Political Dividends of Digital Participatory Governance:

Evidence from Moscow Pothole Management

Nisan Gorgulu, The World Bank INFCE and GWU
Gulnaz Sharafutdinova, KCL, Russia Institute
Jevgenijs Steinbuks, The World Bank, DECSI
Governance goes d-i-g-i-t-a-l

- Co-production of local information
- Participation and voice
- Access
- Government transparency
- Improved public service delivery
Why ‘Smart Moscow’ strategy?

• A city of political significance
• 12 mln. population
• 2018 GRP - $ 284,4 bln.

• Mayor Sobyanin (2010 - present) – urban transformation strategy
Main Data – Digital Pothole Complaints

- Nash Gorod (gorod.mos.ru) – run by Moscow Mayor > 200,000 observations for the period 2013 – 2019
- Rosyama (rosyama.ru) > 7,000 complaints (largely 2013)

- municipality (N=125) (rayon/poselenie), date of complaint, user id
- first response date, the responding official, date of fix (Nash Gorod only)
Votes for incumbent across Moscow municipalities, 2013 vs 2018

Source: Russian Electoral Commission (http://vybory.izbircom.ru)
Main Specification

• Spatial Autoregressive model
  • Inverse distance weight to controls for spatial dependence of electoral outcomes

• Dependent Variables:
  • Votes for the incumbent (degree of overall support for mayor)
  • Margin of victory (electoral strength vis-à-vis opposition)
  • Turnout (overall electoral engagement)

• Explanatory Variable:
  • Cumulative pothole complaints K months before elections to the election date (3-month rolling windows)
Identification Strategy

• What causes potholes?

  • *Weather (arguably exogenous)*

• Intensity of road use (endogenous)

• Road use regulations (arguably endogenous)
Instrumental Variable: Predicting Potholes

- Number of instances in the heating season preceding the election year when
  - the 24-hour temperature has switched at least once between positive and negative values
  - there was precipitation in the form of rain or snow

- Weather data for 13 weather stations in Moscow in close proximity to Moscow

- Controls for spatial dependence of pothole complaints
First Stage Regressions

Potholes are more likely to appear in the municipalities with a larger number of daily temperature switches and more precipitation during the heating season.
Effects of Digital Public Engagement (Complaints) on Electoral Competition

- Each pothole complaint is associated with additional
  - 29 to 44 votes for the incumbent
  - 18 to 27 votes increase in the margin of victory

- Turnout is slightly lower with an increase in digital public engagement (effect is not statistically significant)
Pothole Management Effectiveness

• Each additional day of pothole management per square kilometer is associated with a decline of
  • 7 to 14 votes for the incumbent
  • 8 to 15 votes in the margin of victory

• Voter turnout is not statistically significant
Big Questions

• What are the conditions that enable digital technologies to enhance public service delivery?

• How can we assess the external validity of specific case studies showing that data infrastructure helps delivering efficient public services?

• What new evidence can we produce to help client countries in the ECA region assess the effectiveness of their digital development strategies?