovered in order to get a more comprehensive understanding of how citizens' service attitudes are shaped. Finally, the experimental design used allows for an estimation of the causal impact of performance information and thus the internal validity can be considered high. However, this comes at a price. One general concern about survey experiments is whether the effects are lasting. Future studies might address this question by analyzing data from experiments in which citizen attitudes are measured in several waves. Another general concern is to what extent the findings can be generalized (Shadish et al. 2002: 83). While this study attempts to deal with this critique by using information about actual performance (and in a form that resembles that of actual benchmarking activities by, for instance, the Danish Productivity Commission (Wittrup et al. 2013)) and costs, the findings presented here

may depend on a number of contingencies. These, for instance, have to do with the saliency of the service area, citizens' knowledge about performance, the extent to which citizens accept that the performance information does tell something about actual performance, the size of the costs that citizens are presented with, their prior expectations about the size of the costs (which are arguably likely to vary across service areas), and the kind of attitudes measured. This research was conducted on a service that is highly salient to Danish citizens, public schools, with a valid and comparable performance indicator that most people would arguably agree measures one important aspect of performance (public school grades corrected for pupil composition). However, citizens are presumably likely to care less about performance and more about costs on less salient policy areas. Likewise, performance information may likely be of less importance the larger the ambiguity about the relevance of the performance indicator. Also, the costs of expanding services may reach a level where it completely crowds out the importance of performance information. Future research is encouraged to study such contingencies by comparing the impact of performance information on service areas that vary with regard to their salience and the ambiguity of performance indicators, to experimentally vary the costs associated with expanding the service in order to increase our understanding of the performance-cost relationship, to include information about citizens' prior beliefs about the size of costs, and to include other attitudinal outcome measures.

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## **Tables:**

### **Table 1: Experimental conditions**

Performance information experiment		Cost information experiment	
Treatment group:	Control group:	Treatment group:	Control group:
<p>“The quality of public services is greatly debated. For instance, there has been a distinct focus on measuring teaching quality in Danish public schools.</p> <p>The last 3-year report about the grades in the final public school exam showed that the average grade in [name of municipality] was placed in the [best, middle, worst] third among the Danish municipalities when taking the social composition of pupils into account (KREVI report 2011).”</p>	<p>“The quality of public services is greatly debated. For instance, there has been a distinct focus on measuring teaching quality in Danish public schools.”</p>	<p>“Imagine that a proposal is being made that pupils in public schools should receive an extra hour of teaching each week.</p> <p>Calculations show that the expenses associated with this proposal are approximately 2,800 Danish kroner per pupil each year.”</p>	<p>“Imagine that a proposal is being made that pupils in public schools should receive an extra hour of teaching each week.”</p>

**Table 2: Survey Design**

- 
1. Question about performance perceptions<sup>1</sup>
  2. Performance information experiment: Treated individuals presented with information on the performance of their municipal school system relative to the performance of other municipal school systems
  3. Citizen satisfaction question<sup>2</sup>
  4. A number of questions placed in between (not used here)
  5. Cost information experiment: Treated individuals presented with information about the costs of increasing the service level
  6. Question about attitudes to increasing the service level (the dependent variable)
- 

<sup>1</sup>: Question formulation: How satisfied are you with the services below? Services mentioned in the battery: Day care, elderly care, public schools, libraries, roads, leisure facilities. Response categories: Very satisfied, Satisfied, Neither satisfied nor dissatisfied, Dissatisfied, Very dissatisfied.

<sup>2</sup>: Bearing in mind the demographical situation of your municipality, how would you evaluate the quality of the services in your municipality compared to the quality of services in the rest of the country? Services mentioned in the battery: Day care, elderly care, public schools, libraries, roads, leisure facilities. Response categories: Above average, Approximately like the national average, Below average.

**Table 3: The impact of performance information on citizen satisfaction and service attitudes for respondents receiving and not receiving performance information – ordered logistic regression.**

	Model 1: With performance information	Model 2: Without performance information	Model 3: With performance information	Model 4: Without performance information
Dependent variable	Citizen satisfaction		Service attitudes	
High performance	.484 (.176)**	.051 (.198)	.375 (.135)**	-.059 (.132)
Low performance	-.355 (.200)+	.000 (.171)	.190 (.168)	.017 (.166)
N	772	756	929	937
Nagelkerke's R <sup>2</sup>	.04	.00	.01	.00

Notes: Entries are ordered logit coefficients (cluster robust standard errors in parentheses). \*\*: p <.01; \*: p<.05; +: p<.1.

**Table 4: The impact of performance information on attitudes to spending for respondents receiving and not receiving cost information – ordered logistic regression with municipality fixed effects (H<sub>1</sub> + H<sub>2</sub>)**

	Model 1: All respondents	Model 2: With cost information	Model 3: Without cost information
Performance information	-.130 (.119)	-.320 (.169) +	.042 (.179)
Performance information x low performance	.141 (.181)	.242 (.256)	.042 (.277)
Performance information x high performance	.427 (.172)*	.601 (.270) *	.451 (.301)
N	1866	950	916
Nagelkerke's R <sup>2</sup>	.06	.10	.14

Notes: Entries are ordered logit coefficients (cluster robust standard errors in parentheses). \*\*: p <.01; \*: p<.05; +: p<.1.

**Table 5: The impact of performance and cost information on attitudes to spending for users and non-users – ordered logistic regression with municipality fixed effects (H<sub>3</sub>)**

	Model 1: Users only	Model 2: Non-users only
Information	-1.191 (.550) *	.121 (.156)
Information x low performance	1.118 (.675) +	-.226 (.239)
Information x high performance	1.399 (.646) *	.227 (.221)
Cost information	-.550 (0.287) +	-.535 (.092)**
N	372	1408
Nagelkerke's R <sup>2</sup>	.32	.11

Note: Entries are ordered logit coefficients (cluster robust standard errors in parentheses).

\*\* : p <.01; \* : p<.05; + : p<.1.

## Notes

<sup>1</sup> If either of the groups is initially more knowledgeable, performance information may have less impact relative to the other group than would have been the case if both groups had had the same level of initial knowledge.

<sup>2</sup> The four groups do not differ significantly on characteristics like gender, age, level of education, employment status, voting on left-wing parties at the previous municipal election, and municipality size. Hence, the randomization appears to have created probabilistically similar groups as intended.

<sup>3</sup> Further analyses (not shown here) show that the differences between Model 1 and 2 are statistically significant and that performance information hence has an impact on citizen satisfaction. This finding replicates a main finding in James (2011a) but with other operationalizations.

<sup>4</sup> I define users as parents to children who are either enrolled in or still are too young to be enrolled in public schools. Thus, the operationalization includes potential future users as well. Similar findings to the ones reported in Table 5 are produced if the potential users are instead coded as non-users.