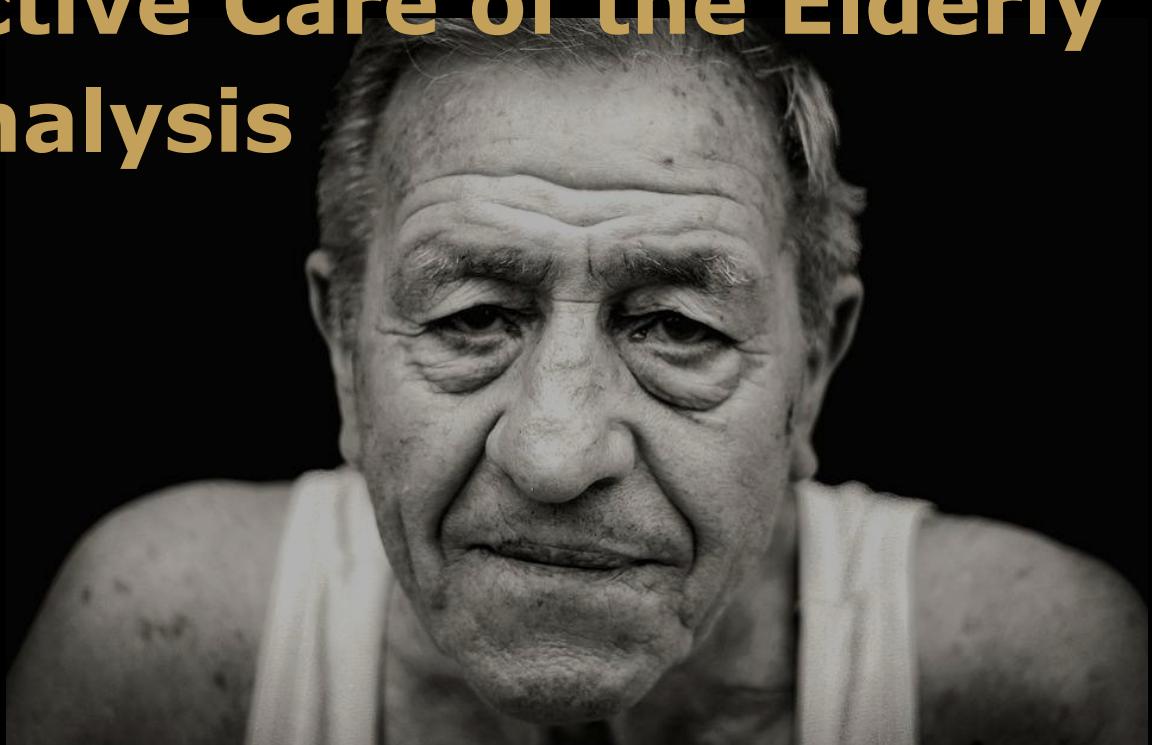


Supporting Government to Take Effective Care of the Elderly by Spatial Analysis

**Presented by Team KOH
Aug 19, 2017**

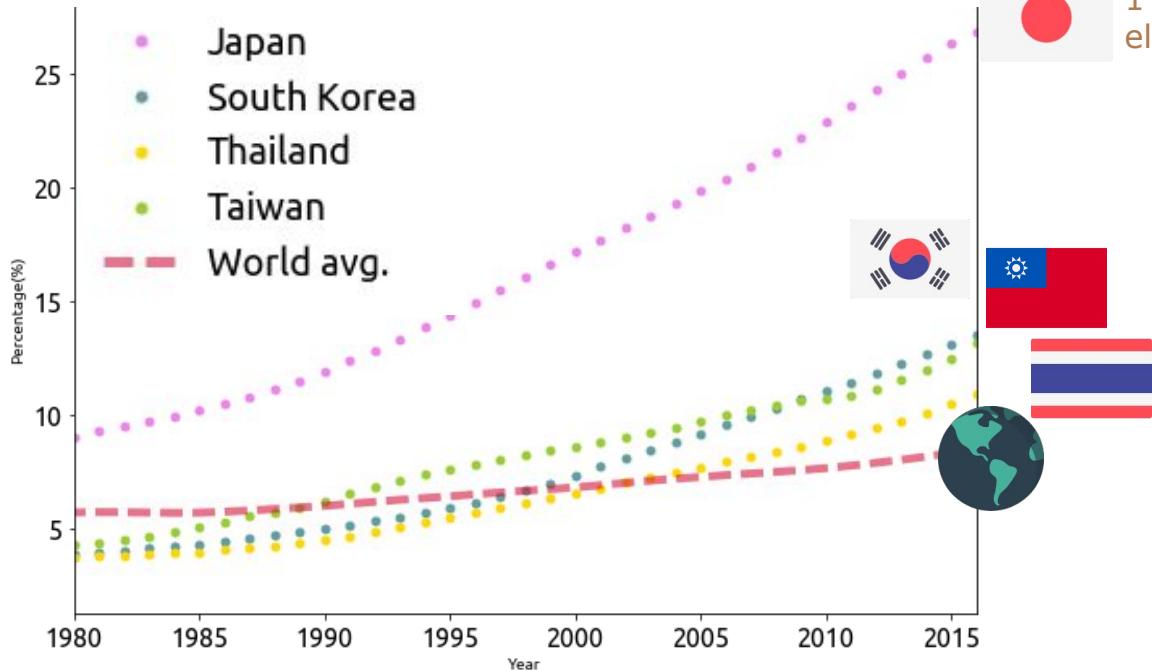




Problem

Ageing Population Timebomb!

% of Pop Aged
65+ by Country



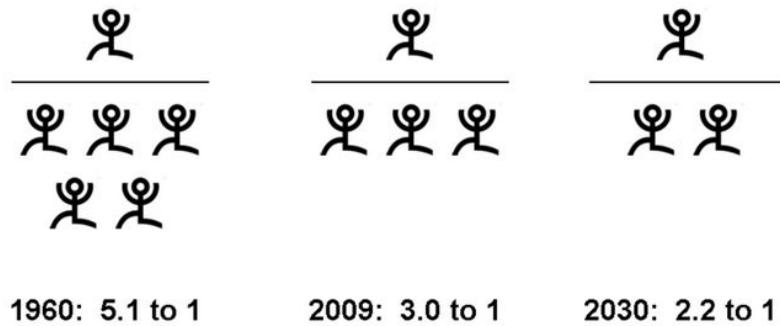
Percentage of Elderly population in Japan, Korea, Thailand and Taiwan are **all higher than average of World**.

1 of 4 people is an elderly

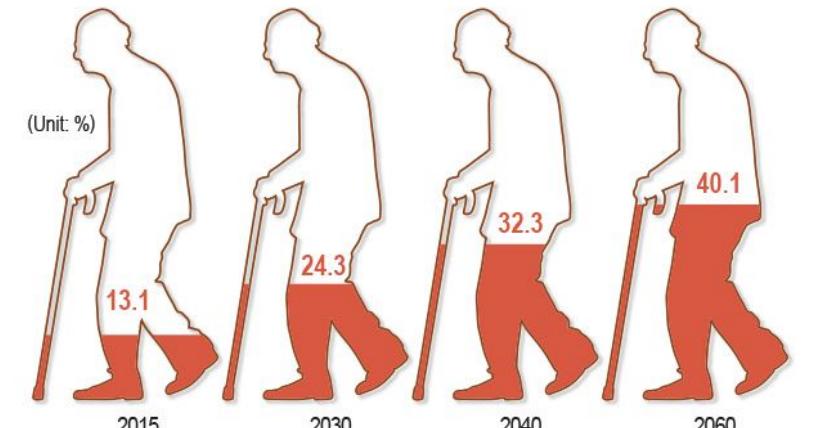


Problem

Social Security: Worker to Beneficiary Ratio



Ratio of elderly over 65

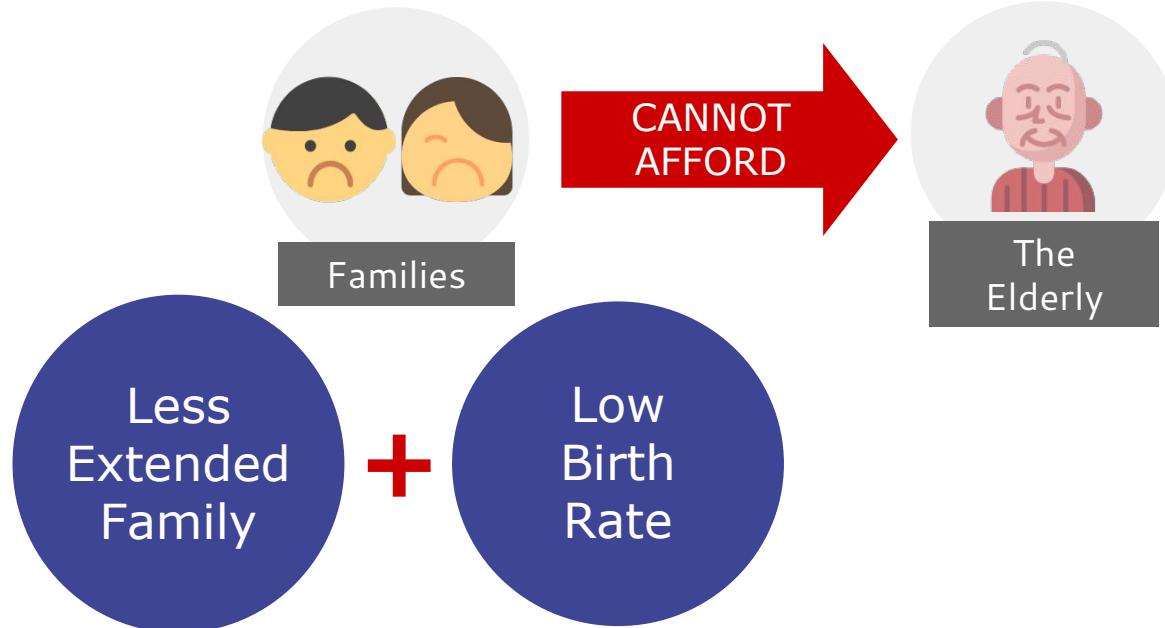


Source: Statistics Korea

Aged Dependency Ratio is rising rapidly.

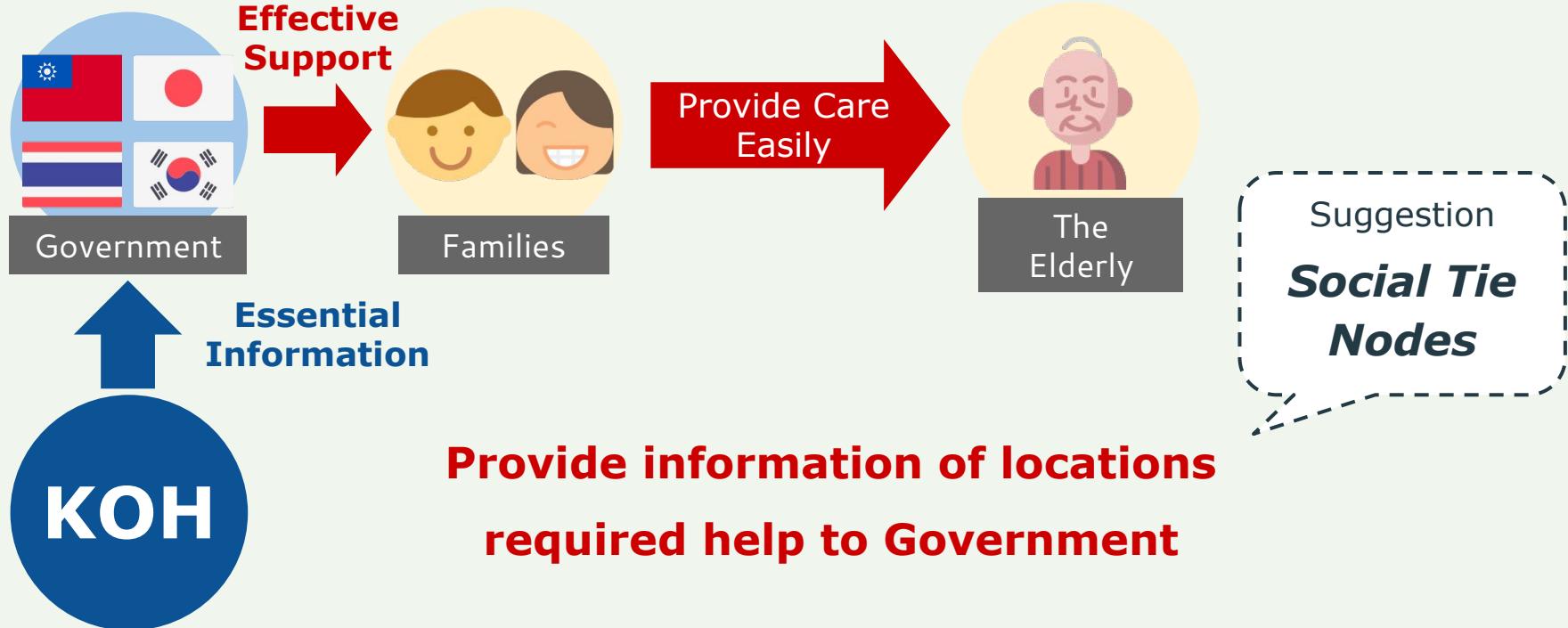


Situation: Lack of Resources





Solution: Providing Essential Info to Government



GOAL

Find out the locations **required further help**
for Government,
to make them provide resources effectively



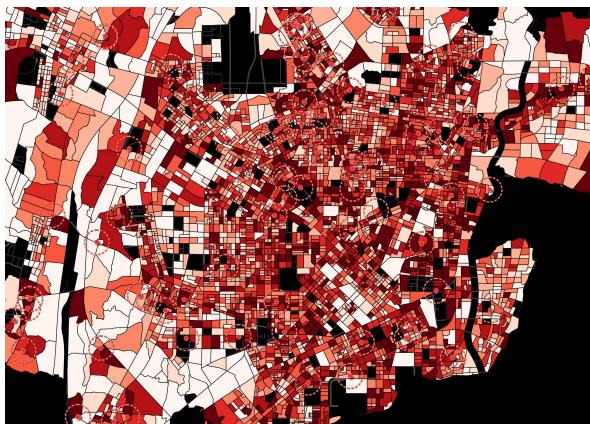
Method: Cross-field
Spatial Analysis



Materials

Open Data of Taichung City

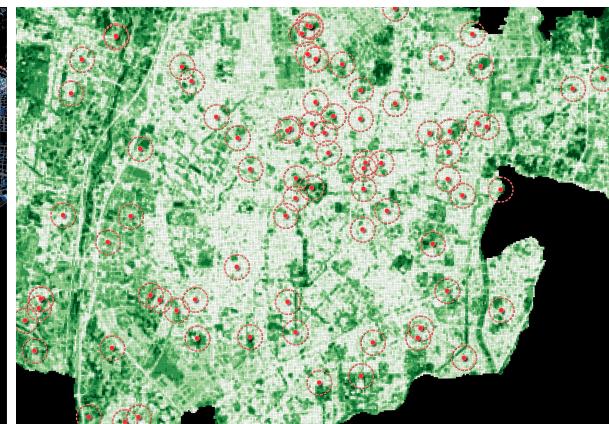
According to statistics, the percentage of **people aged 65+ is over 10%** in Taichung City.
(Civil Affairs Bureau, 2016)



Population



Buildings



NDVI

(Normalized Difference Vegetation Index,
from satellite map)

**Taichung City: the second biggest city of Taiwan; 2.8 million pop, like Osaka



Step One

Step One: Target Points Setting

Point out the existing
community centers

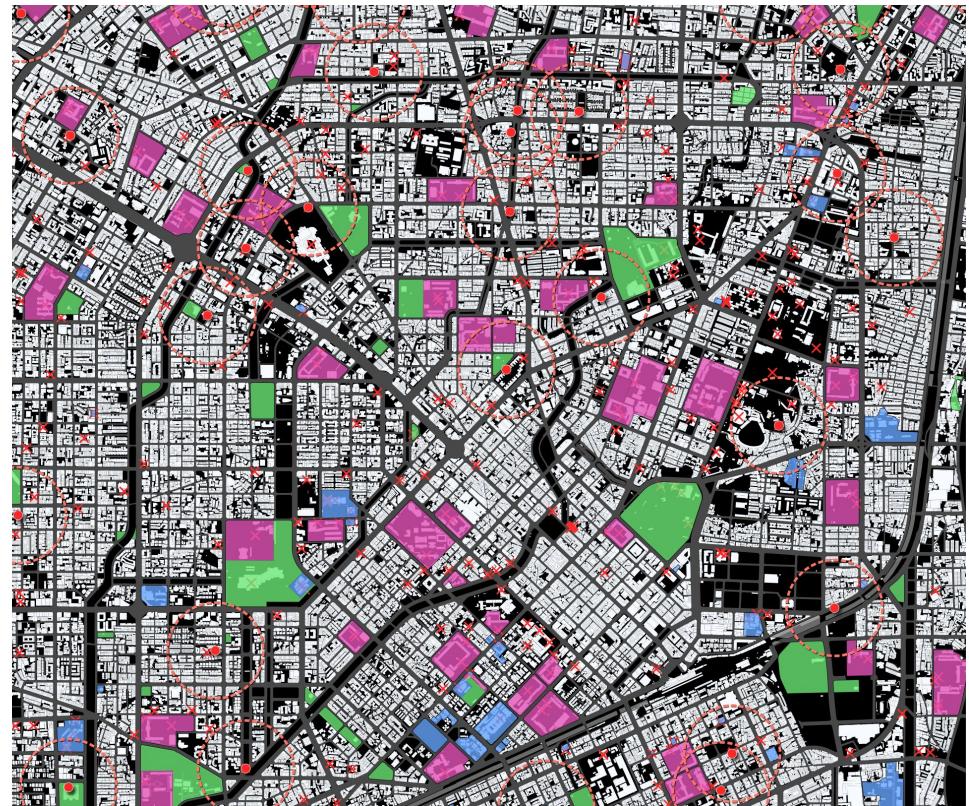




Step Two

Step Two: Data Cleaning

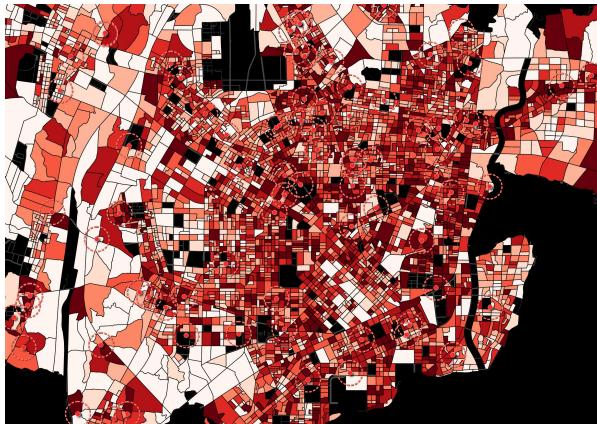
Intersect data of landmark, urban plans, and regional statistics to filter out low densely populated areas





Step Three

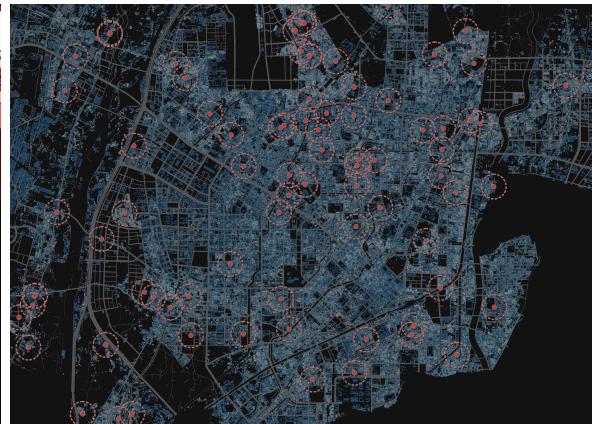
Step Three: Intersectional Spatial Analysis



Population Data

Density of the Elderly

**Find out areas needed
resources**



Buildings Data

Floor Area

**React the distribution of
residents**



NDVI

Green/Open Space

**Choose suitable areas for
holding activities**



Step Three: Spatial Analysis

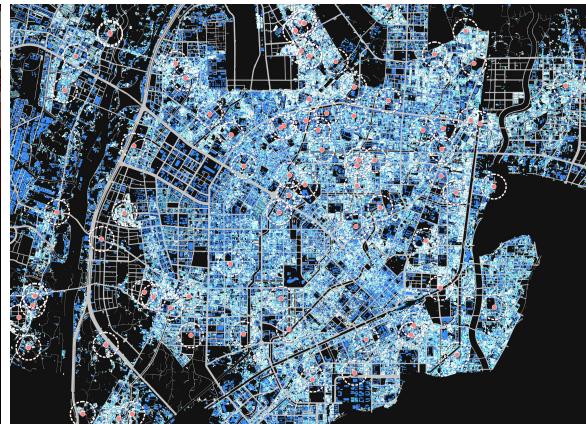
Step Three: Intersectional Spatial Analysis



Population Data

Density of the Elderly

Find out areas needed resources



Buildings Data

Floor Area

React the distribution of residents



NDVI

Green/Open Space

Choose suitable areas for holding activities



Step Three: Spatial Analysis

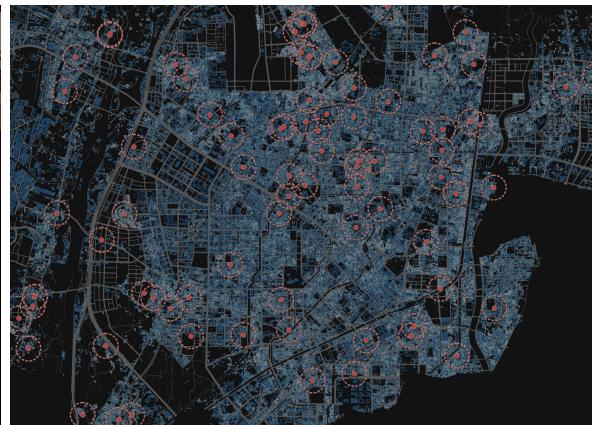
Step Three: Intersectional Spatial Analysis



Population Data

Density of the Elderly

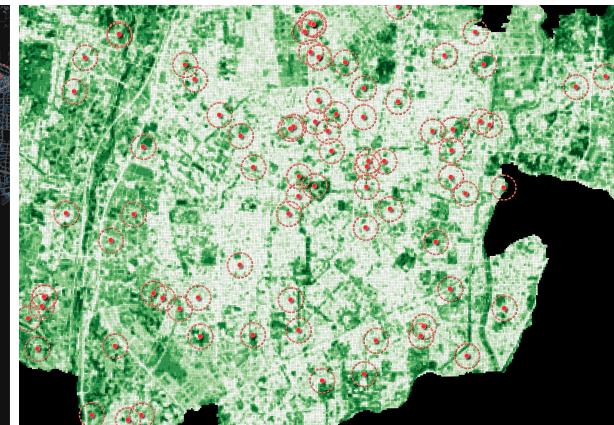
Find out areas needed resources



Buildings Data

Floor Area

React the distribution of residents



NDVI

Green/Open Space

Choose suitable areas for holding activities



Spatial Analysis: Geoprocessing

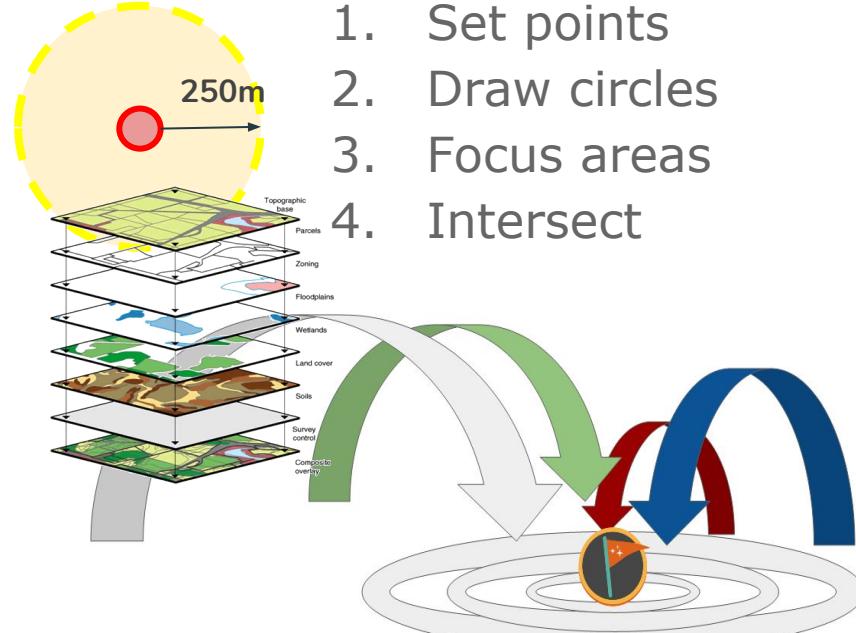
Geoprocessing

| Buffering and Clips

| Intersect the Layers

| Dissolve the Items

▼ Abstract the Value



5. Add the value to itself from near objects



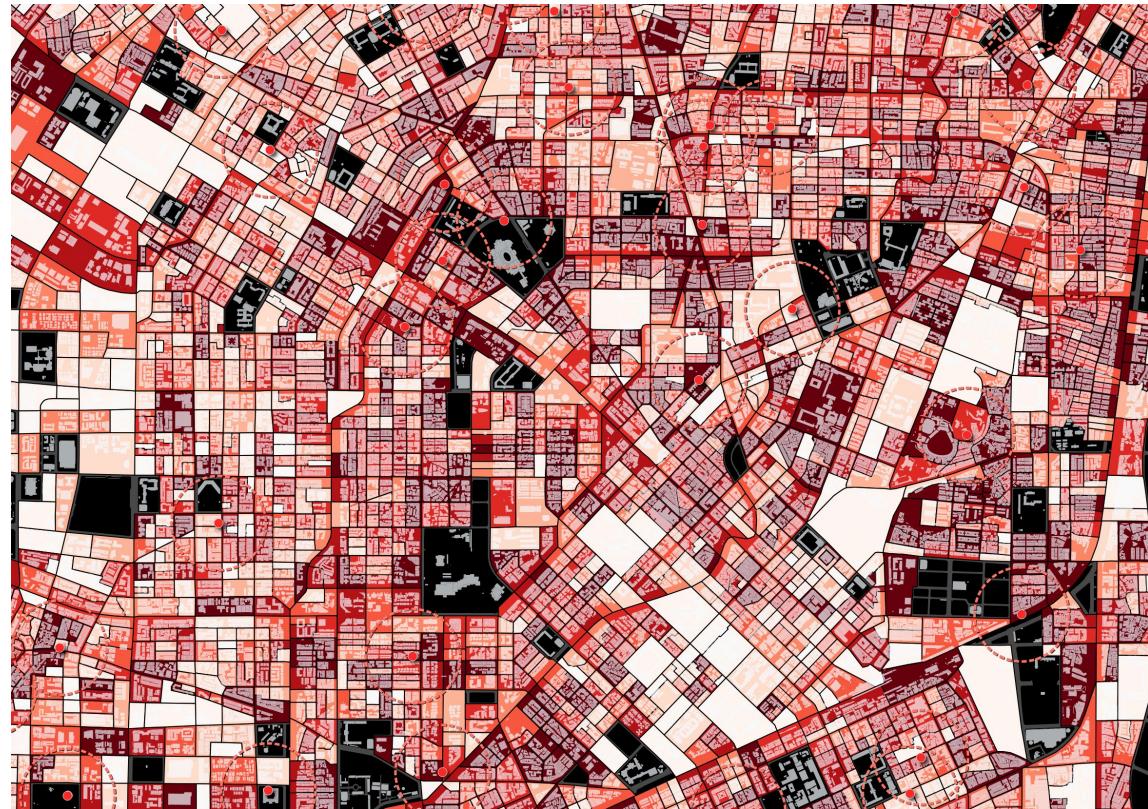
Spatial Analysis: Geoprocessing

- | Buffering and Clips
- | Intersect the Layers
- | Dissolve the Items
- ▼ Abstract the Value

Density of Population 65+

low

high





Spatial Analysis: Geoprocessing

- | Buffering and Clips
 - |
 - | **Intersect the Layers**
 - |
 - | Dissolve the Items
 - |
 - | Abstract the Value





Spatial Analysis: Geoprocessing

- | Buffering and Clips
- | Intersect the Layers
- | **Dissolve the Items**
- | Abstract the Value





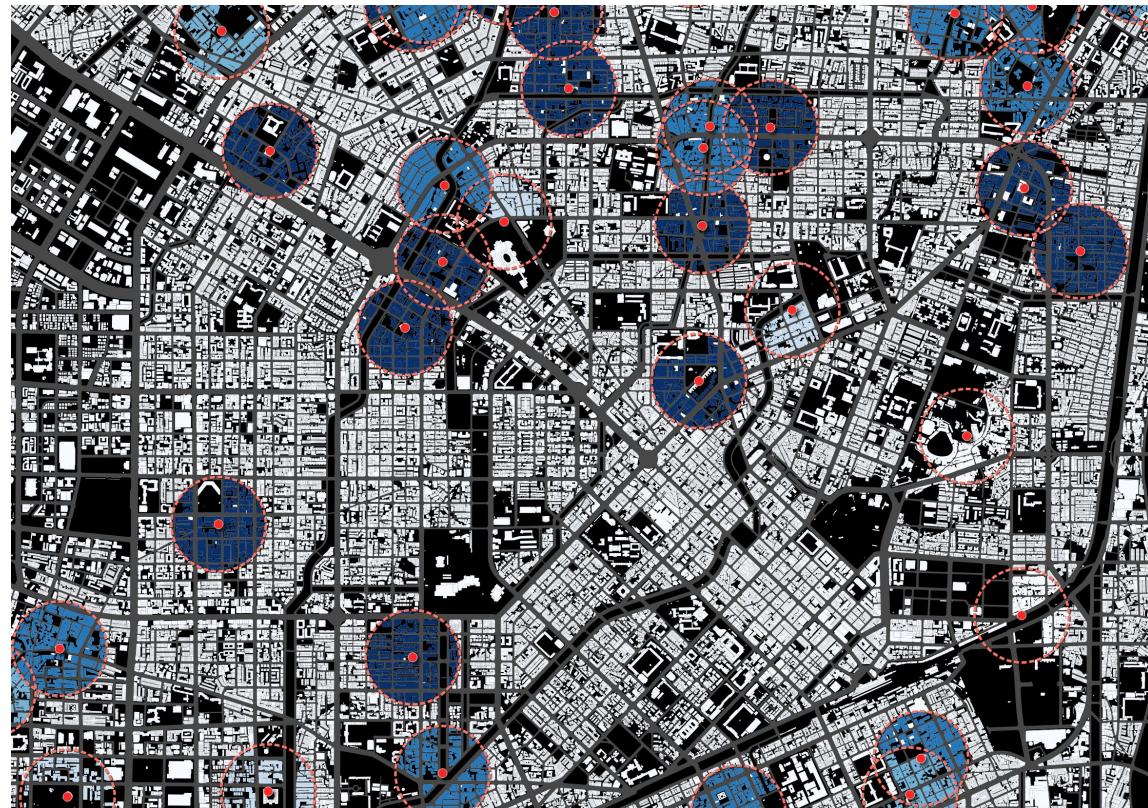
Spatial Analysis: Geoprocessing

- | Buffering and Clips
- | Intersect the Layers
- | **Dissolve the Items**
- | Abstract the Value

Low floor
area

Buildings

High floor
area





Spatial Analysis: Geoprocessing

- | Buffering and Clips
- | Intersect the Layers
- | **Dissolve the Items**
- ▼ **Abstract the Value**

Low open
space

NDVI

High open
space





Spatial Analysis: Result

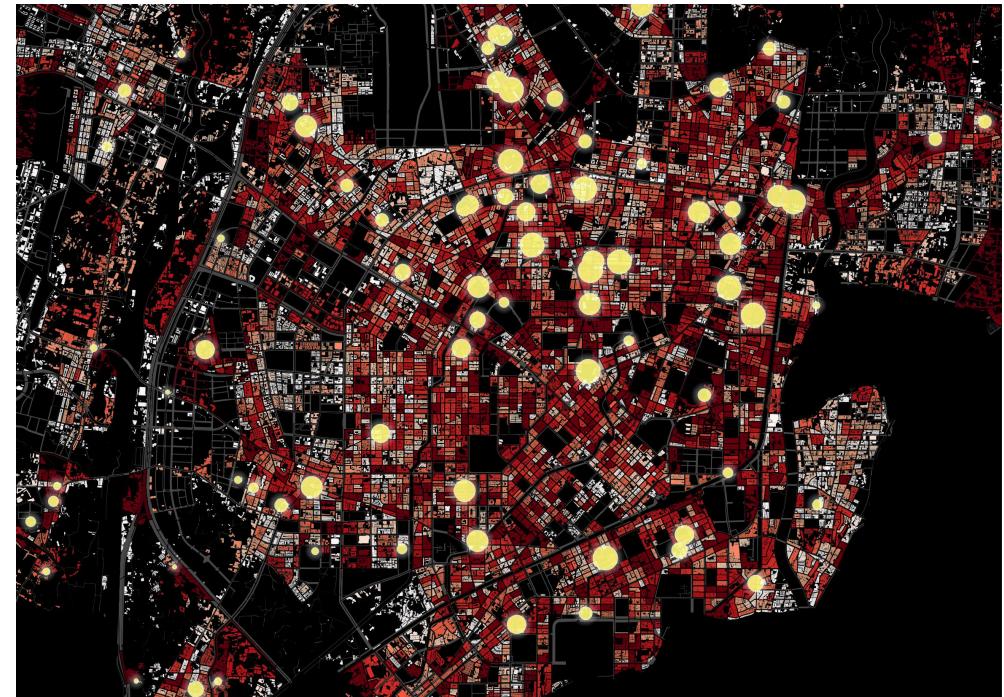
**The locations in need
have shown up!**



High density of pop
65+ living around

Population 65+

low high





Suggestion: Social Tie Nodes

Make those suitable locations
become ***Social Tie Nodes***





Duplication & Facilitation

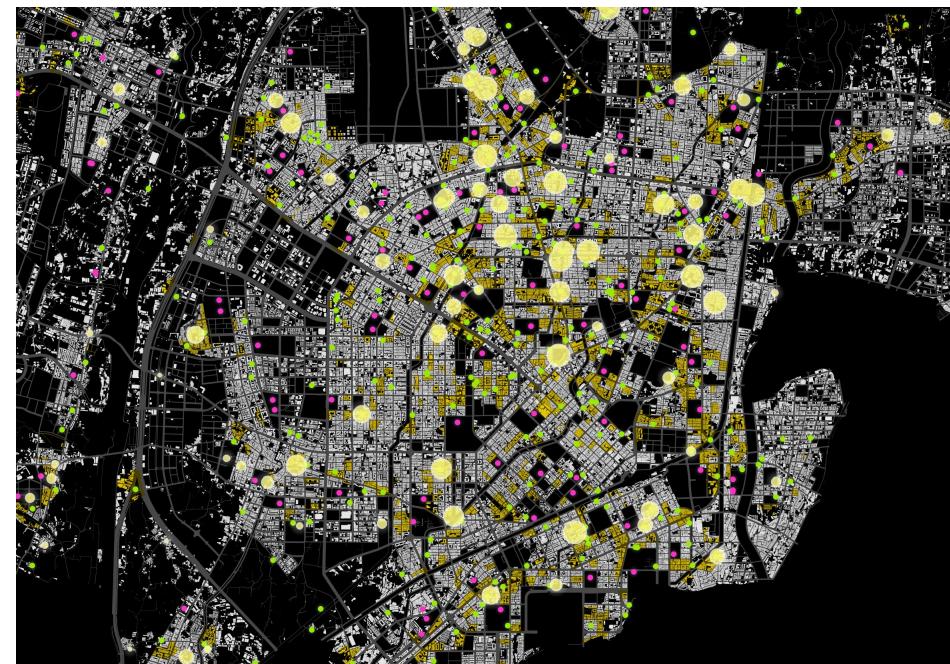
Discovery more possibilities!

**Use the same method
to find out more suitable
locations**

Intersection of
schools, temples
& pop 65+

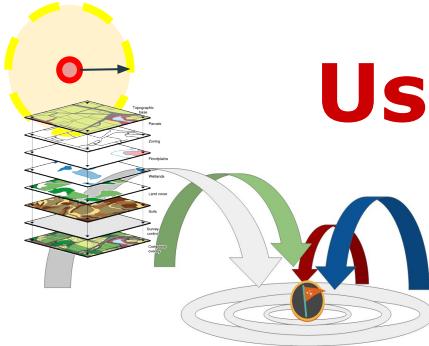


High density of
pop 65+ living
around





Duplication & Facilitation



**Use the same method to
your country!**



APPLICATION

**Make information easy to read and check,
and offer to Government**



Application: Offer to Government

Export to Government's GIS Platform

Government's GIS platform

圖層套疊

▼ 圖層類型

基本圖層 加值圖層 參考圖層

搜尋:

工廠

工業區範圍 特定區範圍 觀光工廠

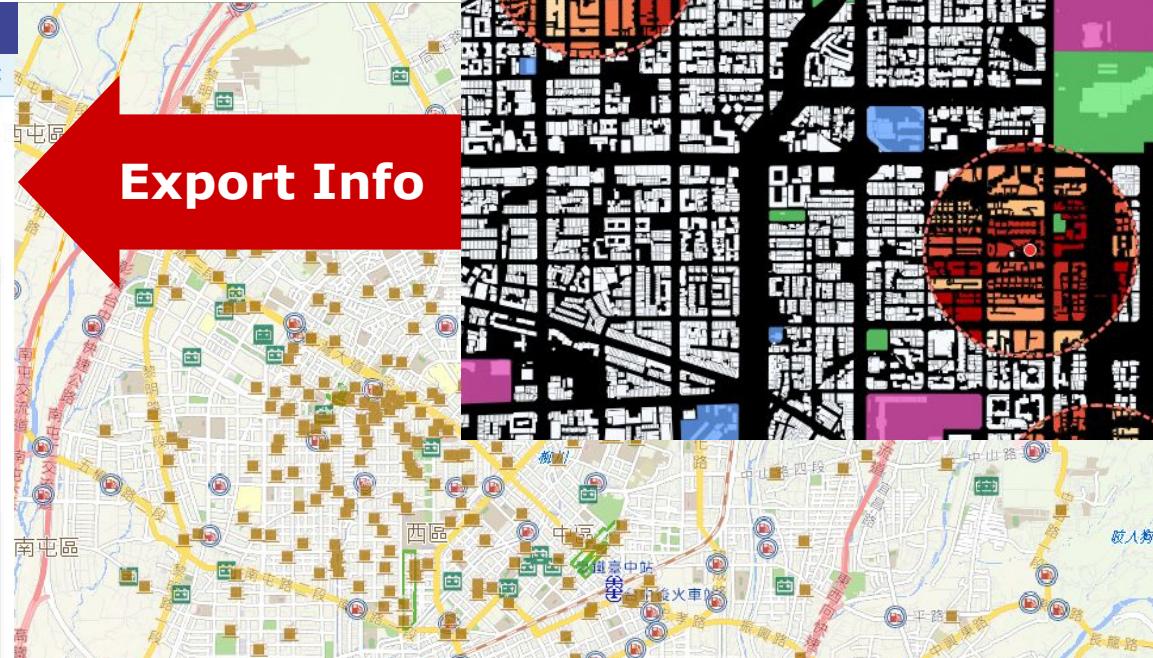
能源

中油加油站 台塑加油站 台糖加油站 電動機車充電站

電動機車維修站 電動汽車充電站 電動汽車租賃站 天然氣供氣範圍



Export Info

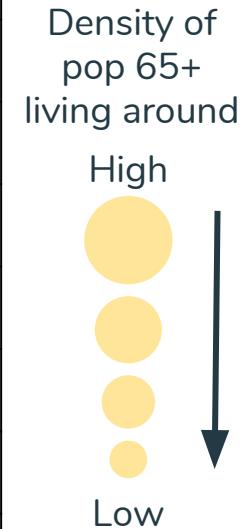




Application: Information Platform

Create an platform to show and rank, find out target locations

Social Tie Nodes	Population	Pop 65+	NVDI	Score
Community Center A	8562	1030	0.0386	5
Community Center B	6896	999	0.0541	5
~				
敦化社區關懷協會	7068	649	0.0684	4
~				
中興社區活動中心	145	38	0.2461	1
新東社區發展協會	459	21	0.0829	1



KOH

**Find out the locations required
help for Government**

**Support them to take effective care
of the elderly**