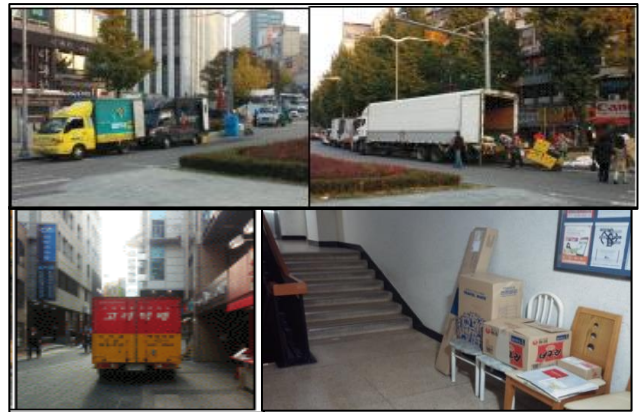
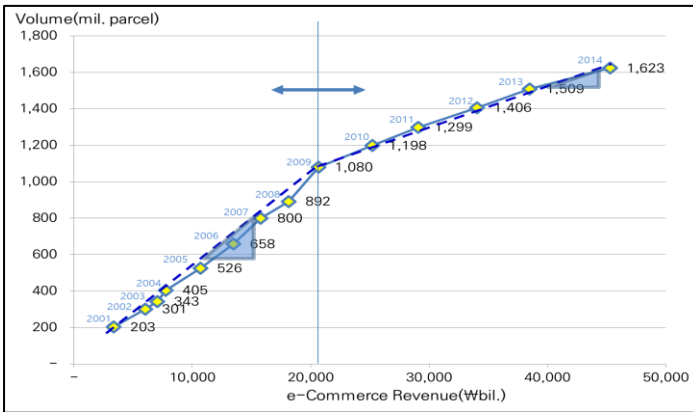


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## 1. Introduction: Parcel Delivery Service in Korea

- **Rapid Growth of Parcel Delivery Services in Korea with the prosperity of e-commerce**
  - In 2013, **totally 1.5 billion packages**, 7.3 packages per capita a month on average (The Korea Chamber of Commerce & Industry, 2013)
  - Developed as an **essential service for daily life** in the last 15 years
- **Issues Rising**
  - Inappropriate infrastructures and ineffective institution by public sector
  - **customer dissatisfaction** increases, **social costs** as **congestion**



### ■ Study Objectives

- Developing a **parcel freight O-D** to explore the **spatial pattern of parcel freight movement**
- Identifying the **parcel freight determinants**

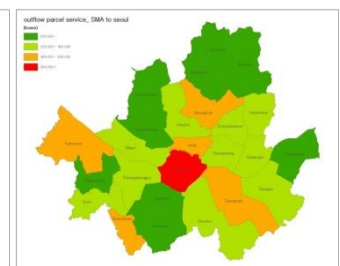
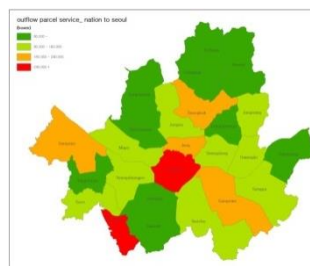
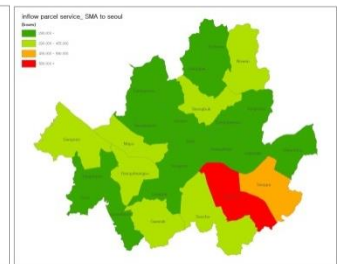
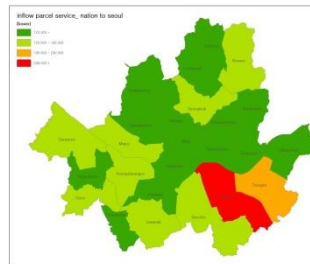
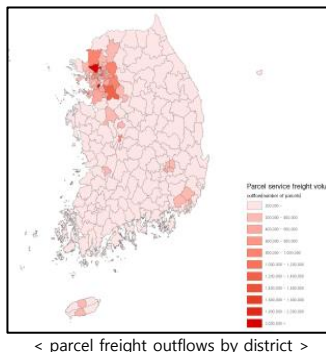
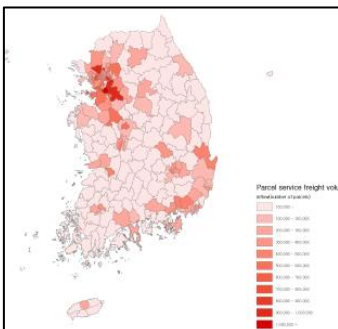
## 2. Characteristics of Parcel Freight Flows in Seoul

### ■ Seoul is the **Hotspot**

- toward Seoul 24.22%, from Seoul 30.3%
- active interaction with its vicinity (SMA)
- flows within Seoul occupy 40.28% of the total in 2012

### ■ Variations within the city of Seoul

- Gangnam is the most attractive
- Yongsan is the most productive



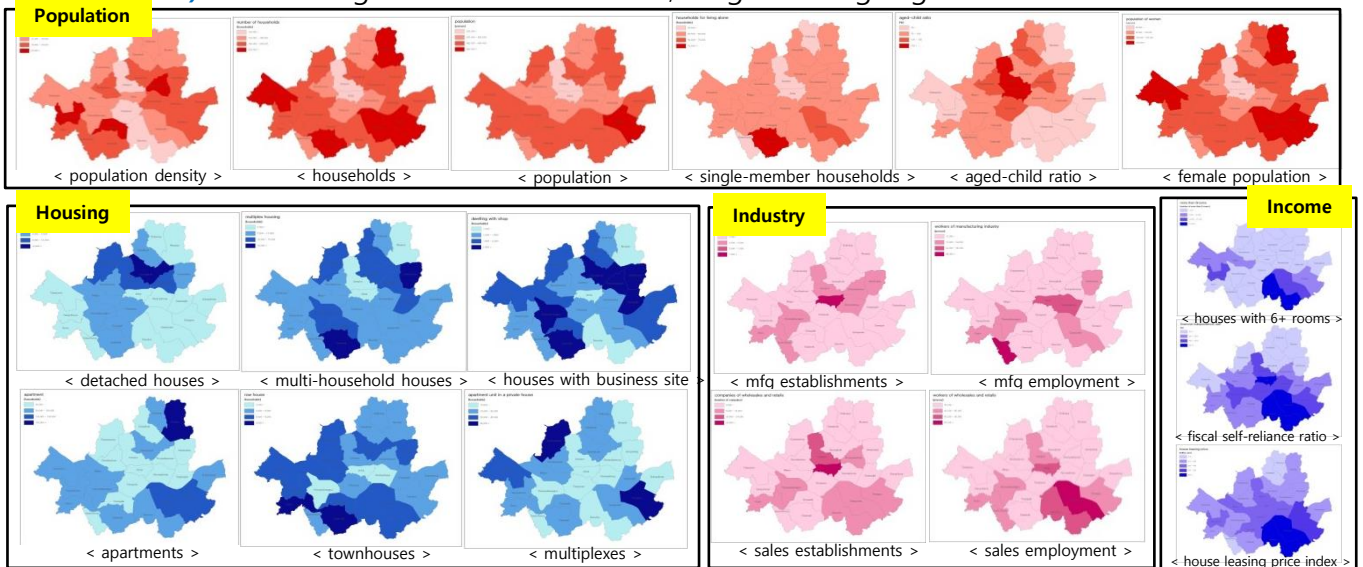
### 3. Socioeconomic Determinants of Parcel Freight Flows

#### ■ Indicators: Socioeconomic Factors

- **19 variables** as freight determinants selected based on literature review

#### ■ Spatial Pattern of Socioeconomic Factors in Seoul

- **(Population)** densest Yangcheon, more female in Seocho and Gangnam, more young people in Gwanak, more elders in Jongro and Jung-gu
- **(Housing)** apartments > multiplexes > detached houses
- **(Industry)** manufacturing concentrated on Jung, Geumcheon, Seongdong, more sales in Gangnam
- **(Income)** richest Gangnam and richer Seocho, Jung and Jongro-gu



#### ■ Correlation Analysis

- All four indicators determine regional inflows of parcel freight
- For the outflows of parcel freight, industry indicators are most significant

	Classification	Inflows	Outflows
Population –related Indicators	Population density	-.282	-.387
	Number of households	.248	-.226
	Population size	.593**	-.064
	Number of single-member households	.537**	-.143
	Aged-child ratio	-.612**	-.010
	Female population size	.728**	-.201
Housing –related Indicators	Number of detached houses	-.326	-.206
	Number of multiple-household houses	-.267	-.261
	Number of houses with business site	-.149	-.151
	Number apartments	.705**	-.026
	Number townhouses	.301	-.321
	Number multiplexes	.206	-.386
Industry –related Indicators	Number of manuf. Establishments	-.108	.503*
	Number of manuf. Employees	.093	.607**
	Number of sales establishments	.476*	.657**
	Number of sales employees	.501*	.630**
Income –related Indicators	Number houses with six and more rooms	.737**	.123
	Fiscal self-reliance ratio	.365	.448*
	House leasing price index	-.520*	-.158

\*\* The corresponding correlation coefficient is statistically significant at the significance lever of 0.01.

\* The correlation coefficient is statistically significant at the significance level of 0.05.

### 4. Conclusion

#### ■ Directions for City Logistics Improvement Policy of Seoul

- As for parcel freight **inflows**
  - mandatory installation of parcel lockers within the multi-unit house complexes 500+ households
  - female-friendly parcel drop & pickup points development for safety
  - planning to guarantee parcel service equity for remote areas
- As for parcel freight **outflows**
  - parking regulations, loading/unloading zoning, and consolidation policy need developing