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1. Objectives of Study

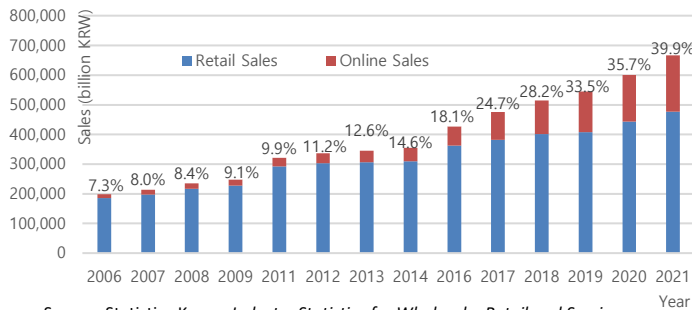
- Explore the **change trends in home-based shopping and last-mile delivery services**
- Examine the **impact of COVID-19** to understand the main driver of changes in “lifestyle logistics services”
- Propose **strategies for sustainable logistics system to improve and enhance the last-mile delivery services**

2. Home-based Shopping : Online Shopping

■ Consistent Growth of Online Shopping

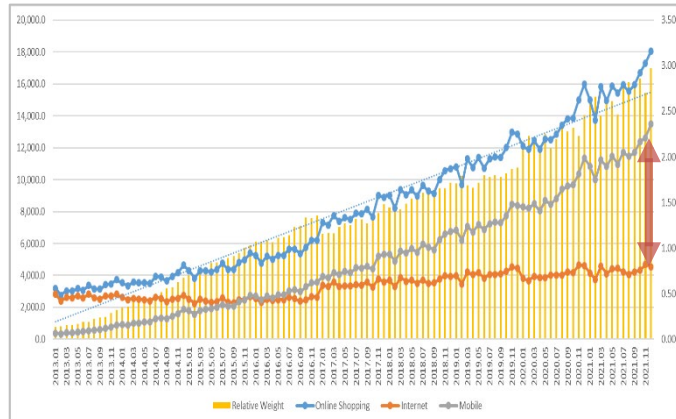
- 1.34 trillion KRW (7.3% to whole retail sales) in 2006 → 19.02 trillion KRW (39.9%) in 2021
- **mobile App-based shopping** dominance

< Growth of Online Retail Sales >



Source: Statistics Korea, *Industry Statistics for Wholesale, Retail and Services*, <https://kosis.kr>.

< Online Shopping Sales by Purchasing Channel >

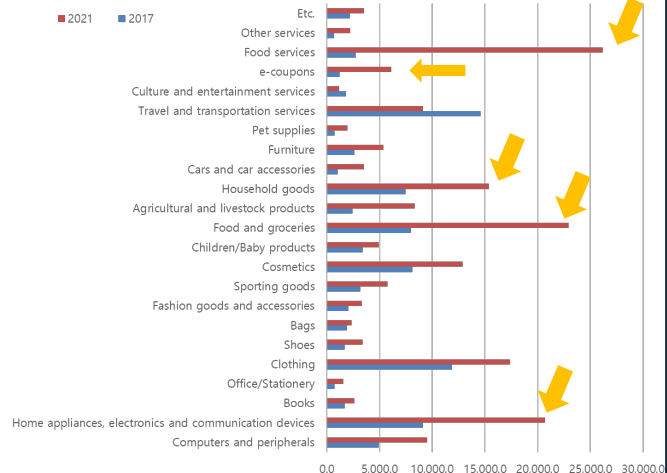


Source: Statistics Korea, *Online Shopping Trends Statistics*, <https://kosis.kr>.

■ Changes in items purchased online

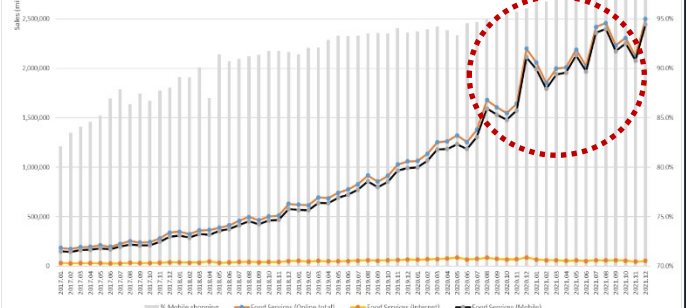
- mainly ‘durable goods’ to **almost ‘everything’**
- notably **more groceries and food services**

< Online Shopping Sales by Group of Product >



Source: Statistics Korea, *Online Shopping Trends Statistics*, <https://kosis.kr>.

< Online Sales of Food Services >



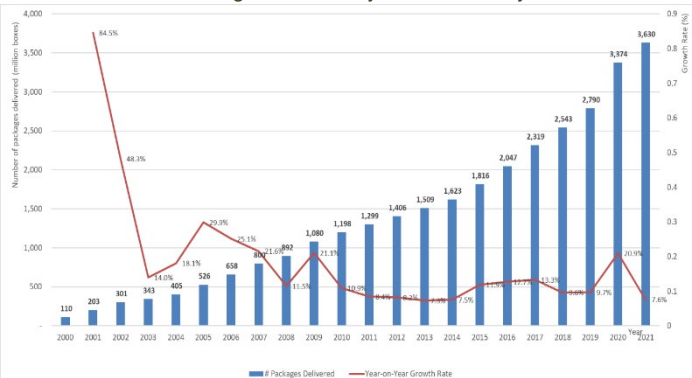
Source: Statistics Korea, *Online Shopping Trends Statistics*, <https://kosis.kr>.

3. Last-Mile Delivery Logistics Services : Parcel delivery & Instant delivery

■ Rapid growth in last-mile delivery business

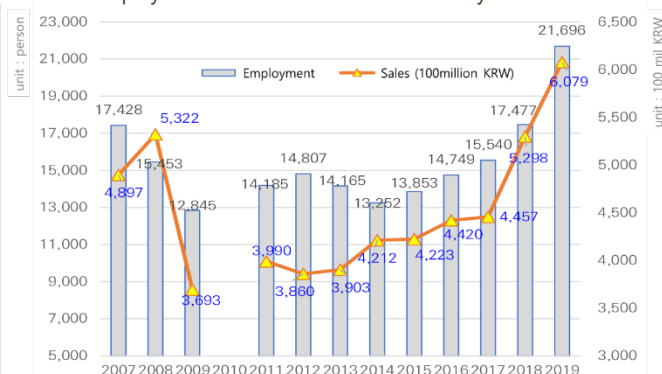
- (Parcel delivery) 1,198 million packages in 2010 → 3,630 million packages in 2021
- (instant delivery) sales of 489.7 billion KRW in 2007 → sales of 607.9 billion KRW in 2019

< Number of Packages handled by Parcel Delivery Services >



Source: Korea Integrated Logistics Association (KILA), Last-Mile Delivery Logistics Service Statistics: Trends in packages handled by parcel delivery services, National Logistics Information Center

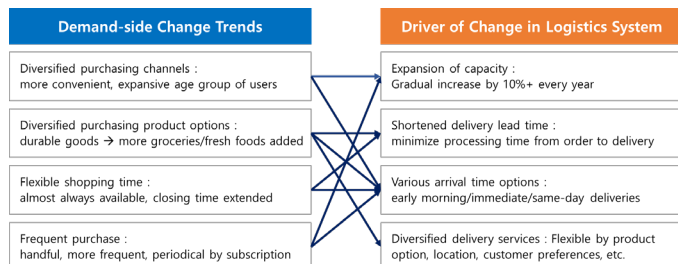
< Employment and Sales of Instant Delivery Services >



Source: Statistics Korea, Report on the Transportation Survey, <https://kosis.kr>

4. Impact of COVID-19 and Challenges

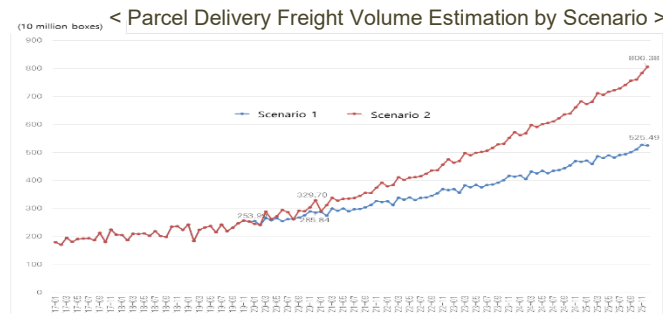
■ Home-based shopping customer preferences keep reshaping last-mile delivery services



Source: Source: Seo, et al., 2022, KOTI, Figure 2-37, p.69.

< Drivers of Change in Last-Mile Delivery Logistics Systems >

■ Two scenarios estimated to suggest additional growth of parcel delivery volume



Source: Source: Seo, et al., 2021, KOTI, Figure 5-7, p.101.

5. Improvement Strategies for Sustainable Last-Mile Delivery Services

- **[Strategy 1] Augment Transportation Capacity**
 - modal shift; 11t hydrogen FEVs; division of labor
- **[Strategy 2] Expand Capacity of Logistics Facilities**
 - new development; expansion; fulfillment function integration
- **[Strategy 3] Last-mile Delivery Infrastructure to establish Advanced Delivery Systems**
 - "last-mile delivery station"; cutting-edge delivery strategies
- **[Strategy 4] Sustainability in Labor Supply and Demand**
 - job quality enhancement, training program for skilled labor
- **[Strategy 5] Supportive Framework for System Innovation**
 - Technical, financial and legal supports, etc.

