



Constructing electricity as entitlement: Energy politics in Lahore, Pakistan

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- Pakistan has faced a chronic energy crisis for several years, and its impact on citizens is under-reported. This study conducts a baseline for energy consumption and outage in Pakistan's second-largest city, Lahore. This is the largest household survey on energy in Lahore in recent years. We find that Lahore is relatively sheltered from the worst impacts of Pakistan's national electricity crisis.
- Pakistan's political messaging on energy provision has been historically inconsistent, fluctuating between treating electricity as a right, and implementing pay-to-use policies for its distribution companies. This study is motivated by the following question: what are the political impacts of understanding electricity as a right? In Lahore, we find that while stated tolerance for theft and non-payment of bills is low, up to 20% of individuals report skipping at least one month of utility bill payment.
- Preliminary results from an experimental component of the study suggest that tolerance for non-payment increases for low-income individuals. This is remarkable, given that middle-income individuals pay up to 18% of their monthly income in electricity bills. Overall, Lahore is typical of an important electoral constituency that receives high quality services from a state-owned distribution bureaucracy.

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Overview of the research

In 2018, a study conducted with IGC funding found that low-income neighbourhoods in Karachi faced eight hours of outage a day, compared to an average of four hours a day in higher income neighbourhoods. These figures are considerably higher than official outage figures reported by the distribution companies and the national regulatory authority, NEPRA. This study explores the provision of local public goods and their impact on attitudes towards the state bureaucracy in Lahore, Pakistan. The study implements a household survey of over 2000 households in urban Lahore.

First, this study explores how voters in key constituencies construct the provision of services such as electricity. To what extent does the continued provision of highly subsidized energy determine political support? Using Lahore's politically competitive landscape, we examine whether protecting energy entitlements results in voters rewarding politicians with favourable ratings. Second, we look at a common impetus for utility reform – the middle class. To what extent are Lahore's middle and upper-middle classes tolerant of forms of non-payment and electricity theft? This preliminary report focuses on the latter, while providing some early findings on the former motivating question.

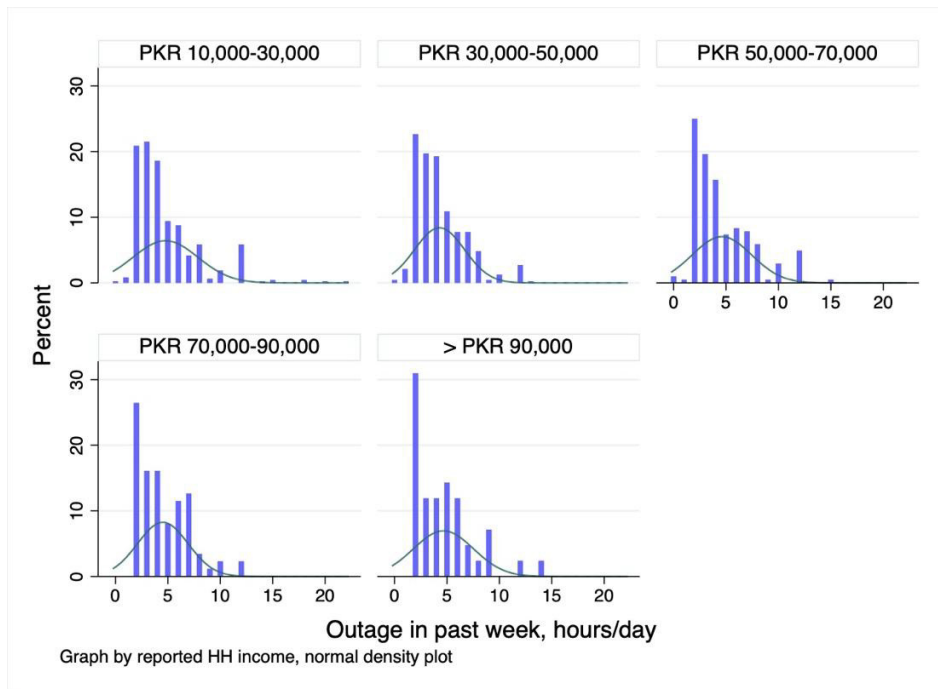
Developing countries engage in utility reforms, including privatization, in response to pressure from middle-income consumers; they might also be subject to external pressure by international lenders. Alternately, states may seek to implement privatization as a means of seeking patronage from commercial and business elite. Previous work has traced the history of privatization in Karachi, Pakistan, as an example of the latter. They have demonstrated the political impacts of this transition to privatized utilities, most prominent the decline in reliance on state institutions, and shifts in engagement with political parties. Pakistan's other major city, Lahore, provides an important test case for whether citizens continue to make claims to the state for utility provision, and if this model of state-owned service delivery engenders trust in the state and in fellow citizens.

A rich literature on public goods provision suggests that cities like Lahore, ethnically homogenous but politically competitive, should receive greater attention from the state vis a vis public goods. It is less clear whether the state continues to rationalize electricity at the micro-level, prioritizing those who can pay over those who cannot, or whether electoral politics continues to guide service delivery. Second, the role of emerging middle-class constituents in this context is under-theorized; this study aims to examine their preferences and attitudes towards the state and its political and bureaucratic representatives, and towards lower-income groups.

Electricity provision in Lahore: Findings from the survey

One of the key outcomes of this study is that electricity provision in Lahore operates as a state-run bureaucracy. Official reports point to significant revenue shortfalls and national-level policy commitments assert the need to rationalize the provision of electricity to households that pay for the service. However, the distribution of electricity, measured by outages in the previous week, are fairly uniform across income segments in the city (Figure 1). Unlike Karachi, where significant disparities exist in the provision of electricity depending on the income clusters that consumers are allotted to, in Lahore the distribution of electricity is much more uniform (Figure 2). For example, the average reported outage in households where income is between PKR 10-30,000 is 4.7 hours; in the highest tier of income in our sample (PKR 50-90,000) it is 4.5 hours.

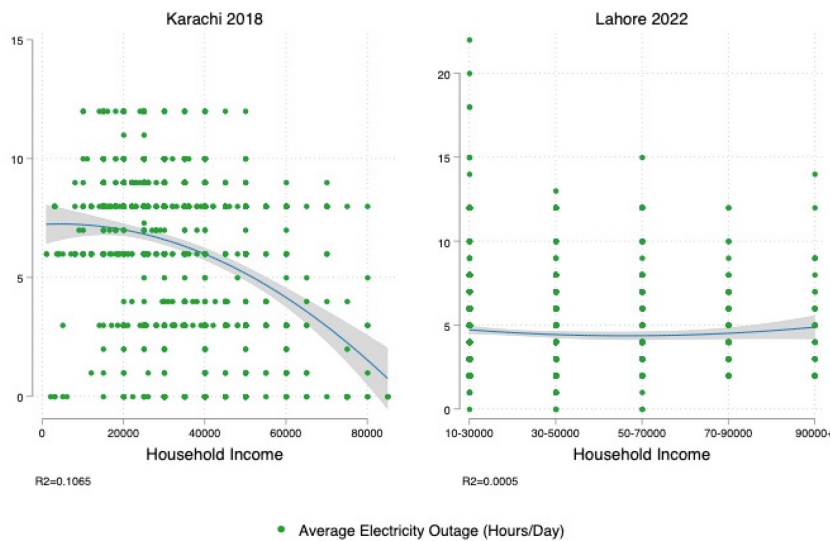
FIGURE 1: Reported electricity outages in past week by income category, September-October 2022.



As with a lot of income data, it is likely that some of the self-reporting on income is very noisy. However, similar patterns are seen when using asset data, which tends to be more accurate. Another key indication that the income data is relatively accurate is the fact that electricity *bills* do vary across income groups – intuitively, wealthier individuals consume more and therefore spend more on electricity. This reflects that self-reported income in this study is an accurate measure of wealth.

A final check on wealth and electricity distribution in future work will be to match the sample locations to outage data, which is available from LESCO. This will allow a more complete picture of how outages are targeted – or not – across the city, depending on where the distribution company experiences greater losses. Preliminary results suggest that at least as far as outages are concerned, LESCO does *not* prioritize high-income neighbourhoods over low-income ones, and that outages are evenly distributed.

FIGURE 2: Comparing average daily electricity outage by income category, Karachi (April 2018) and Lahore (September-October 2022).

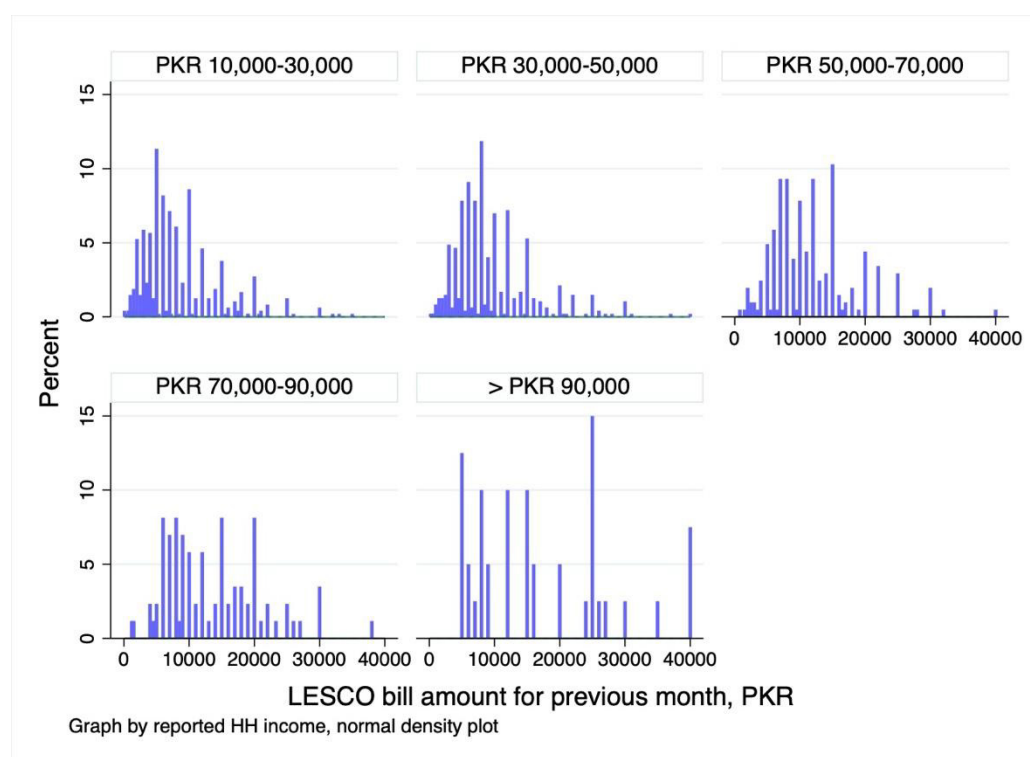


Higher income groups pay more for electricity on aggregate, likely due to higher consumption. Low-income groups report lower monthly electricity bills (Figure 3). The average bill amount amongst the lowest tier of income is Rs. 8,120. In higher income groups, it is Rs. 12,873. This significant discrepancy suggests that billing does accurately reflect the consumption of energy across different income groups. It also suggests that income data for the survey is somewhat accurately reported, with higher income groups having significantly higher levels of utility consumption.

What is worth mentioning is that in Lahore, billing and consumption data reflects progressive energy tariffs in place. The lowest income households spend 4% of their reported monthly income on electricity, whereas the wealthiest households in the sample spend about 18%. At PKR 70,000 monthly income, these households may be considered “upper middle” income, which makes their energy burden of 18% a significant one. So, while energy tariffs are progressive in that they benefit very low-income groups, the relative burden on upper-middle income households is an important area for future research.

Another dimension of utility payments is the frequency with which individuals can make payments. LESCO's reported less than 2% non-technical losses in 2017, however this figure could be more depending on how these losses are measured. In the sample for this study, over 20% of individuals in the lowest income tier reported missing at least one to two months of payment. By comparison, the monthly payment rate was close to 90% in the highest income tiers. These gaps in collection do not seem to be reflected in LESCO's annual reports and audits, making this study an important avenue for accountability within the service provision of the distribution company. Again, given the disparity in monthly payments between different income tiers, it is remarkable that outages continue to be evenly distributed.

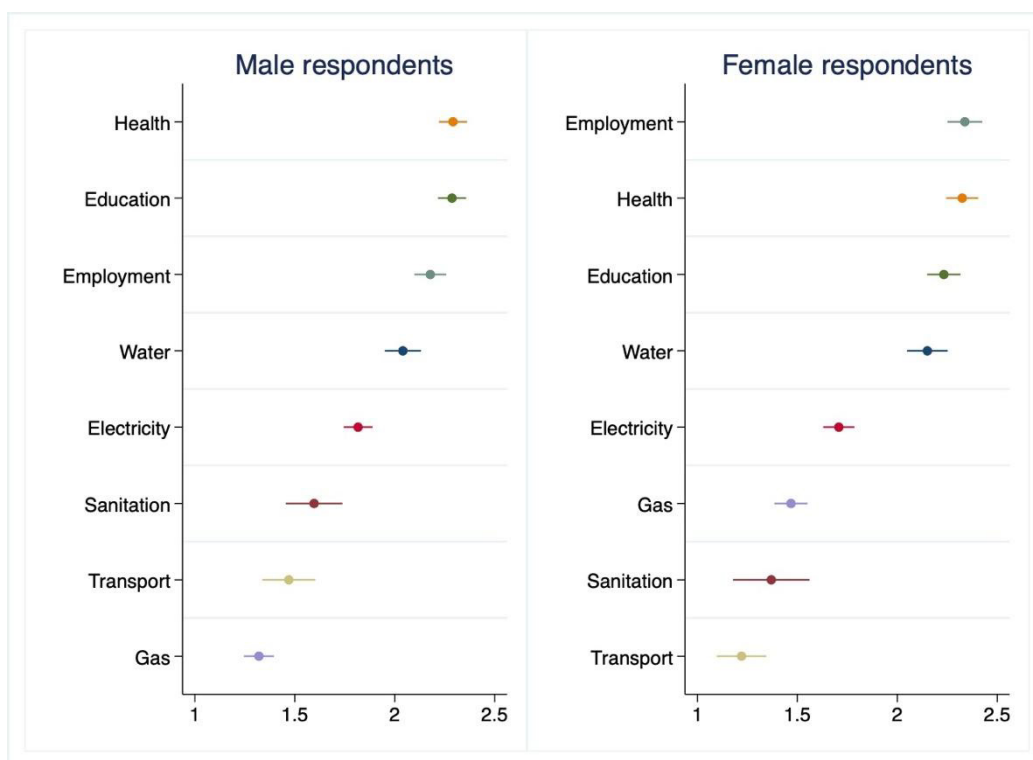
FIGURE 3: Reported electricity bill in past month by income category, September-October 2022



To what extent is electricity a priority in Lahore? Overall, the previous three findings suggest some degree of satisfaction with the status quo. In Karachi, by contrast, electricity is one of the most urgent policy priorities for individuals. In Lahore, electricity ranks five out of eight potential policy priorities (Figure 4). While men and women have different preferences for healthcare and employment, their ranked mean for electricity is equitable. This suggests that electricity is a relatively low household concern in Lahore. Given that this survey took place in peak summer months, it is remarkable that energy concerns in the city were not higher. Instead, given pressures of inflation and the slow recovery from Covid-19 over the past few years, employment and health seemed to feature much more prominently.

Overall, Lahore presents a picture of a metropolitan centre that is sheltered from the worst of Pakistan’s energy crisis. Despite increased national energy costs due to the cost of fossil fuel prices in 2022, persistent circular debt and increased tariffs on energy, Lahore’s residents not only report nominal levels of outage, but have also been spared any passing down of energy costs. The city can claim a privileged position in the country’s distributive priorities, by virtue of being both an economic and political hub. These findings reflect the benefit of this privilege even to its poorest citizens, who report a relatively positive relationship with the state bureaucracy.

FIGURE 4: Ranked priorities for service delivery by gender, September-October 2022



Given the relatively well-off position of Lahore compared to other cities in the country, it is important to examine *subjective* attitudes towards service delivery and providers. While most people in the sample report going to LESCO with complaints regularly (Figure 5), the satisfaction with response varies (Figure 6). “Excessive” electricity outages and very high bills were generally the most reported complaints among respondents. Nearly sixty percent of the sample reported receiving very high bills. This suggests that individuals are resistant to increased tariffs and attempts by LESCO to stagger electricity provision by imposing rolling blackouts, or load shedding, that is common to the rest of Pakistan.

Dissatisfaction with LESCO is higher among low-income households than it is for higher income households (Figure 6). Preliminary findings suggest that this might be due to low-income individuals feeling the burden of higher electricity bills or outages more than higher income communities. Lower income households are less likely to have alternate means of electricity such as a UPS or generator during times of outages, making these outages more keenly felt, even if they are quantitatively the same across income groups.

It is worth noting that political parties are not a focal point for complaint when it comes to electricity issues. Most individuals reported using LESCO. The experimental component of this work, which is forthcoming, sheds light on how households across income groups might use political party representatives and elected officials to address their electricity needs. In particular, the study examines whether voters punish political parties that campaign on an “efficiency” agenda that seeks to rationalize electricity payments, versus ones that assert a “welfare” agenda which protects the use of electricity for low-income individuals.

FIGURE 5: “Who are you most likely to report electricity issue to?” September-October 2022

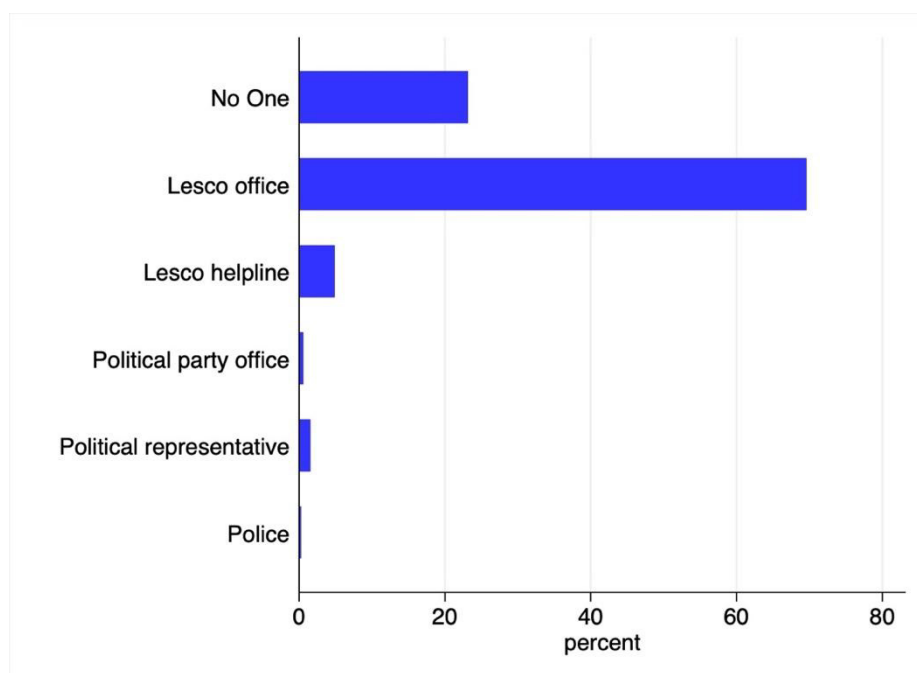
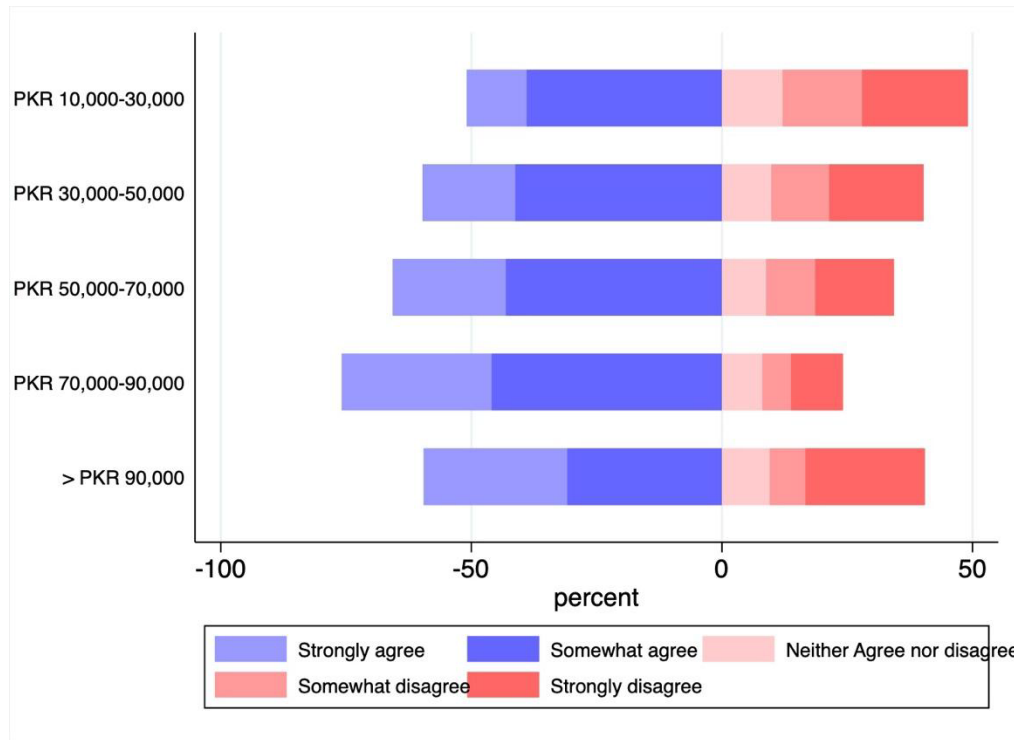


FIGURE 6: To what extent do you agree with the following statement: LESCO and its workers, such as the linesman, listens to the needs of and help ordinary citizens”, September-October 2022



The review of political economy literature presented in previous sections suggests that an important part of policy reform in the energy sector is whether electricity is perceived as a right or a commodity. The findings presented in this study suggest that the structure of service delivery is perceived as a right and not a commodity in Lahore. While individuals report relative satisfaction with LESCO, the satisfaction is less among low-income groups. Next, perceptions of being reprimanded for illegal activities are high (Figure 7). However, when presented a vignette that described a person engaged in illegal activities to secure electricity, over 80% of individuals said that LESCO should show leniency. Unsurprisingly, bribing LESCO officials or “offering them a token” was considered the least likely to get individuals into trouble.

Experiment results

In order to test tolerance for theft and non-payment of bills, respondents were presented with a vignette experiment. In the vignette, a fictional news report details an individual who received what he considered an unfair bill. The individual takes a series of steps, including refusing to pay his bill, disconnecting his meter and attempting to bribe a Lesco officer. Respondents are asked to what extent they agree with the individual’s actions. Next, a third of the respondents receive a treatment where they are shown a picture of a blue-

collar man in a low income neighbourhood (T1), a third are shown a picture of a white-collar man in a medium-income neighbourhood (T2), and the final third are not shown any image. Respondents from the two treatments are asked the same question again. The results are shown in Table 1.

At first, it appears that tolerance for non-payment and theft is low. However, the group that is shown the image of a low-income individual is more tolerant of theft, significant at $p < 0.1$. This may be due to a more positive or neutral attitude towards theft by low-income individuals.

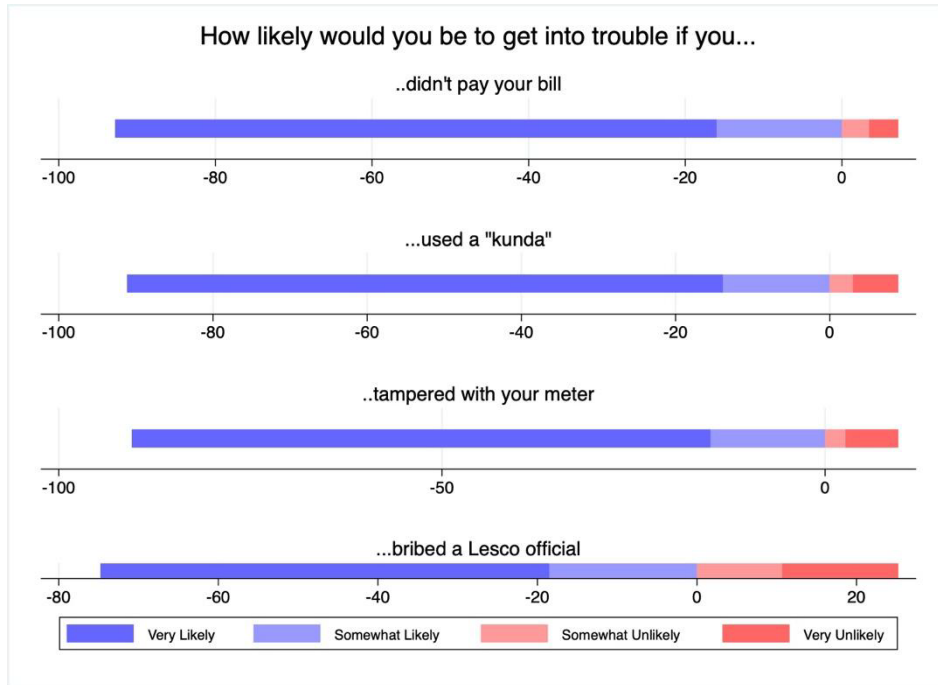
Table 1

| Q33. To what extent do you agree with the actions this individual took to use electricity? | Full Sample | Treatment 1 | Treatment 2 |
|--|-------------|-------------------------------|--------------------------------|
| | | <i>Blue-collar individual</i> | <i>White-collar individual</i> |
| Strongly Agree | 8.36 | 6.48 | 8.26 |
| Somewhat Agree | 23.21 | 28.08 | 20.34 |
| Neither Agree nor Disagree | 12.13 | 15.77 | 14.19 |
| Somewhat Disagree | 16.38 | 17.71 | 21.4 |
| Strongly Disagree | 39.93 | 31.97 | 35.81 |
| <i>Mean</i> | <i>3.56</i> | <i>3.41</i> | <i>3.56</i> |
| <i>Difference T2-T1</i> | | | <i>0.155*</i> |

In order to avoid social desirability bias, these statements were framed in the context of vignettes where individuals took part in these activities because they received unfairly high bills. It is worth mentioning that despite a significant portion of the sample claiming that non-payment of bills would lead to penalties

or fines from LESCO, over 20% of the sample among low-income residents reported skipping at least one month of bills.

FIGURE 7: “If you took the following actions, do you think you would incur any penalty, fine or additional charges from LESCO or the government?”, September-October 2022



This suggests a crucial nuance in the attitude towards service delivery in Lahore. In general, while *quantitative* measures of provision such as outages and bill amounts present a relatively good picture, citizens have strong views of entitlements to electricity and service delivery. This is in line with multiple theories of utility entitlements, particularly in contexts where the state has used electricity distribution as a populist instrument of welfare and creating support amongst citizens. Perceptions of electricity provision and entitlements in Lahore should therefore be viewed in contrast to other cities in the country, such as Karachi, Peshawar, and Quetta, where citizen-state relations are markedly different from those in Punjab’s political and commercial capital.

As noted previously, this is a first cut of a rich and detailed survey and qualitative dataset. Future iterations of this study will focus on the spatial distribution of electricity in Lahore, using both LESCO’s own data on non-technical losses, as well as political data on electoral outcomes and party competition. Finally, early analysis of the experimental component of this data suggests a high level of tolerance for theft and non-payment of bills. Future work will identify whether tolerance varies with income background, that is, whether individuals view poor consumers more favourably and with more tolerance than higher income ones. A second strand of experimental analysis

will focus on whether politicians who support energy reform are viewed favourably. The findings presented here provide multiple areas for further research.

Policy implications

Lahore, like other cities in Pakistan, is highly segregated by income inequality. Access to employment, transportation, health, and other services varies greatly, depending on geographical residence. In previous years, Pakistan has faced a national electricity crisis, with exacerbating circular debt, increased fuel costs and fuel tariffs, and pressure to rationalize the provision of electricity to domestic consumers. This study makes an important intervention by examining access to energy across income tiers in Lahore. This section sums up the findings of this study and provides policy implications.

1. Energy costs and access are relatively evenly distributed across income groups in the city. Unlike the study done in Karachi, this survey does not indicate vast disparities on electricity distribution, outage, or relative costs due to income. While future work needs to be done to explore spatial and other potential factors for variation, initial analysis suggests greater energy parity in Lahore than in other cities in Pakistan.
2. This parity is a direct result of *energy providers* in both these cities. In Karachi, the private firm K-Electric is responsible for energy distribution and bill collection in the city. In Lahore, LESCO is a state-run entity with professional, state-appointed bureaucrats. This study demonstrates the measurable difference in service delivery priorities for both these institutions.
3. This study shows that the private entity in Karachi is more likely to aggressively pursue pay-for-use policies where low-income communities that have more defaulters are likely to get targeted with higher outages. From previous studies, very low-income neighbourhoods in Karachi experience over 8 hours of outage in the summer. In Lahore, this figure is closer to 5 hours. In contrast, while higher income, low revenue loss neighbourhoods in Karachi experience 0-2 hours of outage, even in peak summer months, high income residents in Lahore regularly report 4.5 hours of outage.
4. Taken together, these two factors point to electricity constructed as a right, or part of a series of entitlements in Lahore, compared to a commodity in other cities. Studies conducted in India and elsewhere suggest that this will make it difficult for the state to impose service delivery reforms in cities

where citizens enjoy a relatively high rate of service delivery provision. This study and its future iterations seek to examine the contours of this dilemma: for example, how might voter attitudes towards pro-reform politicians play out in the electoral arena? Can political parties credibly commit to rationalizing electricity provision in Lahore, without facing electoral repercussions?

5. While overall satisfaction with LESCO and its employees is relatively high, low-income groups in Lahore feel the burden of electricity bills and outages more than their wealthier peers. Electricity costs may be lower, but they constitute a higher share of disposable income. While energy efficiency is likely to be a priority for Pakistan in the coming years, it is crucial to note the relative impact on low-income communities. Other work by the PIs has noted the potential for social unrest when energy subsidies are rolled back (Hossain et al 2018). The relative sensitivity to the surveyed sample of price shocks suggests a higher propensity for civic unrest if policymaking shifts towards a pay-to-use model.
6. Another important implication of these findings is the uneven application of the 2013 National Power Policy's recommendation, that "load-shedding (should) be focused on areas of high theft and low collections as opposed to the current structure of indiscriminate load-shedding." This policy is much more stringently applied in some cities compared to others. Therefore, a national and regional disparity in access to electricity is evident. In order to gain multi-stakeholder support for energy reform, these discrepancies need to be addressed at the national level.
7. The general satisfaction with LESCO, despite disparities across income, suggests that state-run bureaucracies are in general more responsive to the needs of consumers than private bureaucracies. There is also relatively high tolerance for theft, particularly if perpetrators are seen as low income. On the one hand, Lahore's poorest residents feel mistreated by LESCO when they seek redressal with high bills and outages. On the other hand, this points to a strong sense of felt citizenship and access to the government. While political parties likely play a part in resolving crises, the state bureaucracy is an important outlet for addressing grievances and complaints.
8. An understanding of perceptions of rights and commodities is critical to energy reform in Pakistan. However, these understandings should be coupled with commitments to environmental justice and equitable access. For example, the dual findings of relatively good provision to low-income groups, and a sense of entitlement in Lahore, might pave the way for more diverse forms of energy provisions – decentralized grids and investments in

renewable energy to support the demands of the citizens. In contrast, entitlement may also have an opposite effect, encouraging more theft and creating a barrier to diverse energy provision. Quantifying the effects of both can inform policy. Meanwhile, efforts should be made to close the national gap in access to energy across cities, and to continue to shield the most vulnerable citizens from inevitable climate and environmental shocks that could lead to social unrest and negative impacts on income and livelihoods.