

# Lesson 1: Introduction to Geospatial Analytics and Applications

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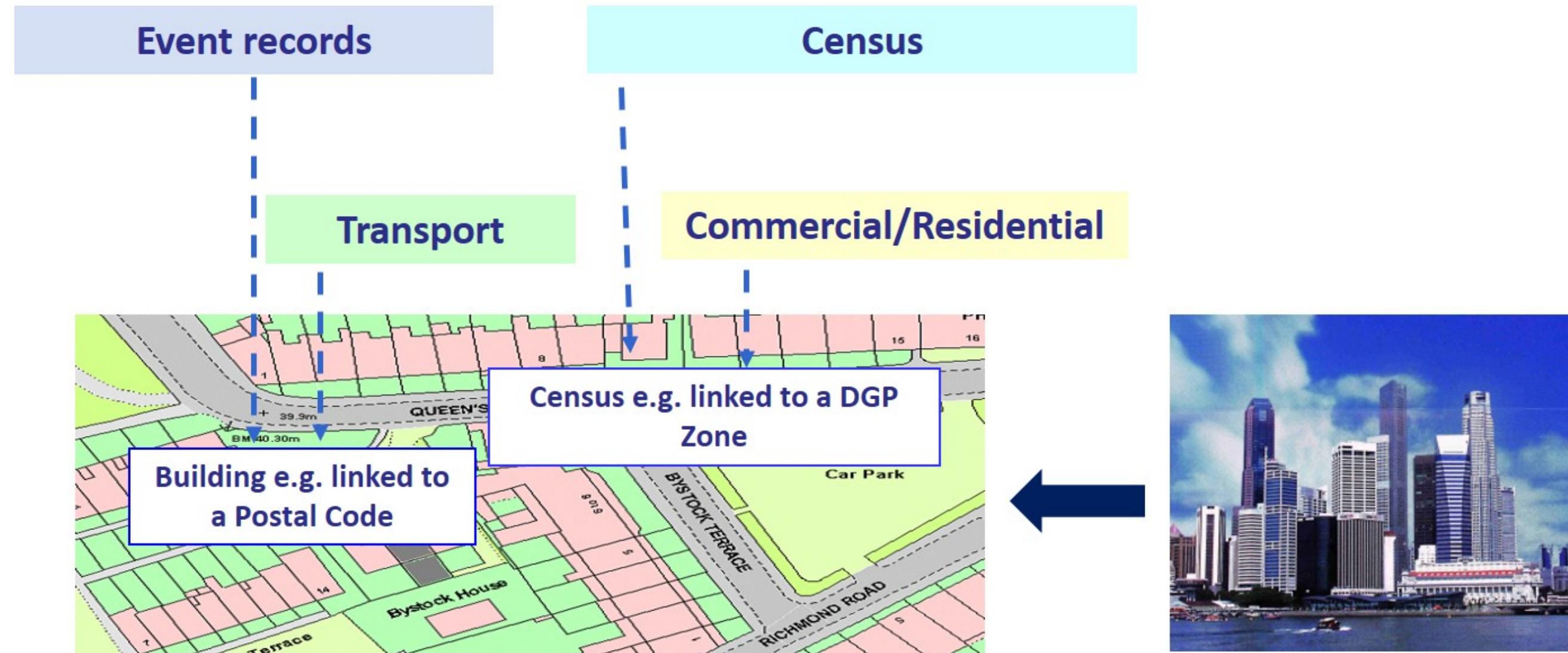
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# Demystifying Geospatial Analytics

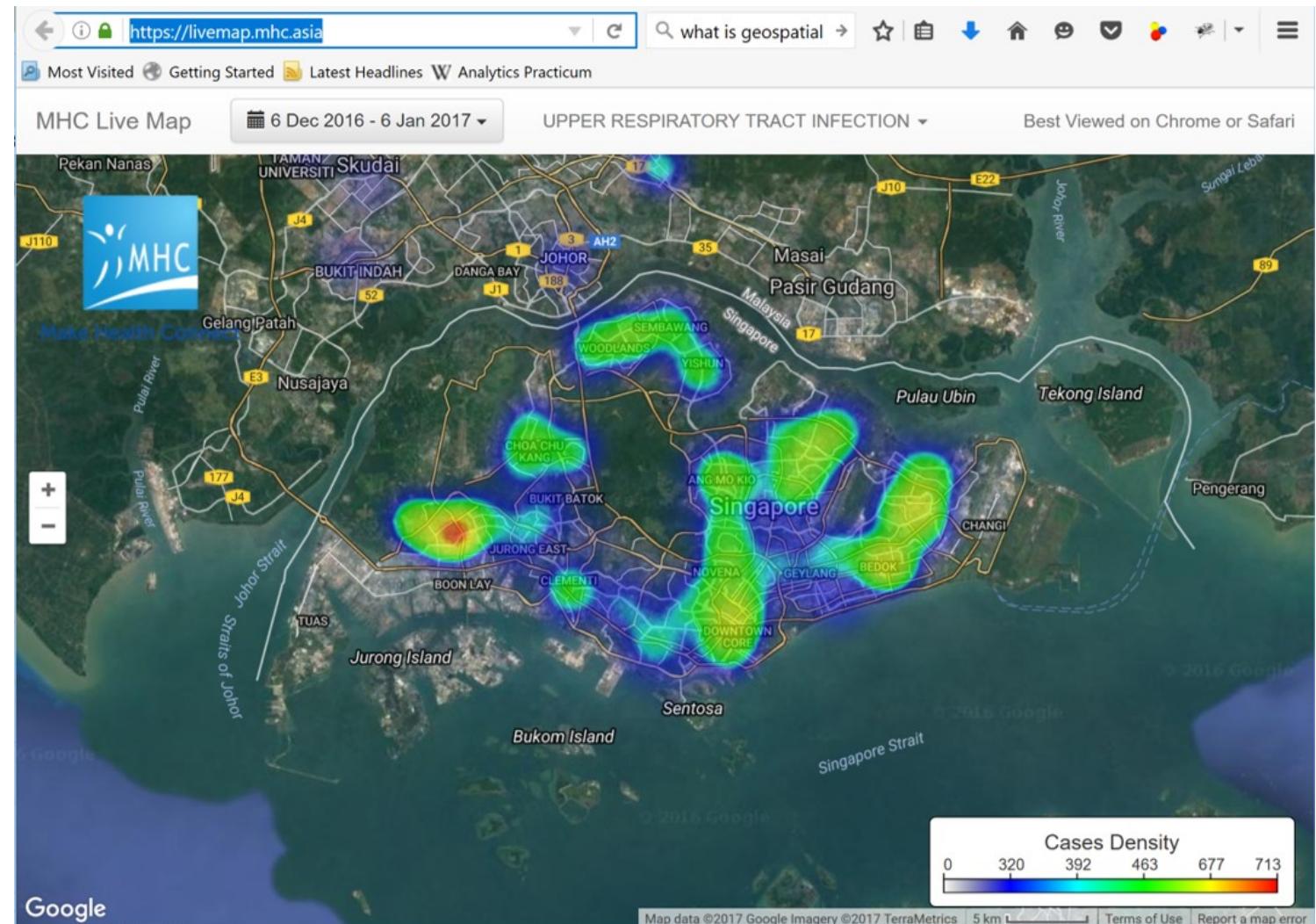
- A **Geographical Information System (GIS)** is a toolkit for creating, managing, analysing, visualising, and sharing data of any kind according to where it's located.



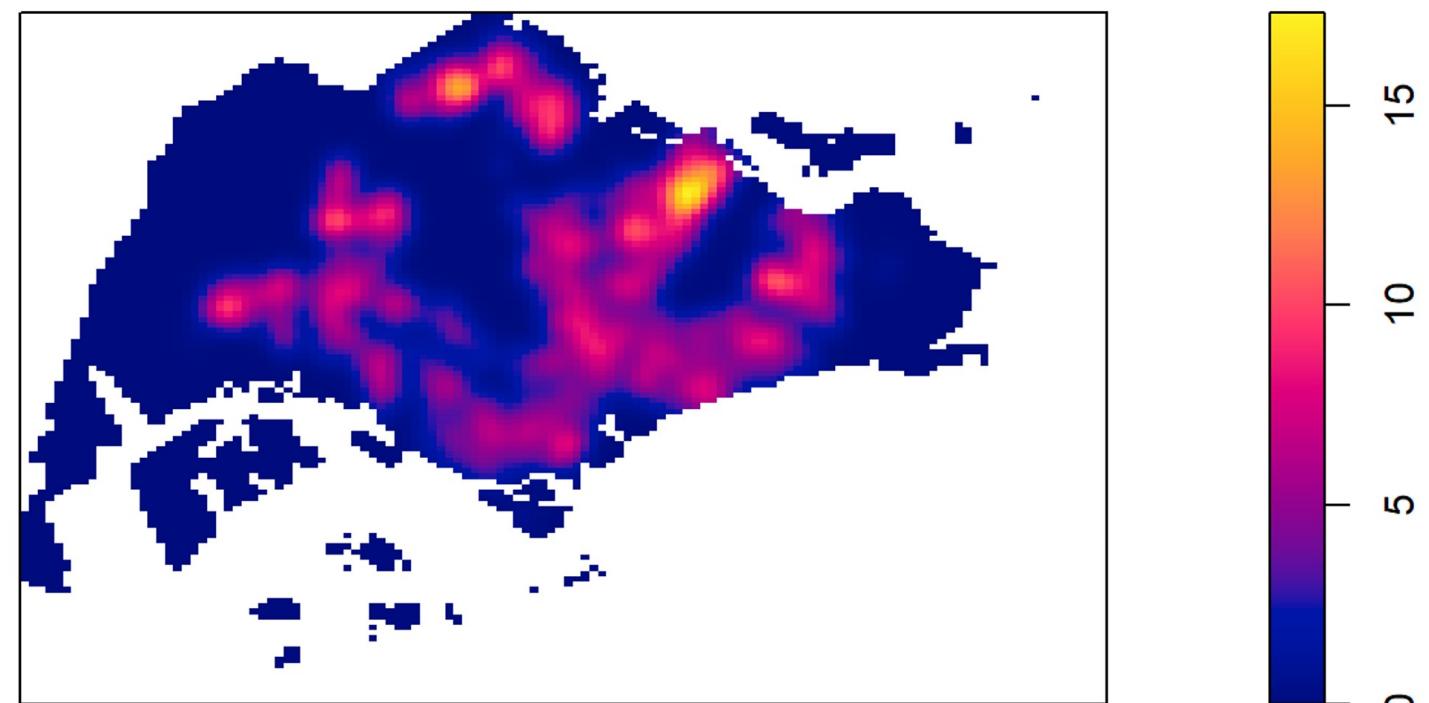
Geospatial analytics is more than a GIS.

# Demystifying Geospatial Analytics

- Geospatial analytics is more than data visualisation



KDE Childcare Centre at 600m

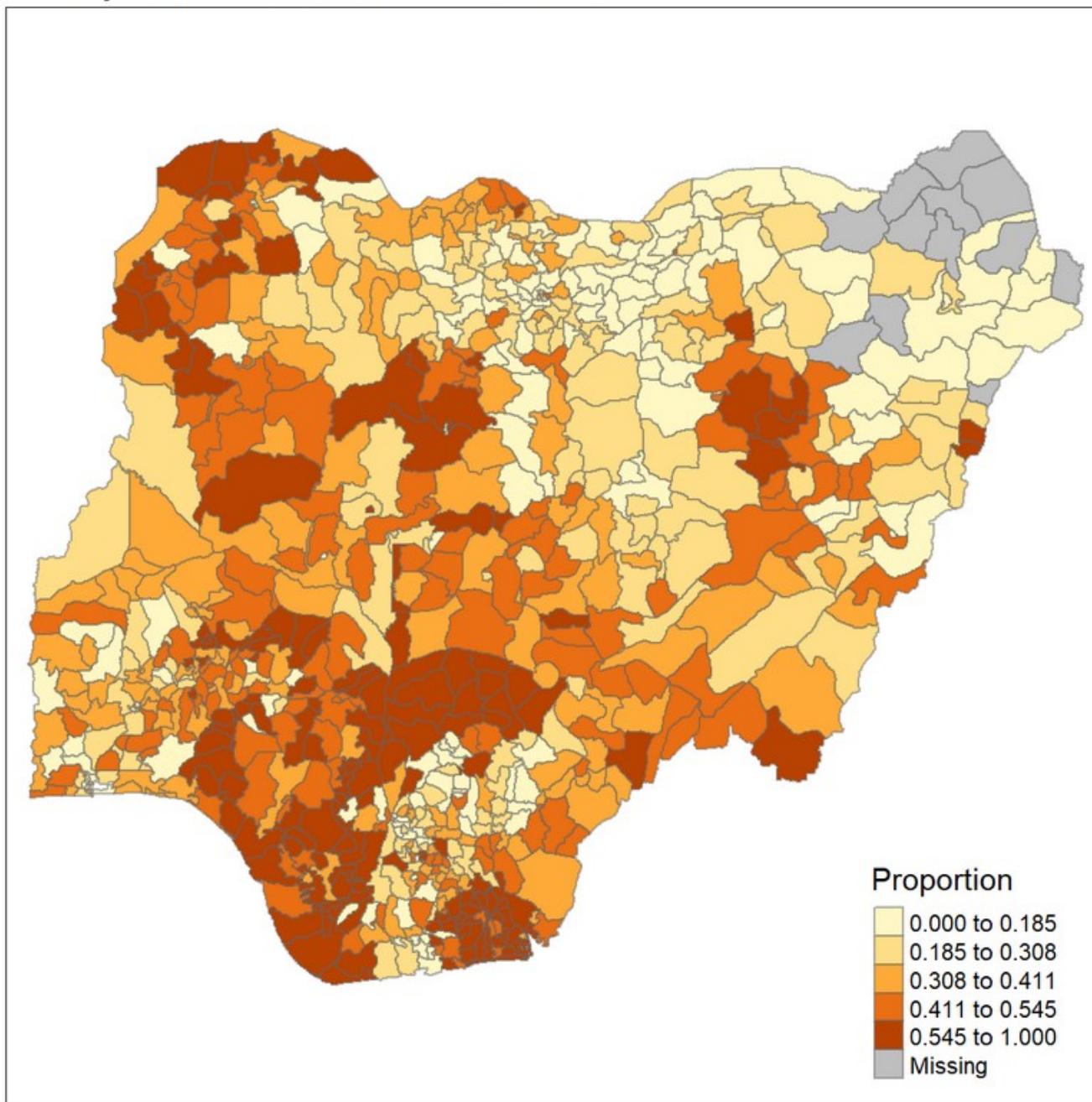


Source: Singapore's first disease map delivers real-time information on infectious diseases

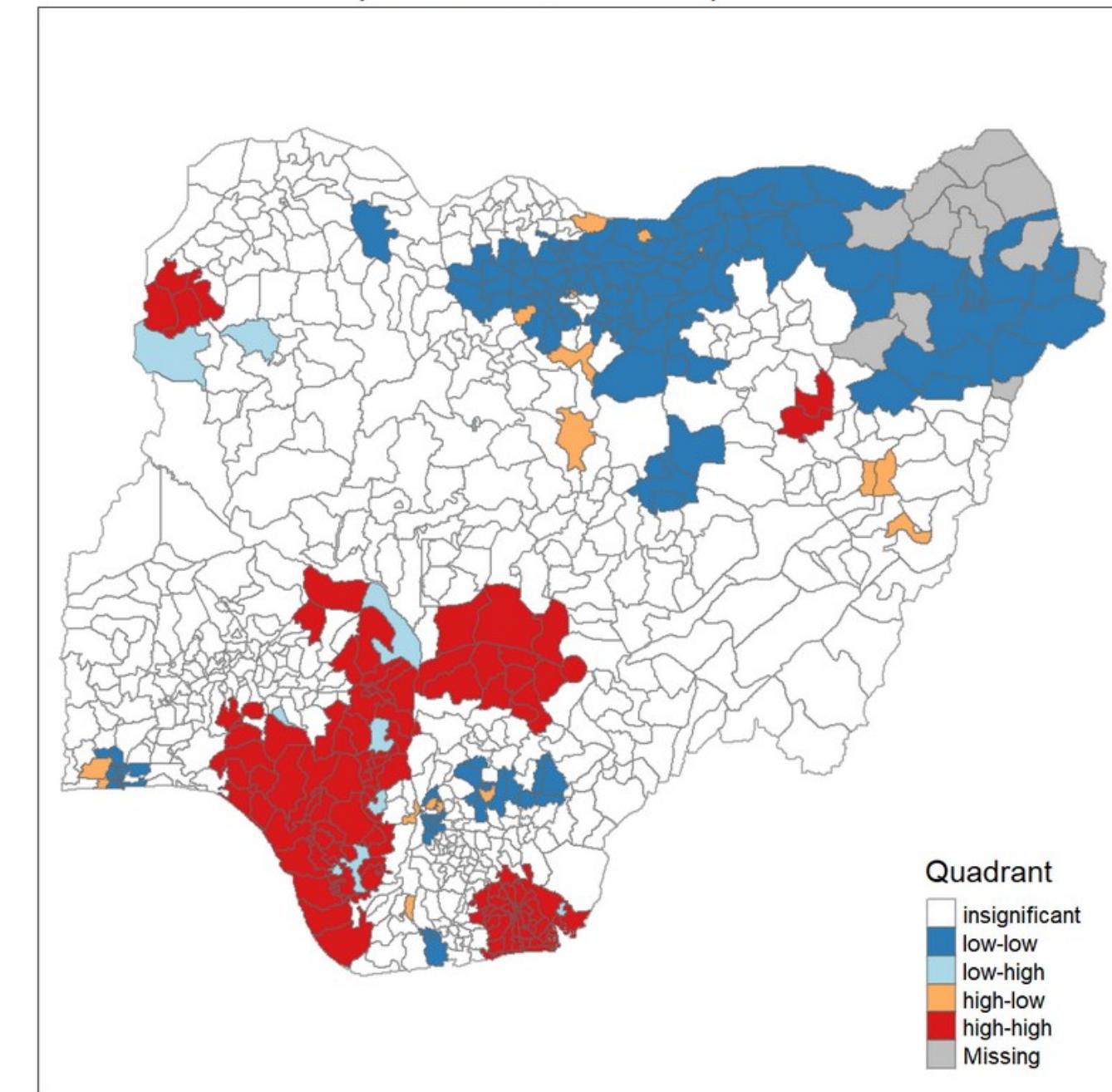
# Demystifying Geospatial Analytics

- Geospatial analytics is more than just mapping.

Proportion Non-functional



LISA Cluster (Non-Functional)



# Motivation of Geospatial Analytics

- About 80% of all data maintained by organisations around the world has a location component.



# Motivation of Geospatial Analytics

- Geospatial information in Smart Nation.

Thursday, Jan 8, 2015

**THE STRAITS TIMES / Singapore**

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## Singapore needs to be 'smart city' to stay ahead: PM

PUBLISHED ON NOV 24, 2014 11:13 AM

191 68 0 39



The need for Singapore to be a "smart nation", using the latest technology to benefit the country, goes beyond just making life better for the people, said Prime Minister Lee Hsien Loong at the launch of the Smart Nation initiative on Monday. -- PHOTO: ST FILE

One major initiative will be to let people access maps and build up geospatial databases by contributing information such as animal sightings, traffic incidents or the best mee pok eateries.

See more at this [link](#)

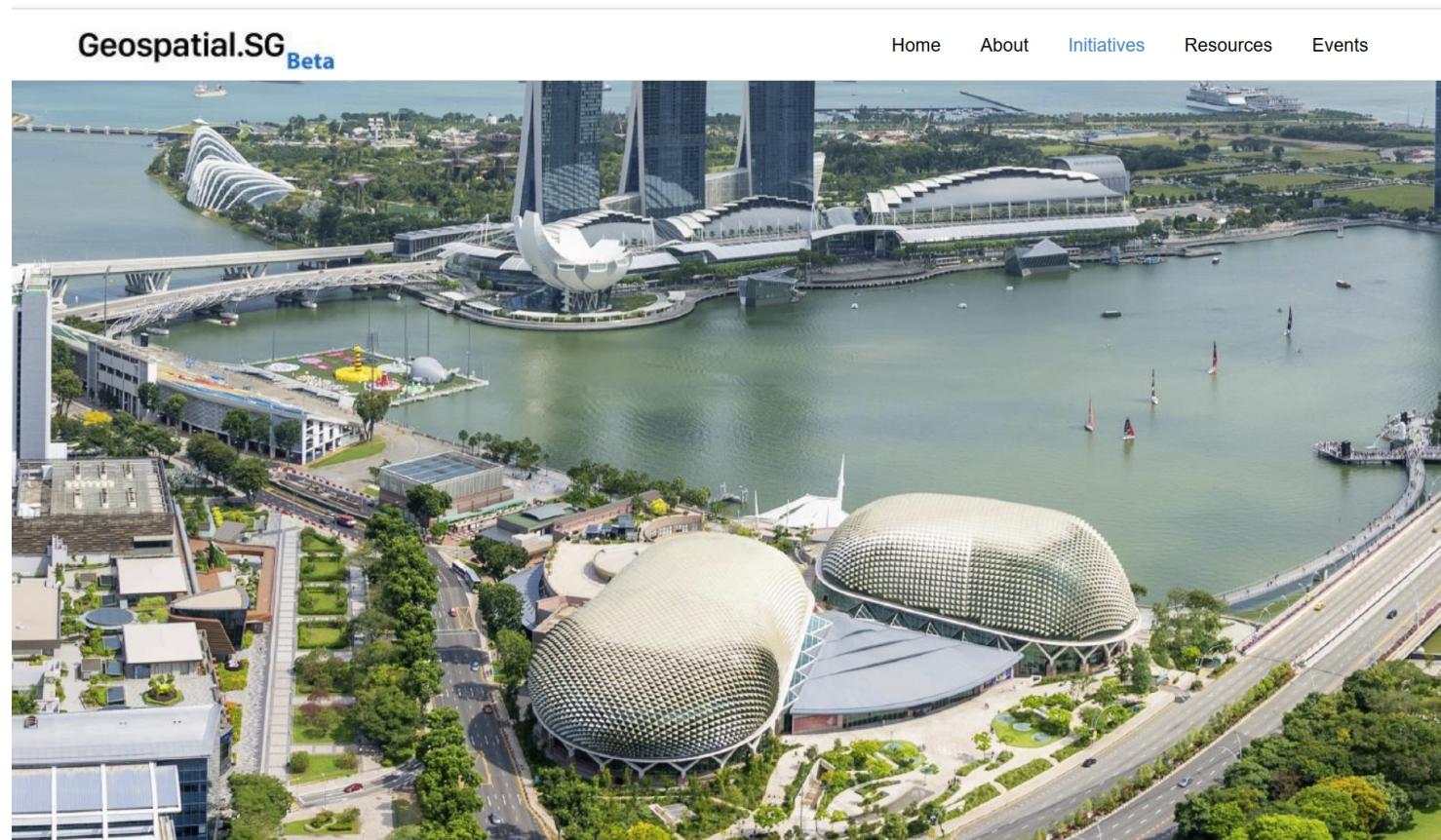
# Motivation of Geospatial Analytics

- The explosion in the availability of open geospatial data from both the public and private sectors at national and international levels.



# Motivation of Geospatial Analytics

- The national geospatial master plan.



## Singapore Geospatial Master Plan

The Singapore Land Authority (SLA), in partnership with the Government Technology Agency (GovTech), leads the Singapore Geospatial Master Plan to maximise the impact of geospatial information and technology for the economy and the wider society.

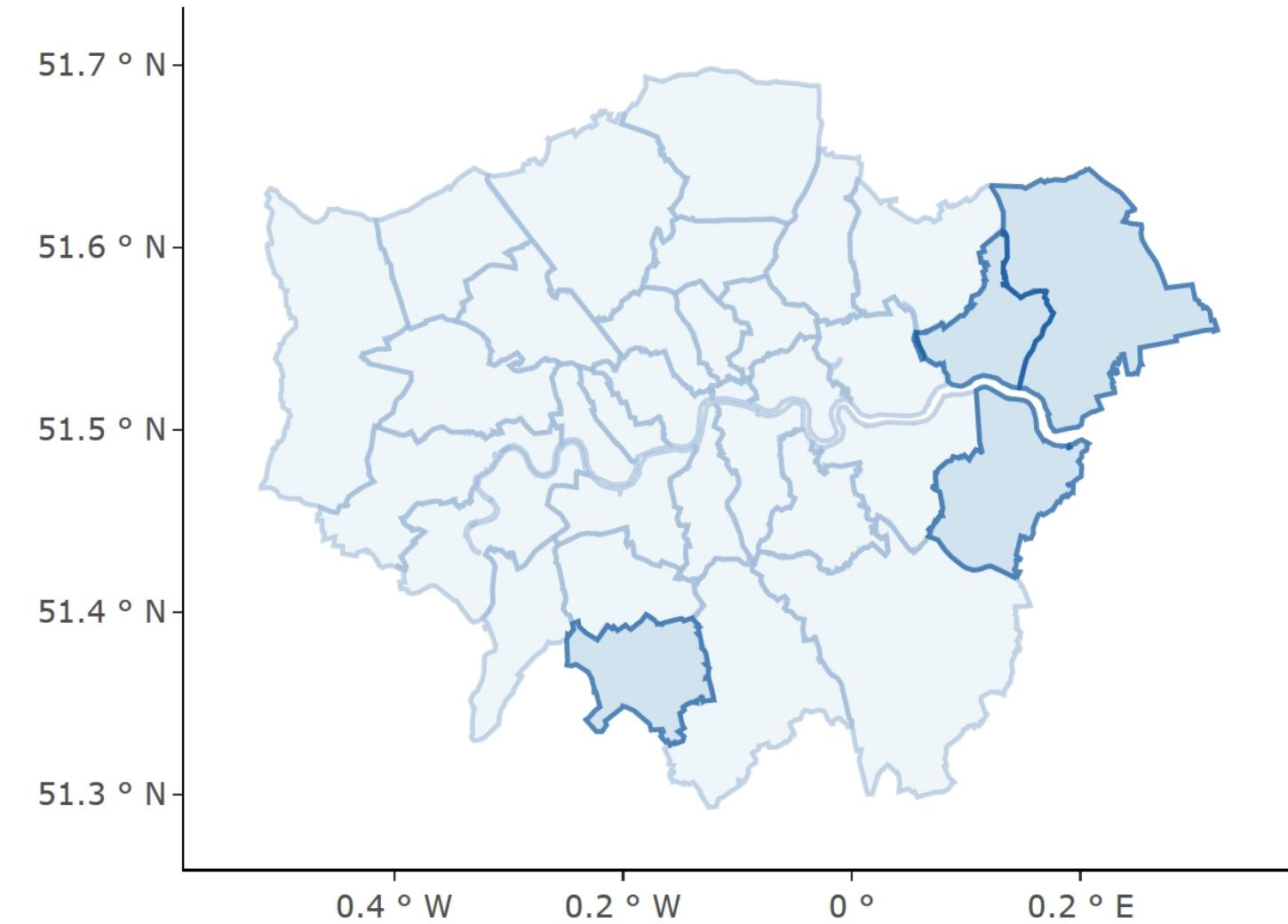
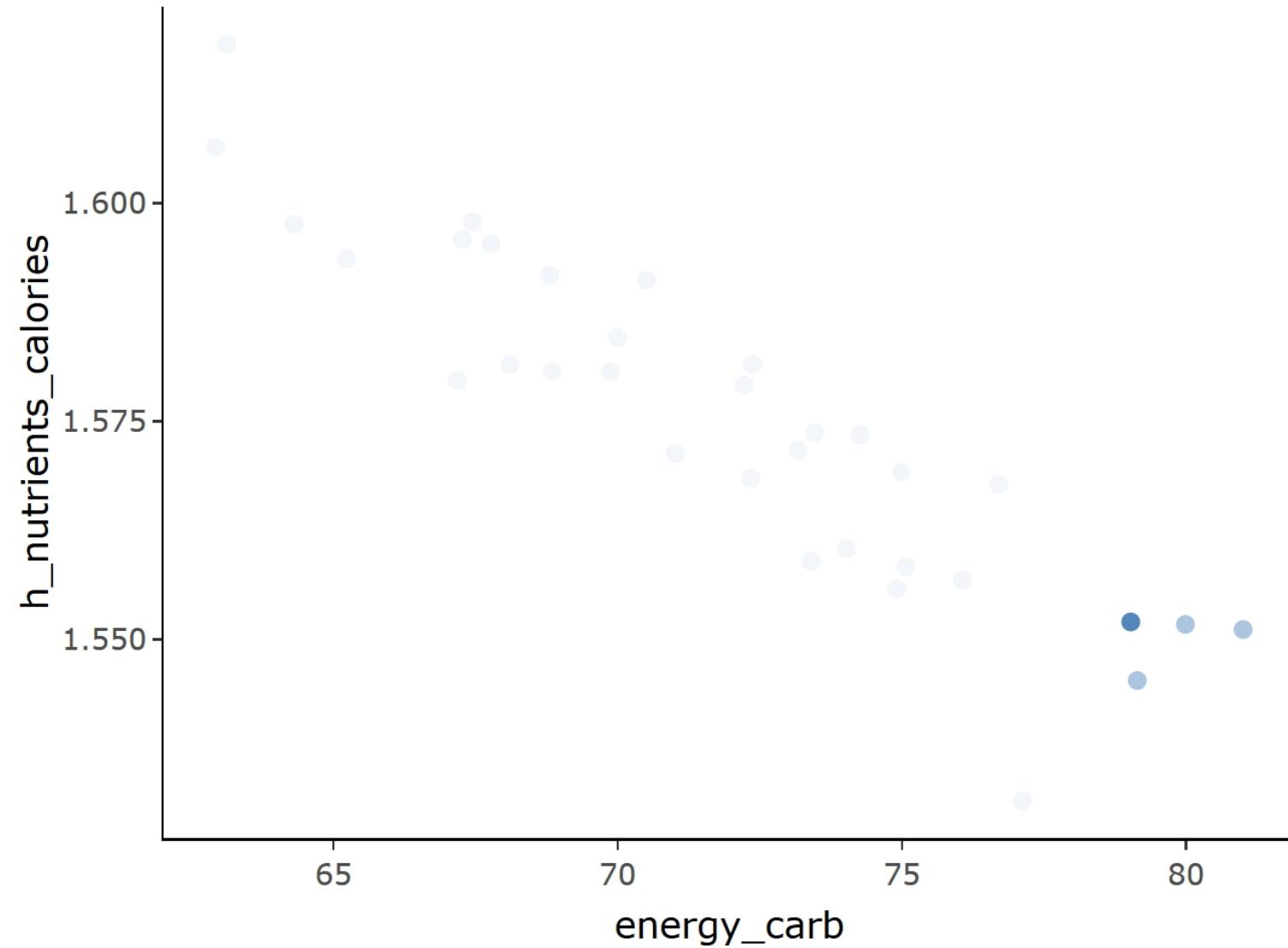
**Vision:** A Geospatial-Powered Singapore.

**Mission:** Empowering the Industry, People and Government with Geospatial Information and Technology to Enhance Decision-making, Create Opportunities and Lead Better Lives.

Source: [Singapore Geospatial Master Plan](#)

# The role of Geospatial Analytics

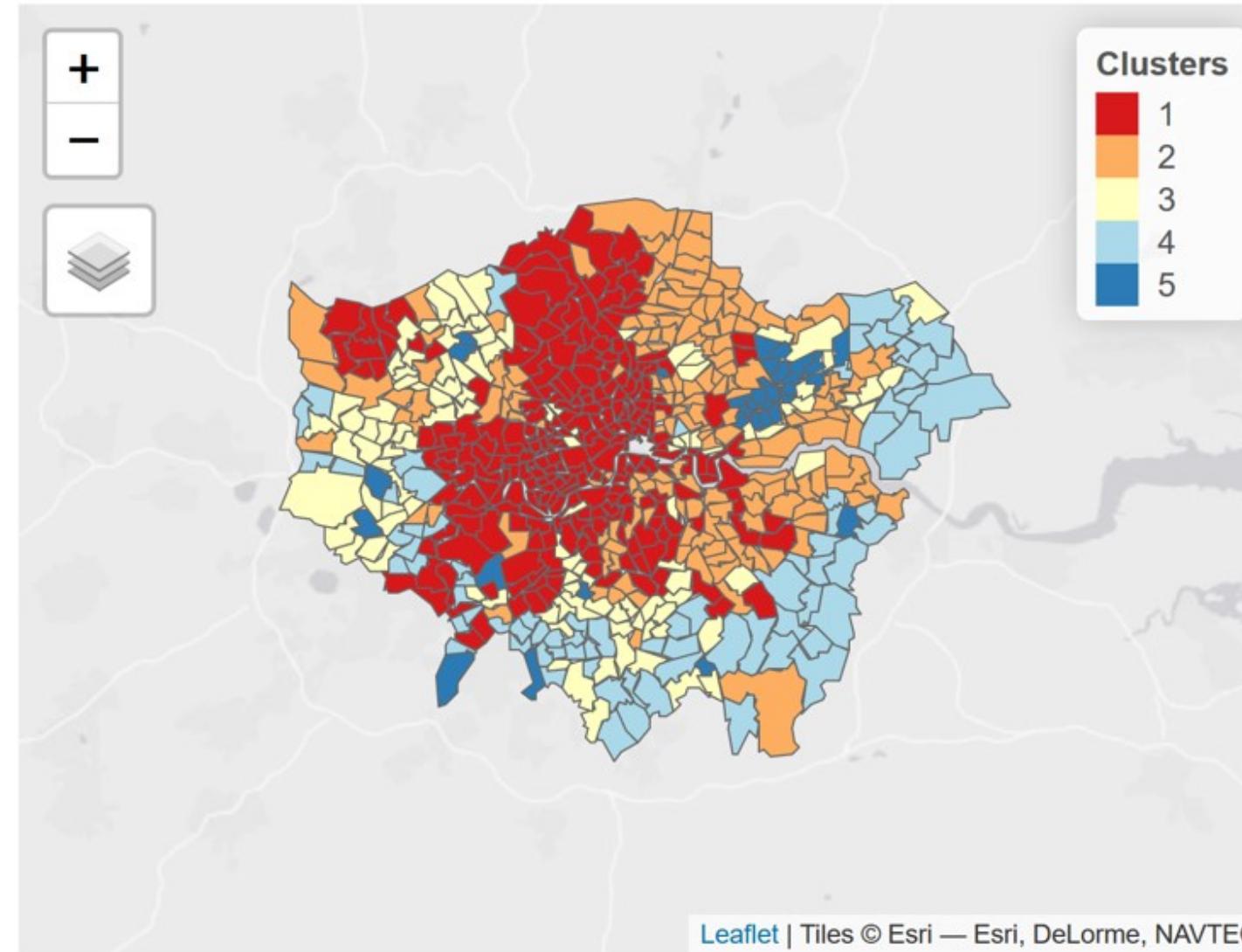
- Uncovering insights not found in statistical graphs and tables.



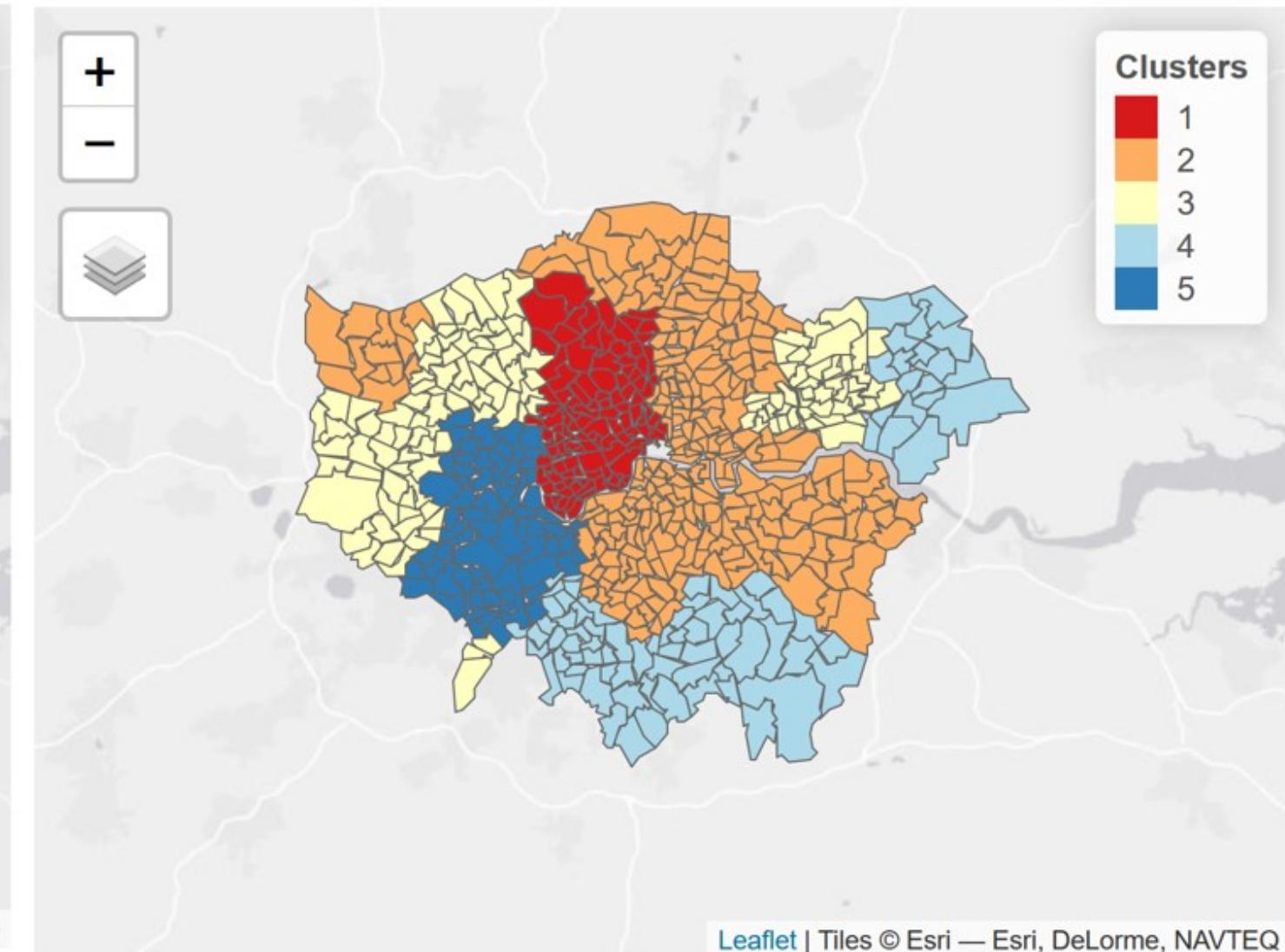
Source: SGSAS - Simple Geo-Spatial Analysis using R Shiny

# The role of Geospatial Analytics

- To reveal the untapped property of spatial contiguity in geographic knowledge discovery in databases.



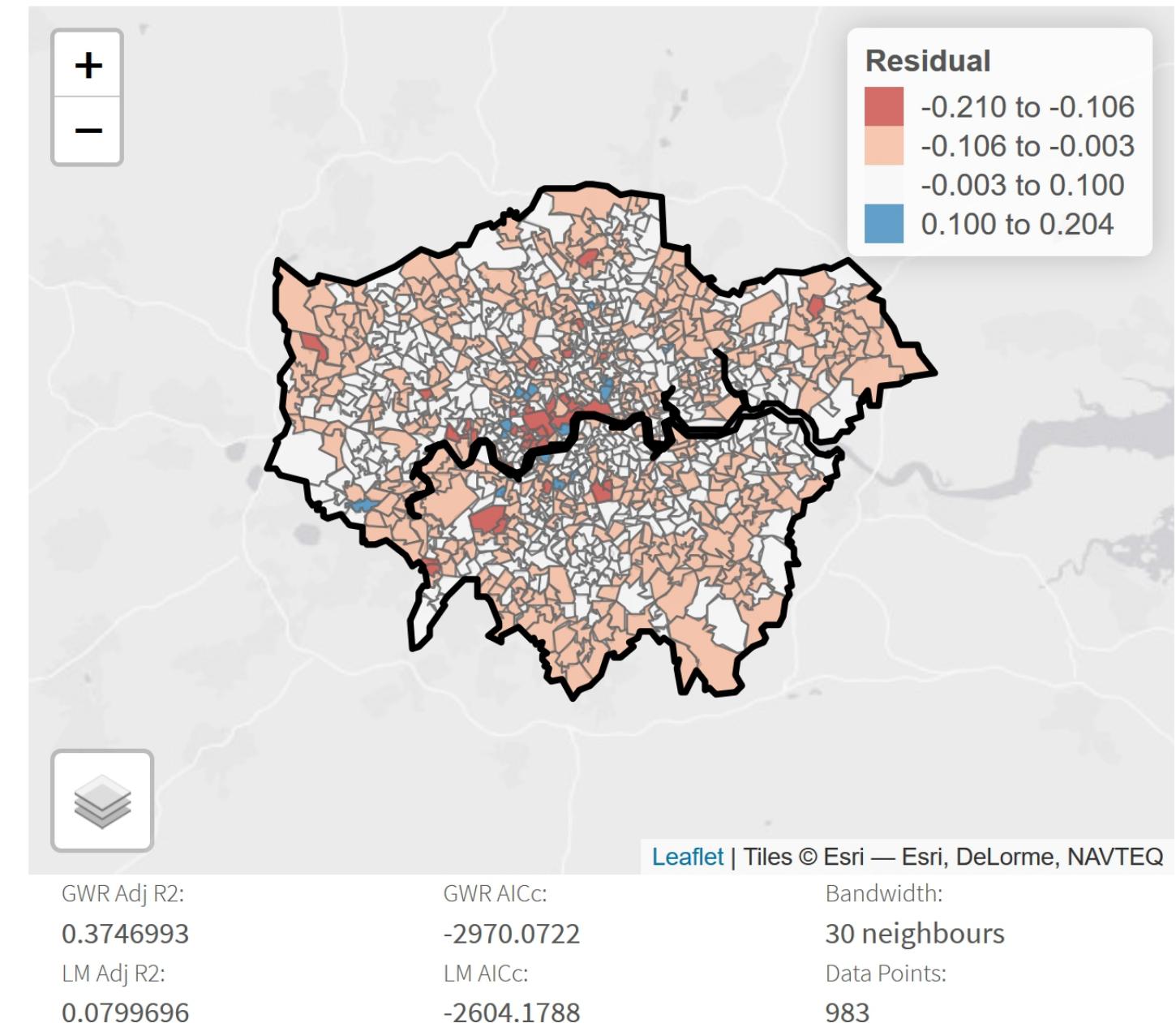
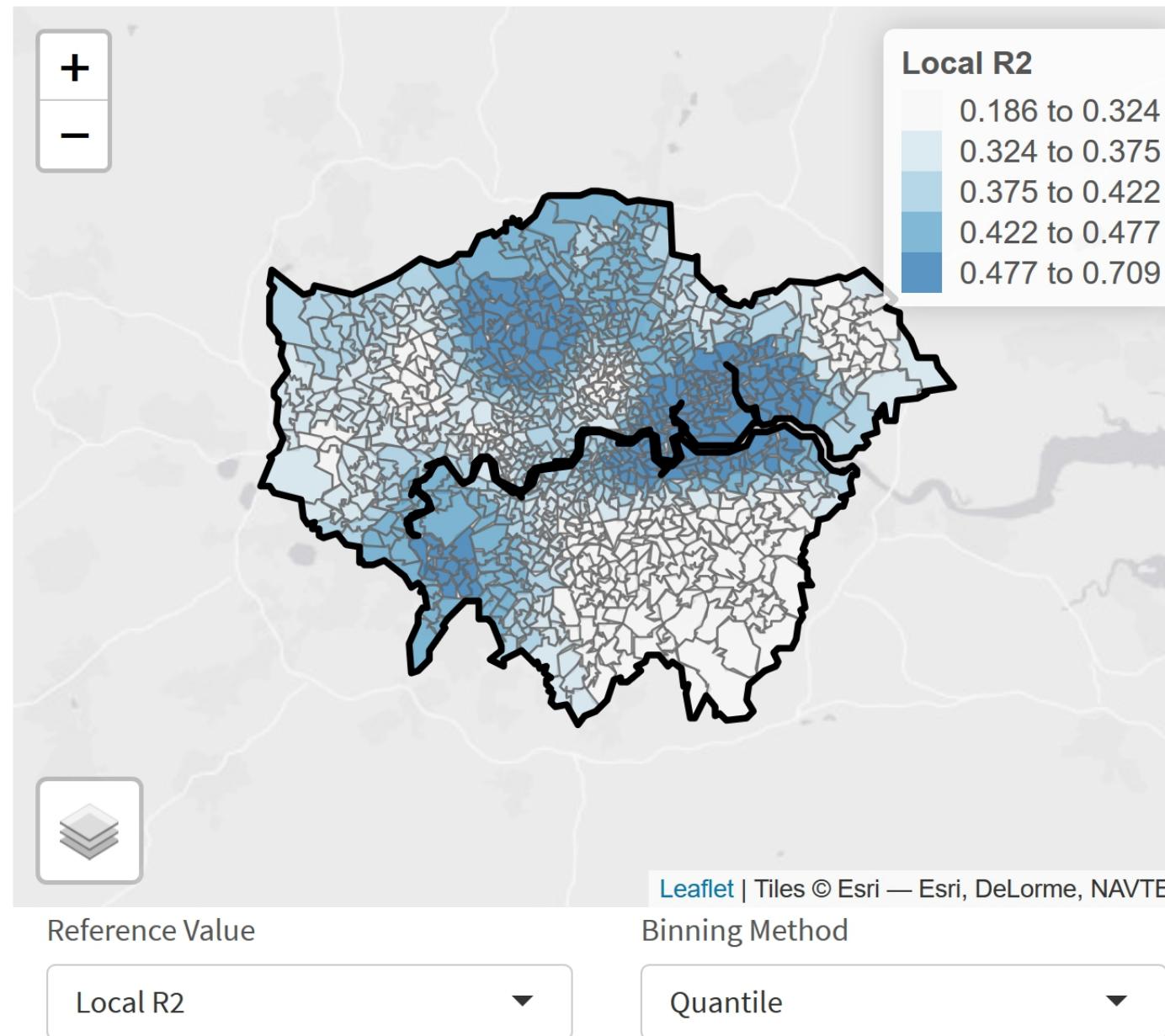
**Hierarchical clustering**



**Spatially constrained clustering**

# The role of Geospatial Analytics

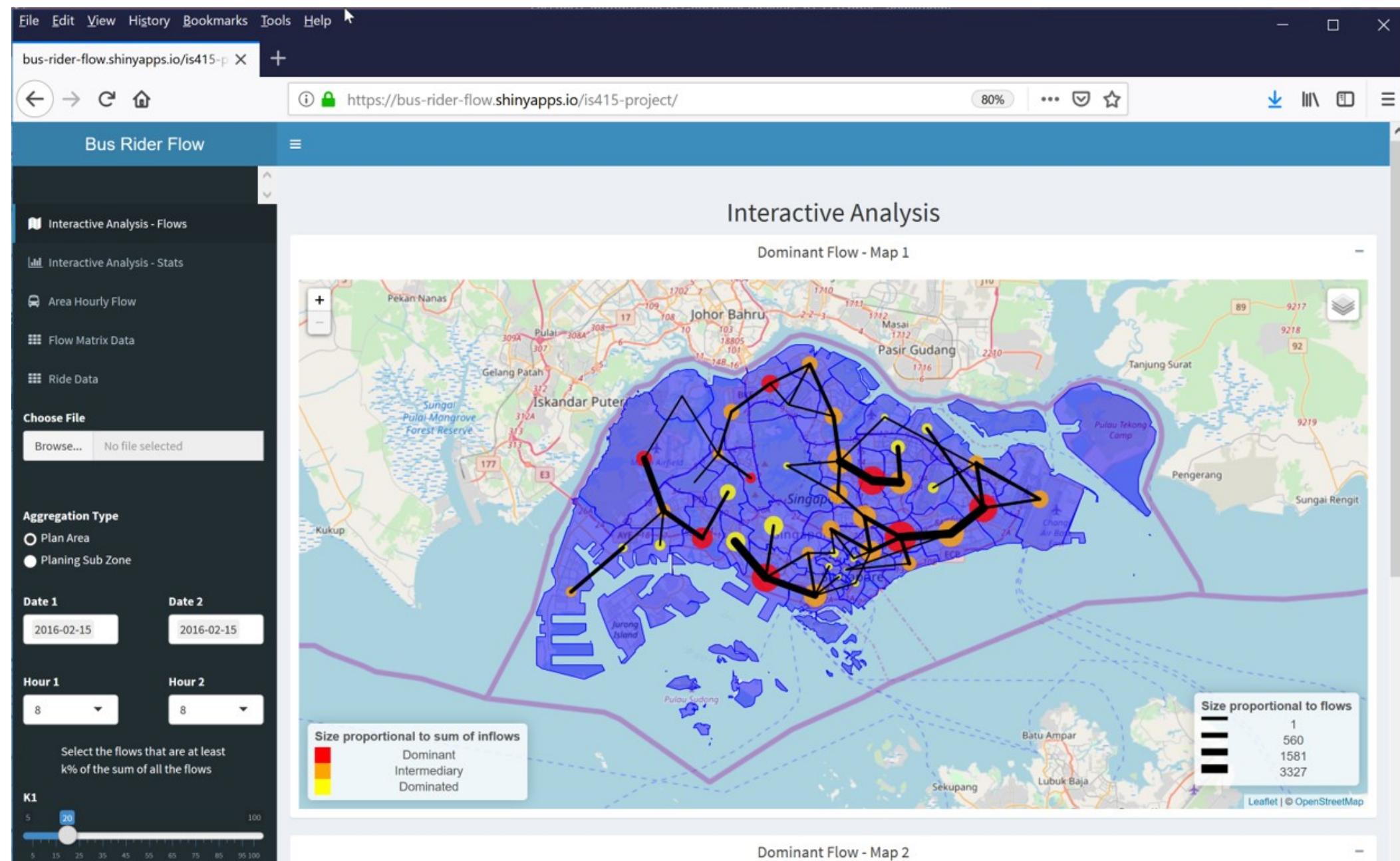
- To uncover the complexity of the real world relationship.



Source: SGSAS - Simple Geo-Spatial Analysis using R Shiny

# The role of Geospatial Analytics

- To model spatial interactions and flows.



Source: IS415 Bus Rider Flow Project

# Geospatial Analytics and Social Consciousness

The true power of geospatial analytics is to provide decision makers and planners with data-driven and process information for better problem solving and more efficient use of resources.

