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Perceptions and acceptability of electricity theft:
Towards better public service provision

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Abstract

In many developing countries, theft remains a significant obstacle to ensuring proper public service provision and access. We argue that social acceptability of theft constitutes an understudied barrier to curbing power theft. Using a conjoint experiment, we study perceptions of theft in the form of using illegal wires, katiya, among rural and urban households in Uttar Pradesh, India (n=1800). Social acceptability of theft is influenced by the income and electricity supply quality contexts of offenders. For a 1000-rupee (approx. 15 USD) income difference between hypothetical vignette agents, the odds of choosing a higher acceptability rating for an offender increases by 11%. One fewer hour of electricity supply received by the vignette person would increase the acceptability of their theft activity by 4%. The majority of respondents chose a warning as the appropriate punishment severity; income and supply quality distinguish the odds of choosing higher punishment categories. While there exists a sense of social reprimand for stealing power, desired punishment is nuanced and context-dependent.

Keywords: social norms; theft; public service provision; energy policy; conjoint experiment
Highlights

- Social acceptability is higher for theft offenders with less well-off income and power supply quality contexts.

- Raising punishment levels to deter theft may not necessarily be socially desired.

- Social norm adjustments and participatory approaches could contribute to curbing theft and improving service provision.
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Declarations of Interest

None.
1 Introduction

Public services such as water and electricity are often subsidized in developing countries in order to increase their affordability for low-income households. However, regions receiving such subsidies face significant issues with distribution, where utilities supply many non-paying users. This results in low quality service provision, where households experience frequent or extended outages and low voltage or poor power quality (McRae, 2015). Power theft, which could manifest in a number of forms, remains a serious problem in many developing countries (Lewis, 2015).

To combat poor public service quality and to enhance accountability, diverse approaches such as citizen participation, protest, and offering competing supply have been proposed to mitigate exclusive dependence on hierarchical, top-down methods (Paul, 1992). Citizen-based accountability strategies, for example, have documented successes in the health services sector in a number of countries (Joshi, 2017). In presence of theft in public services, the success of such alternative approaches to regulation and punishment depends upon the social norms and acceptability that underlie theft behavior.

Theft of electricity occurs in several forms, including illegal tapping (using illegal night-lines or katiya), consumer meter tampering, and through billing problems (irregularities with billing or unpaid bills) (Sharma et al., 2016). It is estimated that various forms of electricity theft constitutes 20-25% of the generated power in India - a cost of INR 20,000 crores (2.7 million USD) annually (Sharma et al., 2016; Gaur and Gupta, 2016). In a six-state survey on energy access in India conducted by the New Delhi-based Council on Energy, Environment, and Water (CEEW) in 2018, around 94% of the rural respondents stated that electricity theft is an illegal activity and should be stopped. At the same time, 29% reported that stealing exists in their village (Jain et al., 2018). Existing policies have failed to curb electricity theft, which was a focus of the Saubhagya scheme, the Indian government initiative announced in
2017 that aimed to electrify all households by the end of 2018.

This paper provides a critical look at the acceptability of theft as an obstacle to proper public service access and provision. To achieve effective compliance with legal electricity use, understanding the theft problem and the associated social attitudes is crucial (Smith, 2004; Cialdini, 2007; Never, 2015). We conducted a large-scale conjoint experiment in 1800 households across Uttar Pradesh in order to study the social attitudes towards electricity theft. In our study, we focus on the form of theft via illegal wiring or katiya, while acknowledging that electricity theft can be committed in a few additional ways. Based on social norm theory, as well as studies on the perceptions toward small crime, we develop new hypotheses on factors affecting public acceptance of electricity theft. The social acceptability of electricity theft as a crime is a function of the electricity supply and income situations, i.e., electricity theft could be viewed as more acceptable when electricity supply quality is poor and household income levels are low. Where supply quality is poor and affordability is a concern, citizens are likely to be more forgiving of electricity theft as opposed to places with relatively high income and better supply quality. Preferences over in-group membership with respect to religion and caste status could be additional drivers.

We find that social acceptance of electricity theft is indeed context-dependent. In particular, we confirm that social acceptability of theft as a crime is higher when the perpetrator has a difficult income and electricity supply situation. Using ordinary least squares regression, a 1000-rupee income difference (around 12% relative to respondent’s mean income; approx. 15 USD at the time of the experiment) between hypothetical vignette agents is associated with a 3.3% difference in acceptability of theft activity or a 11% increase in the odds of choosing a different acceptability response. For a one hour electricity supply difference between vignette offenders, which corresponds to around one-quarter of a standard deviation of the hours supplied to respondents, odds for choosing a higher acceptability rating is 4% higher for the perpetrator with lower hours. Conversely, where the supposed perpetrators have
better income and electricity supply prospects, stealing electricity becomes less acceptable. However, our results do not support the hypothesis that there are preferences over similarity in religion or caste status, where we expected respondents to find the behavior of offenders of the same caste status more acceptable.

In addition, the desired punishment levels for power theft is low—on average, between a warning and a small fine. The socioeconomic context differences of the hypothetical offenders do not seem to affect the desired punishment levels, but among the less acceptable offenders, income and supply quality do seem to matter for the odds of choosing a higher level of punishment. Together, our results suggest that while there exists a sense of social reprimand for stealing power, actual desired enforcement of regulations could remain more relaxed or nuanced.

This set of results has significant implications in designing policy reforms that aim to mitigate electricity theft and improve public service provision. In many developing countries, subsidized utility services such as electricity could lock poor households into poor service (McRae, 2015). These regions simultaneously face significant theft of power, posing significant obstacles in ensuring proper public service access (Lewis, 2015). We provide new knowledge in citizens’ context-dependent attitudes towards public service theft as a crime. Thus far, the existing policies focusing on harsher punishment models, stronger enforcement, or technology-based solutions such as smart metering have not been effective in curbing theft. Addressing the social norms at play and considering a norm shift could have a significant impact in improving accountability and provision of public services (Lewis, 2015; Joshi, 2017).
2 Existing Literature on Social Norms, Theft, and Public Service Provision

There is evidence showing that proper electricity access brings about positive impacts in well-being. Similar positive relationships between electricity access and rural household incomes, health, education attainment, and voting behavior in both rural and urban settings have been documented (Ahmad, Mathai, and Parayil, 2014; Chakravorty, Pelli, and Ural Marchand, 2014; Aklin et al., 2015). One persistent issue that hinders proper electricity access is the issue of theft.

Power theft is a common occurrence in South Asian countries, and often deemed by power managers simply as a fact of life in poor communities (Gaur and Gupta, 2016; Jamil and Ahmad, 2013). Electricity theft or fraud manifests in various forms, including meter tampering, stealing through illegal connections, billing irregularities, and unpaid bills (Smith, 2004; Golden and Min, 2012; Ganesan, Bharadwaj, and Balani, 2019). In India, theft in the form of illegal wiring is the use of katiya. Similar practices also exist in South Africa called the spiderweb and in Mexico called the diablitos (Smith, 2004). Electricity theft via katiya consist of rigging a line from the power source’s main line to where it is needed, which bypasses a meter for billing purposes. We focus on the illegal connections via katiya; while these are visible and detectable kinds of wire, removal and detection of these lines can still be difficult.

Previous work on electricity theft enforcement has neglected social norm of theft that underlies behavior. If usage of katiya with the associated practices of bribe payments become part of a social norm, we must first understand the structure of this social norm in order to devise proper remedies to the issue. The focus on technological, operational, and managerial remedies is not enough to provide better governance (Smith, 2004; Never, 2015; Sharma et al., 2016; Schechter, 2007).
Social norms can be defined as behavior patterns that are self-enforcing (Young, 2015). When considering the interaction between social norms and small crimes such as theft, one should understand how the patterns of behavior arise and function, which agents are conforming, and how this norm is sustained such as by coordination or sanctions (Douhou, Magnus, and van Soest, 2011; Elster and Jon, 1989). Theft of public services, such as electricity theft, could have become a small crime that many commit, as it is in the case of some areas of India, making it all the more difficult to resolve simply with heavier punishments. While stealing electricity is illegal under the law (Ganesan, Bharadwaj, and Balani, 2019), when many people in the community practice theft, such a crime may begin to be deemed as relatively acceptable and form a social norm (Douhou, Magnus, and van Soest, 2011). For effective policy to remove theft as a socially acceptable small crime, norms of cooperation and reciprocity must be re-oriented. This may amount to altering the norm of katiya usage into one akin to a coordination game - turning acceptance into effective disapproval and credible social sanctions, which in turn creates a sustaining behavioral outcome whereby theft can be eliminated.

The expected utility model of theft and crime have major limitations in this context (Jamil and Ahmad, 2013; Douhou, Magnus, and van Soest, 2011). The expected utility model of risk-aversion and behavior fails to account for social norm effects that include reputation, morality, and fairness. Simply raising punishment levels and assuming that offenders will make the appropriate tradeoffs and reduce theft activity has not been entirely effective. Weak enforcement, other market and political failures, and the lack of effort in altering the social norm of theft as a small crime could contribute to the persistence of power theft despite harsher punishments (Douhou, Magnus, and van Soest, 2011; Elster and Jon, 1989; Young, 2015). Central to understanding theft behavior involves identifying additional considerations that include these social attitude variables that are often missing in previous analyses. Our survey attempts to address these deficiencies in the literature.
There is a limited literature that studies how social norms, expectations, and public perceptions of energy affect theft control policies in developing countries (Never, 2015). Among socioeconomic factors impacting the social acceptance or rejection of theft in Uganda, trust, perception of just pricing, and informal norms emerged to be of importance. Using interviews and focus groups, Never (2015) found that informal social norms in payments for government services, as well as in corruption related to electricity theft, impact the success of controlling power theft through regulation and social enforcement. Thus, a thorough understanding of the underlying social norm of electricity theft is critical to successful reforms.

Psychology and human resources research have considered the effect of social norms as forms of social control and how peer contexts affect social perceptions of crime (Böckenholt and van der Heijden, 2007; Cialdini, 2007; Schmidtke, 2007). Schmidtke (2007) focused on consensus and perceived similarity among restaurant workers’ theft behavior and found that perceived similarity of actions and social norms are closely related to the peer acceptability of theft behavior. Injunctive (what others view as appropriate) and descriptive (one’s perception of what others actually do) social norms thus could be non-trivial factors and significantly impact governance and policy efficacy (Young, 2015; Bursztyn, González, and Yanagizawa-Drott, 2020). We use a conjoint experiment to try to derive some of the injunctive and descriptive social norms by allowing respondents to rank the acceptability of two hypothetical individuals committing power theft. We consider whether group similarity through different social characteristics affect social acceptability of theft.

3 Context and Hypotheses

Using a large-scale conjoint experiment in Uttar Pradesh, India, we study social attitudes and perceptions toward power theft. In the conjoint experiment, respondents are asked to compare two hypothetical individuals that commit power theft, albeit with different sets of social characteristics. This allows us to test whether the socioeconomic context effects affect
perceptions of crime seriousness and acceptability akin to related work by Aldrovandi, Wood, and Brown (2013) and Douhou, Magnus, and van Soest (2011). Our work differs from the aforementioned studies in that we investigate the perceptions of power theft as an incorrect behavior within the context of developing countries. Our results have direct implications for designing new policies and strategies to curb power theft in developing countries.

The first part of this section describes the situation in Uttar Pradesh, while the remaining parts of the section present hypotheses based on this local context and rooted in the existing literature.

3.1 Public Service Provision and Electricity in Uttar Pradesh

Over the last few years, there have been significant improvements in access to electricity connections in India through grid electricity or solar home systems. In a recent 21-state energy access survey conducted in India, the share of households using electricity as the primary source of lighting rose from 67% in 2011 to 96% in 2020 (Agrawal et al., 2020). In addition, 37% rural households reported prevalence of theft in their villages, with 94% of the respondents reporting that they are aware of its illegality (Jain et al., 2018; Ganesan, Bharadwaj, and Balani, 2019). Uttar Pradesh accounts for more than one-third of the share of unelectrified households, and many unelectrified households reported the lack of necessary infrastructure to connect to the grid in their locality and affordability constraints as reasons preventing their access to grid electricity (Jain et al., 2018; Agrawal et al., 2020).

In India, electricity tariffs and their associated rules and regulations are provided within the Electricity Act of 2003. The Act delegated the responsibility of approving tariffs to the Central Electricity Regulatory Commission (CERC) and to State Electricity Regulatory Commissions (SERCs) for units selling power across and within states respectively (Bhattacharyya and Ganguly, 2017). To encourage consumption in agricultural and domestic sectors, consumers from industry and commerce subsidize electricity consumption in these
other sectors in India in most states through what is known as a cross-subsidy scheme. Essentially, commercial sectors get charged a higher tariff to compensate for lower rates for the agricultural and domestic users. This has led to financially tenuous positions for the various distribution companies (DISCOMs) (Chattopadhyay, 2004; Bhattacharyya and Ganguly, 2017). In Uttar Pradesh, 42% of the total electricity supplied by all DISCOMs are provided for domestic consumers, and more than two-thirds of the total subsidy between 2017–2020 is targeted at rural consumers (Ganesan, Bharadwaj, and Balani, 2019).

Institutional structures and social expectations play important roles in determining long-term public service provision outcomes. Because electricity is viewed as essential to other technologies and modernity, people may thus see electricity access as an entitlement of a public good rather than as a commodity (Blankenship, Wong, and Urpelainen, 2019). Divergent political histories of state building in Ghana and Uganda prompted different paths to electrification. In the former, massive state-building effort provided electric power for industrialization goals. In the latter, post-colonial leaders did not prioritize electricity access amid conflict and inherited colonial energy networks. (Maclean et al., 2016).

In India, similar challenges and histories unfolded in the Indian water rights context, demonstrating the role of power and stakeholder expectations in mediating infrastructure provision and urban citizenship concerns (Björkman, 2018, 2014; Ranganathan, 2014). The context of social expectations must be well-understood in order to devise effective policies to curb theft, especially if persistent distrust towards public service providers and minimal social reprimand for stealing underlie the social norms.

3.2 Hypothesis: Income

Aldrovandi, Wood, and Brown (2013) and Douhou, Magnus, and van Soest (2011) provided evidence that the social perceptions of small crimes can be influenced by social contexts. We first outline three hypotheses related to the social contexts of possible theft perpetrators.
First, in the context of leniency for individuals with difficult income backgrounds, we expect that the lower the income levels, the more acceptable it would be in general to commit electricity theft. This means that the less well-off the hypothetical individual is, the more likely one would find it acceptable for said individual to steal than for a more well-off person; and conversely, the punishment chosen would be harsher on a richer person taking advantage of others through theft.

Previous research using vignette questions for hypothetical persons committing small crimes has underscored the importance of the income context of the offender. The most salient effect of the characteristics of a hypothetical offender for various small crimes as documented by Douhou, Magnus, and van Soest (2011) was the effect of the vignette person’s income or wage levels. Respondents considered the offense activity less justifiable if the person who commits the small crime earns more. The results were robust across six types of small crime.

**Hypothesis 1** (Income and theft acceptability). *The income level of an individual using katiya is negatively related to social acceptability and positively related to the desired punishment levels.*

Thus, we expect that it would be more socially acceptable for a lower-income person with significant affordability constraints to commit theft.

### 3.3 Hypothesis: Poor Supply Quality

A similar reasoning on social contexts applies to supply quality: the more inadequate the supply of electricity, the more likely one would accept theft behavior as a justifiable action. When a person already faces few hours of electricity supply, the associated social context is that the economic circumstances are not ideal. In addition, since the quality is already substandard, there is more reason to avoid standard legal payment for an incomplete service, or to rebel against the authorities as a form of social protest. Therefore, we expect to see
that where one receives fewer hours of electricity (i.e. electricity supply quality is worse),
the more acceptable a theft activity would be for that person. When consumers steal elec-
tricity, overloads are possible and affect voltage of the supply, and DISCOMs face financial
imbalances and are in more difficult positions to improve on the infrastructure, perpetuating
a theft-loss and trust vicious cycle (Gaur and Gupta, 2016).

In effect, the underlying social norm could be described as a social contract between citi-
zens and utilities (Elster and Jon, 1989; Rothstein, 2005; Fox, 2015), whereby theft becomes
unacceptable if one already receives good quality electricity and is therefore expected to pay
for legal use. If poor electricity quality persists, then individuals who commit theft may be
tolerated, because the expectation fails to match with the delivery of the service.

**Hypothesis 2** (Supply quality and theft acceptability). *The electricity quality level of an
individual using katiya is negatively related to social acceptability and positively related to the
desired punishment levels.*

We posit that the higher the quality of supply, the less acceptable it is to commit theft,
and the higher the desired punishment levels, and vice versa. In this setting, we approximate
supply quality via duration of electricity supply.\(^1\) In Uttar Pradesh, an overwhelming share of
rural and urban households considered supply quality to be important (Ganesan, Bharadwaj,
and Balani, 2019). Households in Uttar Pradesh receive some of the lowest electricity supply
quality, with rural households receiving an average of 16 hours a day and urban households
around 20 hours a day. 18% reported extended outages at least once in the previous month
(Agrawal et al., 2020). Recent work by Blankenship, Wong, and Urpelainen (2019) showed
that respondents’ attitudes towards improved electricity quality is positively related to levels
of social trust. Acceptance of theft activity should thus conversely be related to the quality
context of the potential offenders.

\(^1\)Supply quality also encompasses other dimensions such as outages, voltage fluctuations, surge and ap-
ppliance damage, etc. To keep the experimental design as simple as possible, hours of supply was chosen as
a salient measurement of supply quality.
3.4 Hypothesis: Group Identity

We posit that group identity affects social perceptions of theft. In India, inter-group disparity is multifaceted and complex, where religion, language, sub-nationality, region interact strongly with class and gender (Deshpande, 2011a; Mosse, 2018). The Indian caste system, originated in ancient India, continues to have cascading effects in the Indian society. Caste represents a system of social stratification that predates colonialism by centuries (Deshpande, 2011b). The lowest caste group, commonly known as Dalits2 (consisting of Scheduled Castes and Scheduled Tribes), is considered to be historically disadvantaged due to the suppressed opportunities, physical and social exclusion, under-representation, and public humiliation - the Scheduled Castes were referred to as the “untouchables” (Hasan, 2006; Banerjee, Iyer, and Somanathan, 2005; Banerjee and Knight, 1985). The caste system, while legally abolished, persists as a system of inequality and discrimination in India (Thorat and Newman, 2007; Deshpande, 2011a; Mosse, 2018). Caste status continues to have impacts on subjective wellbeing, market and non-market discrimination, and Dalit-supporting parties have failed to reduce discrimination (Mosse, 2018; Aklin, Cheng, and Urpelainen, 2018). Thus, there are important reasons to believe that caste status could affect acceptability of theft and interact with social perceptions and norms.

On the one hand, one may expect that the less well-off Scheduled Caste is likely to be perceived as more acceptable in committing electricity theft, in line with the association with disadvantaged socioeconomic circumstances (see Hypothesis 1). On the other hand, if discrimination persists (Aklin, Cheng, and Urpelainen, 2018; Auerbach and Thachil, 2018), any activity by the Scheduled Caste (SC) could be considered as less acceptable regardless of the context. Also, stereotype aversion could also lead to a negative association of SC and

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2The term Dalit is considered unconstitutional by the National Commission of Scheduled Castes. Modern legal usage would prefer Scheduled Castes and Tribes (SC/ST). To conform with colloquial usage, the term Dalit is kept in the experimental design, though the authors hereby clearly acknowledge the proper label of SC.
theft acceptability. The Scheduled Caste could in theory suffer from the perception that they are prone to committing theft. To mitigate such a stereotype, one could reprimand activities that perpetuate the stereotype disproportionately, i.e., to view that it is less acceptable for SC to commit theft, as such agents would only perpetuate the negative stereotype. Because of the need to distance oneself from these historical categorizations, SC members may be deterred from committing theft.

Given the uncertainty as to which of these effects dominate the perception of theft, the following hypotheses are plausible:

**Hypothesis 3a** (Caste and Disadvantaged Circumstances). *Theft is more socially acceptable with the Scheduled Caste (Dalit).*

**Hypothesis 3b** (Persistent Discrimination or Stereotype Aversion). *Theft is less socially acceptable with the Scheduled Caste (Dalit).*

In addition, preference for religion similarity could affect social perceptions of theft. A number of scholars also find evidence of religious discrimination in all segments of the economy, in particular towards religious minorities in India, where the practice of Hinduism represents the majority (Banerjee, Iyer, and Somanathan, 2005; Banerjee et al., 2009; Thorat and Attewell, 2007; Thorat, 2010). For a hypothetical person with a religion that is dissimilar to one’s own, we argue that, due to preference for social similarities as noted in Schmidtke (2007), the hypothetical person who commits theft will not be perceived as acceptable simply because they are members of a different social group. Co-religious preference has also been detected in other contexts (Auerbach and Thachil, 2018). However, it is also possible that the opposite could hold true as one wishes to preserve the image of one own’s religion (akin to the stereotype aversion above), and thus the results could be the opposite, where one chooses to be more stringent to individuals sharing the same religion, and less so for someone with another religion.
Hypothesis 4a (Religion Similarity and Image Preservation). *Theft is less acceptable for persons of the same religious background as one’s own.*

Hypothesis 4b (Religion Dissimilarity). *Theft is less acceptable for persons of different religious background than one’s own.*

4 Research Design

4.1 Experiment Administration and Sampling

To test the hypotheses outlined above, we conducted a conjoint survey with survey enumerators from Morsel India, an Uttar Pradesh-based survey company, who administered a 45-minute survey to each respondent. The survey was conducted in late spring of 2018. The data and replication archive are available on the Harvard Dataverse at: https://doi.org/10.7910/DVN/TOKRKK. The survey was administered using an Android smart phone app, and was in Hindi.\(^3\) In addition to information related to the specific hypotheses we tested, we also collected data on respondents’ socioeconomic status, electricity usage, and preferences over government policy toward electricity access and pricing. We sampled 2 districts each from 5 regions containing similar numbers of rural households in Uttar Pradesh. This gives a total of 10 districts, and within each district we chose 9 villages and 9 wards. From this, a total of 900 village households and 900 urban households were sampled (10 households per village/ward). We collected data from a total of 1800 respondents: 900 from rural villages and 900 from urban wards. To ensure research transparency, a Pre-Analysis Plan (PAP) was registered on Evidence in Governance and Politics (EGAP)’s online repository 20180402AA in April 2018\(^4\) and the IRB of record is at Johns Hopkins University, HIRB00006510.

Figure 1 depicts the five regions defined for sampling. Within each region group, two districts were randomly sampled with the probability that a district is chosen being the total

\(^3\)We wrote the surveys in English, but they were then translated into Hindi by Morsel.

\(^4\)The PAP can be accessed here: https://osf.io/wchq. The pilot study was conducted in January 2018.
number of households (villages and wards) in the district divided by the total number of households (villages and wards) in the defined region. This results in 10 districts sampled, 2 from each region, with districts that have more households being more likely to be chosen. Villages and wards were then similarly randomly chosen by the household size weight, and finally, 10 households were chosen by systematic random sampling on each village or ward site; enumerators began from a central location in each village or ward, and surveyed every 6th household starting on their right hand side. Enumerators surveyed the head of each household when possible, if the head was not available another adult member of the household took the survey. In our sample, 65% (62%) of rural (urban) respondents were household heads. This gives us 90 rural villages, 90 urban wards, for a total of 1800 respondents representative of the state’s rural and urban populations. Appendix A1 contains further details regarding the survey design, sampling, pilot procedures, training, data quality control, and pre-analysis.

[Figure 1 about here.]

The conjoint survey consisted of an experimental section in which respondents were given two hypothetical persons to compare. The respondents decides whether they find Person A or Person B less acceptable given their circumstances and behavior. On the activity dimension, the person may be using katiya (the majority of sample), or stealing from friends, family, or strangers (for control). The key dimensions of interest are income (randomized levels of income) and electricity (randomized levels of electricity supply in their villages or wards). In addition, respondents may also know the caste and the religion of the hypothetical persons. They are asked to compare the hypothetical persons and decide who is the less acceptable one, given their circumstances. They are also asked to select a level of punishment for the person deemed less acceptable. Respondents are asked to choose between two individuals of different characteristics. The conjoint is repeated four times,
i.e., respondents are asked to choose between two individuals four times. In Figure 2, the conjoint section design is illustrated with the randomly assigned personal circumstances and their probabilities. Enumerators sketch the information of the two hypothetical persons on a notebook for comparison; respondents are then asked to pick the less acceptable person along with a punishment level.

[Figure 2 about here.]

4.2 Dependent Variables

Our first outcome variable is a latent variable of social acceptability of electricity theft, which is recorded as an ordered outcome. In the conjoint experiment, each respondent is randomly presented with four pairs of persons which vary on five dimensions. Respondents are asked to make a tradeoff between social acceptability, socioeconomic backgrounds, and electricity quality. The respondent chooses either Person A or Person B to be less acceptable, or about equally unacceptable, given these hypothetical circumstances. This variable allows us to measure the conditions at which society would find theft relatively more acceptable due to poor power quality and/or poverty.

In the questionnaire, we used the Hindi word स्वीकार्य, or social acceptability, which had a simple and straight-forward interpretation with little ambiguity or confusion. Transliterated as sveekaary, the word means “acceptable,” broadly interpreted as people generally approve or allow it to happen; usual or not a problematic behavior. In our pilot study conducted in January 2018, our team tested the wording on non-sample households and respondents for comprehension and understanding. Our local research partners also confirmed the wording and intended meaning for our main conjoint question.

Second, we ask respondents what appropriate severity of punishment they would choose for the electricity theft. This allows us to further identify the perceived social cost of electric-

\footnote{The full sample size of the conjoint experiment is then 7200 responses.}
ity theft to society. To provide additional context, Section 135 of the Electricity Act of India (as amended in 2007) outlines possible punishments for repeated offenses to be punishable with a fine not less than six times the financial gain or with an imprisonment term of up to five years.\textsuperscript{6} Like social acceptability, punishment severity is also a latent variable recorded as an ordered outcome. Respondents choose from no punishment, warning, monetary punishment, to jail time of up to three years. This allows us to measure the deemed severity of punishment desired for the inappropriate action from no punishment to very severe punishment. Desired punishment levels are another indicator of social acceptability of crime. To focus on respondent attitudes towards the less acceptable individual and to reduce respondent fatigue, the punishment levels are only solicited for the less acceptable individual. A limitation of the interpretation for punishment is that it compares across the set of less acceptable individuals.\textsuperscript{7}

4.3 Independent Variables

4.3.1 Context Effects

The first part of our analysis is focused on the respondent-scenario level, where we look at the context effects in the conjoint scenarios respondents receive. The model specifications are as follows:

\[\text{Acceptability}_{i,j}^* = \beta_1 \Delta \text{Income}_{i,j} + \beta_2 \Delta \text{Quality}_{i,j} + \beta_3 \text{Dalit Caste}_{i,j} + \beta_4 \text{Religion Similarity}_{i,j} + \gamma X_i + \epsilon_{i,j}\]

\[\text{Punishment}_{i,j}^* = \beta_1 \Delta \text{Income}_{i,j} + \beta_2 \Delta \text{Quality}_{i,j} + \beta_3 \text{Dalit Caste}_{i,j} + \beta_4 \text{Religion Similarity}_{i,j} + \gamma X_i + \epsilon_{i,j}\]

\textsuperscript{6}This depends on the severity of the violation; less than 10 kW is punished less severely with no jail term. See Section 135 Part (e) subparts (i-ii) of the Electricity Act.

\textsuperscript{7}And not across all hypothetical offenders presented within scenarios.
where $i$ indexes respondents and $j$ indexes scenarios. In particular, the acceptability and punishment conjoint scenarios appear four times for each respondent. In the conjoint scenarios, respondents are given four pairs of persons to compare. Each scenario presented has two person’s characteristics, including possibly differing covariate dimensions. Respondents were asked to choose whether person A or B is less acceptable, or about the same. Thus, the outcome is an ordered variable representing the latent distribution of relative social acceptability of the activities of these persons presented. We code acceptability as Acceptability of Person A, with Acceptability = 0 if A is less acceptable, Acceptability = 0.5 if the respondent is unsure or indifferent, and Acceptability = 1 if respondents choose B to be less acceptable, implying acceptability of A.\textsuperscript{8} Respondents are also then asked for the appropriate punishment level, in increasing severity levels from none, a small fine, a hefty fine, to jail time. This is also an ordinal outcome variable representing the latent distribution of punishment severity desired for the less acceptable hypothetical person.

*Dalit Caste* is a binary variable for the person chosen to be more acceptable is of the Scheduled Caste (Dalit); *Religion Similarity* is a binary variable denoting whether the more acceptable person has the same religion as the respondent. $\Delta Income$ would be the difference in income between hypothetical person A and B. Income levels are presented as four levels, at 3000, 6000, 9000, and 12000 Rupees\textsuperscript{9}; these are randomly assigned (along with no information) to the hypothetical person. $\Delta Quality$ is the difference in hours of electricity supplied to the place where the hypothetical persons live. The hours of electricity supply are randomly assigned from no information to 8, 12, 16, 20, 24 hours of reliable electricity. Both income and electricity quality differences is computed by the person B-person A. $X_i$ is a vector of respondent-level control variables, and $\epsilon_i$ is a stochastic error term. Standard

\textsuperscript{8}This coding is represents a reversal as seen in the Pre-Analysis Plan. There are no qualitative differences, but for coefficient interpretation a positive outcome is easier.

\textsuperscript{9}These levels were chosen in consultation with CEEW and Morsel India for an appropriate range of income for households in the sample.
errors are clustered at the individual or village level, as responses to the scenarios are likely to be highly correlated within individuals or communities.

The model specification is run in both an ordinary least squares (OLS) linear regression as well as in ordered logistic regression, given that the outcomes of acceptability and punishment are both ordinal categorical outcomes. A summary of our outcome variables and primary independent variables can be found in Table 1.

[Table 1 about here.]

4.3.2 Controls

Additionally, we include a number of control variables. While these are not necessary for the purpose of identification, we include them for the following reasons in order to obtain more precise estimates of effects, in case they were significant. The first is a dummy variable indicating whether the respondent was from a rural or an urban area, in order to ensure that our effects are not driven primarily by respondents coming from different types of areas.

Second, we include a dummy variable indicating whether the respondent lives in an electrified household connected to the grid. This is because our interpretation of respondents’ perception of social acceptability may be different for electrified and non-electrified households – in the case of the former, respondents have the reference of their current access and cost, while in the case of the latter, respondents are viewing theft from not consuming grid electricity at all.

Third, we control for the average number of hours of electricity supply a respondent had access to each day. This variable takes a value of zero for non-electrified households. Next, we control for logarithmized household expenditures. These allow us to account for whether richer respondents have different ideas of social acceptability of theft. Finally, we include a variety of dummy variables to account for household socioeconomic status – namely, dummy variables for caste, religion, education-level, and whether the respondent had a government
ration card. Response to a question on trust is included as additional control, in case social trust strongly determines social acceptability of theft.

5 Results

The survey was conducted between May and July 2018 for 900 rural and 900 urban households. We report our findings in this section.

In Figure 3, we summarize the results for social acceptability as an outcome at the scenario level. Recall that we have coded the acceptability to be the acceptability of hypothetical person A committing the small crime.\(^{10}\) The regressions in Figure 3 represents the full specification, whereby we regress acceptability of A on the income and electricity supply differences of the offenders, the Dalit-status of person A, religion similarity of person A to the respondent, and all additional controls. Figure 3a represents the OLS model, clustering standard errors by village or ward respectively. Because the outcome variable is an ordinal outcome (accept, indifferent, and not accept), we present results from the ordered logit model as well in Figure 3b. The number of observations is slightly discounted from the 7200 possible scenarios due to missing observations for some of the control variables.\(^ {11}\) The income variables represent the differences in income between hypothetical person B and A; the hours variables represent the differences in supply hours between B and A. I.e., Income: -9 represents the scenario in which A has 9000 more rupees of income than B; Hours: +4 represents the scenario in which B has 4 more hours of electricity supply than A.

Both Figure 3a and 3b provide similar results. First of all, we see that income differences between B and A strongly affect the social acceptability of A committing the small crime. Since income difference is computed as B’s income minus A’s, positive income differences means that B has more income than A. The positive and significant coefficient indicates that

\(^{10}\)Since respondents only choose between A and B to be less acceptable (unsure is permitted), by coding acceptability of A we also in effect include the relative acceptability of person B.

\(^{11}\)4 scenarios per respondent; 1800 respondents in total yields 7200 at the scenario-level.
the stronger this difference is, the more acceptable it is for A to commit theft. \(^{12}\) We find a statistically significant effect of the income context of the social acceptability of theft: the higher the income, the less acceptable it is to commit theft.

Secondly, we find a similar result with the electricity supply quality. Here we also see that differences in electricity hours supplied to the offenders A and B matter for acceptability. Akin to income, the more hours (better quality) one receives than the other person, the less acceptable it is to steal. The coefficients are somewhat smaller than the income effect with larger confidence intervals. Religion similarity of A to the respondent’s own religion is not a statistically significant determinant of social acceptability; other controls did not have statistical significance either.

[Figure 3 about here.]

Table 2 presents the regression results in parallel with Figure 3, with the binned income and hours differences between the hypothetical offenders replaced by a continuous variable. Column 1 represents the OLS regression results. Indeed we see statistically significant effects of social context. The OLS model would predict a 0.0178 point increase in acceptability for a 1000-rupee difference between B and A (where B has more income than A). Given that the mean household expenditure in the sample of 8408 rupees, and the mean categorical incomes 7500 rupees, the 1000-rupee difference would translate into a 12-13% increase in income in a rural household. Since acceptability of had a mean of 0.543, the point increase would translate to an increase of 3.3%.

For the difference in hours of electricity supplied, a one hour increase in hours would mean a 0.007 increase in the acceptability score, so the marginal hour difference represents a difference in acceptability by 1.2%.

\(^{12}\)Conversely, if A is the more well-off person, income differences are negative. The negative coefficients similarly indicate that the more well-off the person is, the less acceptable it is for them to commit theft.
To provide a better interpretation of the results given that the outcome variable of interest is in graduated levels of acceptability (A acceptable/B less acceptable, indifferent, B acceptable/A less acceptable.), column 2 represents the ordered logistic regression results in log-odds. Exponentiating the coefficients give us the odds ratios. Controlling for the other explanatory variables, the unit increase in income differences between B and A would increase the odds of choosing A to be more acceptable (coded in ordered levels as A less acceptable (B more acceptable), indifferent, or B less acceptable (A more acceptable), as compared to choosing indifferent or A is less acceptable) by 11%. The unit increase in differences in hours would increase the odds of choosing A to be more acceptable by 4%. Figure 4 shows the predicted probabilities for choosing A as more acceptable (B less acceptable) by income and electricity supply differences. Clearly, the more well-off the hypothetical offender is in terms of income and electricity supply, the lower the predicted probability of acceptance; conversely, the less well-off the hypothetical offender is, the higher the predicted probability of acceptance. The slight asymmetry suggest a small “first person” A bias but the overall result is consistent.

[Figure 4 about here.]

As we also saw in Figure 3, there is a significant (at the 0.01 level) negative coefficient for if the hypothetical person is of the Dalit/Scheduled Caste or not, suggesting that the SC status actually decreases the social acceptability of theft. The ordered logit results (Column 2) would indicate that if A were to be of the Dalit Caste, the odds of choosing A to be acceptable (holding all else constant) as compared to responding indifferent or A being less acceptable would be lower. This lends some support to either the explanation of persistent social discrimination or stereotype aversion; based on this data, we could not disentangle the two, but posit that caste politics could play a role in designing theft-curbing policies.

[Table 2 about here.]
Recall that punishment levels are designated for the less acceptable person determined by the respondent, the independent variables of income and hours are instead presented as absolute differences between the hypothetical individuals, as the punishment levels refer to whoever was the less acceptable already. In Figure A3, we summarize the results for desired levels of punishment as an outcome at the scenario level. For the caste and religion dimensions, we include which hypothetical person was chosen as less acceptable (less acceptable × caste/religion status). We do not find statistically significant explanations for desired punishment. Neither income nor supply differences strongly affect desired punishment levels. The differences between individuals do not strongly affect desired levels of punishment, suggesting that while income and supply hours affect acceptability, the level of punishment is less sensitive to the differences of these hypothetical offenders. Additional robustness tests are included in the Appendix A2 and do not qualitatively affect the results.

Within the set of hypothetical offenders deemed less acceptable, their levels of characteristics could still distinguish between punishment categories. In Table 3, we see that income and supply levels among less acceptable offenders affect the desired punishment levels; respondents preferred harsher punishments for hypothetical persons with more income and better electricity quality. Meanwhile, the respondent’s own hours of supply, trust levels towards institutions, and Scheduled Caste/Dalit status had a small positive effect in desired punishment levels. Desired punishment levels are higher for households with more hours already, which could be explained by a stronger norm of no theft as quality is already more adequate. Respondent’s own caste status also influenced the desired punishment levels: if the respondent is of the Scheduled Caste, then the punishment desired is less. On the other hand, one’s own spending (a proxy for income) reduces the punishment levels desired. The more spending reported by the respondent, the smaller the punishment sought. Column 1 reports OLS results and Columns 2-3 the ordered logit results.

For a 1000-rupee increase between hypothetical offenders deemed less acceptable, the
odds of choosing one category higher desired level of punishment increases by 4.1%, significant at the 0.01 level holding all else constant. For 1 additional hour of supply, the odds of choosing one category higher desired level of punishment increases by 3.7%, significant at the 0.01 level holding other variables constant. Thus, though the differences between hypothetical offenders presented do not add to different punishment levels, punishment levels can still be distinguished by income and supply quality within the less acceptable offenders.

[Table 3 about here.]

Additionally, because our conjoint experiment involved repeating the scenarios four times per respondent with different randomly-assigned characteristics, one might be concerned about priming effects and whether respondents’ responses affect subsequent ones. Moreover, we only ask for the appropriate punishment levels for the less acceptable hypothetical individual, and respondents detect this pattern only after the first choice. Thus, we replicate the results when: (1) including only the first scenario, and (2) excluding the first scenario. Tables A10-A11 and A14 report the results restricted to scenarios 2-4 only, while Table A15 reports the results restricted to scenario 1. The results are consistent with the main results.

To summarize, we find two main results. First, the income and hour hypotheses outlined above seem to hold true. We find positive and significant coefficients for both the difference in income and hours. This means that, the more income person B has in comparison to person A (the poorer person A is), the more acceptable respondents find person A for using katiya. For electricity hours, a similar result is shown. The more hours person B receives in comparison to person A, the more acceptable it would be for person A to steal electricity via katiya. We also find negative results for the effect of caste; if person A is of the Dalit caste, it is less likely for respondents to find the use of katiya acceptable. A potential explanation could be, as outlined above, that responses are indicative of an environment of persistent social discrimination or of stereotype aversion. The second result is that socioeconomic
context differences between offenders do not directly affect punishment levels, i.e., the sole differences between hypothetical offenders don’t increase the appropriate punishment levels. Looking within the less acceptable offenders, the odds of choosing a higher punishment category is indeed sensitive to income and supply contexts of the less acceptable hypothetical offender. Although the $R^2$ is fairly low in our models, in this paper we were more interested in testing specific hypotheses based on a priori theory than on explaining all of the variation in preferences over theft and punishment.\footnote{The econometric literature suggests that when a researcher’s goal is hypothesis testing, $R^2$ is much less useful than the specific regression coefficients and their confidence intervals; it is only when comparing across models that use the same dependent variable that the comparison of $R^2$ values becomes all that useful (King, 1986: 669-678). Achen (1982: 61), for example, argues that $R^2$ “measures nothing of serious importance.” Future work should model the decision process and functional form of subjective acceptability in various response scales.}

6 Conclusion and Policy Implications

In many developing countries, continued subsidies for public services have been shown to trap households into receiving poorer services. Regions receiving such subsidies face significant issues with distribution and with non-paying users (McRae, 2015). In the electricity sector, theft persists as a significant barrier to ensuring safe, proper access to power (Lewis, 2015). Social norms towards theft activities could present an understudied factor that stagnates cooperative behavior, directly affecting the efficacy of proposed policy reforms.

Our results show that socioeconomic contexts of people affect how others view whether or not power theft is an acceptable action. In particular, the economic circumstances and the electricity supply quality strongly affect the perception of social acceptability of committing electricity theft. Under OLS, a 1000-rupee income difference (around 12% relative to respondent’s mean income; approx. 15 USD) between hypothetical vignette agents is associated with a 3.3% difference in acceptability of theft activity. In addition, one additional hour of electricity supply received by the vignette person would reduce the acceptability of their theft activity by 1.2%. The more well-off an individual is, with better supply quality,
deemed less acceptable to be committing theft, and vice versa. We find evidence supporting context-dependent social approval for stealing electricity. Religious, caste, and associated in-group preferences seem to be of secondary order, though the complexities of caste discrimination remain a potential area for further research in the political economy of small crimes in the development policy context.

We also find that punishment desired for power theft is low (with a mean at warning or small fine). Economic and electricity contexts differences between hypothetical offenders do not fundamentally alter in punishment levels desired for power theft, but among less acceptable persons, these dimensions do positively affect the odds of choosing a higher category of punishment. This could be explained in two ways. First, it could suggest that the prevailing sense of justice (different from social acceptability) is tied strongly to the crime itself, the stealing, and so punishment levied would be mostly about the crime, and not the context differences. Second, while there exists a sense of social reprimand for stealing power, actual desired enforcement of regulations is low. Power theft is seen as bad, but not so bad that it warrants strong punishment–either it has become a status quo in society, or it just simply isn’t a priority in the individual’s justice compass, compared to other priorities.

This is consistent with experimental evidence in previous work. Cross-cultural field and laboratory experiments revealed that a lack of strong social norms of civic cooperation as expressed in people’s attitudes towards small crimes such as tax evasion, welfare abuse, and fare evasion leads to weak or anti-social punishments (Chaudhuri, 2011). If improving public service provision requires the cooperation of theft offenders, citizen contributors, and public service providers, then recognizing the social norm aspect of theft would be important to ensuring proper public service development.

The demonstrated reluctance to punish could be reflective of the vicious circle of mistrust between utility providers and citizens: if service quality is poor and citizens don’t trust utilities to improve, then punishing the poor for stealing would be unjust, as willingness
to pay for improved quality is strongly related to trust levels (Blankenship, Wong, and Urpelainen, 2019). The reluctance to punish could however co-evolve with development and strength/weakness of enforcement. It is highly plausible that eventually punishment could be attractive if income, trust, and enforcement improve significantly and thus tip toward a mechanism of loss aversion instead of one of reluctance. This in practice may be slow to realize, as politicians have demonstrated forbearance for illicit activities in order to court electoral support of poor voters (Golden and Min, 2012; Holland, 2017).

Overall, our results indicate that indeed theft acceptability is linked to the offender circumstances, in particular, the income levels and the hours of electricity supply they receive. The richer the perpetrator, and the more hours of electricity supply they receive, the less likely it would be for citizens to view their behavior as acceptable. We do not find that similarities between the respondent and the perpetrator in caste and in religion affect the perceptions of acceptability, so in-group preferences or biases such as seen in Tajfel (1974) are not important determinants of social acceptability of power theft.

In the latest effort to secure universal power access, the central government of India launched the Saubhagya scheme to accelerate power connections through intensive connection campaigns that were supposed to conclude in 2018. The Saubhagya scheme introduced free or low-cost connections along with harsher punishments for theft offenders including lengthy jail times. In 2017, the Uttar Pradesh State Power Minister announced up to five-year jail time for first-time theft offenders and seven years for second time offenders. In mid 2018, it was reported that Uttar Pradesh has been doubling theft detection squads and violating property rights and privacy by using ladders to enter balconies (Lahariya, 2018). These aggressive, top-down approaches to curb theft are unlikely to secure strong social buy-in because our results show that while social reprimand can be significant, desired punishment levels are far below these kinds of measures being implemented or considered. Successful reduction in power theft will require a different approach, one that considers the social atti-
tudes and prevailing norms in the communities; a one-size-fits-all, harsh punishment model is unlikely to work.

The linkage between income contexts and theft acceptability is notable. As the region develops and as income rises, it is possible that acceptance of theft will decline. Policy should consider the linkage between income and theft acceptability and leverage the possible reinforcement effects of increased income and lower tolerance of theft. If policies to curb theft could be coupled with improved electricity supply quality provided to consumers, one could anticipate rapid results in improving overall public service provision. A potential virtuous circle could be sustained with better service quality; less acceptable theft behavior; lower theft rates; and in turn, better service quality.

Given our results on social acceptability and punishment, we recommend switching from a model of harsh punishment to a participatory, holistic approach to curb power theft. Community-based participatory rule setting, multi-stakeholder engagement, and a close co-operation model with local power officials could create longer lasting impacts with better accountability (Paul, 1992; Joshi, 2017). Regulators and utility officials should pay close attention to the social and economic contexts of theft offenders. For such a model to succeed, trust-building between the consuming agents, village leaders, utility managers, officials, and linemen have to be strengthened. A scheme to help convert and retrain katiyamen—the laborers who dangerously attach live wires onto existing systems—to work at the utility or in another relevant industry could also be considered.

In order for theft deterrents to work and be sustained, simply raising punishment levels would not achieve the goal if there is a sense of social acceptability of theft—whether it is in retaliation to poor service quality thus perpetuating the theft-loss cycle or due to prevalence (Gaur and Gupta, 2016; Douhou, Magnus, and van Soest, 2011). A sustaining policy outcome requires social norm adjustment, from a “theft seems acceptable” one to a no-theft one, which in our view would not happen without the consideration of the income
and supply quality dynamics, as well as the complexities of caste and social discrimination.

Extensions to this work can include eliciting the beliefs and \textit{perceived} magnitude of theft committed by different segments of the population, baseline biases towards caste status, and the \textit{perceived} beliefs of others in their community and in the broader society. This relates to emerging work on how \textit{perceived} beliefs (i.e., what I think others think) could play a critical role in people’s acceptability of various social behaviors, such as women’s participation in the labor market (Bursztyn, González, and Yanagizawa-Drott, 2020). In addition, research on social sanctions could focus on eliciting socially desired punishment levels for both sets of hypothetical offenders to study the extent to which social and legal sanctions align in these settings (Kube and Traxler, 2011).

This paper provided evidence that social contexts do affect social acceptability of power theft using a large-scale conjoint experiment. The fact that desired punishment for theft is low suggests that a harsh punishment model is unlikely to have strong social buy-in. Instead, it may increase risks and rents for offenders and generate more rent for theft and corrupt officials who benefit financially from the scheme. Future research should focus on delineating effective strategies for norm shifts in theft tolerance and public service provision.
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Figure 1: Defined Sampling Regions for Uttar Pradesh
Section 6 Attitudes on Crime

You will now be asked to compare two situations between two hypothetical people a few times. For each set of people, please tell me what you think about them.

Which do you find **less acceptable**, behavior of Person A or B? You can say about equal as well.

<table>
<thead>
<tr>
<th>Person A</th>
<th>Person B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Caste background dimension</strong></td>
<td><strong>Caste background dimension</strong></td>
</tr>
<tr>
<td>BLANK (50%)</td>
<td>BLANK (50%)</td>
</tr>
<tr>
<td>Dalit (50%)</td>
<td>Dalit (50%)</td>
</tr>
<tr>
<td><strong>Religion background dimension</strong></td>
<td><strong>Religion background dimension</strong></td>
</tr>
<tr>
<td>BLANK (50%)</td>
<td>BLANK (50%)</td>
</tr>
<tr>
<td>Hindu (25%)</td>
<td>Hindu (25%)</td>
</tr>
<tr>
<td>Muslim (25%)</td>
<td>Muslim (25%)</td>
</tr>
<tr>
<td><strong>Activity dimension</strong></td>
<td><strong>Activity dimension</strong></td>
</tr>
<tr>
<td>Steals from friends/family (6.66%)</td>
<td>Steals from friends/family (6.66%)</td>
</tr>
<tr>
<td>Steals from strangers (13.33%)</td>
<td>Steals from strangers (13.33%)</td>
</tr>
<tr>
<td>Has katiya at home (80%)</td>
<td>Has katiya at home (80%)</td>
</tr>
<tr>
<td><strong>Income dimension (all activities)</strong></td>
<td><strong>Income dimension (all activities)</strong></td>
</tr>
<tr>
<td>BLANK or</td>
<td>BLANK or</td>
</tr>
<tr>
<td>When household income is [3000, 6000, 9000, 12000]</td>
<td>When household income is [3000, 6000, 9000, 12000]</td>
</tr>
<tr>
<td><strong>Electricity dimension</strong></td>
<td><strong>Electricity dimension</strong></td>
</tr>
<tr>
<td><em>ONLY IF Activity Dm. Includes Katiya</em></td>
<td><em>ONLY IF Activity Dm. Includes Katiya</em></td>
</tr>
<tr>
<td>BLANK or</td>
<td>BLANK or</td>
</tr>
<tr>
<td>When the village/ward has less than [8, 12, 16, 20, 24] hours of reliable electricity</td>
<td>When the village/ward has less than [8, 12, 16, 20, 24] hours of reliable electricity</td>
</tr>
</tbody>
</table>

Percentages indicate the probability of that value appearing within that dimension in a scenario. If not noted, the probability is equal among all possible values.

Figure 2: Illustration of the conjoint section of the survey
Figure 3: Effects of scenario frames on respondent’s acceptance of theft (conjoint-level). Standard errors clustered at the village/ward level. Mean acceptability = 0.543 (0.333).
Panel (a) reports the OLS regression of acceptability on income and electricity quality differences, as well as religion similarity and caste status of the perpetrator. Panel (b) reports the same specification except with an Ordered Logit Model instead. Income and electricity quality differences affect the social acceptability of a person committing the theft. The worse off one is in income and in quality of electricity, the more acceptable it is for them to steal.
Figure 4: Predicted probability of respondent’s acceptance of hypothetical offenders (conjoint-level) from ordered logit regression. Standard errors clustered at the village/ward level.

Panel (a) reports predicted probability of acceptability by differences in income between vignette offender B and A. Panel (b) reports predicted probability of acceptability by differences in electricity supply hours between vignette offender B and A.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptability</td>
<td>Respondent’s choice of the person that is more acceptable</td>
<td>A, B, or equal/don’t know</td>
</tr>
<tr>
<td>Punishment</td>
<td>Scale of the desired/appropriate punishment levels</td>
<td>1(no punishment)-4(jail time)</td>
</tr>
<tr>
<td>Covariates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>∆Income</td>
<td>Difference in income between the less and more acceptable person</td>
<td>0-9000</td>
</tr>
<tr>
<td>∆Quality</td>
<td>Difference in hours supplied between the less and more acceptable person</td>
<td>0-16 hours</td>
</tr>
<tr>
<td>Dalit Caste</td>
<td>Whether the more acceptable person is of Dalit caste</td>
<td>0-1</td>
</tr>
<tr>
<td>Religion Similarity</td>
<td>Whether the more acceptable person share the same religion as respondent</td>
<td>0-1</td>
</tr>
</tbody>
</table>

Table 1: Summary of variables.
<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>∆ Income (B-A)</td>
<td>0.0177***</td>
<td>0.106***</td>
</tr>
<tr>
<td></td>
<td>(0.00110)</td>
<td>(0.00642)</td>
</tr>
<tr>
<td>∆ Hours</td>
<td>0.00657***</td>
<td>0.0395***</td>
</tr>
<tr>
<td></td>
<td>(0.000760)</td>
<td>(0.00453)</td>
</tr>
<tr>
<td>Dalit Caste of A=1</td>
<td>-0.0238**</td>
<td>-0.144**</td>
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<td>(0.0486)</td>
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<td>Rel. Sim of A=1</td>
<td>0.0107</td>
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<td>(0.00936)</td>
<td>(0.0560)</td>
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<tr>
<td>Education of Resp.</td>
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<td>-0.00552</td>
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<td>(0.00665)</td>
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<td>Log Spending of Resp.</td>
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<td>0.0508</td>
</tr>
<tr>
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<td>(0.00796)</td>
<td>(0.0493)</td>
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<tr>
<td>Urban</td>
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<td>-0.0291</td>
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<td>(0.0575)</td>
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<td>Electrified</td>
<td>-0.0163</td>
<td>-0.0735</td>
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<tr>
<td></td>
<td>(0.0323)</td>
<td>(0.196)</td>
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<tr>
<td>Ration card</td>
<td>-0.00241</td>
<td>-0.0107</td>
</tr>
<tr>
<td></td>
<td>(0.00893)</td>
<td>(0.0540)</td>
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<tr>
<td>Hours supplied of Resp.</td>
<td>-0.000705</td>
<td>-0.00503</td>
</tr>
<tr>
<td></td>
<td>(0.00101)</td>
<td>(0.00612)</td>
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<tr>
<td>Resp. Dalit caste</td>
<td>0.0166</td>
<td>0.110</td>
</tr>
<tr>
<td></td>
<td>(0.0122)</td>
<td>(0.0773)</td>
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<tr>
<td>Resp. Hindu</td>
<td>0.00894</td>
<td>0.0552</td>
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<td>(0.0119)</td>
<td>(0.0712)</td>
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<td>Trust</td>
<td>0.000300</td>
<td>0.00297</td>
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<td>(0.0207)</td>
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<td>Constant</td>
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<td>(0.0810)</td>
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N 6596 6596
R² 0.065
Pseudo R² 0.033
χ² 452.272
p 0.00000 0.00000

Standard errors in parentheses
Standard errors clustered at the village/ward level
Column 1: OLS regression; Column 2: Ordered logit regression
Reports regression results with acceptability of person A as the dependent variable.
Income and hours difference computed as compared to person B, where positive difference means B has more than A.
Rel Sim is Religion Similarity of A to the respondent.
+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001
Table 3: Punishment for the less acceptable

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<tr>
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<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
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<tbody>
<tr>
<td>Income of less acceptable person</td>
<td>0.00001**</td>
<td>0.00004**</td>
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<td>(0.00000)</td>
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<td>(0.00001)</td>
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<td>Supply hours of less acceptable person</td>
<td>0.00999***</td>
<td>0.03586***</td>
<td>0.03589***</td>
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<td>(0.00246)</td>
<td>(0.00945)</td>
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<tr>
<td>Dalit Caste of less acceptable person=1</td>
<td>0.00865</td>
<td>0.05517</td>
<td>0.05512</td>
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<td>(0.03122)</td>
<td>(0.11345)</td>
<td>(0.11357)</td>
</tr>
<tr>
<td>Resp. Dalit caste=1</td>
<td>-0.10856*</td>
<td>-0.38494+</td>
<td>-0.38582+</td>
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<td>(0.05285)</td>
<td>(0.20754)</td>
<td>(0.20763)</td>
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<tr>
<td>Dalit Caste of less acceptable person=1 × Resp. Dalit caste=1</td>
<td>0.04319</td>
<td>0.12862</td>
<td>0.12884</td>
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<td>(0.06795)</td>
<td>(0.26828)</td>
<td>(0.26836)</td>
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<td>Less acceptable person Hindu=1</td>
<td>-0.02751</td>
<td>-0.15993</td>
<td>-0.16190</td>
</tr>
<tr>
<td></td>
<td>(0.05192)</td>
<td>(0.20252)</td>
<td>(0.20217)</td>
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<td>Resp. Hindu=1</td>
<td>0.04500</td>
<td>0.15181</td>
<td>0.14922</td>
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<td>(0.05231)</td>
<td>(0.19674)</td>
<td>(0.19704)</td>
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<tr>
<td>Less acceptable person Hindu=1 × Resp. Hindu=1</td>
<td>0.06154</td>
<td>0.28055</td>
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<td>(0.06802)</td>
<td>(0.26011)</td>
<td>(0.25938)</td>
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<td>Log Spending of Resp.</td>
<td>-0.04426+</td>
<td>-0.16916+</td>
<td>-0.16808*</td>
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<td>Urban</td>
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<td>(0.04623)</td>
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<td>0.16139</td>
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<td>(0.14192)</td>
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<td>Hours supplied of Resp.</td>
<td>0.00991*</td>
<td>0.03849*</td>
<td>0.03856*</td>
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<td>(0.01590)</td>
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<td>Trust</td>
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<td>0.14771*</td>
<td>0.14722*</td>
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<td>Respondent using Katiya=1</td>
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<td>(0.26655)</td>
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N                                      | 1771         | 1771         | 1771         |
R²                                      | 0.037        |              |              |
Pseudo R²                                | 0.024        | 0.024        |              |
χ²                                      | 47.390       | 49.345       |              |
p                                      | 0.00000      | 0.00003      | 0.00003      |

Standard errors in parentheses
Standard errors clustered at the village/ward level
Column 1: OLS regression; Column 2-3: Ordered logit regression
Reports regression results with punishment levels as the dependent variable.

+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001