How High-Income Areas Receive More Service From Municipal Government: Evidence From City Administrative Data*

James J. Feigenbaum†
Department of Economics
Princeton University and Boston University

Andrew B. Hall‡
Department of Political Science
Stanford University

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Abstract

Do economic inequalities translate into political inequalities, and if so, how? Combining data on over 500,000 requests for services from the 24-Hour Constituent Service Hotline in Boston, Massachusetts with fine-grained census data on income, we show that higher-income census tracts request and receive more services from the city's government than do lower-income census tracts located in the same neighborhood. To ensure that these results are not driven by differences in the service needs of higher- vs. lower-income areas, we first estimate them using only requests for snow removal, because snowfall affects the entire city. We report that a 10% increase in the per-capita income of a census tract predicts roughly a 3% increase in the number of requests for snow removal ($p < 10^{-5}$). We then show that higher-income areas are more likely to place requests using the city's smartphone app, and patterns in the timing of requests suggest, as expected, that the smartphone app is more convenient than the alternative methods for placing requests available to those who do not own smartphones. Higher-income citizens are thus advantaged in the non-electoral components of local politics because it is easier for them to participate.

*Authors are listed in alphabetical order and contributed equally. For comments and suggestions the authors thank Justin Grimmer, Melissa Sands, Brandon Stewart, and Jessica Trounstine.

†James J. Feigenbaum is a Post-Doc in the Department of Economics at Princeton University. In 2017, he will be an Assistant Professor in the Department of Economics at Boston University.

‡Corresponding Author. Andrew B. Hall is an Assistant Professor in the Department of Political Science at Stanford University (andrewbenjaminhall@gmail.com, http://www.andrewbenjaminhall.com).

1 Introduction

More than 50% of the world's population,[1] and more than 80% of the United States' population,[2] now reside in cities, yet we still have much to learn about the political workings of city governments. Given the sharp rise in income inequality in the U.S. and globally (Piketty 2014), and the apparent links between economic and political inequalities in the national political process (Gilens 2005, 2012; Gilens and Page 2014), it is especially important now to revisit age-old questions about the economics and politics of our cities. To ask a question first posed in Dahl's seminal study of New Haven, Connecticut, "How does a 'democratic' system work amid inequality of resources?" (Dahl 1961).

We are newly able to answer questions of this sort thanks to the recent explosion in the availability of quantitative data about U.S. cities. Taking advantage of this development, we combine administrative data on over 500,000 constituent requests for a variety of municipal services—like snow removal, tree removal, graffiti removal, and pothole repairs—with fine-grained census data on incomes for the city of Boston, Massachusetts. We follow Dahl (1961: 3) in using this new data to answer basic questions about municipal politics, such as: "To what extent do various citizens use their political resources? Are there important differences that in turn result in differences in influence?" We find that higher-income areas devote more effort to requesting government services—such as snow plowing, pothole repairs, and traffic light repairs—and, as a result, receive more service from local government.

Our answer to these basic questions is thus somewhat different from Dahl's. Though city politics may be more pluralistic in other ways, when it comes to the provision of basic city services, it is the wealthy who participate in the process, and gain from it, at a greater rate. Why is this so? After presenting our main results, we examine one important mechanism. For a variety of reasons, it is simply easier for higher-income individuals to use the requesting process. In particular, we show that requests that come from higher-income census tracts are more likely to be filed via the city's smartphone app, while requests from lower-income census tracts are more likely to be placed by telephone. We also document that non-smartphone requests are heavily

[1] `http://www.un.org/en/development/desa/news/population/world-urbanization-prospects-2014.html`, Accessed 20 July 2015.

[2] `http://www.reuters.com/article/2012/03/26/usa-cities-population-idUSL2E8EQ5AJ20120326`, Accessed 20 July 2015.

clustered during working hours on weekdays—when it is perhaps easier for individuals to place phone calls—while smartphone app requests are more evenly distributed across weekdays and weekends. This timing pattern strongly suggests that the smartphone app makes requesting easier and more convenient, as we might expect. Because smartphones are expensive,[3] higher-income areas have disproportionate access to easier means of lodging requests. This result helps explain the inequalities we document and suggests that, while the introduction of new technologies for fielding constituent complaints is an overall boon to the transparency of local government, it can exacerbate inequalities in participation when the underlying technology is costly for citizens to obtain.

In general, statistical associations between income and service requests are uninformative because the underlying need for services may vary across individuals and space in ways the researcher cannot observe. Suppose we find that one part of a city tends to have residents with higher incomes and also originates more requests for tree removals, relative to other parts of the city. Is this because higher-income residents are more proactive in requesting tree removals, or could it be that higher-income people simply live in places with more trees, and thus have more need to request tree removals? Biases like these confound simple comparisons. We attack this problem in two ways. First, we make all of our comparisons *within-neighborhood*, comparing census tracts located within the same neighborhood but differing in their income levels. This removes any bias from underlying service needs that vary across neighborhoods but not within neighborhoods and, because neighborhoods are relatively small, makes the resulting comparisons more trustworthy. Second, going further, we perform our primary analysis only on requests for snow removal. Unlike many other services, the need for snow removal is relatively constant across places within a snowy city, which makes Boston the ideal context for our study (Levine and Gershenson 2014; O'Brien, Sampson, and Winship 2013). Across a wide variety of request types, we continue to find a robust association between the per-capita income of census tracts and the frequency of service requests, just as we do for snow removal requests.

[3] A recent Pew survey estimates that 84% of Americans earning $75,000 or more own a smartphone while only 50% of those earning less than $30,000 do (`http://www.pewinternet.org/files/2015/03/PI_Smartphones_0401151.pdf`). The survey also reports that the lower-income individuals of own smartphones are more "smartphone dependent"—meaning it is their only main access to the internet—than higher-income owners. As such, even for lower-income smartphone owners, filing requests may remain difficult since their phone use will often be tied to other more pressing purposes.

The remainder of the paper is organized as follows. In the next section, we situate our study in the literatures on local politics and economic and political inequality, and we lay out the implications of our analyses. Following that, we describe the datasets we use to answer these questions empirically. Next, we explain our empirical approach and describe why it is helpful in removing unobserved variables that could confound the relationship between income and service request. Subsequently, we present our results, showing that higher-income areas request more services and that smartphone use is an important mechanism that helps explain the findings. Finally, we conclude.

2 Local Politics and Economic Inequality: An Overview

The study of municipal politics has a long tradition in the social sciences both because of the central role the city plays in the lives of so many Americans, and also because of the general lessons about the nature of democratic society that the scrutiny of cities can reveal. Reviewing the local politics literature, for example, Jessica Trounstine writes: "Knowing how benefits are distributed and who wins and who loses in American politics requires understanding the functioning of local representative democracy" (Trounstine 2010).[4]

Perhaps no single study exemplifies this goal more than Dahl (1961), who explores local politics in New Haven, Connecticut, but, in doing so, illuminates broader themes about representative democracy. Dahl explores how political resources are distributed across New Haven society, highlighting the ways in which these resources are *non-accumulating*, i.e., not distributed in the same manner as economic resources. As a result, he concludes that local democratic politics can be surprisingly pluralistic. Though the wealthy possess many economic resources that the less wealthy do not, Dahl argues that other sources of political power, like popularity, produce a complex political system in which the wealthy—at least in historical New Haven—do not possess undue political influence.

[4]Recent work takes up this goal and applies modern empirical techniques to municipal politics, though this burgeoning literature mainly on the exclusively electoral links between city dwellers and their representatives (Tausanovitch and Warshaw 2013, 2014; Ferreira and Gyourko 2009; Gerber and Hopkins 2011; Gamm and Kousser 2013; Hajnal and Trounstine 2005). Several studies also investigate disparate aspects of the non-electoral arena in municipal politics, examining, for example, the share of community security and education that is provided by private entities (Trounstine N.d.), the role that economic constraints and political and institutional factors play in determining how cities allocate their funds (Hajnal and Trounstine 2010) or the provision of public goods across cities with different characteristics (Rugh and Trounstine 2011). We offer a different angle, focusing instead on how citizens request and receive local services. In so doing, we aim to understand the links between economic and political inequality.

There are good reasons to revisit the fundamental questions that Dahl poses, given the economic and political changes that have taken place between the writing of his book and the present day. Income inequality in the U.S. has risen sharply since the publication of *Who Governs?* (e.g., Piketty 2014), meaning that the economic resources that Dahl studies are distributed more unevenly than in previous eras. If this inequality affects political inequalities, then its effects will be larger today than at the time that Dahl was writing.

Indeed, studying a modern context, we find evidence that economic and political resources—at least in the sphere of local government services—*are* cumulative, with those earning more money also wielding more political influence simply because they are better able to participate in the local political process. Though focused on local service requests, our findings suggest deeper links between economic and political inequality, too. Many other important political activities beyond requesting services require similar amounts of time, effort, and information. It is likely that wealthier individuals and places create similar political advantages by engaging in other such activities at a disproportionate rate as well.

The results also speak directly to the literature on civic engagement. Previous research, for example, reports that "Citizen activists tend to be drawn disproportionately from more advantaged groups" (Verba, Schlozman, and Brady 1995). One type of activist, as the authors explain, is a person who contacts local government with particularized requests.[5] We confirm that more advantaged groups place more requests for services, and we highlight the consequences that this behavior has at the local level.

Finally, because our analyses establish a clear link between the income of city areas and their propensity to request services from local government, they build on work that documents apparent political inequalities that result from economic inequalities at the national level (Gilens 2005, 2012), too. In local politics, as in national politics, the political system appears to place disproportionate attention on the needs and requests of those with greater economic resources. This link exists not just in the ideological arena—like in the roll-call votes that the aforementioned papers investigate—but in the non-ideological arena, too, as we show.

[5] For other work on contacting local officials, see also Butler and Broockman (2011) and White, Nathan, and Faller (2014).

We are far from the first to exploit municipal services data to study political questions. Minkoff (2015) studies New York City request data, examining which of a number of important demographic and political variables predict the filing of requests and offering a general theoretical framework for thinking about the request of services. Though not focused on income levels, the article does report only a small association between census-tract median income and the frequency of requests, in contrast to the results we will present below. We suspect there are two reasons for this difference. First, of course, the contexts in which we estimate these associations differ. Second, unlike the main variables that Minkoff (2015) focuses on, the income of census tracts may be especially tied to the underlying, unobserved service needs the tracts have. Not observing these needs may produce a downward bias if higher-income areas have a higher propensity to file requests but a lower underlying need for services. In studies of Boston request data, both Levine and Gershenson (2014) and O'Brien, Sampson, and Winship (2013) outline the snow-based control strategy which forms one of the two empirical approaches we employ in this paper to circumvent problems of this kind. In establishing that demographic characteristics map to service request behavior, the article also highlights why accounting for these variables is important for our study. Also studying Boston, O'Brien (2015) provides a number of interesting analyses concerning the ways that citizens interact with the request system, showing that they tend to report hyper-local issues and do not specialize by issue type. Finally, Christensen and Ejdemyr (2015) studies San Francisco request data and shows how electoral incentives can induce representatives to become more responsive to service requests. Although we do not study response times in this paper—focusing instead on non-electoral participation—this latter study thus suggests fruitful areas for follow-up research.

3 Data on Constituent Requests and Income

The analysis draws on three main datasets. Data on service requests to the Mayor's 24-hour hotline comes directly from the city of Boston, which makes these and other datasets available at `https://data.cityofboston.gov/`. This dataset covers the years 2011–2015. Citizens are able to make requests via the phone, a mobile app, the city website, or in person. In addition, city employees can add requests directly. Typically we include these worker-generated requests because they likely come from constituents (e.g., citizens who call a particular department instead of the

24-hour hotline). However, we also re-estimate the results without the worker-generated requests to make sure they are not driving the results; see Table A.2.

All requests are categorized according to type by the city. Table A.1 lists the universe of request types. As the table shows, there are several categories of snow services. For the purposes of the snow-only analyses in the paper, we include all categories that use the word "snow."

For every request, we are able to observe the time and date of complaint and of resolution, as well as the request type, the assigned department, and the source of the complaint (phone call, app, etc). Crucially for our purposes, we also observe the exact latitude and longitude location of the problem, enabling us to map complaints to census tracts and neighborhoods. We exclude two census tracts from our analyses: the tract containing city hall, which we suspect contains a large number of erroneous geo-locations, and the tract containing Logan airport, which has no population. These omissions do not drive the estimated results. For more geographical information, see Figure S.3 and following in the Supporting Information.

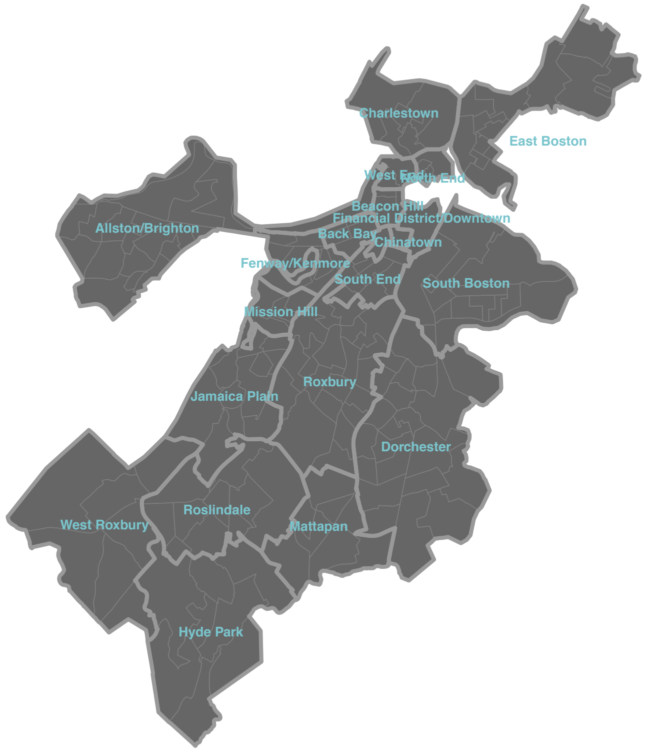
We merge the service request data with census tract demographic and economic data from the 2009-2013 American Community Survey (ACS). We use the 2013 TIGER/Line shapefiles to map census tracts and neighborhoods in Boston. We locate each request point, by latitude and longitude, within a census tract and a neighborhood layer. Both the ACS and shapefiles are available from NHGIS, `https://www.nhgis.org/`.

4 Empirical Approach: Within-Neighborhood Design

As discussed in the Introduction, the main empirical concern is that places that very in income may also vary in their underlying need to request services, confounding simple comparisons of request behavior and income. To circumvent this issue, we do two things. First, as in Levine and Gershenson (2014), we focus initially on requests for snow removal, because, unlike other service types, we know that all areas of Boston have relatively similar needs in this area since snowfall affects the whole city.[6] As Levine and Gershenson (2014: 614) writes, "Because snowstorms are

[6]In conversations with a Boston-area meteorologist, we have become aware that snowfall is not truly constant across the city; certain swaths of the city receive more snowfall than others. However, it is our impression that these areas are quite a bit larger, geographically, than the neighborhoods within which we estimate our effects.

Figure 1 – Broader Neighborhoods of Boston, As Defined by the City.



entirely exogenous to urban politics and neighborhood demographics, they generate equal levels of objective need across the city."[7]

Second, we also make all of our statistical comparisons *within neighborhood*, as well as within-time, using census tracts-by-month as our unit of analysis. Census tracts are small geographical units used for census-taking purposes. In our data, a tract has an average population of just over 4,000 individuals. These tracts are contained within larger city neighborhoods which are defined by the city; on average in our data, a Boston neighborhood contains just over 16 census tracts. Figure 1 shows these neighborhood definitions.

We only calculate the association between income levels and service requests by comparing the incomes and requests of census tracts that are both located within the same neighborhood. This further helps us remove confounding from unobserved underlying service needs, since these census tracts are likely to be similar in many respects, especially since the divisions of census tracts

[7]Similarly, O'Brien, Sampson, and Winship (2013: 9) explains: "When it snows, it typically snows throughout the city, and, controlling for certain infrastructural characteristics (e.g., the total road length, dead ends), all neighborhoods should have a roughly equal need for snow plows." We do not directly control for road characteristics but the neighborhood fixed effects likely absorb much of this variation.

are arbitrary and driven by the statistical needs of the Census Bureau rather than political or socioeconomic considerations.

Formally, we estimate equations of the form

$$\log \mathit{Num\ Requests}_{ijst} = \beta_1 \log \mathit{Income}_{it} + \beta_2 \mathit{GINI}_{it} + \gamma_j + \delta_t + \sum_{z=2011}^{2015} 1\{Year = z\} + \boldsymbol{X}_{it}\boldsymbol{\eta} + \epsilon_{ijst},$$

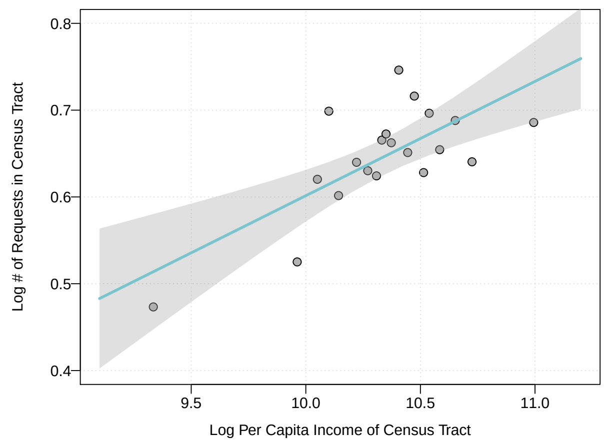
where the outcome variable $\log \mathit{Num\ Requests}_{ijst}$ measures the logged number of service requests of type s placed during month t in census tract i located in neighborhood j. The main explanatory variable of interest is $\log \mathit{Income}_{it}$, which measures the logged per-capita income in census tract i in month t. Thus, β_1 represents the main quantity of interest, the estimated association between per-capita income and request behavior across census tracts. We control for neighborhood fixed effects (γ_j), month fixed effects (δ_t), year fixed effects (the summation term), and an optional vector of additional control variables measured at the census tract and month level ($\boldsymbol{X}_{it}$). When included, this vector contains the following variables: GINI; log census tract population; a set of share variables to indicate the racial composition of the tract as measured in the Census; and population density of the census tract.

5 Higher-Income Areas Request More Service

5.1 Main Analysis

First, we compute the per-capita income and the number of service requests submitted in each census tract in the city of Boston, and we use this to make our within-neighborhood comparisons. Figure 2 presents binned averages of log income and log total requests by census tract, covering the full time period of our data, where both variables are residualized using neighborhood fixed effects as well as month and year fixed effects—thus ensuring that the comparisons are only made using income and requests as measured within the same month and year and among census tracts within the same neighborhood. As the plot shows, there is a noticeable, positive relationship between the per-capita income of census tracts and the number of requests made.

Figure 2 – Relationship Between Income and Service Requests at the Census-Tract Level, Boston, 2011-2015. Higher-income census tracts tend to request more services from local government. Points are averages in equal-sample-sized bins of census tract log income. Data residualized by neighborhood, month, and year fixed effects. Each point represents roughly 25,000 raw data points.



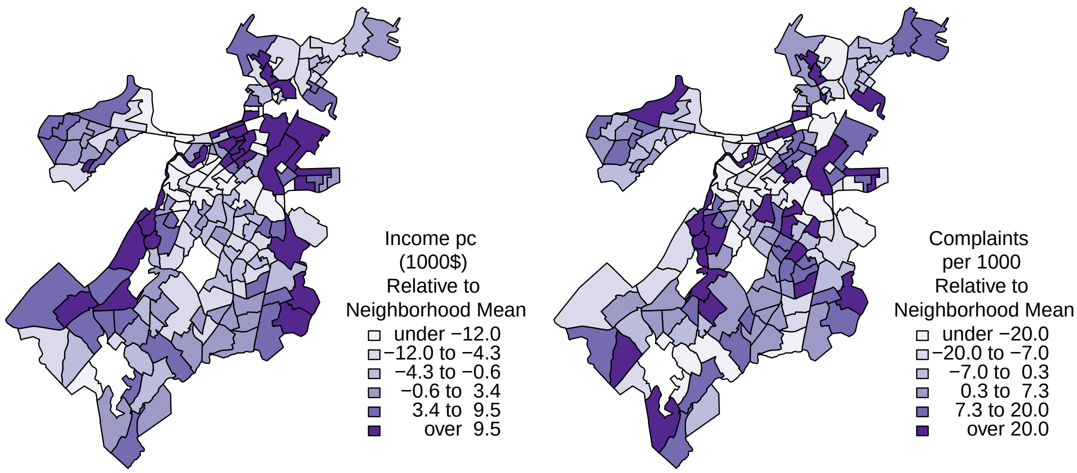
Next, Figure 3 presents the overall geographical correlation between census-tract per-capita income and requests. Darker colored areas are census tracts where the per-capita income is higher above the neighborhood's average, in the left panel, and where the number of complaints are higher above the neighborhood's average, in the right panel.

Table 1 presents the formal regression results. The first column shows the simple results considering only snow-removal requests and including neighborhood, month, and year fixed effects, but no additional control variables. As the first row shows, a one percent increase in per-capita income at the census-tract level predicts roughly a 0.3 percent increase in the number of snow-removal requests ($p < 10^{-5}$). Because of the neighborhood fixed effects, we can think of this estimate as a within-neighborhood estimate. So, for example, for two census tracts both located within the neighborhood of Back Bay, we would expect those where the per-capita income is higher to make more snow-removal requests—even though underlying snow conditions are likely to be very similar across the whole of Back Bay.

In the second column, we replicate the snow-removal analysis but with the addition of the following control variables: GINI (a measure of income inequality within each census tract); log census tract population; a set of share variables to indicate the racial composition of the tract as

Figure 3 – Income and Snow-Removal Requests Per Capita by Census Tract, Boston.

(a) Income per Capita, 2013 ACS **(b)** Snow-removal requests per capita in 2015



measured in the Census; and population density of the census tract. The addition of these controls has little impact on the main quantity of interest, as shown in the first row of the second column.

The latter two columns replicate these same specifications but using all request types. This alternate approach has advantages and disadvantages. By bringing in more request types, the results are obviously more general as well as more powerful from a statistical perspective. On the other hand, by including request types where the underlying need surely varies more by area—graffiti clean-up, for example, does not occur evenly across tracts even within neighborhoods—the associations we measure here may be less informative. As we see in the third and fourth columns, we continue to find a strong and positive association between census-tract income and the number of requests.

Table 1 – Association Between Income, Income Inequality, and Requests for Service at the Census Tract Level. Wealthier census tracts file more requests, both for snow removal and across all included request types.

	DV: Log Number of Requests			
	Snow Removal		All Requests	
Log Income	0.32	0.21	0.14	0.12
	(0.06)	(0.08)	(0.02)	(0.02)
# Individual Obs				
# Census Tract-Month Obs	4,878	4,849	157,691	157,245
Controls	No	Yes	No	Yes
Neighborhood Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes

Standard errors clustered by census tract in parentheses. When included, controls are: GINI, log population, racial composition of tract, and population density.

5.2 Effects Across Service Types

Figure 4 decomposes overall estimates by service type. The figure plots the estimated coefficient on log income at the census-tract level where equation 1 is estimated repeatedly, restricting the sample in turn to each of the service request types listed in Table A.1. As we see, there is a positive association between census-tract per-capita income and requests for essentially all types of requests, with just a few categories displaying negative (but never statistically significant) coefficients, most likely due to sampling variability.

The association for snow removal requests is among the largest. We suspect that this evidence in favor of the snow-based design; our estimates for other request types are likely downward biased because higher-income areas have lower unobserved needs for those services (e.g., graffiti removal). Naturally, the opposite could also be true; the estimated association for snow-removal requests could instead be upward biased if, say, wealthier areas have greater needs for snow removal. We think this is less likely since snowfall affects all neighborhoods, and more importantly, all areas within a neighborhood, but we cannot rule it out completely. We should point out that, if anything, one might expect the snow results to be downward biased by road quality, too. If higher-income areas have better roads, and thus a lower underlying need to request snow removal, then our estimate of the link between income and snow removal requests likely understates the full difference in the propensity for higher-income vs. lower-income areas to file requests.

5.3 Technology Disproportionately Helps Higher-Income Areas

We now turn to considering *why* higher-income areas submit more requests, even when underlying need is held constant. There are no doubt many explanations. Citizens in higher-income areas may be more educated, may have more information about local government—including even the simple fact of being aware that the request system exists—and may have more reason to believe that the government will heed their requests than do citizens in lower-income areas. While we cannot test for all of these mechanisms in our data, we can investigate one possibility: namely, that it is simply easier for people with more money to find the time and opportunity to file requests.

To test this idea, we first investigate the means by which each complaint in the dataset is submitted. We calculate the proportion of requests within each census tract that were submitted

Figure 4 – Estimated Association Between Census-Tract Per-Capita Income and Requests for Services Across Service Types, Boston, 2011-2015. The independent and dependent variables are both logged, so resulting coefficients can be interpreted as percentage effects. Higher-income areas request all services except traffic signal repairs at higher rates; this relationship is especially pronounced for snow removal.

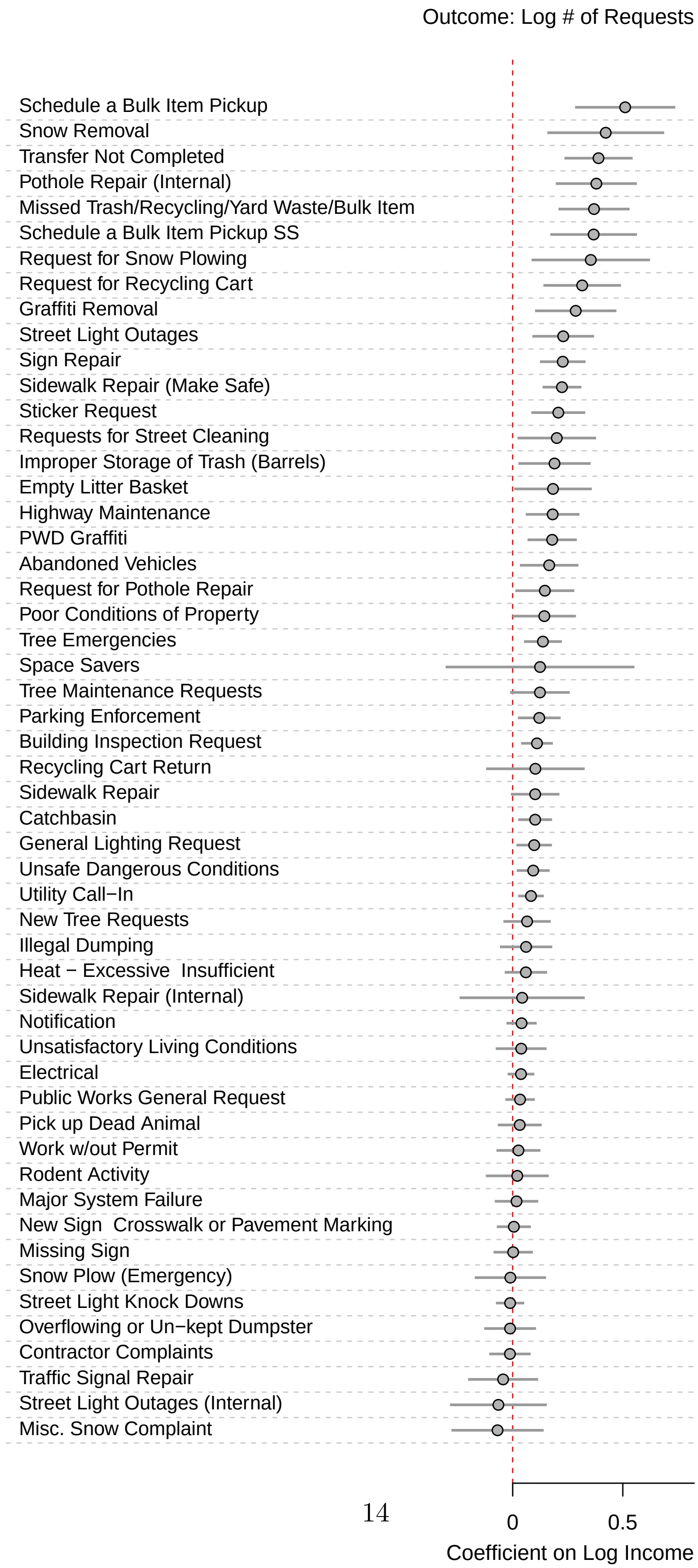
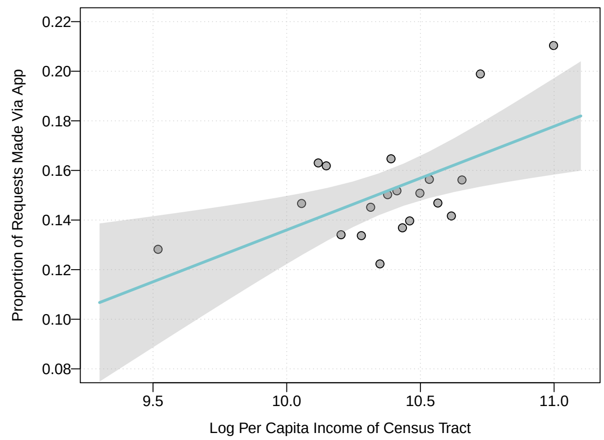


Figure 5 – Estimated association between census-tract per-capita income and the proportion of requests made via the smartphone app. Higher-income areas are more likely to use the smartphone app to submit requests. Points are averages in equal-sample-sized bins of census tract log income. Data residualized by neighborhood, month, and year fixed effects. Each point represents roughly 25,000 raw data points.

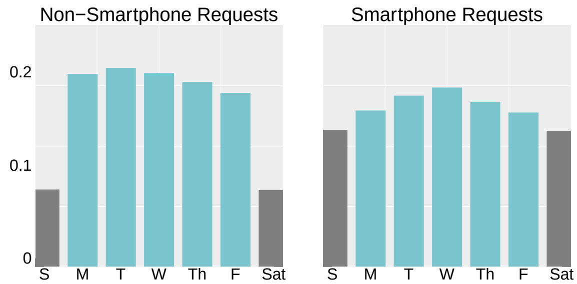


via the city's smartphone app, and we repeat the simple analysis from above with this new outcome variable. As Figure 5 shows, higher-income census tracts are more likely than lower-income ones to submit requests via smartphone.

This relationship is important because, as discussed in the Introduction, smartphones are expensive, and ownership patterns vary strongly with income. Higher-income individuals are more likely to own smartphones, and thus more likely to have access to the city's smartphone app, which allows citizens to submit requests on-the-fly. There is good reason to suspect this makes filing requests easier. Although both the app and the hotline phone are available 24 hours a day, 7 days a week, calling requires effort and planning in ways the app does not.

We test for evidence that users find the smartphone app more convenient by investigating the timing patterns of smartphone requests vs. non-smartphone requests. Figure 6 shows the frequency of requests across days of the week for non-smartphone requests (left panel) and smartphone requests (right panel). Non-smartphone requests, which are largely personal phone calls to the city's office, are clustered on the work days. Smartphone requests, in contrast, are almost evenly distributed across all seven days of the week, with Saturday and Sunday requests much more frequent that they are for non-smartphone requests. We confirm this same difference in patterns when we look at the times of day when requests are made, too, in Figures S.2 and S.3. Using the smartphone

Figure 6 – Frequency of requests across days of the week. Requests made through means other than the smartphone app (mainly phone calls) are much more common on weekdays; requests made through the smartphone app are nearly constant across the entire 7-day week.



app is much more convenient, allowing individuals to submit requests at any time without having to place a call to an office.

We also investigate the times of day at which citizens place requests. Figures 7 and 8 present these time distributions by month for all requests made through all non-smartphone channels (first figure) and all requests made by smartphone (second figure). The hours 9:00am–5:00pm (9:00–17:00) are highlighted in each panel. As we see in the first plot, regular requests (those not made via the smartphone app) peak during normal business hours.

In the second figure, on the other hand, we see that business hours are barely prioritized over other hours by smartphone users. Like the days of the week analysis in the body of the paper, this suggests the convenience that the app offers. Smartphone users do not need to worry about whether they can reach a person or find a time when they can place a phone call. Because higher-income individuals are more likely to own smartphones, they are more likely to enjoy this convenience, thus helping to explain why higher-income areas submit more requests in general.

Figure 7 – Frequency of requests across the hours of the day, by month; all non-smartphone requests. Most requests are submitted during daytime working hours. The month of February shows the most requests, largely driven by the massive February snowfall of 2015.

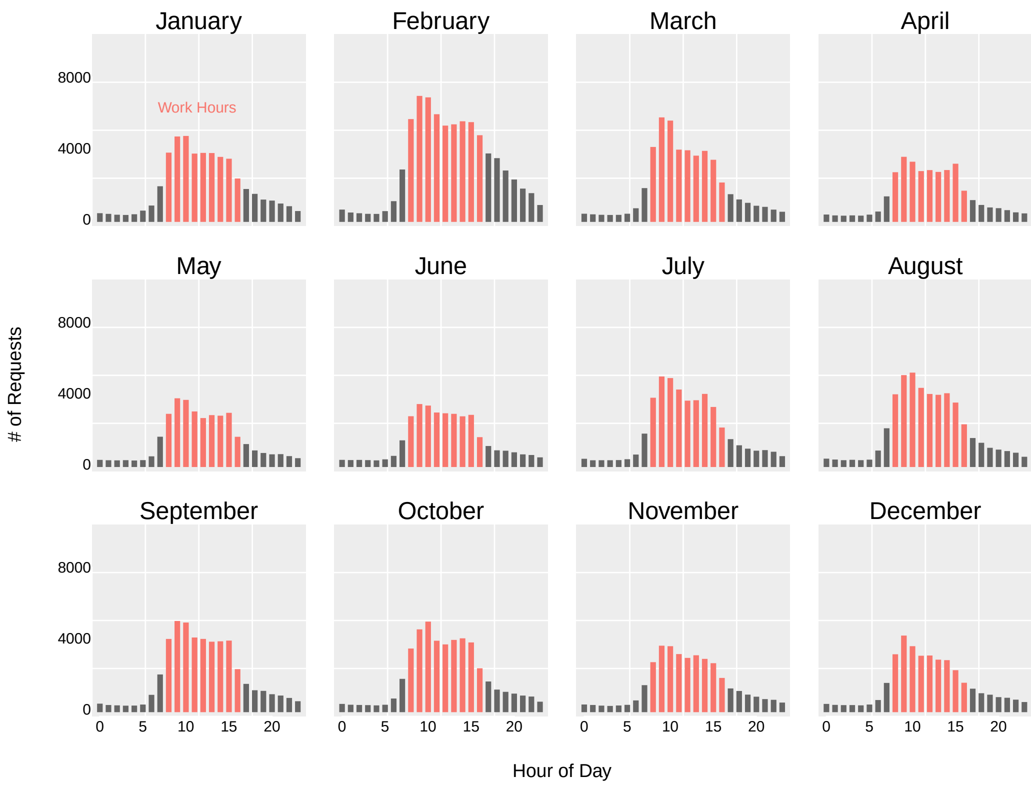
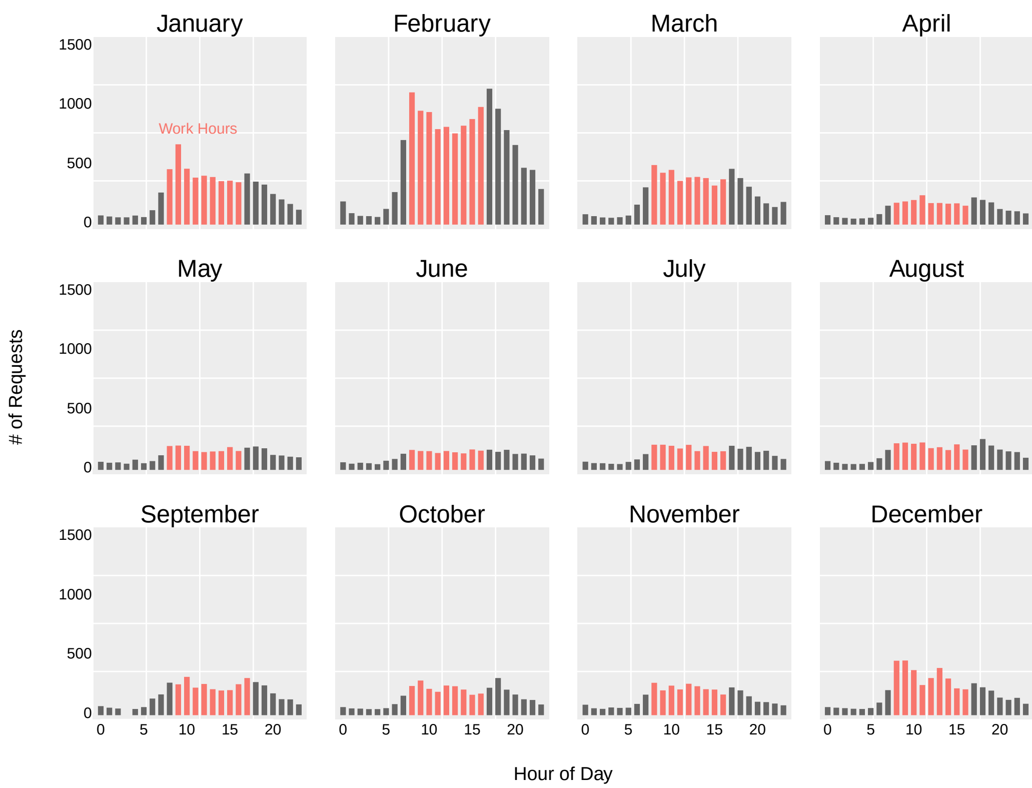


Figure 8 – Frequency of requests across the hours of the day, by month; smartphone requests only. Requests via smartphone display less difference between work/non-work hours. The month of February shows the most requests, largely driven by the massive February snowfall of 2015.



6 Discussion and Conclusion

In this paper, we have documented a link between economic resources and political resources. Controlling for underlying need by studying requests for snow removal, as well as by making comparisons only within neighborhoods of Boston, we have demonstrated that higher-income census tracts place more requests for service, and thus receive more service, than do lower-income tracts.

Why does this inequality exist, and what could be done about it? While we certainly do not have a full answer, we have offered evidence for one explanation. It is easier—more convenient, less time-consuming, and requiring less effort—for higher-income individuals to request services from local government. In particular, higher-income areas are more likely than lower-income areas to use smartphones to request services, probably because smartphones are expensive and therefore more prevalent among wealthier people. Usage timing patterns suggest, as one might expect, that this smartphone app in turns makes submitting requests easier and more convenient, thereby advantaging those who own smartphones. The rolling out of other request channels that cater to lower-income areas might be one way to address this inequality.

More generally, new efforts may be necessary in order to persuade individuals in lower-income areas to file requests. A lack of faith in the government's willingness to respond to their requests and/or a lack of information about even the possibility of submitting these requests are likely to be important reasons why these areas submit fewer of them. Future work should investigate important questions like these.

Local government is arguably the most important layer of government in Americans' daily lives. Like any democracy, our municipal governments draw much of their power from, and partially deploy their resources in response to, citizen activity. When this activity is uneven across economic strata, it is likely that the government's response will also be uneven. In our case, studying the city of Boston, it is clear that those of greater economic means participate more in the non-electoral components of local government, asking for and receiving more service from their city's government than do those of lesser financial means.

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A.1 Online Appendix

In total, we observe 202 distinct service request types, as categorized by the city of Boston. Table A.1 lists those request types for which we observe at least 1,000 distinct requests in the data. Some request types are similar and could be combined; to depict the raw data we leave these categories separate here. In the analyses on snowfall, however, we combine all types that contain the word "snow."

Table A.1 – Service Request Types and Frequencies. All request types with at least 1,000 appearances in the data are displayed.

Type	Total
Schedule a Bulk Item Pickup	60,414
Request for Snow Plowing	47,079
Requests for Street Cleaning	32,383
Pothole Repair (Internal)	29,731
Missed Trash/Recycling/Yard Waste/Bulk Item	28,614
Street Light Outages	24,823
Request for Pothole Repair	23,620
Snow Removal	20,281
Sidewalk Repair (Make Safe)	12,406
Graffiti Removal	12,334
Request for Recycling Cart	11,896
Schedule a Bulk Item Pickup SS	11,575
Improper Storage of Trash (Barrels)	11,501
Tree Maintenance Requests	10,491
Traffic Signal Repair	10,329
Unsatisfactory Living Conditions	9,263
Sticker Request	7,837
Pick up Dead Animal	7,231
Rodent Activity	6,851
Abandoned Vehicles	6,687
Sign Repair	6,528
Poor Conditions of Property	6,035
Tree Emergencies	5,055
Highway Maintenance	4,844
Parking Enforcement	4,632
Sidewalk Repair	4,358
New Tree Requests	4,100
Illegal Dumping	4,073
New Sign Crosswalk or Pavement Marking	3,649
General Lighting Request	3,558
Building Inspection Request	3,485
Empty Litter Basket	3,425
Notification	3,413
Recycling Cart Return	2,999
PWD Graffiti	2,988
Transfer Not Completed	2,899
Sidewalk Repair (Internal)	2,710
Street Light Outages (Internal)	2,491
Utility Call-In	2,447
Major System Failure	2,436
Work w/out Permit	2,302
Heat - Excessive Insufficient	2,276
Unsafe Dangerous Conditions	2,227
Street Light Knock Downs	2,184
Missing Sign	2,139
Contractor Complaints	1,744
Public Works General Request	1,674
Space Savers	1,526
Request for Snow Plowing (Emergency Responder)	1,415
Misc. Snow Complaint	1,364
Catchbasin	1,213
Electrical	1,193
Overflowing or Un-kept Dumpster	1,095

A.2 Removing Worker Submitted Requests

As discussed in the Materials section, our main analyses include all requests submitted from all sources. Some requests are filed directly by city employees. We have good reason to suspect most of these requests still originate from citizens; on its own website, for example, the city of Boston refers to these categories as "direct department contacts" (`http://www.cityofboston.gov/mayor/24/requests.asp`, Accessed 22 July 2015). Nevertheless, we want to be sure these alternate sources do not drive our results. Accordingly, Table A.2 re-estimates the main results using only the following two city-identified sources: "Citizens Connect App" and "Constituent Call." As the table shows, the results are nearly identical to those reported in the paper.

Table A.2 – Association Between Income, Income Inequality, and Requests for Service at the Census Tract Level; Removing Worker-Reported Requests. Wealthier census tracts file more requests, both for snow removal and across all included request types.

	DV: Log Number of Requests			
	Snow Removal		All Requests	
Log Income	0.34	0.24	0.11	0.09
	(0.06)	(0.08)	(0.02)	(0.02)
# Individual Obs	58,496	58,496	311,098	311,098
# Census Tract-Month Obs	4,625	4,599	121,706	121,405
Controls	No	Yes	No	Yes
Neighborhood Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes

Standard errors clustered by census tract in parentheses. When included, controls are: GINI, log population, racial composition of tract, and population density.