

Technology and Local State Capacity: Evidence from Ghana

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We provide descriptive and experimental evidence on the role of technology in improving government tax capacity

Tax Collection Capacity is Essential for Development

- ❖ Besley-Persson (2013), Gordon-Li (2009)
 - ❖ Public goods provision facilitates development process
 - ❖ Lack of ‘state capacity’ limits taxation, which limits public goods provision
- ❖ How to raise tax collection capacity?
 - ❖ Better incentives for collectors (Khan, Khwaja, Olken, 2016)
 - ❖ Sending more letters / reminders (Hjort, Rao ...)
 - ❖ Better citizen engagement / morale
- ❖ This paper: Role of technology in tax collection

Setting: Local Governments in Ghana

- ❖ 216 local governments; provide few public goods on average
- ❖ Collect on average \$0.75 per capita per year
- ❖ Property taxes particularly under-collected (Govt of Ghana, 2014)
- ❖ Limited prior evidence on why tax collections so low

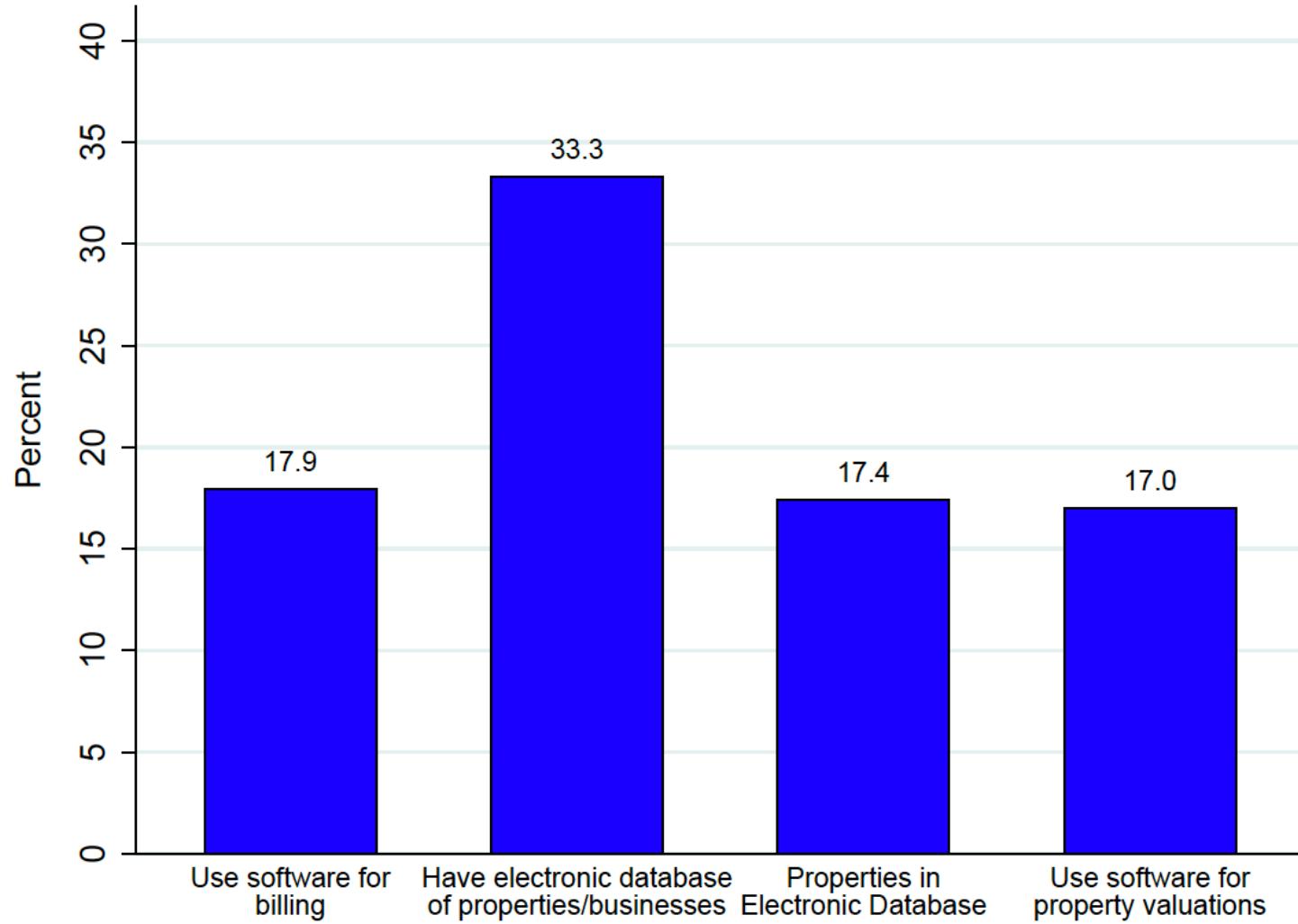
Descriptive evidence

Survey of tax collection practices and constraints

- ❖ Census of all the 216 local governments in Ghana
- ❖ Surveyed
 - ❖ officials involved in tax collection
 - ❖ elected assembly members
 - ❖ crossed section of citizens
- ❖ Comprehensive questions on tax collection practices and constraints



Technology Use in Billing + Collections is Low



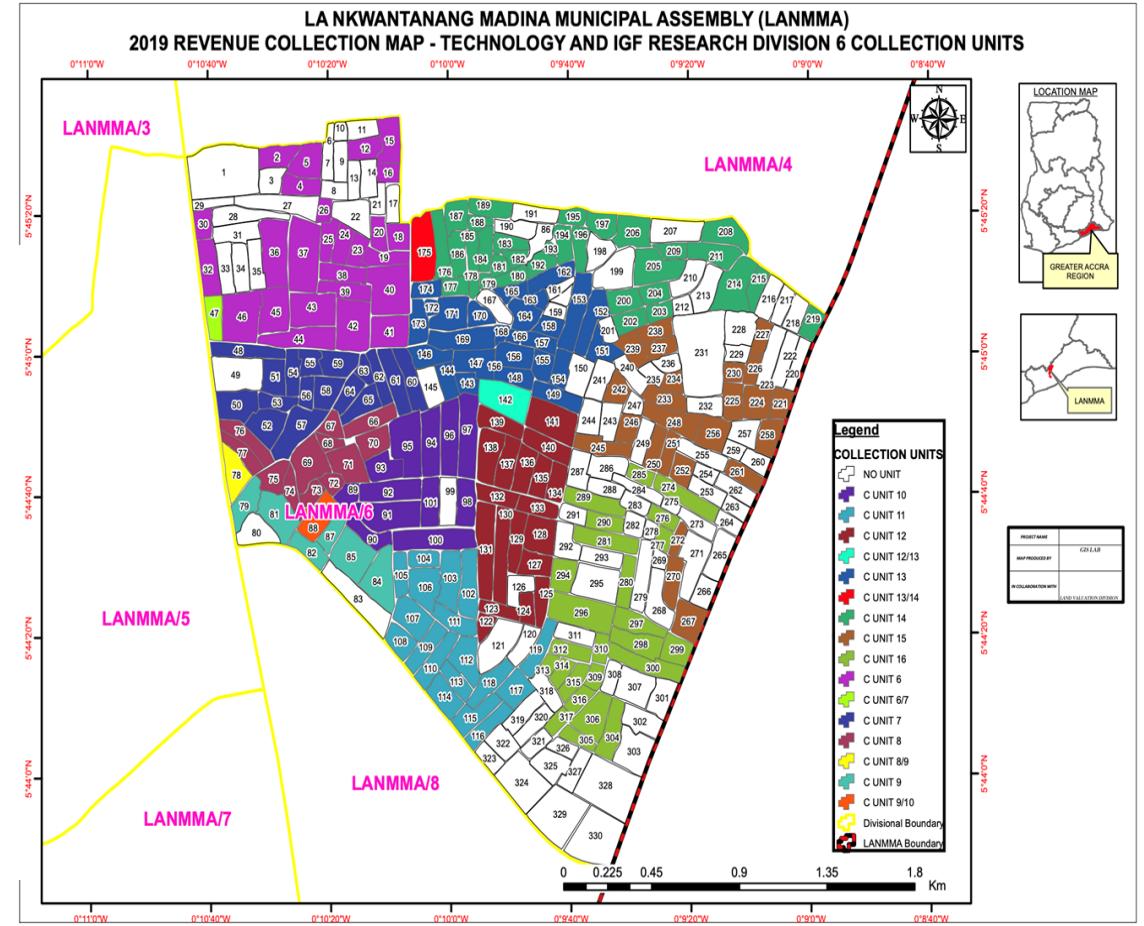
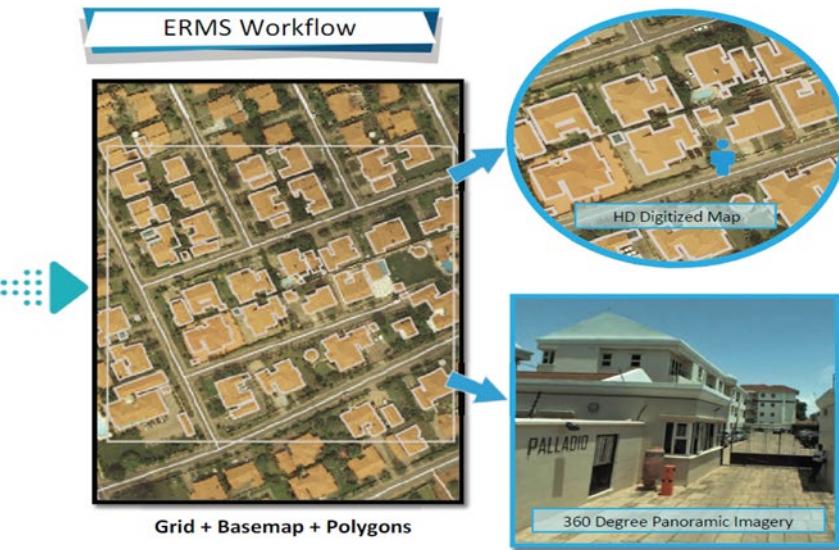
Use of Technology Correlates with better Tax Collection

- ❖ Local governments which chose to invest in technology:
 - ❖ deliver they deliver more bills,
 - ❖ collect more revenues and
 - ❖ have lower non-payment rates than do governments without technology.
- ❖ Question of causality?

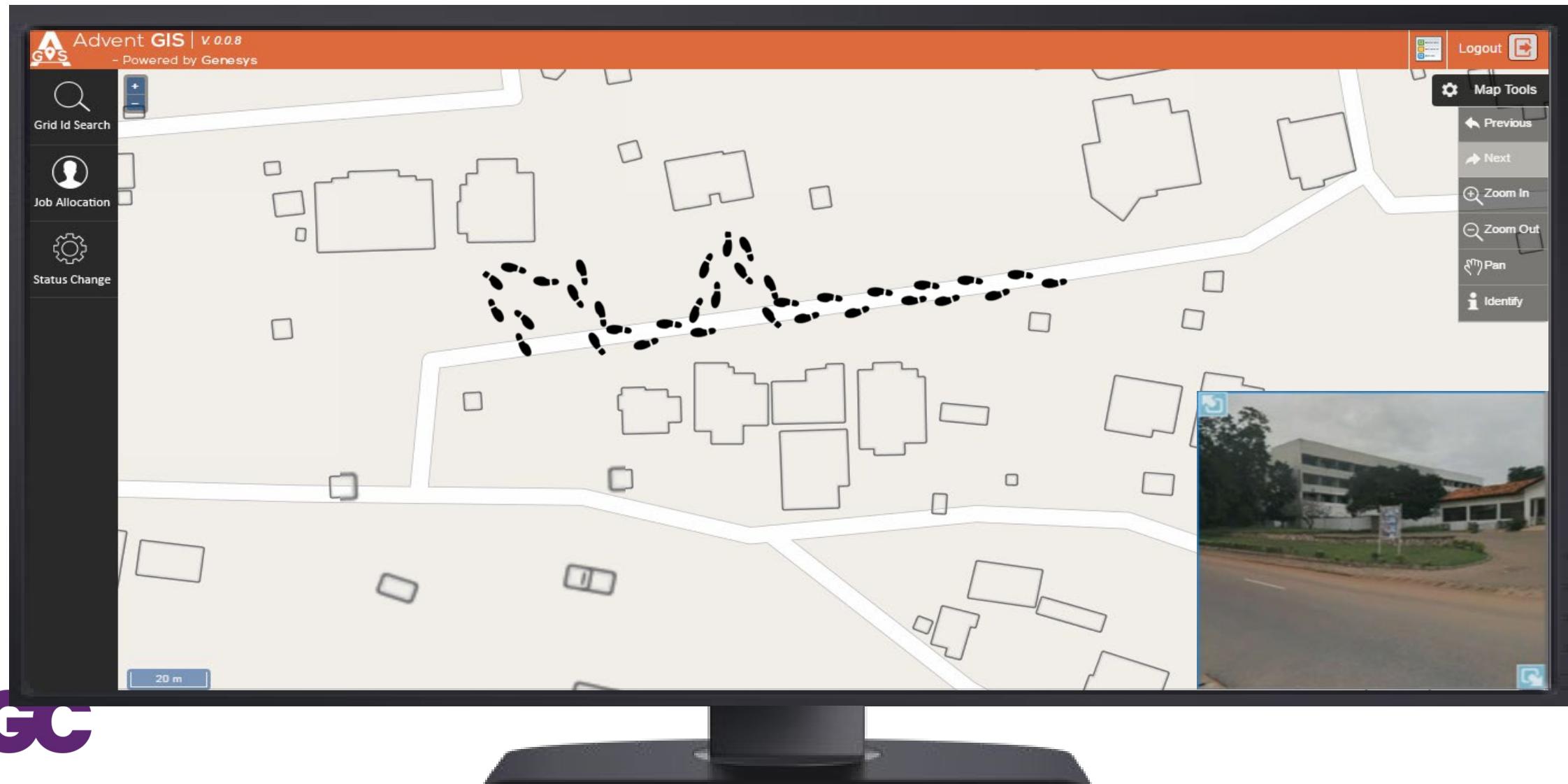
Experimental evidence

ERMS

Randomised the use of technology in one local government in Ghana

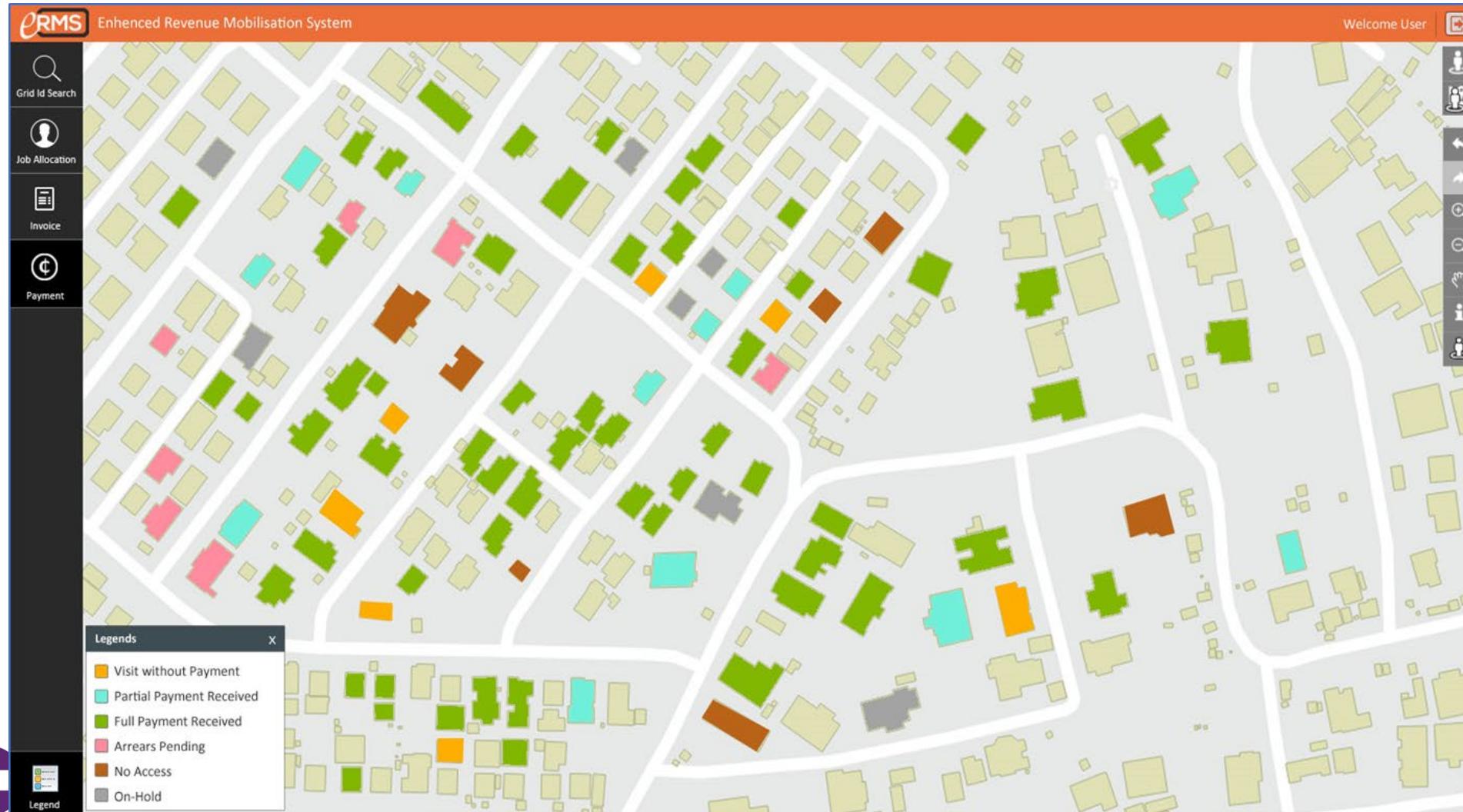


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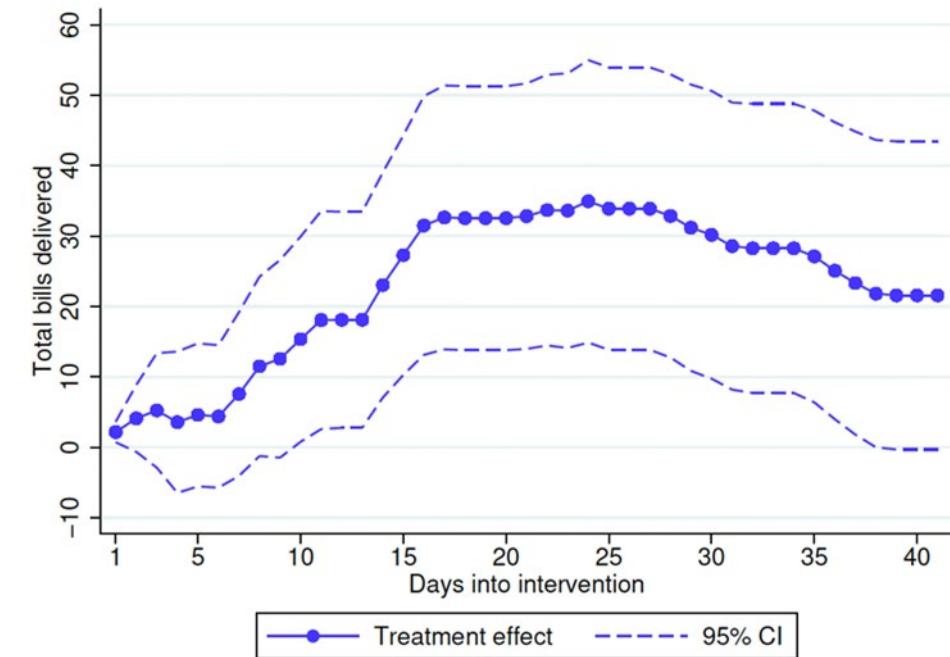
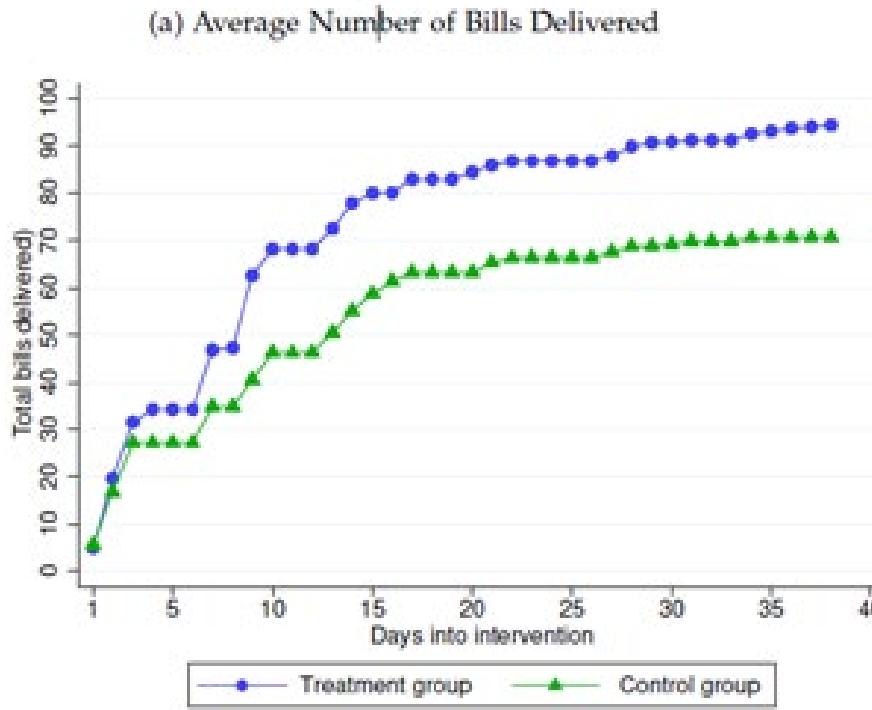


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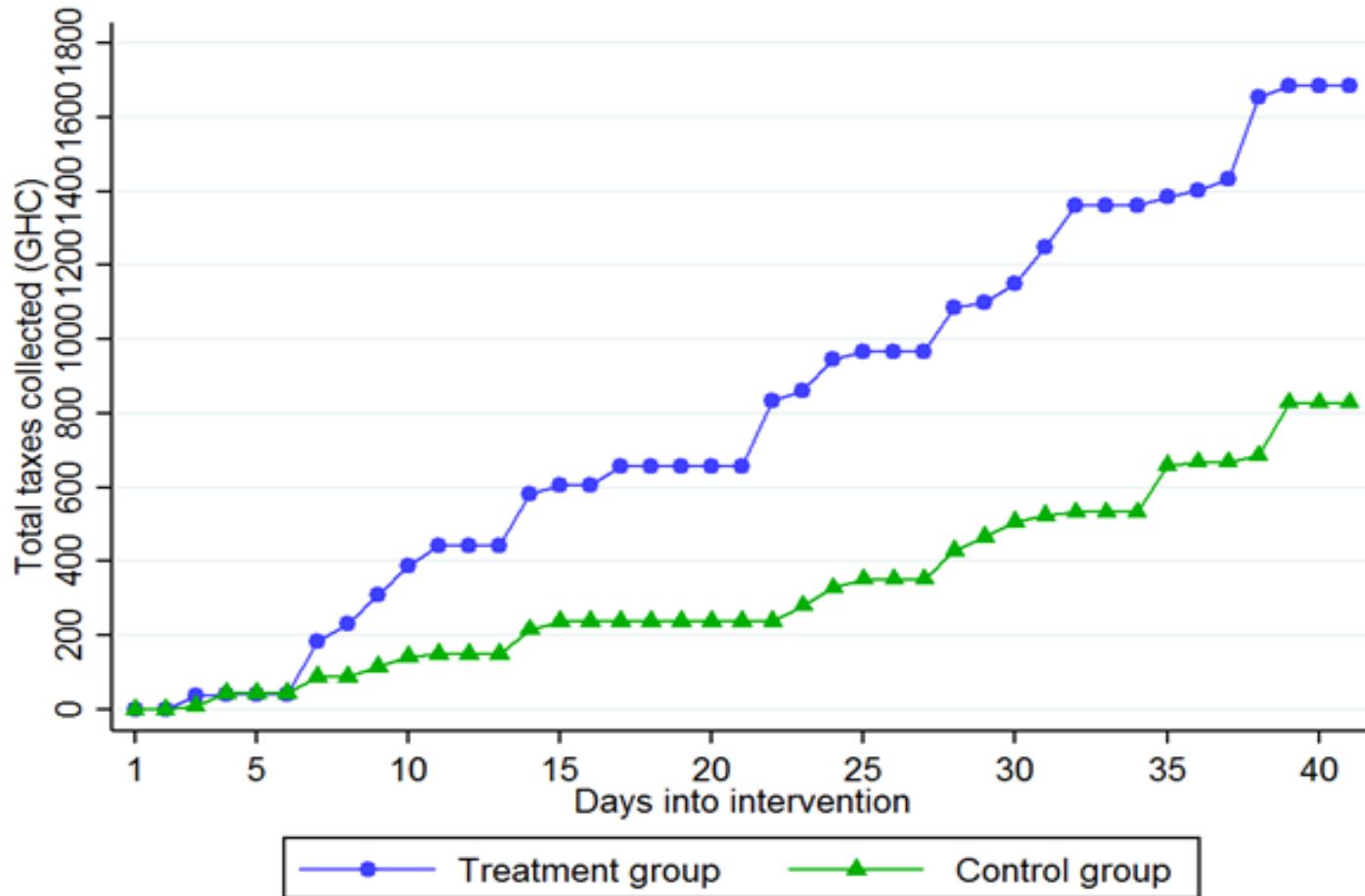


Technology ➔ 27% bills delivered



This reflects advantage in locating taxpayers more efficiently in an environment with scant property addressing.

Technology ➡ 103% more taxes



Why the treatment effect on collections is so much larger than the treatment effect on bill deliveries?

Plausible explanations

- ❖ Households have different attitudes toward payment when visited by collectors who show up with the technology
- ❖ The technology helps reduce leakages,
- ❖ the technology allows collectors to learn about and focus their scarce time on households that are most likely to make tax payments.

Implications: the promises and pitfalls of technology investment