Supplementary Information

A Semi-Structured Interview and Ethical Statement

In this study, we conduct an in-person semi-structured interview with two bureaucrats from the 12345 hotline centre. The research receives approval from exemption review (ID: 2000033480, IRB-FY2023-6816) from the authors' home institutions. Prior to the interview, we provide clear and comprehensive information on the research and how data will be collected, used, and saved. Each participant will read and sign the consent form before the interview.

Each interview involved 30 minutes. It is comprised of several prepared questions. We take all necessary measures to minimize any potential harm to participants. There were no known risks associated with participants because (1) we would not reveal any confidential information, and (2) we did not ask any subjective questions. All questions are related to administrative procedures, data information, policy implementation and performance evaluation criteria. The specific information we get is mentioned in the main text.

For the data processing, the decision to include only apartment complex-level data was made precisely to avoid the potential risks associated with sharing more detailed information. By aggregating the data at the apartment complex level, we effectively removed the possibility of identifying individual callers. This allowed us to analyze trends and patterns without compromising the privacy of the individuals involved. All personal identifiers, including phone numbers and precise addresses, were stripped from the dataset during our reprocessing stage, long before any analysis took place. Access to the data will be restricted to three authors.

We obtained the data through legal channels and in compliance with all relevant regulations and ethical guidelines. The raw data was handled only by a small, carefully trained team, following strict protocols to ensure confidentiality. Once the data was anonymous and aggregated, it was then used for our research.

B Formal Model of the Unequal Responsiveness

We develop a model to analyze how two survival logic in the authoritarian regime distort the government responsiveness. The model setup is stated as follows. In the municipal, $k \geq 2$ citizens suffer disutility $\overline{S}$ and ask for the service from the government. Their complaints (e.g., noise, environment, education) are assigned to a department, where B is a street-level bureaucrat. B decides how much effort or resource r_i to use to address the petition. There is also a political leader (P) who is the direct principal of the bureaucrat; P could be the district mayor or party secretary in the context we study. The political leader P supervises bureaucrat B.

Because of the limited resources and complex administration, it takes a few days $t > 0$ for bureaucrats to resolve a petition. As in Ting (2021), waiting time t reflects the governance service

quality. Therefore, if citizens use the petition system, the utility of citizens is discounted depending on the efficiency (government quality) t. We assume common discount factor $\delta \in (0,1)$. Thus, the utility function of citizen i who receives resource r_i can be represented by $u_i = s(r_i)\delta^t$. Increasing and concave function $s(r_i)$ measures citizens' satisfaction after receiving r_i. According to the follow-up survey and interview [13], satisfaction is also related to the bureaucrat's performance evaluation. Therefore, $s(r_i)$ is also a part of $B's$ utility.

Instead of using the public service system, citizens have two alternative means to fulfill their demand. First, they can use private resources $y \in [0,1]$. We use parameter $\theta \in [0,1]$ to gauge citizen's ability, including social networks, the knowledge of policies and laws, etc. Specifically, θ represents the marginal effect of y. It is natural to think that citizens incur additional cost ηy for B when using alternative channels (filing lawsuits or directly complaining to connected leaders). For example, bureaucrats have to spend additional effort to address the lawsuit. We use $\eta > 0$ to denote the marginal cost. In extreme cases, citizens can also choose a costly form of petition–protest–that is often responded to by authoritarian governments because it is the primary threat to autocratic rules (Acemoglu and Robinson, 2001).

For the model of municipal service, if citizens use the complaint system, they must decide to spend private resource ($A = 0$) or protest ($A = 1$) after receiving feedback from the bureaucrat. If $A = 0$, citizens should also decide how much y to use according to the increasing and convex cost function $c_0(y)$. They capture the remaining utility $\overline{S} - s(r_i)$, which is proportional to the resource y spent and is affected by θ. We assume $\overline{S} > s(\overline{r})$. If $y = 0$, citizens accept the current response; we let $c_0'(0) = 0$. If they protest $A = 1$, citizens capture all remaining utility with a sizable cost $c_1(\theta)$. Because protest itself is not our main focus, we suppress the uncertainty of success and strategic consideration of collective action into a single function $c_1(\theta)$. We let $c_1(\theta)$ increase in θ to reflect that the opportunity cost of high-capacity citizens is larger than that of their low-capacity peers. Thus, the complete utility function of citizen i is

$$u_i = s(r_i)\delta^t + \begin{cases} [(\overline{S} - s(r_i))\theta_i y - c_0(y_i)\delta^{-t'}]\delta^{t+t'} & \text{if } A_i = 0 \\ [(\overline{S} - s(r_i)) - c_1(\theta)\delta^{-t'}]\delta^{t+t'} & \text{if } A_i = 1 \end{cases} \tag{1}$$

where $t' \in [0, t)$ denotes the efficiency of private resources. A key assumption is that the municipal service is less efficient $t < t'$. We multiply the cost by $\delta^{-t'}$ to indicate that citizens exert effort first and then receive feedback after t' days.

Political leader P receives fixed rent R if is not deposed and given concern about career advancement. Both depend on whether collective action occurs in the area. P can prevent such action by supervising whether bureaucrat B successfully addresses complaints from citizens. Specifically,

[13] See SI A

P decides whether to check ($D \in \{1, 0\}$) how B responds to citizen i with fixed cost c_P for each case. Political leaders can learn whether the demand is well responded to; if not, they can re-send the case to the department and order someone to reconsider the response, a pattern mentioned by the bureaucrat we interviewed. In the model, we assume P observes the effort r_i if they check the case. It is possible for P to learn r_i by carefully tracking the entire process of municipal services. Therefore, the utility function for P can be represented by

$$u_P = RI_{[\sum_{i=1}^{k} A_i=0]} - \sum_{i=1}^{k} c_P D_i \tag{2}$$

where $I_{[\sum_{i=1}^{k} A_i=0]}$ is an indicator function that equals 1 if the condition $\sum_{i=1}^{k} A_i = 0$ is true. $I_{[\sum_{i=1}^{k} A_i=0]} = 1$ if and only if no single citizen protests. D_i is a binary decision variable for the politician for complaint case i. For simplicity, we assume that the rent is sufficiently high to maintain the supervising mechanism: $R \geq kc_p$.

Bureaucrat B has different career concerns that are evaluated primarily based on completion of their administrative work, as confirmed by our interview. It is natural to assume the cost of exerting effort is an increasing and convex function $c_B(r)$. Since no standard procedures guide how bureaucrats allocate effort, numerous biases can arise when bureaucrats have discretion in allocating effort and resources (Lipsky, 1980). Their utility function if $A_i = 0$ is stated as follows:[14]

$$u_B = \sum_{i=1}^{k} s(r_i) - c_B(r_i) - \eta y_i \tag{3}$$

If $A_i = 1$, a bureaucrat has probability q of being removed from the government and afford cost $\Delta > 0$.

The timing is as follows:

1. Nature draws θ_i from the distribution F_θ; the distribution F_θ is common knowledge.

2. Bureaucrat B allocates resource r_i to each citizen i and reports to P.

3. Political leader P decides whether to check case i. If $D_i = 0$, the case is ended; if $D_i = 1$, the case is re-sent to other bureaucrats.

4. Each citizen i decides action A_i. If $A_i = 1$, the citizen also decides the value of y_i.

Notably, citizens make decisions only after they call 12345 and receive feedback. It is likely that there always exists a small group of citizens with high capacity (θ) who find that the public service system is not efficient enough. Because the public complaint system serves all citizen and takes time t to respond, citizens who have extremely higher θ may find that it is dominated to use

[14] Since in the model t is exogenous, the discount factor will not affect the bureaucrat's incentive. Therefore, we do not add it to the utility function. A more complicated model can let t be a decision variable, though we think our model captures the main intuition.

the public system; instead, they can bypass this stage and directly use private resources to obtain the service, which takes only $t' < t$ days.

Proposition B.1. *In the call-based municipal service, there exists $\overline{\theta} > 0$ such that citizens whose $\theta > \overline{\theta}$ is dominant to bypass the public service and use the private approach. Moreover, as t' decreases (public service becomes more efficient), the cut-off $\overline{\theta}$ decreases.*

Proof. Suppose citizen i with θ bypass the 12345 hotline and directly use a private approach; the utility is

$$u_i = [\overline{S}\theta y - c_0(y)]\delta^{t'}$$

The optimal resource y_1 satisfies $c_0'(y_1) = \overline{S}\theta$. Similarly, if citizen i with θ use 12345 and possibly private approach later, the utility function is

$$u_i = s(r_i)\delta^t + [(\overline{S} - s(r_i))\theta y - c_0(y)\delta^{-t'}]\delta^{t+t'}$$

The optimal choice y_2 satisfies $c_0'(y^*) = (\overline{S} - s(r_i))\theta_i\delta^{t'}$ given r chosen by B.

Now let us find $\overline{\theta}$ such that $u_i(y_1) \geq u_i(y_2|r_i)$. Simple algebra shows

$$\theta[\overline{S}y_1 - (\overline{S} - s(r_i))y_2\delta^t] \geq s(r_i)\delta^{t-t'} + c_0(y_1) - c_0(y_2)\delta^{t-t'}$$

Note that since c_I is increasing and $[\overline{S} - s(r)] \leq \overline{S}$ by assumption, we get $y_1 \geq y_2$. Then it is easy to see both sides are positive.

Thus, define $\overline{\theta}$ as $\frac{s(r_i)\delta^{t-t'} + c_0(y_1) - c_0(y_2)\delta^{t-t'}}{\overline{S}y_1 + (\overline{S} - s(r_i))y_2\delta^t}$ and set $r_i = \overline{r}$ to maximize formula (note y_2 is also a function of r_i), we prove the first part of the proposition B.1. The comparative statics is straightforward.

□

Also, in the data, we cannot observe the missing callers with the extremely high θ. Therefore, it is without loss of generality to assume people use private resources only after they receive feedback from bureaucrats. Suppose θ is public information. Political leader P hopes to design the best supervising strategy that can both prevent protests and minimize the supervision cost. In the last stage, collective action is not a credible threat if and only if the net benefit from private approach y^* exceeds that from protesting:

$$\begin{aligned}(\overline{S} - s(r_i^*))\theta_i y_i^* - c_0(y_i^*)\delta^{-t'} &\geq (\overline{S} - s(r_i)) - c_1\delta^{-t'} \\ s(r_i^*) &\geq \overline{S} - \frac{[c_1(\theta) - c_0(y_i^*(\theta_i, r_i^*))]\delta^{-t'}}{1 - \theta_i y_i^*(\theta_i, r_i^*)}\end{aligned} \tag{4}$$

The above inequality shows the lower bound on effort r_i for bureaucrat B assigned to case i for protest prevention in equilibrium. Intuitively, protest cost c_1 decreases the lower bound. Based on the bureaucrat's action, it is optimal for political leader P to check only cases with a lower θ. We conclude it in the following perfect information equilibrium:

Proposition B.2. *Suppose θ is public information. There exists the pure-strategy subgame perfect equilibrium that citizens do not protest on the equilibrium path. Moreover, it has the following two properties:*

(1) The optimal recourse/effort r_i^* assigned by bureaucrat B is increasing in θ_i: $\frac{\partial r_i^*}{\partial \theta_i} > 0$

(2) There exists a $\tilde{\theta}$ that politician P checks and re-assigns cases $D_i = 1$, where $\theta_i < \tilde{\theta}$.

Proof. For our complete and perfect information game, the pure-strategy subgame perfect equilibrium exists by backward induction and well-behaved citizens' utility function. We focus on the equilibrium that citizens do not protest if the net benefit from $A = 1$ equals the optimal net benefit from $A = 0$.

In equilibrium, politician chooses $D_i = 1$ if the equation 4 does not satisfies. Because we assume $R \geq kc_P$, the politician is always beneficial to do so. Now, since $A_i = 0 \ \forall i$, given r_i, citizen i maximizes utility function and finds y_i^* that balances benefit and cost:

$$c_0'(y^*) = (\overline{S} - s(r_i))\theta_i \delta^{t'}$$

We can see $\frac{y^*}{\partial \theta} > 0$. The optimal y^* is also a function of r_i, which needs to be determined. It is determined by the optimization problem for B,

$$\sum_{i=1}^{K} [s(r_i) - c_B(r_i) - \eta y_i(r_i, \theta_i)]$$

The optimal solution r_i is only a function of θ_i. For each i, we can easily calculate the optimal choice $r_i^*(\theta)$. Tedious algebra shows the comparative statics that $\frac{\partial r^*}{\partial \theta} = \frac{-\eta \frac{s'(r)\delta^{t'}}{c_0''(y)}}{s''(r) - c_B''(r) + \eta \frac{s''(r)\theta\delta^{t'}}{c_0''(y)}} > 0$. This proves statement (1).

For statement (2), we need further study equation 4 in the main text:

$$s(r_i^*) \geq \overline{S} - \frac{[c_1(\theta_i) - c_0(y_i^*(\theta_i, r_i^*))]\delta^{-t'}}{1 - \theta_i y_i^*(\theta_i, r_i^*)} \tag{5}$$

The LHS is increasing in θ; and we know $RHS = \overline{S} \geq s(r_i^*)$ if $\theta = 0$. Then $\tilde{\theta}$ can be determined by the intersection of RHS and LHS. The value of $\tilde{\theta}$ and whether $\tilde{\theta}$ is unique depend on how RHS changes with θ: (1) If RHS is monotonically decreasing in θ, we can expect one

unique $\tilde{\theta} \in [0,1]$ or $\tilde{\theta} = 1$ if there is no intersection; (2) if RHS is not monotonic, then $\tilde{\theta}$ may have multiple values. Because we do not assume specific function form, it is hard to determine how $\frac{[c_1(\theta)-c_0(y_i^*(\theta_i,r_i^*))]\delta^{-t'}}{1-\theta_i y_i^*(\theta_i,r_i^*)}$ behaves. The difficulty lies in $\frac{\partial y^*(\theta,r^*)}{\partial \theta}$ can be negative or positive. In the equilibrium of our interest, we assume $c_1'(\theta)$ is large enough so that $\frac{[c_1(\theta)-c_0(y_i^*(\theta_i,r_i^*))]\delta^{-t'}}{1-\theta_i y_i^*(\theta_i,r_i^*)}$ is monotonically increasing. This assumption means that the opportunity cost for high capacity (large θ) is pretty high. Therefore, under the assumption, we can find $\tilde{\theta}$ from equation 5 and $\underline{r} = r^*(\underline{\theta})$. See a numerical example in the main text.

To summarise, in the above non-protest pure strategy sub-game perfect equilibrium,

(1) Politician P only check and re-assign cases $D_i = 1$ if $\theta_i < \tilde{\theta}$ and order bureaucrat B continue to invest effort;

(2) Bureaucrat B assign r_i^*;

(3) Citizens i does not protest if $r_i^* \geq \underline{r}$. □

Signaling through costless messages. In the real world, θ is not observed. The first available method for residents is to send a costless message when they complain through the public service system. In our call-based municipal service system, however, rational citizens with lower θ can tell a lie to imitate citizens with higher θ. The main reason is that communication through phone calls is costless and unverifiable: anyone can threaten to take legal action or announce that they have a personal tie with higher officials.

We add a simple cheap talk phase before the basic call-based municipal service model. By revelation principle, we assume the message space is exactly the space of θ, i.e. $M = \Theta$ [15]. The strategy of citizen i is a mapping $m_i : \Theta \to \triangle\Theta$. The bureaucrat, after observing message profile $\times_{i=1}^{k}\Theta$, assigns a vector of resource $(r_1, ..., r_k)$ to citizens. As standard in the literature, we focus on the Perfect Bayesian Equilibrium. As shown in the proof, however, our result is satisfactory for any further refined solution concepts. We use $\beta(\theta_i|m)$ to denote bureaucrat's updated (equilibrium) belief of i's type based on (equilibrium) message strategy and observed signals.

Proposition B.3. *In the call-based municipal service with pregame cheap talk, all equilibria are noninformative.*

Proof. First to note, in the optimization problem for B,

$$\sum_{i=1}^{K} \mathbb{E}_{\beta_i}[\alpha w_i - c_B(r_i) - \eta y_i(r_i, \theta_i)]$$

the optimal solution r_i is only a function of θ_i (β denotes the distribution of θ under updated belief). And the type θ_i of sender i is independent of others. Therefore, in equilibrium, $\beta(\theta_i|m) =$

[15] To avoid technical difficulty which does not add any intuition, WLOG, we assume Θ is finite here.

$\beta(\theta_i|m_i)$.

The key logic depends on citizens' similar preference on r for all types θ. To be specific, their utility is all increasing in r. To see this, from $c_I'(y_2) = [\overline{S} - s(r)]\theta$, we get $\frac{\partial y_2}{\partial r} = -\frac{\theta s'(r)}{c''(y)} < 0$. Then it is easy to see $\frac{\partial u_i}{\partial r} > 0$.

WLOG, by Proposition B.1, we assume $\Theta \in [0, \overline{\theta}]$ and in equilibrium all $\theta \in \Theta$ is used.

Because $\beta(\theta_i|m) = \beta(\theta_i|m_i)$, let us focus on one sender i. Now, suppose there is a PBE that senders use strategy $(m_1(\theta), ..., m_k(\theta))$ where, sender i, $\exists j, k \in \Theta$ such that $m_i(\theta_j) \neq m_i(\theta_k)$. This means that for sender i, when i's type is θ_j, the message strategy is different from the message if i's type is θ_k.

Since $m_i(\theta_j) \neq m_i(\theta_k)$, with probability measure one, $\beta(\theta_i|m_i(\theta_j)) \neq \beta(\theta_i|m_i(\theta_k))$ and so $\mathbb{E}r_i(\theta_j) \neq \mathbb{E}r_i(\theta_k)$. Then, because $\frac{\partial u_i}{\partial r} > 0$, sender i has incentive to deviate. □

Therefore, there is no Nash equilibrium in which citizens truthfully reveal θ with pure communication.

Unequal Responsiveness to Wealth Status. Since citizens with low θ always have an incentive to report a higher type, the politician P and bureaucrats B must rely on other information to effectively learn their types.[16] In China's urban context, we argue that θ is highly related to wealth status, and we use housing price p to approximate wealth.[17].

The key assumption of the separating signal can be easily constructed. For example, consider a simple Pre-game decision problem: As housing is the largest individual investment for most people (Ansell, 2019), the housing price p reflects the overall conditions that we are concerned including location, safety, transportation, education, community life and et al. Thus, the benefit of certain property $b(p)$ is an increasing and convex function of price. Although everyone hopes to have a good house, the huge cost $c(p, \theta)$ drives individuals with different types θ to make different decisions. Suppose we only consider two types $\theta_L < \theta_H$. Following the literature, we assume the single crossing condition $c_p(p, \theta_L) > c_p(p, \theta_H)$, i.e. the marginal cost of housing price for lower type θ_L is higher than θ_H. Then, it is straightforward to see the optimal choice p for type θ_L is lower than θ_H.

Therefore, we assume, for each case, that bureaucrat B and political leader P observe a noisy signal of θ_i, the housing price$p = \pi(\theta) + \epsilon$, where $\epsilon \sim N(0, \sigma^2)$, [18] and $\pi : [0, 1] \to \mathbb{R}^+$ is a known affine and increasing function.

Proposition B.4. *In the call-based municipal service with noisy signal, the non-protest pure-strategy subgame perfect equilibrium has the following properties:*

[16]The established scholarship shows several meaningful signals that convey information. For example, people use verbal signals (like accents) to discriminate against immigrants (Wolfson and Manes, 1985; Kayaalp, 2016).

[17]See more discussions on θ, wealth, and housing prices in the background section.

[18]Precisely, because housing price $p \geq 0$, we can view $p = \pi(\theta) + \epsilon$ as a latent variable; the realized housing price $p' = 0$ if $p < 0$.

(1) Allocated resource r_i^* from bureaucrat B is increasing in the housing price p : $\frac{\partial r_i^*}{\partial p_i} > 0$.

(2) There exist a housing price $\tilde{p}$ for which the politician re-sends cases $D_i = 1$ such that housing price $p_i < \tilde{p}$.

Proof. We maintain all assumptions in the proof of B.2. Similar to the equilibrium in Proposition B.2 In the last stage, citizens do not protest if $r_i^* \geq \underline{r}$. Statement (1) follows straightforwardly.

For statement (2), suppose linear function $\pi(\theta)$ has the form $\pi(\theta) = a\theta + b$. Then, when B and P observe signal p, they believe $\theta \sim N(\hat{p}, \hat{\sigma}^2)$ where $\hat{p} = \frac{p-a}{k}$ and $\hat{\sigma} = \frac{\sigma}{k}$. We use Φ to denote the cumulative distribution function of the standard normal distribution. Then the optimal response of bureaucrat B becomes the expected value: $r^* = \int r(\theta) d\Phi(\frac{\theta-\hat{p}}{\hat{\sigma}})$.

For the optimal strategy for politician P, we still need to explore the equation 5:

$$s(r_i) \geq \overline{S} - \frac{[c_1(\theta) - c_0(y_i^*(r^*, \theta_i))]\delta^{-t'}}{1 - \theta_i y_i^*(r^*, \theta_i)}$$

We realize that, given p, any $\theta \in [0, 1]$ is possible under distribution $\theta \sim N(\hat{p}, \hat{\sigma}^2)$. Given optimal $r^* = \int r(\theta) d\Phi(\frac{\theta-\hat{p}}{\hat{\sigma}})$, the RHS of above equation is decreasing in θ under the assumptions in proof of B.2. Therefore, there is a θ' that citizens with $\theta_i < \theta'$ do not satisfy the equation, so they will protest. The probability that $\mathbb{P}[\theta < \theta']$ is exactly $\Phi(\frac{\theta'-\hat{p}}{\hat{\sigma}})$.

For each case i, $D_i = 1$ if and only if the utility is higher than $D_i = 0$:

$$R - c_P \geq \Phi(\frac{\theta' - \hat{p}}{\hat{\sigma}}) \times 0 + (1 - \Phi(\frac{\theta' - \hat{p}}{\hat{\sigma}})) \times R$$

that is $\Phi(\frac{\theta'-\hat{p}}{\hat{\sigma}}) \geq \frac{c_P}{R}$. Notice that the numerator $\theta' - \hat{p}$ is monotonically decreasing in p; thus we can find a $\tilde{p}$ that if $p \geq \tilde{p}$, then $\Phi(\frac{\theta'-\hat{p}}{\hat{\sigma}}) \leq \frac{c_P}{R}$. In equilibrium, Politician P only $D_i = 1$ if $p < \tilde{p}$. This proves the first part of the statement (2).

For the second part, we first to note that $\frac{c_P}{R} \leq \frac{1}{2}$, because $R \geq kc_p$ and $k \geq 2$. Therefore, given $\tilde{p}$, we expect $\theta' - \hat{p} \leq 0$. Then, for any $\sigma_1 \geq \sigma_2$, we have $\Phi(\frac{\theta'-\hat{p}}{\hat{\sigma_1}}) \geq \Phi(\frac{\theta'-\hat{p}}{\hat{\sigma_2}})$. Thus, to maintain the equation $\Phi(\frac{\theta'-\hat{p}}{\hat{\sigma}}) = \frac{c_P}{R}$, $\tilde{p_1} \geq \tilde{p_2}$.

□

The figure 2 in main text is generated under $\overline{S} = 2.8$,$c_0(y) = \frac{1}{2}y^2$, $s(r) = 2r$, $\delta^{t\prime} = 0.1$, $c_B(r) = \frac{9}{10}r^2$, $\eta = 1$, $c_1 = 2\theta^3$, π is the identity function, and we let $\epsilon = 0$ for simplicity. Overall, the model shows that the rich effectively differentiate themselves from the poor and distort bureaucrats' priorities.

C Examples of Resolution

1. **Actually resolved (shi ji jie jue)**: Resolution Definition: 市民反映的诉求合理、合法，已经得到完全解决The petitions of the citizens are reasonable and legal, and have been completely resolved.

Petition Case: 市民来电反映：上述地址为小区，小区内有一个会所，将装修垃圾堆放在26号门口，长期无人清理。诉求：希望管理部门尽快核实协调清理垃圾。（需回复）Citizens called to report: The above address is a residential community. There is a clubhouse within the community where building rubbish has been dumped at the 26 entrance and left there long-term without cleanup. Request: I hope the management department can verify and coordinate garbage cleanup as soon as possible. (Reply required)

Response: 已联系该处物业，目前已经清理干净。We have contacted the property management, and the building rubbish has been cleaned up now.

2. **Show explanation (jie shi shuo ming)**

Resolution Definition: 市民反映的诉求合理但不合法、不合理不合法或者当前不具备解决的条件，不属实或没有法律、政策依据，承办单位通过解释、说明的工作方法进行告知. The petitions raised by the citizens are reasonable but not legal, unreasonable and currently not feasible to solve, false or without legal and policy basis. The responsible unit informs with explanation and clarification.

Petition Case: 市民来电反映：XX区XXX路XXX弄X号楼每天6:00左右就进行大修房屋的施工，已经持续一个多月，长假期间也是这样施工，影响居民的正常休息和生活了。诉求：按照规定时间进行施工。（需回复）Citizens called to report: Building X, Lane X, XXXX Road, H District, conducts major repairs on houses at around 6:00 every day, which has been going Citizens called to report: Building 1, Lane 108, Beijing West Road, H District, conducts major repairs on houses at around 6:00 every day, which has been going on for more than a month. The same construction is carried out during the long holiday, affecting residents' normal rest and life. Appeal: Carry out construction according to the specified time. (Reply required)

Response: 接单后我局即联系施工单位。该处为房屋全项目大修项目，目前施工单位已调整施工时间，尽量减少扰民，同时加强了现场管理。After receiving the order, our bureau immediately contacted the construction unit. This is a major renovation project for the entire house, and the construction unit has adjusted the construction time to minimize disturbance and strengthen on-site management.

3.**Demand is too high (su qiu guo gao)**

Resolution Definition: 市民反映的诉求有悖社会公德、存在政策限制、明显不合理The petitions expressed by the citizens are contrary to social ethics, subject to policy restrictions, and clearly unreasonable.

Petition Case: 市民来电反映：其上述地址小区原来有三扇门，其中两扇为消防门。市民称其中一扇消防门被物业擅自砌称了墙。市民对此表示不认可。诉求：希望管理部门核实，对该处的消防门恢复原样。（需回复）Citizens called to report: In the above-mentioned address, there used to be three doors in the residential area, two of which were fire doors. The citizen claimed that one of the fire doors was illegally blocked by the property management. The citizen does not agree with this. Appeal: Hope the management department can verify and restore the fire door to its original state. (Reply required)

Response: 经向物业方面了解情况，物业表明该小区自竣工以来一直是两个出入口（含消防通道），不存在第三个消防通道。如诉求人对物业行为有异议可通过信访或司法途径进行申诉。According to the property management, since the completion of the community, there have always been two entrances (including fire exits), and there is no third fire exit. If the complainant has any objections to the behavior of the property management, they can file a complaint through letters or legal channels.

4.**Record it for reference and record (can kao bei an)** Resolution Definition: 指市民反映的诉求属于建议类的，可以留作参考备案The concerns reflected by the citizens belong to the suggestion category, they can be kept for reference and record.

Petition Case: 市民来电反映：其XXXX年X月XX日去上述地址的饭店吃饭然后饭店的地板上有油，摔了一跤，导致尾骨移位，医生表示要求不要上班，但是市民因此单位需求还是工作，但是尾骨是无法恢复的，现在一个多月了，和饭店协商表示不认可，不愿意协商。诉求：要求管理部门为其协调约谈补偿的问题。需回复。A citizen called to report: On XXXX year X month XX day, they went to the aforementioned address to dine at the restaurant. The restaurant's floor was oily, and they slipped and fell, resulting in a displaced tailbone. The doctor advised against working, but the citizen still had to work due to job demands. However, the tailbone cannot recover. Now, more than a month has passed, and the restaurant has refused to acknowledge or negotiate. Request: The citizen asks the management department to coordinate and discuss compensation. A response is needed.

Response: 我单位于XXXX年X月XX日接单，于X月XX日首次通过电话先行联系来电人，告知其问题已经收悉，正在我单位进行办理。X月XX日，由我单位南东所，对来电人所反映的情况进行核实。并通知该消费者把有关的身份证明、有关发票和医院的证据证明等有关复印件送致我所。XX月X号再了解具体情况后，我所就组织双方进行调解，因投诉方的要求和被诉方的理赔之间的相差太远，双方未能达成协议。我所决定终止调解。我所对投诉人就该问题进行了解释说明，现投诉人决定通过司法途径解决。我所现就将此案件参考备案。Our department accepted the order on September 28, 2016. On X month XX day, we first contacted the caller by phone to inform them that their issue had been received and was being processed by our department. On X month XX day, our Nandong office verified the situation reported by the caller. We then notified the consumer to provide copies of relevant identification,

related invoices, and hospital evidence to our office. On XX month X day, after understanding the specifics, our office organized mediation between the two parties. However, due to the significant difference between the complainant's demands and the defendant's compensation offer, the two sides could not reach an agreement. Our office decided to terminate the mediation. We explained the issue to the complainant, who has now decided to pursue a judicial solution. Our office will now file this case for reference.

D Does Government Responsiveness Enhance Satisfaction?

This sections verify the validity of our two response measures by showing their strong correlation with the quality of resolution. To measure such quality, we utilize the follow-up survey conducted by district-level government. In this survey, the government inquires about callers' satisfaction levels with the provided resolution. Despite participation in the survey being entirely voluntary, over 60% of callers provide feedback. We regress the caller's satisfaction evaluation on two outcome measures of government responsiveness: response time and resolution decision. This regression is controlled for petition type and year fixed effects. We have coded the satisfaction levels in an ordinal manner: satisfied (4), basically satisfied (3), okay (2), and unsatisfied (1).

Table A.1: Satisfaction Analysis

	Statisfaction					
	(1)	(2)	(3)	(4)	(5)	(6)
Positive Resolution	0.444***		0.411***	0.409***	0.299***	0.296***
	(0.020)		(0.020)	(0.020)	(0.049)	(0.049)
Resolution Time		−0.038***	−0.032***	−0.032***	−0.034***	−0.034***
		(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
Resolution Time*Positive Resolution					0.019**	0.019**
					(0.008)	(0.008)
Type FE	Y	Y	Y	Y	Y	Y
Year-month FE	Y	Y	Y	Y	Y	Y
Controls	N	N	N	Y	N	Y
N	26,228	26,226	26,226	26,226	26,226	26,226
Adjusted R^2	0.070	0.061	0.075	0.076	0.075	0.076

Table A.1 presents the results. As expected, the positive correlation between resolution time and satisfaction in Column 1 suggests that citizens are more content when the government agency resolves their concerns promptly. Furthermore, Column 2 displays a positive and significant correlation between satisfaction and a favorable response from the government. Columns 3 and 4

combine both resolution time and decision into a single model, and the estimates remain consistent with the earlier results in Columns 1 and 2. Lastly, Columns 5 and 6 factor in the interaction between resolution time and positive resolution, both with and without covariates. The full model with baseline covariates produces a significant estimate for the interaction term. In conclusion, the results underscore the significance of allocative duration. In general, citizens exhibit greater satisfaction with their cases when they undergo a shorter processing time.

E Settlements in Shanghai

The establishment of foreign settlements in Shanghai began after the Opium War. In 1842, the Qing empire signed the treaty of Nanking with Britain, permitting it to open five treaty ports. Shanghai was one of these treaty ports that allowed foreign merchants to reside, trade, and enjoy extraterritoriality and consular jurisdiction. Three years later, the British settlement was established in the south of Suzhou Creek and the west of Huangpu River, under the agreement of the Shanghai Land Regulation (1854). The British settlement merged with the American settlement in 1863, forming a new international settlement. In addition to the British and American settlements, the French Consul obtained a proclamation to establish a concession in 1849. The French Concession is in the south of the International Settlement and north of the old Shanghai city, where Chinese residents lived. While these settlements remained under Chinese sovereignty, the Consul-General of France and Shanghai Municipal Council were the administrative authority for the French Concession and the International Settlement, respectively, providing public services such as water, drainage, street light, and paved road. Compared to the old Chinese city (华界), the foreign settlements (French Concession and the international settlement) have better infrastructure, extraterritoriality, and a dense population of foreigners and wealthy Chinese.

F Figures and Tables

Table F.1: Freqency of Channels to the 12345 Hotline

	n	%	val%
Phone	42867.00	98.50	98.50
Website	440.00	1.00	1.00
Hotline initiated	164.00	0.40	0.40
No Information	36.00	0.10	0.10
Fax	11.00	0.00	0.00
Wechat	1.00	0.00	0.00

Table F.2: Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Resolution Time	43,517	6.83	3.09	5.00	15.00
Positive Resolution	43,519	0.18	0.38	0	1
Satisfaction	26,245	3.10	1.28	1	4
Female	43,519	0.38	0.48	0	1
Local	43,519	0.81	0.39	0	1
Foreign	43,519	0.004	0.07	0	1
Anonymous	43,519	0.26	0.44	0	1
Price	43,519	48,209.78	15,138.77	6,981	144,214
Municipal Two Sessions	43,519	0.07	0.26	0	1
National Two Sessions	43,519	0.06	0.24	0	1
Department Turnover	43,519	0.06	0.24	0	1

Table F.3: Ordinal Measure of Outcome Variables

	Resolution Time (Ordinal)			Positive Resolution (Ordinal)		
	OLS	IV	RF	OLS	IV	RF
	(1)	(2)	(3)	(4)	(5)	(6)
Price	-0.037^{**}			0.005		
	(0.015)			(0.013)		
Settlement			-0.063^{***}			0.013
			(0.012)			(0.010)
Price		-0.211^{***}			0.044	
		(0.050)			(0.036)	
Type FE	Y	Y	Y	Y	Y	Y
Year-month FE	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y
N	43,498	43,498	43,498	43,500	43,500	43,500
Adjusted R^2	0.036	0.027	0.039	0.087	0.086	0.087

Notes: Standard errors clustered at the apartment-complex level are reported in parentheses. FE denotes fixed effects. OLS, IV, RF denote ordinal least squared, instrument variable, and reduced form specifications respectively. To construct the ordinal measure of resolution time, we code green, yellow, orange, and red label cases as 1,2,3,4 respectively. We coding cases "actually resolved" as 3; "show explanation" as 2 and "demand is too high" as 1 as the ordinal measure of resolution decision. Controls are female, local, foreign, anonymous, local two sessions, national two sessions, and executive turnover.

Table F.4: Exclusion Restriction

	Female	Local	Foreign	foregin
	(1)	(2)	(3)	(4)
Settlement	0.011	0.017	−0.024	0.002
	(0.008)	(0.014)	(0.022)	(0.002)
Type FE	Y	Y	Y	Y
Year-month FE	Y	Y	Y	Y
N	43,500	43,500	43,500	43,500
Adjusted R^2	0.004	0.011	0.027	0.002

Notes: Standard errors clustered at the neighborhood level are reported in parentheses. FE denotes fixed effects.

Table F.5: Analysis Using Phone-call Only Sample

	Resolution Time			Positive Resolution		
	OLS	IV	RF	OLS	IV	RF
	(1)	(2)	(3)	(4)	(5)	(6)
Price	−0.233**			0.001		
	(0.093)			(0.010)		
Settlement			−0.377***			−0.006
			(0.070)			(0.007)
Price		−1.269***			−0.020	
		(0.295)			(0.025)	
Type FE	Y	Y	Y	Y	Y	Y
Year-month FE	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y
N	42,846	42,846	42,846	42,848	42,848	42,848
Adjusted R^2	0.038	0.027	0.041	0.063	0.063	0.063

Notes: Standard errors clustered at the apartment-complex level are reported in parentheses. FE denotes fixed effects. OLS, IV, and RF denote ordinal least squared, instrument variable, and reduced form specifications respectively. Controls are female, local, foreign, anonymous, local two sessions, national two sessions, and executive turnover.

Table F.6: Using Alternative Measure of Resolution

	Late Resolution (Binary)		Allocation Time		Precise Resolution Time Sep 18- Aug 19	
	OLS	IV	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)	(5)	(6)
Price	-0.034^{**}		-0.095^{**}		-27.144^{***}	
	(0.014)		(0.039)		(4.672)	
Price		-0.179^{***}		-0.352^{***}		-98.319^{***}
		(0.042)		(0.099)		(17.831)
Type FE	Y	Y	Y	Y	Y	Y
N	43,498	43,498	43,500	43,500	12,471	12,471
Adjusted R^2	0.037	0.027	0.020	0.018	0.043	0.007
Controls	Y	Y	Y	Y	Y	Y

Notes: Standard errors clustered at the apartment-complex level are reported in parentheses. FE denotes fixed effects. OLS, IV, denote ordinal least squared and instrument variable specifications respectively. Controls are female, local, foreign, anonymous, local two sessions, national two sessions, and executive turnover.

Table F.7: Spatial-adjusted Standard Errors

	Resolution Time	
	(1)	(2)
	OLS	IV
Price	-0.225***	-1.255***
	(0.080)	(0.215)
Observations	43,498	43,498
R-squared	0.009	-0.002
Type FE	Y	Y
Year-month FE	Y	Y
Controls	Y	Y

Notes: Standard errors clustered using Conely (1999)'s approach and is implemented using 'acreg' in Stata. The spatial cutoff is set to be 20 km. FE denotes fixed effects.

Table F.8: Summary Statistics of Verbal Signals

Statistic	N	Mean	St. Dev.	Min	Max
Legal	43,519	0.034	0.182	0	1
Collective Action	43,519	0.008	0.090	0	1
Upper Government	43,519	0.018	0.134	0	1
CCP Member	43,519	0.001	0.037	0	1

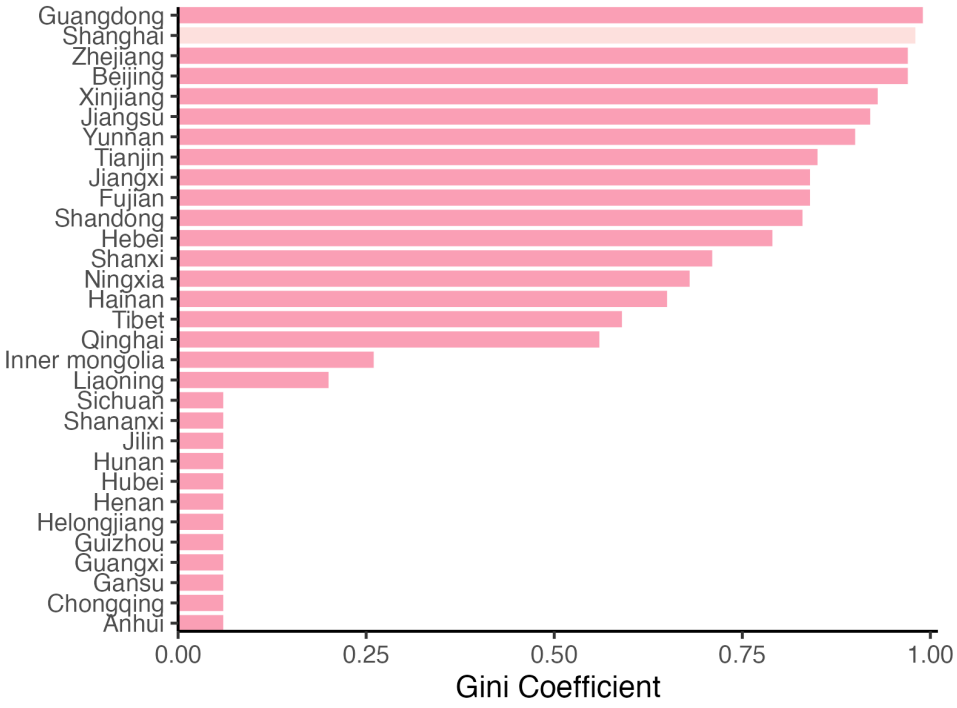
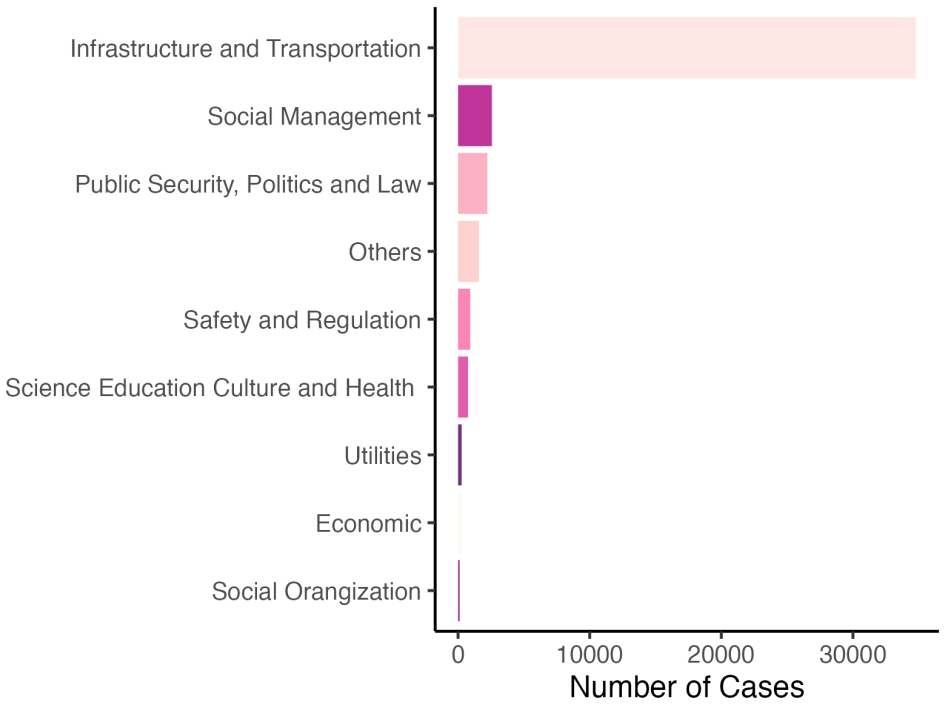


Figure F.1: PROVINCIAL-LEVEL GINI COEFFICIENT
Source: Bhattacharya, Prabir, Javier Palacio-Torralba, and Xinrong Li. "On Income Inequality within China's Provinces." Chinese Studies 7.02 (2018): 174.

Figure F.2: CASE TYPES



Source: H District 12345 hotline records.

Figure F.3: BANKUAI-LEVEL HOUSING PRICE TREND

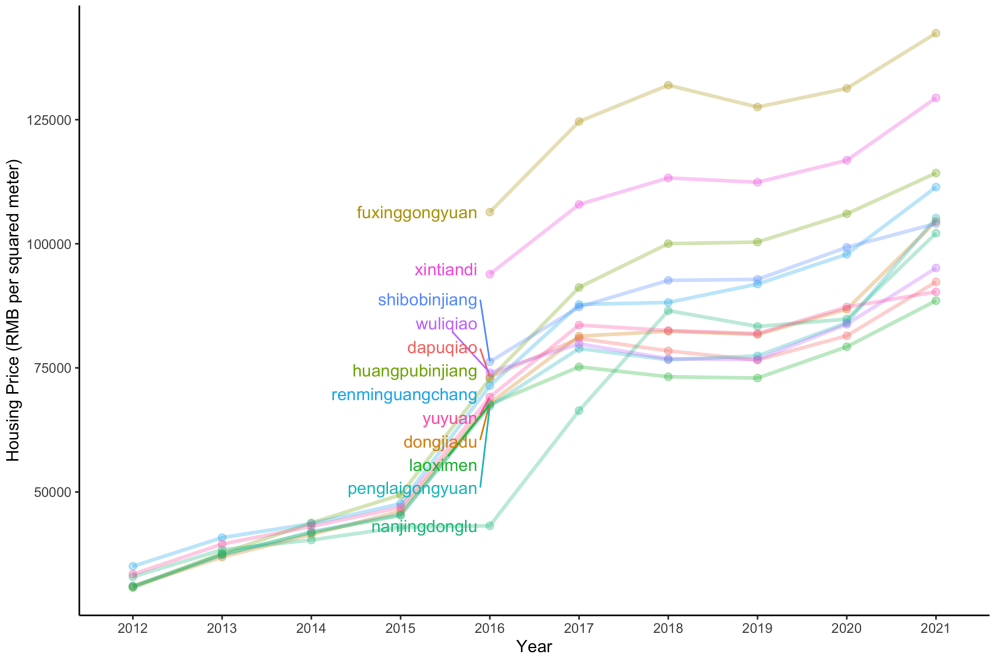
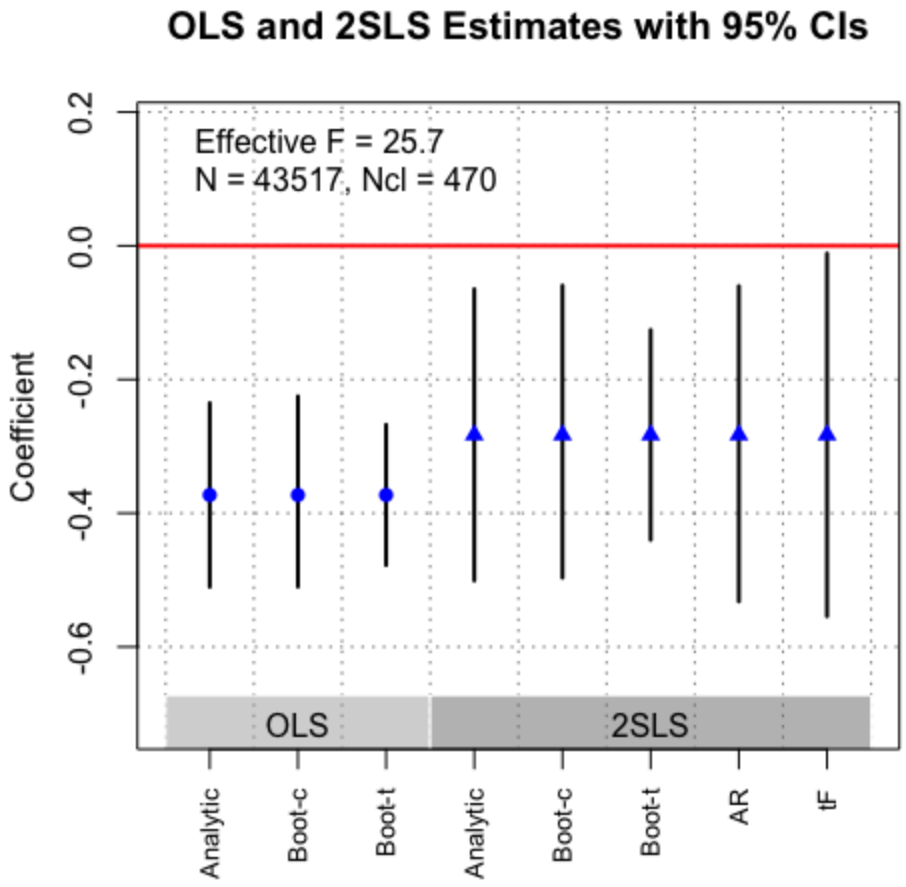


Figure F.4: ESTIMATION AND DIAGNOSTIC OF INSTRUMENTAL VARIABLES

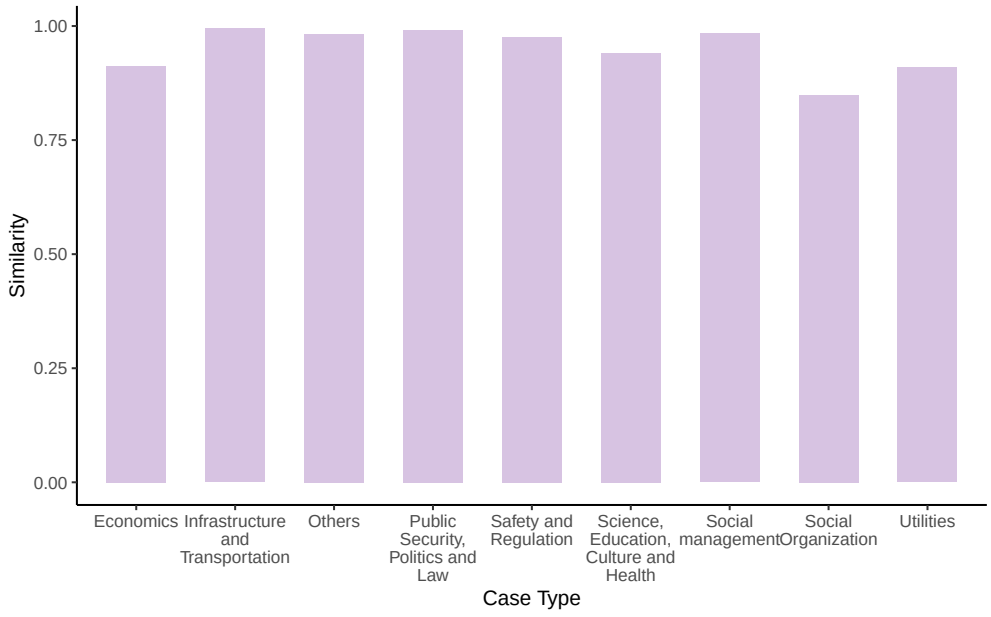


The estimation uses ivDiag package in R. The model specification here is the same as column (2) in table 2. The figure reports robust estimation of OLS and 2SLS under different robust adjustments, including bootstrapped confidence intervals, effective F-statistic, Anderson-Rubin test and valid-t ratio test. All point estimates are similar and significant at the level of 0.05.

G Text Similarity

We conduct a text analysis of all petition transcripts to measure text similarity between the rich and poor. In the main text, we define the rich and the poor according to whether their housing price is above or below the average price. Here, we further examine the petition similarity between the top and bottom 30%. We extract the petition description of cases submitted by callers Then, we compute the Cosine similarity, which measures the text similarity that ranges from 0 to 1 for each case type (Infrastructure and Transportation, Public Security, Politics and Law, Safety and Regulation, Others, Utilities, Social management, Science, Education, Culture and Health, Economics, Social Organization). The higher Cosine similarity means the more similarly the petition texts are. Figure G.1 shows the result of the text similarity analysis. Texts of petitions from the rich and the poor are pretty similar, with a Cosine similarity ranging from 0.85 to 0.99. The mode petition type, Infrastructure and Transportation, has the highest similarity (0.99). The evidence shows that petition texts of callers who are richest and poorest are not statistically different, suggesting they face homogeneous demand for public services.

Figure G.1: TEXT SIMILARITY



H Coding Rule of Verbal Signals

"...The new campus is located at the intersection of Road A and Road B. There is no sidewalk along the school. The school is shared with a nursing home. The

overall environment has a major hidden danger to the personal safety of grade one pupils.According to Article 16 of Chapter III "schools" of the compulsory education law of the people's Republic of China, it is clearly stipulated that the construction of a school shall comply with the school running standards stipulated by the state, and the construction shall ensure the safety of students and teaching staff..."

Keywords for Verbal Signals

Law: 法律,依法,规定
Party Membership Keyword: 党员
Upper-level Government: 上级,领导,市政府
Collective Actions: 上访,抗议,访民,信访