The Squeaky Wheel Gets the Grease: Testing Resources Inequalities in China's Pandemic Control

1 Motivation

How do authoritarian governments strategically allocate resources to co-opt different social groups? Authoritarian governments often distribute resources preferentially to certain civilian groups during crises such as natural disasters or economic downturns [1]. Despite this observed behavior, there remains a significant gap in understanding how governments adjust resource allocation strategies when the crisis is perceived as a result of their own policies or actions.

In our paper, we study this problem through an analysis of the preferential allocation of COVID-19 testing resources across different economic classes in N city, a large metropolis and economic powerhouse in southeast China, before and after the sudden outbreak of popular protests against the zero-COVID policy in October 2022. Since the pandemic's inception, the Chinese central government adopted what was likely the world's strictest and longest zero-COVID policy by imposing lockdowns, quarantining the sick, and implementing regular mass testing. Starting in April 2022[1], a mandatory PCR testing policy was enforced, requiring each citzen to get tested at designated government-operated testing booths conveniently located within a 15-minute walk from their residences. We collected a dataset that records real-time queueing time at over 7000 testing sites in N city from September to December 2022. Utilizing the geographical locations of these testing sites, we map them to N city's 4698 neighborhoods, categorized into the rich, the middle class, and the poor neighborhoods according to housing prices.

The quality of resource received by each neighborhood is measured by two dimensions: *accessibility*, which refers to the availability of testing sites within close proximity to each neighborhood, and *responsiveness*, which describes the efficiency with which the government addresses overcrowding at a neighborhood's nearby testing sites by increasing staff levels [2]. We compare testing resource accessibility across testing sites in the rich, the middle class, and the poor neighborhoods, as well as the government responsiveness to site crowdedness before

[1]The zero-COVID policy officially ended in January, 2023.

and after the shock of protests. In doing so, we aim to understand how public resources are shifted among different economic groups in the face of crises for which the government is blamed.

2 Data and Empirical Strategy

Our data is collected from a mobile app[2] from September 8 to December 8, 2022. Every 10 minutes from 8am to 10pm daily, we sent individual queries via API to access queueing status of every testing site located throughout the city. Each observation includes the following details: date and time of the record, site ID, site location, current queueing status, current staff level, operational hours, and population access specifics. Our dataset also combines rich data including N city's residential real estate and property data, daily COVID reports, and urban village data, etc., to create a unique and novel dataset.

Our data is an ideal dataset to test authoritarian government's resource allocation strategy towards different economic groups. From official statistics, N city is China's one of the most populous and economically developed cities and one of the largest immigrant cities with world's highest housing prices and high wealth inequality – while the average two-bedroom unit sells for over $900,000, a large share of the population live in crowded urban villages, low-income residence, and public rental houses.

Using this novel dataset of the queuing status, we conduct a spatial border analysis on adjunct neighborhoods that exhibit gaps in housing prices. Knowing that response to crowdedness happens only if a testing site is busy, we employ the Heckman selection model to correct bias from non-randomly generated samples. In our model, we first predict the probability that a testing site is busy, and then estimate its response time.

3 Main Results

Our findings reveal a *U-shape* relationship in the distribution of resource accessibility across neighborhoods: both the rich and the poor neighborhoods gain substantially greater access to testing facilities compared to the middle class. In addition, we examine the government's response time to address crowdedness at COVID testing sites. Our results show that while the government still acts at significantly faster speed on overcrowding at sites near rich neighborhoods, the resource leaning towards the poor, as observed in accessibility, disappears. However,

[2]The app was launched by the local government of N city, which allows users to access the app via WeChat and conveniently check the latest updates regarding queueing status at nearby testing sites before making a walk-in visit.

comparing government responsiveness before and after protests, we observe a remarkable improvement in the response time in poor neighborhoods after the outbreak of protests, with no significant change in middle class neighborhoods.

To conclude, prior to the protest, in which the pandemic was viewed as a greater threat than the government policy itself, the government offered *genuine* benefits to the rich (high accessibility and high responsiveness), *performative* benefits to the poor (high accessibility and low responsiveness), and the lowest level of resources to the middle class (low accessibility and low responsiveness). After the protest broke out, the government provided genuine benefits to both the rich and the poor, without raising benefits to the middle class. These results are supplemented by a text analysis of local government documents related to COVID-19, showing that the government's inclination to publicize their resource preferences to the poor before and after the protest outburst.

4 Contribution

This study extends existing co-optation theories by proposing that when crisis responsibility becomes attributable to the government, the government will maintain genuine benefits to the group with the highest economic value, while shifting from offering performative benefits to genuine benefits to the "ideologically favored" group according to the regime's ideological narrative to boost its legitimacy [3]. This nuanced shift in co-optation strategy highlights the adaptive nature of authoritarian regimes in the face of self-imposed crises and underscores the complex interplay between political survival, legitimacy, and the strategic distribution of resources.

References

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