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Evaluation of specific policy measures to promote sustainable urban logistics in small-medium sized cities: the case of Serres, Greece

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Abstract

Urban logistics is an integral part of the proper functioning of a city. It generates employment, serves and supports industrial and commercial activities that are daily taking place in modern urban centres, considered to be important levers of development and prosperity for a region. In recent years, interest in sustainable freight distribution procedures has been increasing among Local Authorities. Sustainable mobility, planning and development of relative management systems involves multiple stakeholders who -through collective effort- need to design, organize and implement actions and measures to support them. This paper presents specific policy measures regarding the enhancement of urban logistics procedures in small-medium sized cities, evaluated through a multi-criteria analysis in the framework of the elaboration of a Sustainable Urban Logistics Plan (SULP) for the city of Serres in Greece.

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Keywords: Multi-Criteria Analysis; Sustainable Urban Logistics Plans (SULP); Logistics Measures Evaluation; Small-medium sized cities

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1. Introduction

During the last decades, the demand for urban freight transport services has increased, making freight transport a significant contributing factor to the sustainability of the urban environment. Distribution of goods is a complicated procedure, causing a variety of social, environmental and economic impacts including traffic congestion, road safety, air pollution, greenhouse gas emissions and noise disturbance. Dablan (2007) argued that freight deliveries contribute significantly to high congestion levels, due to lack of space devoted to logistic activities. According to Figliozzi (2010), urban freight vehicles account for 6 to 18% of total urban traffic volume. Schoemaker et al (2006) estimated that freight vehicles account for 19% of energy use, 21% of CO₂ emissions and 14% of vehicle-kilometers, while Korver et al. (2012) supported that 40% of air and noise emissions are attributable to freight vans. Furthermore, Allen et al (2007) stated that one of the problems connected to goods distribution is policy related.

Although freight transport is one of the primary components affecting the appropriate function of a city, cities' mobility plans are not used to integrate measures and policies regarding the distribution procedures. Rodrigues (2006) argued that traditionally, most local authorities focus on public transport, while freight transport seems to be not only a more complicated area to engage in but also a less interesting one. Van Duin (2005) argued that even though freight is on the top of the Netherlands' agenda, over one third of Dutch cities lack a political agenda for freight. He justified it by showing that local authorities did not share experiences, but only copied each other's' freight measures without examining the measures' transferability and the link between measures' impact and cities' different profiles.

Although interest in the implementation of sustainable freight distribution procedures has been increasing from Local Authorities, practical evidence is poor as few efforts have been made to act on this. In order to mitigate negative effects derived from freight transport and to improve the distribution procedures in urban areas, certain measures and policies are being examined and implemented in several European cities. They take into account specific guidelines and policy tools that have been elaborated in order to address the different impacts caused by urban freight transport operations. The BESTUFS (Best Urban Freight Solutions) I and II projects describe and communicate best practices, plans and obstacles in order to propose city logistics solutions for adoption. The IEE C-LIEGE (Clean Last mile transport and logistics management) project, defines shared policies and measures for an energy-efficient urban freight transport demand management and planning through a cooperative approach between public and private stakeholders. The STRAIGHTSOL (Strategies and measures for smarter urban freight solutions) project tests last-mile distribution demonstrations. The FREILOT (Urban freight energy efficiency) project examines ways of cooperation between Intelligent Transport Systems (ITS). The SUGAR (Sustainable urban goods logistics achieved by regional and local policies) project came up with a tool –a handbook for Authorities- that aims to address the problem of inefficient and ineffective management of urban freight distribution. To accomplish this goal, the project promotes the exchange, discussion and transfer of policy experience, knowledge and good practices through policy and planning levels in the field of urban freight management. The IEE ENCLOSE project provides guidelines to small-medium sized cities towards the elaboration and implementation of Sustainable Urban Logistics Plans in order to tackle city logistics issues through a concrete sustainable strategy. A SULP is a dedicated to city-logistics management plan in line with EU guidelines for achieving sustainability in urban mobility.

Measures and good practices suggested, developed and adopted by many European cities relate to: traffic calming measures, operational regulations (e.g. weight and size restrictions of commercial vehicles, loading and unloading time-slots), green technology use (non-conventionally fuelled vehicles), small or large scale infrastructure solutions (special road lanes reserved for commercial vehicles, loading spaces within the city centre or large consolidation centres located outside urban areas to serve last mile delivery with smaller and greener vehicles), economic measures like urban tolls, use of Information Communication Technologies and traffic management measures.

This paper examines whether specific policy measures, successfully implemented in mid-sized European cities can be adopted by the city of Serres, in Northern Greece, in the framework of a broader policy tool, a Sustainable Urban Logistics Plan. A multi-criteria analysis is conducted in order to identify already tested measures that can actually be included in the SULP of this city, aiming at its optimal service, the immediate effectiveness of the measures, their economic viability etc.

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