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The parcel industry in the spatial organization of logistics activities in the Paris Region: inherited spatial patterns and innovations in urban logistics systems

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Abstract

The aim of this paper is to study the location of the parcel industry, and its place in the spatial organization of logistics activities in the Paris Region. In particular, we wish to compare the location of the parcel industry to the location of other logistics activities. In order to do this, we review in part one the existing factors that determines the location of logistics activities. We use this literature review to draw initial conclusions on the distinctive characteristics of the parcel industry. In part two, we use existing data on the location of establishments in the Paris Region to study the dispersion of the parcel industry compared to the dispersion of other logistics activities. Finally, in part three, we provide a partial explanation for this difference: a spatial hysteresis of the big stakeholders of the parcel industry, and the emergence of innovative logistics solutions.

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Keywords: Parcel industry; Logistics activities; Spatial dispersion; Paris Region

1. Introduction

In the last few years, the issue of the location of logistics activities emerged in the literature, in Europe and in the United States, especially from the perspective of logistics sprawl in metropolitan areas. These issues of spatial dynamics question urban policies, because they underline the lack of interest in freight in the planning process. In a study of the Atlanta metropolitan area, Dablanc and Ross (2012) demonstrated the existence of a sprawl of logistics activities, both at the local and macro-regional scale. In the case of the Paris region, Dablanc and Andriankaja (2011) showed the same phenomenon, through a study of the location of the parcel industry from 1975 to 2010. The sprawl was concomitant to the formation of new logistics clusters in the periphery of the Paris Region (Heitz and Dablanc, 2015).

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Urban spaces are often considered in the literature as places of preferential location for logistics activities (Hesse, 2008). In parallel to the existing dominant dynamic of logistics sprawl, an important trend of location of logistics activities in city centers can be observed. This trend is primarily discussed in specialist publications on logistics and freight, but it is also a topic in academic literature (Browne and al, 2005; Cherret and al, 2012; Dizain and al, 2012; Quak and al, 2012). The return of logistics activities to the center of cities shows the importance of these locations. These two conflicting dynamics (spatial sprawl vs. return to the city center) also lead us to take an interest in the factors that determine the location of logistics activities. The literature covers these factors well enough for all logistics activities (Mérenne-Shoumaker, 2008; Cidell, 2012; Dablanc, 2014) but they have rarely been analyzed for a particular segment of the industry. What we would like to show in particular is the non-homogeneous nature of logistics activities. Raimbault and al. (2012) have differentiated logistics activities in the Paris Region (between what they call the parcel industry, distribution centers and inland ports). They underlined differences in the location of activities, which translates into a difficult implementation of public policies to regulate logistics sprawl. The aim of this paper, therefore, is to go further into this research, especially on the case of the parcel industry. We will compare it with the location of Other Logistics Activities (referenced as OLA). Because of data availability (see part 2), the analysis is for one year only (2013). Therefore, we can't study the sprawl of these activities. But, in our opinion, this paper can contribute to the general reflection on logistics sprawl.

The aim of this paper is to compare the location of the parcel industry with other logistics activities in the Paris region, called Ile-de-France. In part 1, we review the existing literature on the factors that determine the location of logistics activities, and we attempt to analyze the specificities of the parcel transportation industry. In part 2, we show the difference of location in the parcel industry and other logistics activities. Finally, in part 3, we provide a partial explanation for this difference: a spatial hysteresis of the big players of the parcel industry, and the emergence of innovative logistics solutions.

2. The case of the parcel transportation industry in the location of logistics activities: specificities of the sector

2.1. The location of logistics activities: a state of the art

Several factors for explaining the location of logistics activities in a global context of sprawl in metropolitan areas are already identified by the existing literature (Hesse and Rodrigue, 2004; Mérenne-Schoumaker, 2011). Amongst those factors, there is in particular the importance of proximity to transport infrastructure, and more specifically to road infrastructure. The Parisian metropolis is very well-connected by multiple highways that connect the center of the agglomeration to the periphery. Terminals and freight villages tend to be located along those road corridors.

One other obvious and essential factor is the availability of land and its cost. In recent years, logistics activities have tended to require bigger and bigger buildings. This means that they need a lot of land. According to a study published by the Council of real estate business (CBRE, 2013), “XXL warehouses” (more than 50,000 square meters) represented in 2013 over 14% of European demand. During the years 2010 and 2011, they accounted for just 5 to 6% of demand. The evolution toward bigger warehouses can be attributed to several factors: higher integration of operations, better pooling of logistical flows, and the rise of e-commerce. Given this dependency on land availability and cost, and given the fact that logistics activities have low profitability per square meter, terminals and freight villages tend to be located in places where the land is available and cheap. It means they are more likely to be located in peripheral areas than in the dense center of the agglomeration, where the competition with other activities is much fiercer.

Another important factor is access to a consumer market and a low-skilled job market. Metropolitan areas contain most of the customers. Logistics companies can increase the size of their production while minimizing the distance to the consumer. This is especially true in our case study, because the Paris agglomeration contains the highest concentration of economic activities in Europe. The Paris Region, Ile-de-France, represents a third of the French GDP and a very high diversity of economic activities (retail industry, small shops, tertiary establishments…) and consumption patterns, as is specific to metropolitan areas. Proximity to the agglomeration is therefore advantageous (Polese and Shearmur, 2005). Entering the agglomeration is considered a breakdown in supply-chain continuity, and of the continuity of the linear relationship between cost and distance, associated with the inevitable transshipment of goods. Pooled flows in large vehicles have great difficulty entering the dense agglomeration, because of the narrow