

**Researchers**

Karthik Muralidharan  
University of California, San Diego

Anders Jensen  
Harvard University

David Lagakos  
Boston University

**Timeline**

2019

**Sample Size**

1,600 household properties

**Research Implemented by IPA**

Yes

# Improving Local Tax Collection Through Technology in Ghana

## Abstract

Low-capacity governments can face challenges in collecting the tax revenues necessary to promote economic development and provide public goods to their citizens. In partnership with Melchia Investments, a private Ghanaian technology company, researchers are conducting a pilot randomized evaluation to identify the effectiveness of a new tax collection technology in increasing property tax revenues for local governments.

## Policy Issue

Tax revenues can help governments promote economic development and provide public goods to their citizens. However, in many lower and middle-income countries where governments lack information about the economic activity of their citizens, tax authorities may not be able to raise revenues in a fair and efficient manner. In such contexts, tax regulations may not be fairly implemented, tax collection costs can be high, and citizens can lose their trust in the tax system.

Information technologies have the potential to address these issues by improving access to taxpayer information and automatizing the tax collection process. However, the transition to a technology-based tax collection system can present operational challenges and may spark backlash from tax collectors who oppose the transition. Can information technologies effectively improve tax collection in lower and middle-income countries?

## Context of the Evaluation

Ghana's local property taxation system faces several issues, including poor enforcement of tax regulations and high collection costs. According to census data of all 216 local governments, 76 percent of tax payments schedules were not based on official payment rules and tax collection costs represented 55 percent of collected revenues in 2017. In addition, citizens did not generally trust local tax officials and were not well aware of local tax regulations.

Melchia Investments, a private Ghanaian technology company, developed the Enhanced Revenue Management System (ERMS), a tax collection technology that has been adopted in early 2019 by six districts in Ghana to address such issues. The ERMS offers several features that contrast with the traditional system, including:

- Electronic billing and recording of bill payments, as opposed to handwritten bills and receipts.
- Mobile money payments for taxpayers, as opposed to cash payments.
- The use of an electronic point-of-sale device that allows for a real-time tracking of tax collectors, when it was not the case in the traditional system.

In addition, the government of Ghana established the National Builders Corps (NABCO) in 2016, a national service program that employs recent college graduates in government service. Each district is assigned 30 to 100 NABCO staff, who can be employed to support local government functions, including tax collection. In the six districts where it operates the ERMS, Melchia Investments has full control over the deployment of NABCO staff.

## Details of the Intervention

In partnership with Melchia Investments, researchers are conducting a pilot randomized evaluation to test the impact of the ERMS on property tax revenues and electronic tax payments. Researchers also explored the added value of presentations to taxpayers that either stress the costs of tax noncompliance or the benefits of tax compliance.

The researchers randomly assigned 1,600 properties to one of three groups where taxes were collected using the ERMS or to a comparison group:

- *ERMS*: Tax collectors visited at least 800 household properties using the ERMS to issue electronically printed tax bills, process tax payments using mobile money, and print payment receipts.
- *ERMS + non-compliance presentation*: Tax collectors and a NABCO staff member visited at least 200 household properties and, in addition to using the ERMS technology, the NABCO staff member led a presentation on the risks of non-compliance under the new system. The presentation emphasized the enhanced ability of government to monitor households and tax payments and to conduct additional tax enforcement visits.
- *ERMS + benefits presentation*: Tax collectors and a NABCO staff member visited at least

200 household properties and, in addition to using the ERMS technology, the NABCO staff member led a presentation on the on the benefits of the new system. The presentation highlighted the new system's fairness and transparency, and included a summary of current and planned municipal spending and request feedback from households on the tax collection process and expenditure priorities in the district.

- *Comparison group:* Tax collectors visited at least 400 household properties without using the ERMS.

The researchers collected daily data from the ERMS on the amount of tax collected and whether tax payments were made in cash or electronically. In addition, they collected qualitative data from households to gauge their satisfaction and views of the tax collection process and public spending in their district.

## Results and Policy Lessons

Project ongoing; results forthcoming.

July 24, 2020