An analysis on the changes in the parcel delivery services market with growing home-based consumption in Korea

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Questions

- How has the changing retail trend with rapid growth of eCommerce transformed the way that individuals purchase and receive goods?
- How has it influenced the parcel delivery services market in Korea?

This study analyzes...
- sales growth trend of eCommerce
- volume of packages delivered and sales of parcel delivery services
- relationship between eCommerce and parcel delivery services

by collecting data of...
- # packages delivered, sales, and unit price of delivery for 28 months (Nov. 2014 ~ Feb. 2017) from two major Korean parcel delivery companies
- eCommerce data on shopping channels, purchase items and sales published by Korea Statistics
Retail Trends Changing Globally

 ICT development setting off structural changes in retail business

- Context shopping supporting customer’s seamless shopping
  - recommendations/suggestions, scheduling repeated purchases: lead impulse buying

- More store-products penetrating to the online shopping market
  - More fashion goods on Amazon.com: 30M or so 2016 (increased by 91% over year)

- Restructuring traditional value chains in retail business
  - direct online sales channels between producer and consumer, 3D printing

- O4O(Online for Offline) platform spreads
  - Amazon GO: AI-based unmanned stores

- Reorganizing of traditional offline stores
  - by providing more chances of trial/experience/simulation

- SMART logistics: technological advancement
  - automation and unmanned, sharing modes or using the crowd, new delivery modes

1) source: KORCHAM, 『2017 White paper of Korea retail market』
Commerce Trends also Changing in Korea

- online shopping sales increasing

1 billion KOR won (around 0.87 million US $)

Data source: KOSIS (2014.12~2017.3) and Seo and Lee(2017)
**Commerce Trends also Changing in Korea**

- eCommerce sales, any sales for services excluded, keep growing
  - total sales: $30 billion → $42 billion
  - sales per transaction: $22 → $27

Data source: KOSIS (2014.12~2017.3) and KOILA’s parcel delivery service DB for the same period
Korean Commerce Trends also Changing

- mobile shopping sales growing fast
- sales of nondurable goods relatively increasing

Data source: KOSIS (2014.12~2017.3)
New logistics demands grow

- Consumption behavior changed
  - Visit market less frequently
  - Buy in big quantity at once
  - More frequent visit to smaller stores
  - Buy in small quantity

- Faster delivery demands growing
New logistics demands grow

- new logistics business model developed
  - On-demand logistics services platform / omnichannels
- fulfillment services, last-mile delivery services getting significant

▲ retail/logistics/finance integrated platform (eg. Lotte)

▲ On-Demand based last-mile service platform (eg. CJ Korea Ex)

▼ retail/logistics/finance integrated platform (eg. Shinsegae) + ‘bicycle Quick delivery’ services (eg. Mesh Korea)
Recent trends in parcel delivery market

- parcel delivery service market rapidly growing
  - introductory stage in early 2000s, another growth stage thanks to rapid growth of mobile shopping and open market since 2015

Data source: KOILA (2016) and Seo and Lee (2017)
Recent trends in parcel delivery market

- freight volume keep increasing for last eight years
- obvious seasonality
  - low points in February and August, high points for three months of October to December (peak in November)

Data sources: KOILA and individual company’s internal datasets
Spatial distribution of parcel deliveries

- Seoul Metro Area is HOTSPOT
- variations within the city of Seoul

< interregional flows of parcel freight in Korea >

< inflows from others >
< inflows from SMA >

< outflows to others >
< outflows to SMA >
The relationship between eCommerce sales size and volume of parcels delivered from November 2014 to February 2017 was analyzed.

- Each growing pattern in parallel.

Data sources: KOILA, KOTIS and individual company’s internal datasets.
regression analysis between eCommerce sales and volume of parcels delivered conducted

- online shopping sales for services excluded, B2C only
- every eCommerce sales of around 23,620 KOR wons (₩=$21) produces one package delivered by parcel delivery service
- at the significance level of 95%, the sales level ranges between 19,632 and 26,396 KOR wons (₩=$17~$23)

another regression analysis between sales of parcel delivery service companies and online shopping sales

- around 1,913 KOR wons (₩=$1.7) per one parcel package
- at 95% significance level, 1,658~2,100 KOR wons (₩=$1.5~$1.9)

In a word, an eCommerce retailer pays the parcel delivery cost of ₩1,913 for every single online shopping sales of ₩23,620

- its logistics cost accounts for about 8.1% on average
- Also meaning that a parcel delivery service company earns ₩1,913 for every single online shopping sales of ₩23,620
How industry responding?

- Gunpo IFT
How industry responding?

- **Seoul Ease-South Logistics Park**
  - Eco-Friendly City Logistics Park

  ![Cold storage using underground](image)

- One-way In & Out System

![Map of Seoul with Gimpo LP and LOASIS locations]
How industry responding?

Gimpo Logistics Park

Fulfillment Center for E-commerce
Conclusion and Future study

- rapidly growing eCommerce transforming individuals’ purchase behavior as well as their demands on receiving goods
- parcel delivery services market growing fast
- parcel delivery service companies were able to reduce the cost
- for every single online shopping sales of around $21, parcel delivery service costs $1.7 or so: retailers would try to minimize the delivery costs while parcel carriers would try to maximize the delivery profits

- Further study will conduct a more detailed analysis on eCommerce business models and its urban freight strategies by shopping item.
- For the next stage of data collection, a survey of parcel delivery truckers on delivery points and routes, hours, shipment size, parking and delivery behaviors, etc. is being planned.
- expecting all these efforts give us helpful insights for improved urban distribution networks, efficient and effective last-mile strategies, and management and mitigation of externalities caused by parcel delivery services within urban area
KOTI enriches the future by securing harmony among humans, the environment and transport.

감사합니다

Thank you

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