

RESEARCH BRIEF

Does access to electricity accelerate home-based business creation in rural Ethiopia?

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Based on EfD Discussion Paper 22-04, The Impact of Rural Electrification on Business Enterprise Creation (March, 2022), by Sied Hassen and Amare Fentie

Does access to electricity promote business creation over the short term and long term? Does the effect differ with grid and off-grid electricity access? We provide insights from the Electricity Access and Business Creation project in Ethiopia, based on the World Bank's Socio-Economic Survey data.

KEY MESSAGES

Most of the businesses in rural areas are home-based, i.e., the household runs businesses such as food sales, restaurants, mobile and electronics shops, barbering, etc., within their residence. **Rural households' business ownership increased from 17.5% in 2011 to 28.5% in 2016.** We found that:

- Connection to grid electricity increased rural households' operation of businesses by 5% over a long time period, but no effect is observed in the short term;
- Off-grid electricity does not have a measurable impact in either the short or the long run;
- If the government wants to speed up the transformation of the rural economy, rapid expansion of grid electricity is one of the key elements of infrastructure that should receive investment in the rural areas.

Background and Methodology

Better access to electricity is a prerequisite for any country's transformation from a rural economy to a mixed economy, including its transition to higher economic and societal development. In the information age, almost every human activity requires access to electricity. In this regard, Ethiopia has been undertaking substantial development in its electric sector since 2000. A significant number of rural towns are now within the national grid and a significant percentage of rural households are connected to grid electricity. Among the multiple potential benefits of creating access to electricity in rural

areas is the creation of non-agricultural business enterprises. Such enterprises provide opportunities for alternative income outside agriculture.

We found little previous research on the impact of rural electrification on enterprise creation in Ethiopia. Thus, the purpose of this study is to investigate whether access to grid/off-grid electricity helps rural households open business enterprises in Ethiopia.

This study is based on three waves (2011, 2013 and 2016) of the World Bank's Socio-Economic Survey. In each year, about 3000 households were interviewed on multiple

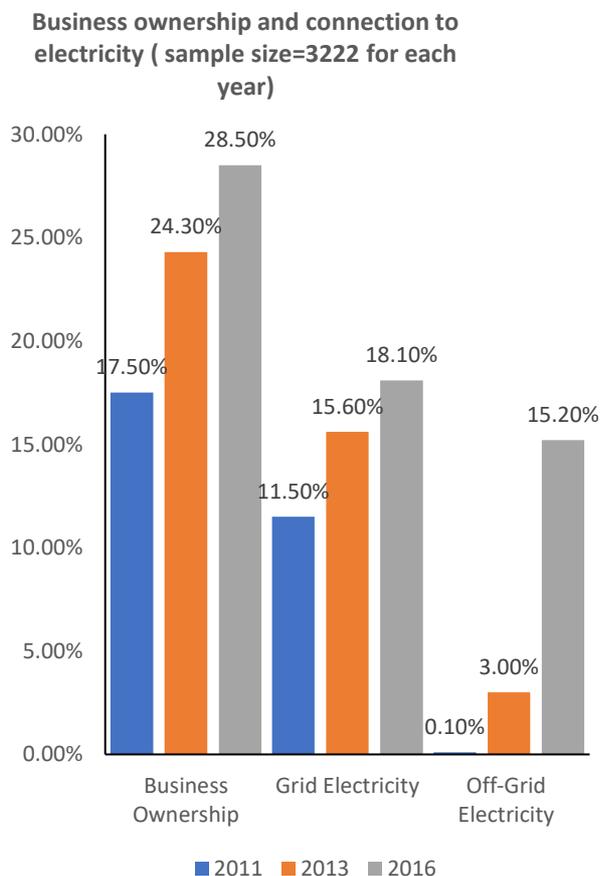
topics, including energy and home-based business activities.

Both qualitative (descriptive) and quantitative data analysis methods were used to analyse the data. In what follows, we present the results in brief.



A small businesses in rural Ethiopia

The change in rural households' business ownership is shown in this graph. The World Bank's socio-economic survey asked households whether a new business had opened over a 12-month time period. The result of this survey is presented in the graph.



As shown in the graph, rural households' business ownership increased from 17.5% in 2011 to 28.5% in 2016. This is consistent with the overall economic improvement in Ethiopia during this period and before. For example, a World Bank (2018) report shows that Ethiopia's economy experienced strong, broad-based growth averaging 10.3% a year from 2006/07 to 2016/17, compared to a regional average of 5.4%. Further, the share of the population living below the national poverty line decreased from 30% in 2011 to 24% in 2016.

Although there could be several explanations for the increase in rural business enterprises, the increase in access to electricity could be one factor. The graph also shows the trend in access to grid and off-grid electricity in rural areas. Access to grid electricity increased from 11.5% in 2011 to 18.1% in 2016. Access and connection to off-grid electricity, mainly through solar technologies, increased from 0.1% in 2011 to 15.2% actually connected in 2016. The expansion of off-grid electric sources increased total access to electricity to about 33% in 2016. This is consistent with the overall increase in access to electricity in the country. The World Bank (2018) online database also shows that the percentage of the rural population in Ethiopia with access to electricity increased from 15% in 2012 to 26.5% in 2016. Further, under the country's second Growth and Transformation plan, the national grid coverage to rural towns increased to 55% in 2016 and the percentage of households in the country that are actually connected to grid electricity also increased, to 30% in 2016. This implies the consistency of our survey results with government and international reports of access rates.

Quantitative Analytical Result

However, the graph does not distinguish whether the increase in business ownership is due to access to electricity or other factors. We used a quantitative analytical model (a regression model) to disentangle the effect of access to electricity. Using this method, the study found that households' access to grid electricity increased rural households' operation of businesses by 5% over a longer time period. However, there is no measurable effect in the short run. Off-grid electricity does not have a measurable impact over either the short or the long term.

Policy implications

The findings of this study are relevant from a policy perspective. They have implications for the country's second Growth and Transformation Plan, which aspires to transform the country's agriculture-dominated economy into an industrial economy. If the government wants to speed up this structural transformation, rapid expansion of electricity is one of the key elements of infrastructure that should receive investment in the rural areas. If such electricity is generated from renewable energy sources, these efforts can simultaneously reduce greenhouse gas emissions.

About the authors

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