

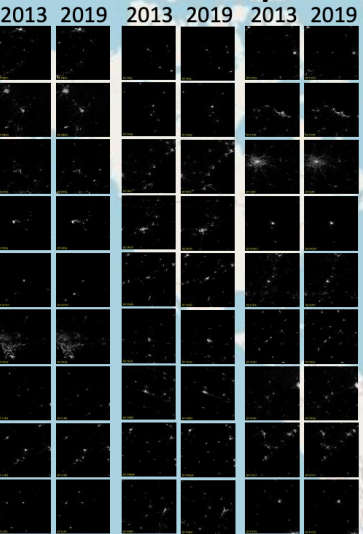
Impacts of Airport System Development on Local Regional Economy: Global Analysis and Case Study in Jakarta

空港システム整備の地域経済への影響：
グローバル分析とジャカルタのケース分析

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New airports from 2015-2017

Nighttime light change around new airports



1 Background

Airport System Development (ASD)

- Introduction of a new airport, expansion of an airport, and improvement of airport ground access.
- Demand for ASD has been increasing globally.

Limited evidence on economic impacts of ASD

- No evidence that covers all airports in the world.

Research questions

- To what extent does ASD impact on local economy?
- What factors affect the impacts from ASD?

2 Goals

This study aims to:

- (1) Estimate empirically impacts of ASD on regional economy using a global dataset;
- (2) Estimate empirically local impacts of ASD through a case study of Jakarta, Indonesia
- (3) Discuss implications to airport city development.

- **Data:** ACI Traffic Report (2012-2018); EU Urban Centre Database (2015); Nighttime light imagery from NASA VIIRS DNB VNP46A4 (2012-2019); Interview local professionals

3 Methods

- Assumption: Observed nighttime light intensity (NLI) represents local economic performance.

Global Analysis

Matched difference-in-differences analysis

- Treatment group: 27 cities with new airport introduction from 2015-2017
- Control group: 27 cities matched from 13038 cities in the world

Case Study in Jakarta

1. Estimate the impacts of introducing Airport Rail Link (ARL) on station areas
2. Interviews with professionals of local urban planning

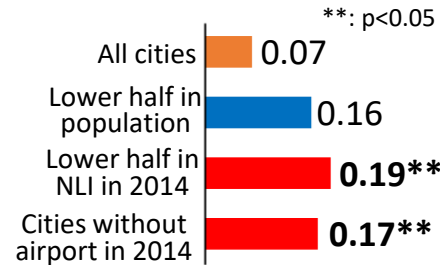
Discussion on policy implications

4 Results

Global analysis revealed that an introduction of new airport has significantly positive impacts on NLI:

- in cities with lower economic level than those with higher level by 19%;
- in cities without airport than those with airport by 17%.

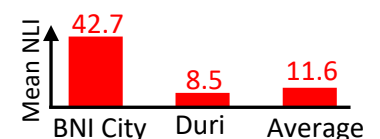
Impact of new airport investment on increase in NLI



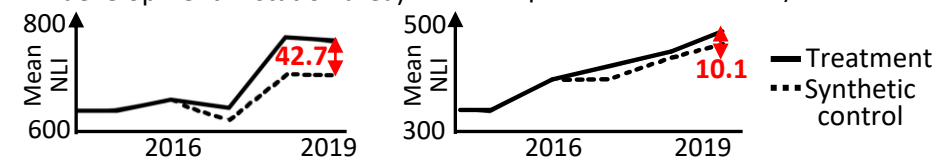
Case study in Jakarta revealed that ARL has more economic impacts on NLI:

- in areas closer to ARL stations than other areas;
- in station areas with joint urban development than those without it.

Impacts on NLI estimated from comparisons of areas at 0-1km vs. 1-2km from ARL stations



Impacts on NLI estimated with Synthetic Control Method



5 Conclusions

- Introduction of new airport has positive economic impact on regional economy in lower-economic level cities.
- Improvement of airport access may have positive economic impacts on station areas notably with joint urban development.

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