

Bribes, Bureaucracies and Blackouts: Towards Understanding How Corruption at the Firm Level Impacts Electricity Reliability

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MORE than 1.2 billion people around the world are without electricity and 1 billion more have access to only unreliable power networks. Unreliable power can hinder or completely halt enterprise productivity, creating significant constraints on economic activity, growth, and human development. Poor reliability also impedes the ability of households to conduct everyday activities, ranging from revenue generating and capacity building activities to social engagements. Humans rely critically on a secure and stable, high-quality supply of power, however improving reliability is characterized by vast complexity and is not strictly an issue related to investing in physical electrical infrastructure expansions and improvements. The problems are often symptoms of much deeper issues that transcend the boundaries of the electricity sector and are intimately tied to areas such as governance, corruption, fiscal policy, social equity, and political institutions.

As such, the underlying causes of poor electricity reliability are complex, particularly in developing countries, and critically relevant to policymakers, revenue-generating firms, and ultimately every member of society. In this paper, the authors focus on corruption at the consumer level as one potential cause of poor reliability. The authors develop a statistical model to estimate the impact of bribery for electricity connections on

power outages and their related commercial losses to firms. Bribes made by consumers reflect self-interested behavior as firms seek to secure electricity connections in order to operate. However, in aggregate, the authors postulate that this bribing behavior overexploits the electrical grid, creating a weaker system that is more vulnerable to power outages. In light of this, these firms could actually experience more power outages and incur greater commercial losses, which is contrary to the intuitive result of the bribe transaction resulting in more secure and reliable service provision.

To the authors' knowledge, this paper is the first to study how corrupt behavior at the consumer level impacts the demand side of the electricity sector. While the question of how corruption, in its broad sense, impacts the power sector and its efficiency is not new, very few papers address the issue of reliability, which is a direct measure of how consumers are impacted. Previous work has demonstrated the importance of electricity reliability for economic growth and development, however the underlying causes of poor electricity reliability in developing countries have gone relatively unstudied.

The authors show that bribes for electricity connections have a statistically significant correlation with more monthly power outages and their related commercial losses incurred by

firms. They find that the propensity to bribe for an electricity connection is associated with an increase of 20 power outages per month and a 28% increase in annual sales lost due to power outages on average.

The results parallel a tragedy of the commons story: electricity, which exhibits common-pool resource characteristics, suffers from overexploitation as self-interested individual firms rationally bribe for electricity, creating negative impacts in aggregate on the overall quality of the resource (electricity reliability). Studying corruption at the individual firm level allowed the authors to study rational self-interested behavior, bribes for electricity connections, and correlate it with an outcome that proxies for reduced quality of service: power outages. As such, bribes may facilitate a weaker state of the electrical system that is more vulnerable to failure.

Furthermore, these findings suggest that one effective governance intervention for improving reliability may be to focus on reducing bribes for electricity connections, perhaps through enhanced transparency, oversight, and enforcement. Ultimately, given the importance of electricity reliability for economic growth and development, the findings imply that policy interventions that target the reduction of bribery for electricity connections at the consumer level could contribute to growth and development in developing countries.