

Stöhlker, Daniel

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## Quality of Local Public Good Provision and Electoral Support

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# Quality of Local Public Good Provision and Electoral Support

Daniel Stöhlker  
[Stoehlker@if0.de](mailto:Stoehlker@if0.de)

ifo Institute  
Leibniz Institute for Economic Research  
at the University of Munich  
Poschingerstr. 5  
81679 Munich, Germany

– Conference Draft –

## Abstract

Do voters value the quality of local public goods, such as whether pavements are clean, whether benches in the park need repair, or whether local roads are in good shape? Using almost 150,000 geo-located complaints that were posted on the complaint-platform FixMyStreet.com between 2007 and 2011, I compute quality indicators for all 8,500 local wards that comprise the whole of England. The results provide compelling evidence for both a strong rewarding and a punishment effect: In wards with positive quality indicators, such as a large fraction of complaints that are solved within 30 days, the incumbent party has statistically and economically significantly higher chances of being re-elected. On the contrary, if the local area features a large share of complaints that is solved only after twelve months or never, the probability that the incumbent party is voted out of office is increased by up to seven percentage points. The results also document a considerable short-run memory of voters as suggested by the fact that good and bad performance indicators more than two to three months away from election day have no statistically significant impact anymore on the chances of re-election. The results are robust to the inclusion of various important co-variates at the ward-level taken from the official Census in 2011 and provide new insights into the link between local governmental spending and voting behavior.

**Keywords:** Quality of Public Good Provision, Local Government Spending, Voting

**JEL Classification:** H40, H72, D72

## 1. Introduction

Do voters value the quality of public good provision when going to the polls on election day? The question is not easy to answer, particularly so because it is a challenging exercise to find a proper metric that captures the quality of local public good provision. Concretely, think of issues such as whether the pavements are clean, whether the benches in the park need repair or whether abandoned cars are blocking a street. Recent studies, see e.g. [Balaguer-](#)

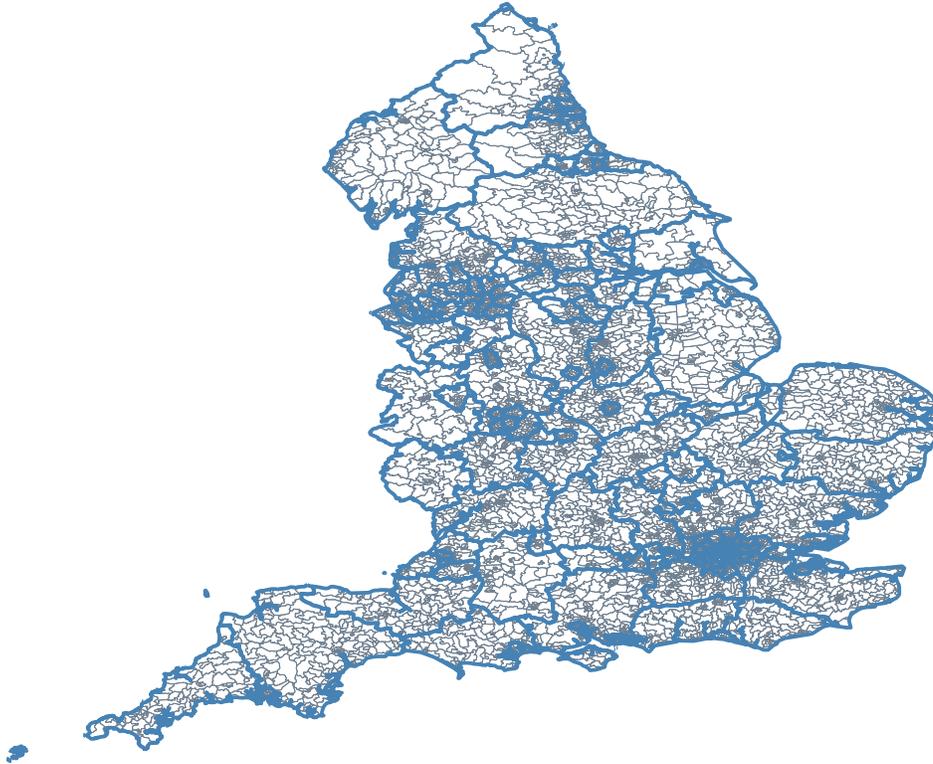
Coll et al. (2015) and Litschig and Morrison (2012) for some recent examples, are almost exclusively relying on aggregate spending at the local level. This, however, is only a poor indicator for the *perceived* quality of public goods which should be the relevant metric for the voter when making a decision who to vote for. This can be the case for several reasons, most importantly because spending at the local level can be done in an efficient way so that it comes to the benefit of the public or it can be to a large extent wasteful without creating any benefit for anyone.

In order to derive measures that, as I believe, are more tangible for the voter, I use complaints that are uploaded to the complaint-platform FixMyStreet.com. The platform is particularly popular in the United Kingdom with more than 1.5 million complaints posted to date since its existence in early 2007. Users are able to post and inform their local authorities of problems that need to come to their attention, such as potholes, broken streetlamps, graffiti, abandoned cars, flypaper etc. Complaints are automatically geo-located by the application on the cell-phone which makes them directly attributable to specific areas. Between May 2007 and May 2011, the dates of major local elections, around 150,000 posts were made by users in England. I use these observations for every of the 8,500 wards in England, the most dis-aggregate geographic area in the United Kingdom, to compute very locally granular performance measures over the four-year horizon based on how quickly these complaints are solved by the local authority. I then test whether these local performance measures are able to explain whether the local incumbent party was re-elected in the local elections in May 2011 while controlling for various important ward-specific characteristics that can be inferred from the official Census from 2011. The estimation results provide compelling evidence for both a pronounced rewarding and a punishment effect of voters: Wards that feature positive performance measures with a large share of complaints quickly solved also have higher re-election chances for incumbent parties while the opposite is true for regions with particularly poor performance statistics.

This paper most directly builds on the empirical literature that analyses the effect of governmental spending on the chances of re-election of incumbent politicians. Recent examples of this literature are Balaguer-Coll et al. (2015), Revelli (2002) and Litschig and Morrison (2012), to name just a few. Litschig and Morrison (2012) for example find that additional local governmental spending at the municipality level to the amount of 20% per capita in Brazil resulted in an increase in the re-election probability of local policy makers by around ten percentage points. The authors argue that effect was primarily driven by extra spending on local services as indicated by rising household income and municipal education outcomes, such as literacy rates. Concrete channels that are driving the main results remain vague and largely untested, however. Similar examples can be found in Veiga and Veiga (2007) and Sakurai and Menezes-Filho (2008) who also find positive effects of extra spending on re-election chances. They document a shift in the budget composition to ‘highly visible’ budget items, such as buildings and construction works which appear to be the driving forces behind the positive results in their studies.

This paper adds to the debate by proposing and testing a concrete measure that captures the *true* quality of local public services, thereby shedding new light on the relevant link between local governmental expenditures and the probability of re-election. The rest of the paper is structured as follows. Section (2) provides a brief description of the local electoral system in the United Kingdom, and England in particular. Section (3) describes the data

Figure 1: Electoral Structure in England: Districts and Wards



on which the analysis is built upon and the computation of the quality indicators. Section (4) presents the estimation strategy together with the results of the analysis and Section (5) concludes.

## 2. Local Electoral System in England

The structure of local government varies from area to area. In most parts of England, it can be divided into two tiers – county and district – with responsibilities for local council services split between them. London as well as other metropolitan areas and some parts of shire England operate under a single tier structure that combines local council responsibilities for all services in their area. Below the level of districts, there are roughly 8,500 so-called wards. Every ward elects councilors to be member of the local city or district council. Figure (1) depicts the electoral structure in England.

In general, each ward has an electorate of 5,500 people on average, but ward-population counts can vary substantially. In cases with larger population, the inhabitants of the ward can nominate two, and in some rare cases even three, local councilors so that the relative amount of inhabitants per representative is kept approximately equal across all wards. In cases with more than one vacant councilor seat, each party can nominate two or three candidates, respectively, that are running for election, apart from independent candidates. Councilors are ordinary members of the public, who are elected by the local residents only.

The candidate to receive the most votes win, in a system known as the ‘multi-member plurality system’. There is no element of proportional representation as it might be known from other countries’ local elections. Councilors are usually elected for a period of four years. However, councils may be elected wholly, every four years, or, alternatively, ‘by thirds’, where a third of the councilors get elected every year, with one year with no elections in between. Recently also the ‘by halves’ system, whereby half of the council is elected every two years, has been allowed.

A councilor’s primary role is to represent their ward and the people who live in it. They play an important role in planning, running, monitoring and developing local council activities. Competencies of local district, borough and city councils are far-reaching and include, for example, rubbish collection, recycling practices, housing development as well as other planning applications such as repair work or local infrastructure maintenance and development. Moreover, councilors can be directly made responsible for the prosperity of each ward, i.e. there is clear link between the quality of local public services and the work of each councilor.

### 3. Quality Indicators of Local Public Good Provision

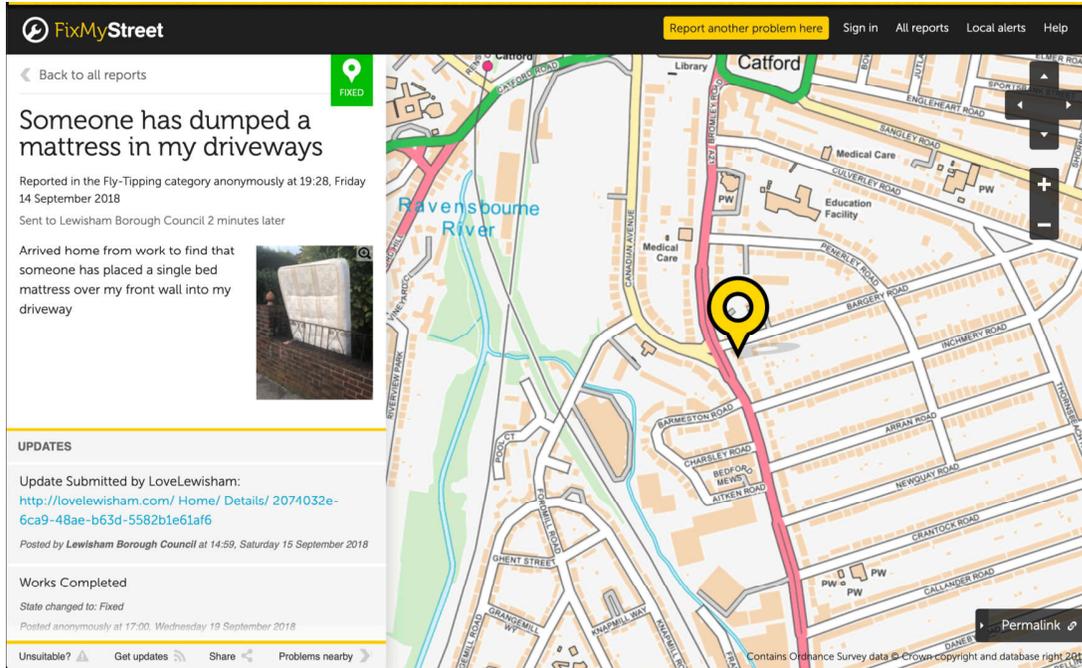
The analysis is based on complaints that are posted on the app-based platform FixMyStreet.com which is enjoying increasing popularity in recent years. Users that have the application on their cell-phone can post complaints in all kinds of categories online together with an image of the situation and a brief description in combination with an automatically generated geo-location. The post is then sent directly to the corresponding team of the responsible local authority. Figure (2) below shows an example of a complaint that falls into the category of ‘Fly-Tipping’. Other popular categories include ‘Abandoned Cars’, ‘Potholes’, ‘Street Light’, ‘Rubbish’ and ‘Trees’. The description on the left-hand side of the screen-shot also displays when the complaint was posted and if (and when) the complaint has been solved by the local authority.

By using a web-scraping algorithm, I compile a list of almost 150,000 complaints that were posted between the dates of the general local elections in the United Kingdom, that is between May 2007 and May 2011. As a second step, by exploiting the detailed geo-references for each complaint, I can compute ward-specific performance indicators. These are the share of complaints that are solved within 30 days, within one to three months, within three to six months, within six to twelve months or after twelve months or never.

The geographic distribution of complaints is shown in Figure (3). In general, all wards in England have at least one complaint in the four-year time window except for some 150 wards which I discard for the rest of the analysis. The average number of hits per ward is roughly 28 which is sufficiently large for computing robust quality measures and to rule out ‘lucky’ or ‘bad’ one-time shots. Some regions, especially those with larger geographic areas or metropolitan regions and cities, have significantly higher complaint counts which are as high as 400 posts in some cases.

The distribution of each quality indicator is displayed in Figure (4) below. As can be seen directly, the bulk of the complaints is solved either quickly within 30 days or with a significant delay (or never) with only a small portion of complaints solved within one to twelve months. In addition, indicators of the best and the worst quality also feature

Figure 2: Example Complaint Posted Online



significant variation across wards while this is hardly the case for the quality categories in between.

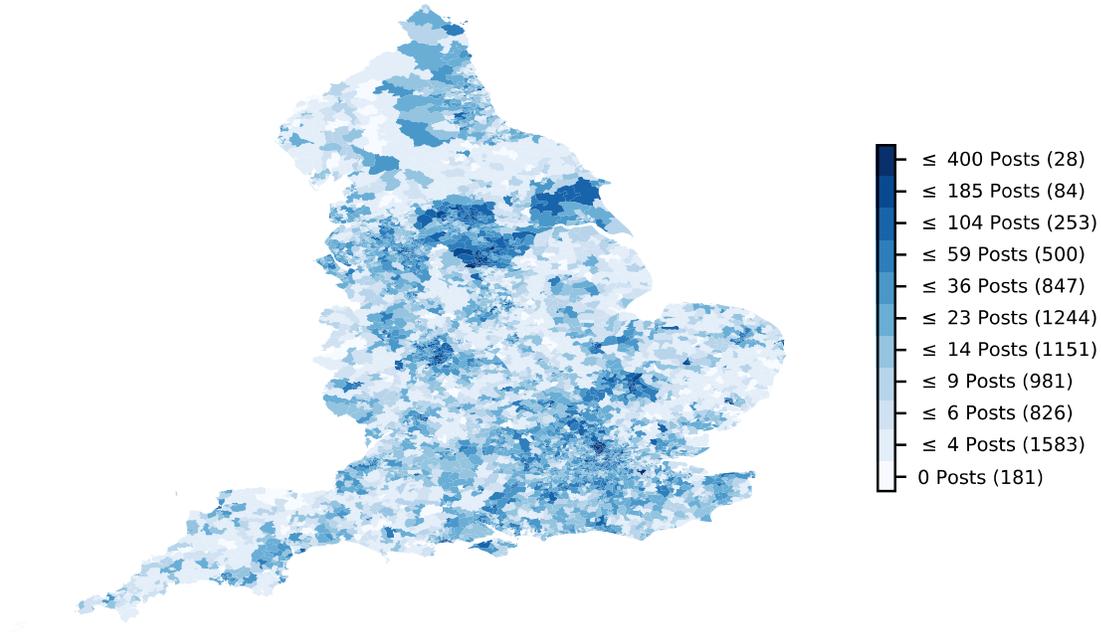
#### 4. Estimation Strategy and Results

In order to identify the effect of changes in the quality of local public good provision on chances of re-election of incumbent parties, I run the following regression

$$P(\text{Change}_{i,2011}) = \alpha + \beta Q_{i,2007-11} + \mathbf{X}_{i,2011} \delta + \epsilon_i,$$

where  $Q_{i,2007-11}$  corresponds to the ward-specific quality performance indicators mentioned above.  $\mathbf{X}_{i,2011}$  is a matrix of ward-specific control variables that is taken from the Census in 2011. The Census is conducted every ten years in the United Kingdom based on representative surveys in each ward which are conducted in March of the same year. It includes industry-related characteristics such as the share of workers active in the agricultural, manufacturing and public sector, labor market features, e.g. the share of part- and full-time employed workers, education and age-related information as well as details on the religious and ethnic traits. In total, I include a list of almost 100 ward-specific control variables in the regressions in order to account for possible ward specificities. I count as a 'Change' if at least one party loses its council seat and is replaced by another party as compared to the election outcome in 2007.

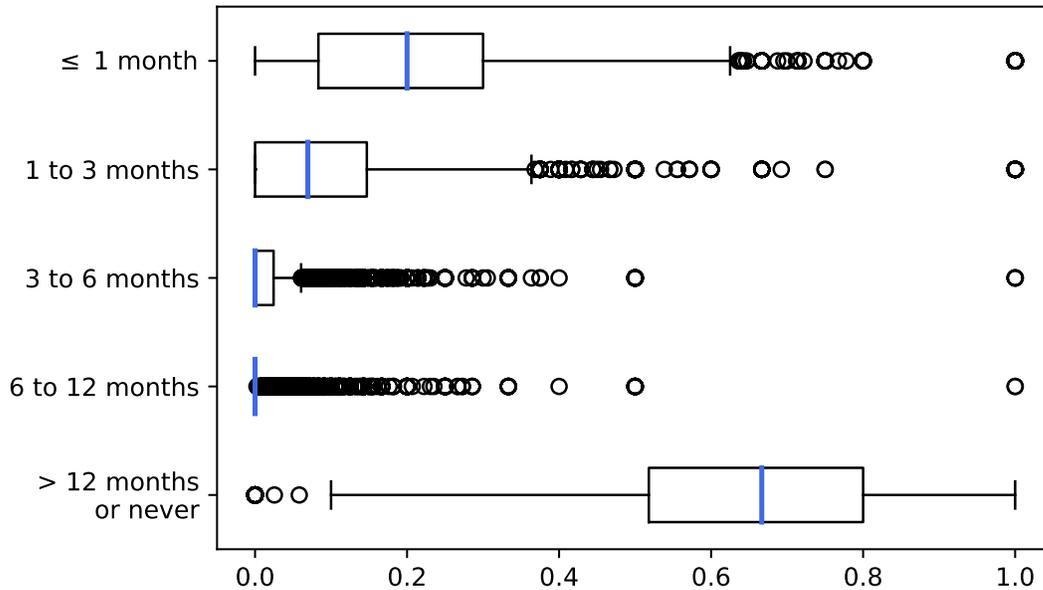
Figure 3: Geographic Distribution of Complaints between May 2007 and 2011



For the regression analysis, I work with those wards that had no elections between 2007 and 2011, i.e. those that work with elections ‘by thirds’ or ‘by halves’, and I restrict the analysis to those wards where the same councilors that were elected in 2007 are also running for election in 2011.

The corresponding regression results are displayed below in Table (1). Starting with the first row of the table, we see that an increase in the share of complaints that is solved within 30 days is accompanied with a decline in the probability that the incumbent party is voted out of office by up to almost eight percentage points. The result is slightly smaller in magnitude (but stronger with respect to its statistical significance) when controlling for additional characteristics of the ward. The results provide compelling evidence that voters strongly reward local politicians for high-quality and timely local services. On the contrary, when increasing the relative amount of complaints that remain unsolved for more than twelve months or never get fixed, the probability of losing a council seat is growing by around six percentage points with stronger statistical significance when including additional control variables. The results speak to a significant punishment effect for poorly working local administrations that are not capable of addressing complaints in a timely manner. There is no statistically visible effect for the other categories which is most likely due to the fact that there is hardly any variation across wards. The last two columns document the regression results when including all indicators, except for the worst category due to multicollinearity. The results suggest that the probability of re-election can be increased by

Figure 4: Quality Indicators at the Ward-Level: Fraction of Complaints solved in:



roughly eight percentage points when all complaints are fixed within 30 days as compared to the baseline case where no complaint is solved.

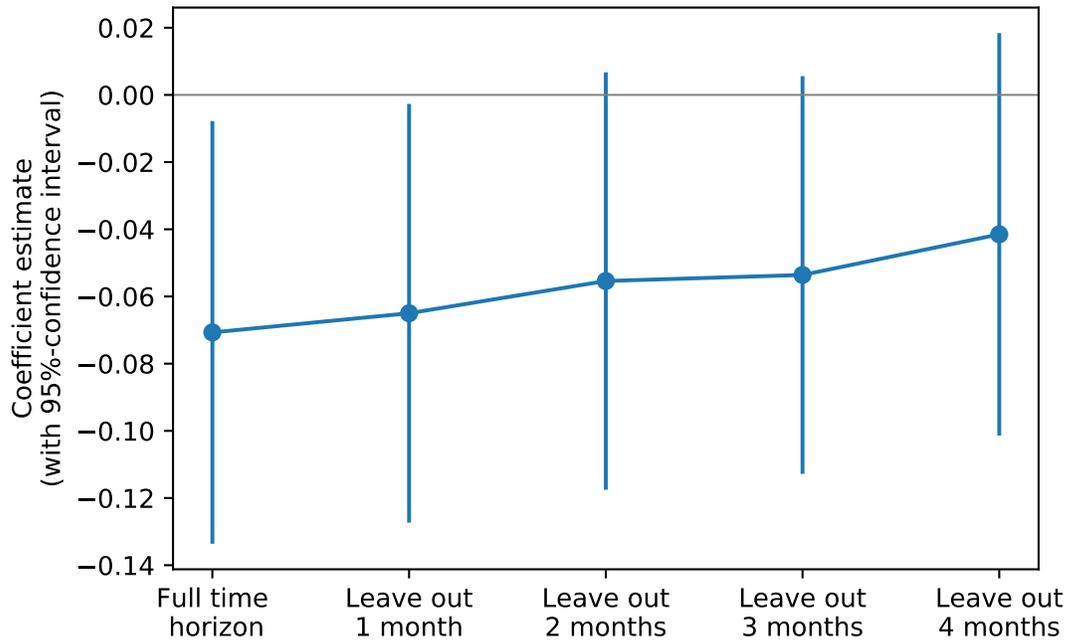
The setup also allows to assess the short-run memory of voters with respect to the quality of local public services. Figure (5) below displays the point estimate and the corresponding 95%-confidence bands for the  $\beta$ -coefficients in the baseline case and for quality indicators computed over a shorter time horizon but with an otherwise identical regression specification. More concretely, the quality measures do not take into account performances of one to four months directly before election day. As can be seen, the magnitude is shrinking in size as compared to the baseline case and turns statistically insignificant quickly when leaving out two months before the election takes place. The results suggest that the rewarding effect is strongest for the service performance right before the election while the performances longer ago are not statistically relevant – at least on average – for the voting behavior.

## 5. Conclusion

In this paper, I investigate the link between the quality of local public services and chances of incumbent parties to be re-elected. Finding a proper metric that captures regional differences with respect to the quality of public good provision is a challenging exercise and has been often answered with the level of regional government expenditures on local services – obviously neglecting its inherent weakness of being largely detached from the *perceived* quality that is visible to the voters. I use all 150,000 complaints that were posted between May 2007 and May 2011, the dates of major local elections in the UK, on the app-based platform FixMyStreet.com to compute indicators at a very granular geographical level to



Figure 5: Coefficient Estimates with Varying Distance to Election Day



obtain performance measures that are more tangible for the voter than aggregate spending figures as they are often used in the literature. The regression results provide compelling evidence that in wards with particularly positive quality indicators, i.e. a large fraction of quickly solved complaints, chances of incumbent parties to be re-elected in 2011 are by around seven percentage points higher than those with particularly poor performance measures. I also find evidence for voters' short-run memory as suggested by the fact that the service performance right before election day are driving the voting behavior to a substantial extent while performance measures longer ago are largely irrelevant.

The results provide interesting new insights into the link between public expenditures and voting behavior at the sub-national level. While previous studies, e.g. [Litschig and Morrison \(2012\)](#) and [Balaguer-Coll et al. \(2015\)](#), do not investigate the concrete channels that are driving voting behavior and incumbent parties' success, the results of this exercise add to the ongoing debate.

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