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City Logistics Strategies for the CBDs within the Seoul Metropolitan Area

Project Number: 2.1d
Year: 2015

FINAL REPORT
September 2017

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Abstract

This study examines the characteristics of so-called urban-typed manufacturing-and-service clusters within the CBD of Seoul to analyze the characteristics of freight movement within this region in terms of transportation modes as well as delivery strategies. As for the transportation strategies (mainly for the efficient and effective delivery), motorcycle is the main mode popularly used in the busy and congested area. However, conflicts with other transportation modes such as trucks, passenger cars and big-sized buses for merchants from other regions still exist, and other safety issues with pedestrians remain. Although the Seoul Metropolitan Government (SMG) has made several efforts of reorganizing parking areas and freight loading/unloading zones, building motorcycle-specific areas, etc., various efficiency- and safety-related problems still exist and these problems create a direct challenge to government measures. Hence, this study suggests more comprehensive and integrated, and most importantly, more practical approaches to the urban freight problems, which includes master planning, establishing necessary law and aligning and modifying existing regulations.

Keywords: *Dongdaemun* Fashion Industry Cluster, motorcycle, chartered coach bus, city of Seoul, micro urban freight movement

INTRODUCTION

Purpose of study

This project aims at developing the advanced city logistics strategies for the CBDs in the Seoul Metropolitan Area (*hereafter* "SMA"). This study takes *Dongdaemun* Fashion Cluster as an example in order to understand the characteristics and roles of logistics systems in the industrial clusters within the Seoul Metropolitan Areas. Our approach differentiates this project from the previous literature that focused on the economic and social phenomena. For the purpose of this research, the study begins with identifying major transportation modes and then examines the current issues so that it finds solutions in terms of developing policies and institutional measures. This study strives to suggest several freight transportation strategies that build more effective and efficient logistics system in the CBD areas where manufacturing and retail/sales business are running simultaneously.

Background

The growth of the city and the change of its industrial structure mutually influence one another. In the case of a city where the economy has grown and the industry has advanced, it is natural for the spatial patterns of the urban industry to change in this process. The typical change is that the manufacturing industry which employed a significant portion of the workforce and was the

core industry in the past industrialization era has been declining in CBD areas. However, it has not been merely disappearing, but the structural changes have occurred and are integrated with innovative industries based on the latest in-demand technologies. For instance, the service industry has taken over the manufacturing industry as the core industry of the city.

The city of Seoul, Korea's economic center, has also experienced a rapid change in its industrial structure over the past few decades. Throughout Seoul's eras of economic growth– beginning with the manufacturing industry, then followed by knowledge-based industries in the 1990s– the development of specific industries over time and the increase of flexibility of corporate organizations were concentrated in urban spaces in order to form industrial clusters in Seoul. The city of Seoul now has become the heart of the industries such as ICT (Information Communication Technology), digital contents, culture and fashion, and their economic agglomerations produced the distinct industrial clusters on its urban space.

This research takes *Dongdaemun* Fashion Cluster (hereinafter DFC) as the case of study. DFC represents distinctive business agglomeration spatial patterns, which are spatially segmented by each activity in the whole process from design to manufacture and distribution by combining with a so-called fast-fashion industry of rapid turnover. In order to recover this spatial segmentation at the same time to facilitate smooth production and distribution, a set of inherent transportation modes has emerged and evolved in this DFC area.

Literature review

The conceptual viewpoint of formation and function of the industrial cluster are divided into two approaches: a static agglomeration economy approach emphasizing production cost reduction and a dynamic approach focusing on learning and innovation-inducing effects within the cluster. The latter includes the cluster theory that scholars such as Porter and Enright concentrated on local agglomeration and the learning region theory that scholars like Morgan, Lundvall, Storper and any others advocated (Muhn, 2004). Porter addressed the significance of industrial location since an individual enterprise was believed to gain the competitive edge based on where it is located and to what external environment exposed rather than what and how its internal activities work (Park, 2005). Therefore, Porter defined a cluster as a group of companies that shared commonalities and complementaries in their business and also were geographically adjacent and connected, and then explored how the local business environment affected the comparative advantage in terms of their productivity and competition within the cluster. The learning region theory explains the cumulated technological learning within a city, a district and a cluster enhances the capacity to improve knowledge so as to form and develop the clusters. It implies that the agglomeration economies is to discuss in comprehensive perspectives of not only an economic point of view but also socio-cultural and institutional aspects. Muhn (2004) addressed it was the superiority of the cluster strengthening learning, creativity and innovation defined in a broad sense that the sustainable development and growth of industrial clusters depend on.

Many a study related to industry clusters in Korea has mainly focused on the identification of clusters based on industrial input-output analysis using the interindustry relations table, factor analysis, and geographical information analysis techniques, etc. The industries with high inter-industry linkages are efficient in linking production processes in the same region or in adjacent

areas. It is because they can take an advantage of agglomeration such as shortening of production period, reduction of raw material costs and transportation costs.

Hwang (2001) proposed five components of the industry cluster: localization, institutional thickness, embeddedness, collective learning and innovation synergy. Ju (2001) classified the industry clusters into three types based on the level of these five core components: simple cluster, regional industrial cluster, and innovative industrial cluster.

The *Dongdaemun* Area can be defined as a fashion industry cluster that it has a sort of seamless system which covers all the processes of design, production and distribution with economic and institutional linages of related industries there. The DFC is not a simple industrial cluster, but an innovative industrial cluster.

Although various studies on the industry cluster have been conducted to explore the economic, cultural and social aspects affecting the formation and development of the cluster, few analyses on the spatial pattern of freight movement and any other logistics characteristics in the cluster has been done yet. For this reason, this study aims to identify and analyze the current situation and its problems in order to suggest some policy recommendations. The DFC, called as the mecca of the fashion industry and one of the typical industry clusters in the CBD of Seoul, is selected as this study area.

TRANSITION OF INDUSTRIAL STRUCTURE IN SEOUL

Manufacturing Industry

The number of manufacturing businesses in Seoul decreased by an annual average of 2.75% from 6,308 in 1999 to 4,269 in 2013, and the number of employees also decreased by 3.20% annually from 174,558 in 1999 to 110,725 in 2013. However, the value added of manufacturing in Seoul increased by an annual average of 3.06% between 1999 and 2013. These numeric figures indicate that the characteristics and form of manufacturing in Seoul have changed. It is also remarkable that each share of the entire nation in both numbers of manufacturing businesses and employees of Seoul is only 6.5% and 3.9% respectively. However, the fashion industry in Seoul tells a different story.

Table 1. Manufacturing Industry in Korea and Seoul (1999-2013)

Year	Korea (Entire Nation)			City of Seoul		
	Number of Businesses	Number of Employees	Value Added	Number of Businesses	Number of Employees	Value Added
1999	47,485	590,224	188,673,218	6,308	174,558	8,927,470
2001	52,317	641,435	206,647,453	6,501	168,375	9,930,645
2003	54,880	687,806	236,778,389	5,999	165,612	11,791,242
2005	57,198	764,318	291,152,665	5,656	148,194	11,234,312
2007	61,785	751,733	329,010,867	5,936	147,950	12,122,204
2009	57,996	724,730	374,500,730	5,093	131,797	13,169,944
2011	63,047	809,745	480,203,387	4,825	121,635	14,681,226

Year	Korea (Entire Nation)			City of Seoul		
	Number of Businesses	Number of Employees	Value Added	Number of Businesses	Number of Employees	Value Added
2013	65,389	2,813,575	479,281,190	4,269	110,725	13,621,708
CAGR	2.31%	11.80%	6.89%	-2.75%	-3.20%	3.06%
Share of Seoul compared to the entire nation				6.53%	3.94%	2.84%

Source: Statistics Korea, Mining and Manufacturing Survey, https://kosis.kr/index/index.do.

Fashion Industry

As for the fashion-related manufacturing industry, almost half of businesses and employees of Korea are concentrated in the city of Seoul. The increase in value added related to the fashion industry in Seoul is noteworthy. Its average annual growth rate is 6.9% since 1999, and the share of the entire nation is overwhelming at 71.70% as of the year of 2003. This represents that the fashion-related manufacturing industry with a high added value is located in Seoul.

Table 2. Fashion Industry in Korea and Seoul (1999-2003)

Year	Korea (Whole Nation)			City of Seoul		
	Number of Businesses	Number of Employees	Value added	Number of Businesses	Number of Employees	Value added
1999	5,821	184,793	5,996,261	2,783	74,704	2,827,312
2001	5,667	165,844	6,957,873	2,840	70,308	3,485,697
2003	4,594	142,146	7,261,832	2,317	66,575	4,189,446
2005	3,957	114,475	7,419,266	2,090	56,336	4,899,793
2007	4,026	108,814	8,054,713	2,222	57,983	5,699,605
2009	3,527	98,446	9,456,071	1,849	51,720	6,801,247
2011	3,624	96,455	10,608,462	1,838	47,943	7,632,985
2013	3,362	90,128	10,033,759	1,597	42,722	7,193,752
CAGR	-3.85%	-5.00%	3.75%	-3.89%	-3.91%	6.90%
Share of Seoul compared to the entire nation				47.50%	47.40%	71.70%

Source: Statistics Korea, Mining and Manufacturing Survey, https://kosis.kr/index/index.do.
Note: The fashion-related manufacturing industry here is defined to include manufacturing of garments, clothing accessories, fur products, and leather, bags and footwear categorized by Statistics Korea's manufacturing industry classification system.

A spatial analysis shows that a number of fashion-related manufacturers are located in *Dongdaemun-gu*, *Seongdong-gu*, *Jungnang-gu* and *Geumcheon-gu* within the city of Seoul while the highest figure of the value added appears in *Gangnam-gu*. In the areas of *Dongdaemun*, *Seongdong* and any other districts with many manufacturers, small manufacturers are observed to be densely concentrated. Effective and efficient transportation and logistics system management is essential to the success of the business there.

Table 3. Fashion Industry by district (*gu*'s) in Seoul

Classification		1999	2001	2003	2005	2007	2009	2011	2013
Seoul	Number of businesses	2,783	2,840	2,317	2,090	2,222	1,849	1,838	1,597
	Value added (thousand)	2,827.3	3,485.7	4,189.4	4,899.8	5,699.6	6,801.2	7,633.0	7,193.8
Jongno	Number of businesses	54	65	35	41	58	58	26	27
	Value added (thousand)	32,647	30,310	179,927	623,594	741,931	979,630	1,005,914	483,420
Jung	Number of businesses	117	125	105	101	124	93	62	40
	Value added (thousand)	78,417	131,096	80,099	106,785	96,716	84,613	62,420	46,029
Yongsan	Number of businesses	24	28	25	16	20	10	4	12
	Value added (thousand)	30,055	44,995	49,208	38,199	14,221	4,683	2,722	6,705
Seongdong	Number of businesses	162	197	181	168	177	146	195	178
	Value added (thousand)	177,346	381,343	335,745	415,776	399,853	499,897	830,270	1,056,196
Gwangjin	Number of businesses	124	127	94	90	106	88	79	69
	Value added (thousand)	168,235	123,327	177,406	167,559	166,659	196,171	213,494	164,151
Dongdaemun	Number of businesses	173	196	182	143	138	134	109	106
	Value added (thousand)	129,517	150,163	243,054	305,182	271,628	389,590	429,662	171,846
Jungnang	Number of businesses	344	326	240	239	250	205	238	211
	Value added (thousand)	122,930	131,031	113,173	104,969	95,777	96,307	128,265	102,761
Seongbuk	Number of businesses	140	125	111	100	108	53	65	69
	Value added (thousand)	94,129	88,505	103,979	77,569	83,224	65,475	86,615	74,581
Gangbuk	Number of businesses	109	107	86	84	96	98	88	80
	Value added (thousand)	47,446	50,630	44,860	49,977	59,205	55,009	40,695	31,849
Dobong	Number of businesses	108	91	85	60	44	50	48	38

Classification		1999	2001	2003	2005	2007	2009	2011	2013
	Value added (thousand)	64,239	56,648	42,424	37,160	42,895	30,486	30,458	20,057
Nowon	Number of businesses	80	86	55	46	35	29	28	21
	Value added (thousand)	45,485	48,624	43,787	40,965	33,576	30,260	29,825	27,679
Eunpyeong	Number of businesses	52	71	47	41	33	28	34	27
	Value added (thousand)	22,222	29,001	28,499	33,896	24,480	19,553	27,873	7,977
Seodaemun	Number of businesses	38	28	22	22	27	24	22	22
	Value added (thousand)	20,189	24,078	27,790	22,694	24,799	27,227	24,697	25,868
Mapo	Number of businesses	68	72	64	51	68	34	25	23
	Value added (thousand)	279,377	238,024	247,277	228,918	265,351	332,634	260,186	99,706
Yangcheon	Number of businesses	95	105	92	73	63	57	71	59
	Value added (thousand)	56,707	58,885	55,501	39,642	32,619	40,325	69,281	66,457
Gangseo	Number of businesses	82	74	51	45	41	45	36	30
	Value added (thousand)	67,587	95,609	64,317	31,398	32,916	68,166	32,544	17,971
Guro	Number of businesses	48	49	53	51	54	39	53	47
	Value added (thousand)	96,129	112,588	154,547	112,551	253,071	157,933	145,784	135,142
Geumcheon	Number of businesses	250	247	202	204	234	221	269	237
	Value added (thousand)	273,963	316,714	505,457	432,045	699,405	1,007,909	1,200,767	1,110,201
Yeongdeungpo	Number of businesses	98	90	72	63	51	46	42	37
	Value added (thousand)	92,911	68,642	68,554	71,656	75,942	112,074	140,894	146,527
Dongjak	Number of businesses	56	62	34	36	23	22	28	21
	Value added (thousand)	32,100	40,500	28,463	27,835	10,889	11,699	15,412	14,272
Gwanak	Number of businesses	241	241	183	158	198	124	100	68
	Value added (thousand)	96,914	125,068	92,520	80,449	113,259	118,669	117,060	89,986

Classification		1999	2001	2003	2005	2007	2009	2011	2013
Seocho	Number of businesses	52	50	57	46	61	46	33	30
	Value added (thousand)	109,318	176,955	202,340	229,383	434,062	430,482	472,136	387,850
Gangnam	Number of businesses	92	93	98	83	89	86	83	65
	Value added (thousand)	436,970	614,218	818,645	905,569	1,021,454	1,081,355	1,587,108	1,994,775
Songpa	Number of businesses	61	84	78	80	67	62	51	34
	Value added (thousand)	169,435	237,509	366,674	445,354	415,297	648,202	406,796	471,666
Gangdong	Number of businesses	115	101	65	49	57	51	49	46
	Value added (thousand)	69,291	109,061	94,265	186,533	204,921	205,197	220,937	431,415

Source: Statistics Korea, Mining and Manufacturing Survey, https://kosis.kr/index/index.do.

SPATIAL AND LOGISTICS CHARACTERISTICS OF THE *DONGDAEMUN* FASHION INDUSTRY CLUSTER (DFC)

The *Dongdaemun* Fashion Industry Cluster (hereinafter referred to as DFC,) is an unplanned shopping cluster which is spontaneously formed and developed with a land area of 310,000 square meters and a total floor space of 810,000 square meters. There is a historic landmark of 63-story Building which has sixty three floors above ground at Yeouido, a heart of financial business in Seoul. DFC is a massive garment industrial cluster equivalent to four and half times the floor space of the 63 –story Building. Various apparel items are traded through diverse channels for wholesale and retail of DFC, and its market reaches broad to not only Korea but also China, Russia and Japan. According to the report of Seoul Fashion Industry Center, the amount of exports from DFC accounts for 17.6% of its entire production in 2011.

There are 17,427 (25.0%) apparel industry establishments running businesses, which build up the economy of agglomeration in the mix of manufacturing and distribution functions within a certain area of the center of the city. The opening of *Gwangjang* Market in 1905 started the birth of *Dongdaemun* Market, and the opening of *Pyeonghwa* Market in 1961 formed the structure of current *Dongdaemun* Market. As two submarkets have expanded and evolved, the *Dongdaemun* Market has developed as a nationwide apparel wholesale market in Korea. It has also begun to play a role of retail market since a large scale retail complex has been built in 1998. The *Dongdaemun* Market serves as the only place in Korea where the goods the customers desire can be produced to provide in the shortest time. It is because the region has a flexible system of procuring required services from others through intermediaries, so-called brokers. As a result, the *Dongdaemun* Market is very popular with young people who prefer the small quantity sales of various kinds and the rapid shipment of goods according to the fast trend.

The *Dongdaemun* Fashion Industry Cluster is divided into four areas : western conventional market area, eastern conventional market area, western retail trading zone and eastern modern trading zone. The DFC has a self-contained distribution structure that starts from planning to procurement of raw materials and subsidiary materials, production, processing and sale in a simple and seamless system. Particularly, it responds quickly to the needs of consumers who are sensitive to the trend because the processes of planning and sales are made almost spontaneously within the same space.

Its locational strength can be explained by its connectivity and accessibility of transportation infrastructure. There are good public transport access with five subway lines (Line 1, Line 2, Line 4, Line 5 and Line 6) and more than twenty bus routes. Also, the area is located in a traffic center where many principal roads pass, so that it is easier for consumers to access and the market area can spread and develop more and more. However, this area is physically very congested since a number of wholesale and retail shops targeting to serve the entire nation form a huge commercial market and this market is adjacent to the core business district in *Jongno-gu* and various specialty shops in the core of Seoul City.

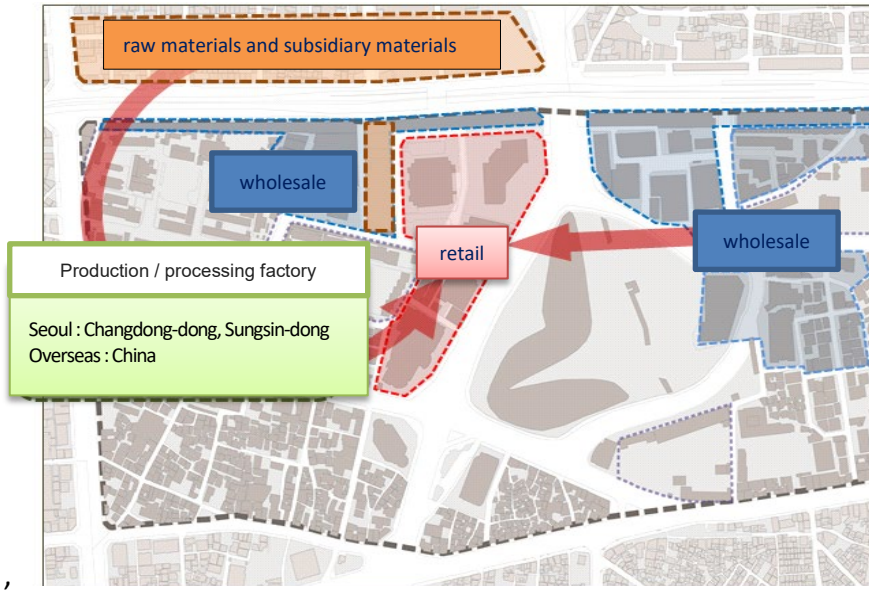

Figure 1. Land use and logistics flow in the *Dongdaemun* Fashion Industry Cluster

The total freight volume shipped in the DFC is estimated around 2,008 tons per day, divided into 1,127 tons of production (56%) and 881 tons of sales (44%), which accounts for about 60% of the total freight volume of the entire city of Seoul (Seoul Metropolitan City's internal documents, 2010). Fabrics and subsidiary materials prepared from *Gwangjang* Market and *Bangsan* Market are shipped to production and processing factories in *Changshin-dong*, *Sungin-dong* and *Sindang-dong*, and then most fashion products are shipped to retail stores via wholesale stores. The rest of quantity exports overseas to China. The characteristics of land use pattern and logistics is summarized as : each district of production/processing and sales is segmented within the area and the wholesale stores and its shopping district functions as a distribution hub connecting various retailers including retail stores in the DFC, local wholesale

and retail stores, and foreign wholesaler. Therefore, the DFC produces a huge amount of freight shipments even from a small-sized but very dense area compared to the entire city of Seoul.

The DFC has developed unique transportation modes. The first one is a motorcycle. Motorcycles are competitive in delivering fast while overcoming spatial restrictions. A motorcycle is suitable for the congested and narrow road traffic that *Dongdaemun* area has, and it is easy to operate and park at a small occupied area. Motorcycles as one representative means of freight transportation in DFC account for 100% of the internal freight traffic in DFC and 50% of the regional movement between DFC and rest of Seoul area (Seoul Metropolitan City's internal documents, 2010). In fact, motorcycles are favorable to door-to-door delivery so that makes it easy to load and unload raw or subsidiary materials to shopping malls from factories and wholesale and retail stores. In addition, motorcycles are easy to cope with demand of frequent transportation of various kinds and small quantity, and most importantly their service is provided at a quite low price between 5,000 KRW and 8,000 KRW, which is equivalent to four to seven dollars or se per one delivery. For this reason, there are always crowded with motorcycles around the fabric accessories market, retailers and wholesalers in the DFC area. Although it is widely used because of its convenience, it causes several issues. Since motorcycles park near the entrance to the shopping mall to operate loading/unloading works sporadically, and sometime occupy even sidewalks, they raise problems such as traffic congestion, inconvenience and safety issues to pedestrians.

Figure 2. Major spots of Motorcycle working in the DFC area

The second transportation mode uniquely developed in the DFC area is the large-sized chartered coach bus, which local merchants who do not live in Seoul use to carry clothes from the DFC to the retail shopping area where they run the business. The local merchants share the ride on the same local route, which works well to overcome regional limitations.

Wholesale shopping area and its nearby areas are more crowded at nighttime between nine in the evening and five in the morning than the daytime, usually from eleven o'clock to twenty o'clock. It is because the local merchants visit the DFC to buy products during nighttime after closing their local stores. The popular wholesale stores in the DFC area allow the coach bus to drive in and park in front of their stores for easier access. The wholesalers usually are responsible to management of parking lots, operation of loading/unloading zones, any other maintenance activities such as fencing, arrangement, and cleaning so as to attract local merchants. In general, their arrival and unloading happens between 20:30 and 22:30, which takes around 20 minutes a bus. Usual loading and unloading after shopping occurs between 1 and 5 in the early morning, which takes about 30 to 40 minutes per bus. Six coach buses can park and work within a zone simultaneously. The total of twenty coach buses stop by the DFC a day. Even though it is the nighttime most retailers close their stores, there is still some severe conflict with pedestrians of domestic customers and tourists who visit the DFC area for their shopping at the 'dawn markets'.

Figure 3. Large-sized coach buses for local merchants during nighttime in the DFC area

Since motorcycles are used for internal transportation or short distance transportation within the city of Seoul, and large coach buses are used for regional transportation, it is not too common to use trucks, vans and cars as a means of freight transportation in this DFC area. It should be noted, however, they also cause some traffic congesting and safety issues in the DFC area since they still play a role as a means of transportation for the individual customers, and they park at either designated parking areas as well as on street in daytime and park and work on street even during nighttime.

PROPOSAL ON CITY LOGISTICS POLICY FOR FASHION INDUSTRY CLUSTER

Considering that the total freight volume from/to/in *Dongdaemun* area is around 60% of the total daily volume of the city of Seoul, it is noted again that the freight flows occurring in this limited area is quite large and all the related economic activities are integrated in this area. In order to adapt to the unique land use and logistics pattern, motorcycles and chartered coach buses had emerged as the effective means of shipping the materials and products.

A motorcycle mainly used in the daytime is a very effective and efficient transportation means of actively responding to the integrated structures of manufacturing-distribution and wholesale-retail business in the *Dongdaemun* area to serve the rapid delivery in a narrow and limited spaced area. Chartered coach buses that give the ride to local merchants between their local business area and the *Dongdaemun* Market are the typical logistics means, which is very effectively utilized in terms of logistics consolidation. In spite of their effectiveness and efficiency, they have continued to raise traffic congestion, road-sidewalk safety and other environmental issues.

The Seoul Metropolitan Government (hereinafter SMG) has tried to solve these problems in several ways, which are not evaluated successful since they failed to consider and reflect properly the regional characteristics of DFC area in terms of its certain spatial and industrial aspects. For example, parking lots and other logistics facilities constructed in nearby public sites are not actively utilized. Since most of logistics activities in the DFC area are to take place within a short time, parking and loading/unloading spaces should be situated not remotely from their activity sites. However, this important factor on the logistics characteristics in the DFC area was overlooked.

Motorcycles and chartered coach buses are important factors in determining the spatial identity of the DFC area when planning its regional logistics strategies. Newly suggested plans and strategies need to aim at improving the conditions and supporting systems for the existing modes so as to increase their operating efficiency rather than changing or substituting the existing one to a new transportation means.

It is necessary to develop policy direction in terms of production-and-distribution structure, logistics infrastructure, transportation mode, logistics activity patterns, and promotion of trade in the target area. Regarding to the production-and-distribution structure, it is critical to develop the strategies for individual transportation as well as regional logistics consolidation. In order to manage logistics facilities effectively, improvement of loading and unloading working zones, and planning of fair and appropriate freight traffic induction charge should be considered. In addition, the provision of proper logistics infrastructure is essential for each transportation mode. As for the control of logistics activity patterns, it is considerable to reduce negative effects through converting to underground logistics and utilizing the public spaces. In terms of promotion of trade, it is urgent to construct a seamless logistics business batch processing system for foreign visitors. From this perspective, this study suggests three strategies to improve the city logistics system in the DFC area as follows.

The first one is to secure stable parking spaces for motorcycles as well as their loading/unloading zones. The candidate spaces should be the spaces which have been already used commonly and are very near to the building the motorcycles serve for rapid delivery. Although the amendment of the parking regulation has provided the basis for securing a

motorcycle parking space, the detailed standards and support basis for installing parking lots of motorcycles have not been established yet. The SMG can start with installing the reserved parking lots for motorcycles where motorcycle drivers commonly use and park disorderly so as to arrange the area neatly in terms of road safety and city landscape in the short term. In the long term, the parking lot law should be revised to include the regulations for installing the parking spaces for motorcycles by use of facility: off-street parking lots for existing buildings and on-site parking lots in new buildings. It is also necessary to define the proper position and the designated numbers of parking lots to install. The similar policy directions are suggested for the chartered coach bus for local merchants. It is necessary to refrain from irresponsible parking at the nighttime operation and then continuously encourage them to park within the designated parking lots.

The second is installing and assigning the logistics zone for legal and official freight loading and unloading activities, particularly for large-sized buses and vehicles. The logistics zone is to establish a distinct space to eliminate conflicts with pedestrians and other passengers. The logistics zone should be designed to secure parking spaces and freight handling spaces at the same time to secure the traffic flows of the buses when the coach buses flock together between 11 pm and 5 am.

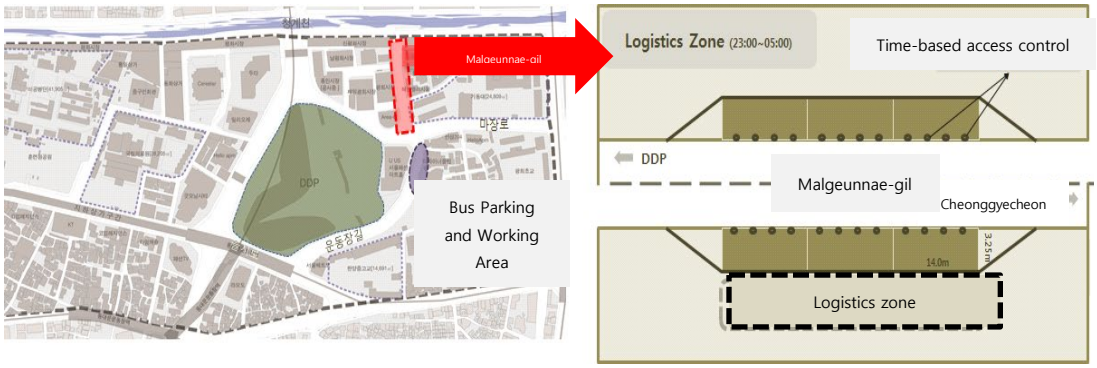

Figure 4. Blueprint of Logistics Zone in the DFC area

The last suggestion is to promote the initiation of a seamless logistics service business for foreign tourists. It is necessary to develop an integrated logistics processing system to provide a seamless service for foreigners who visit and make commercial transactions in the DFC area.

This study tried to find the solutions to current problems that *Dongdaemun* market has in terms of city logistics by the qualitative approach rather than the quantitative approach based on statistical data and analysis. The further study can be developed to evaluate the effects of suggested policies by analyzing the data obtained by field surveys, interviews, and any statistical data on the DFC area in the future to overcome any limitations of this study.

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Acknowledgment

This research is supported by the Volvo Research and Educational Foundations through the MetroFreight Center of Excellence, KOTI. Data was mainly obtained from Statistics Korea and the Seoul Metropolitan Government, and also from several field trips by its study group members. All errors and omissions are the responsibility of the authors.