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Developing a Local Research Strategy for City Logistics on an Academic Campus

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Abstract

This paper investigates the relative suitability of data and methodologies to assess the determinants of urban freight activity based on a case study that has been carried out in a typical city centre University campus in a medium sized British city. Data from procurement/purchasing and traffic surveys have been used to set a baseline model of freight activity in the development of Delivery and Servicing Plans (DSPs). Focus group interviews as well as revealed and stated preference surveys are discussed to address the data gap with a localised research strategy adapted to a campus sustainability initiative.

Keywords: City logistics; purchasing; research strategy; urban freight; delivery and servicing plans

1. Introduction

City logistics is a current concern in many cities across the world due to the pressure to become more sustainable in noise, air quality, congestion, and carbon emissions. In Europe alone, over 60% of the population currently lives in urban areas, making up 85% of the EU's GDP (European Commission, 2007). In response to this issue, recent literature reports urban freight strategies such as low emission zones, urban consolidation centres and freight quality partnerships are attempting to reduce social and environmental impacts (see for example: Allen and

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Browne, 2010; Browne, Allen, Nemoto, Patier, and Visser, 2012). Delivery and Servicing Plans (DSPs) is one of the recent strategies being promoted in the UK to address urban freight issues (Cherrett, Allen, McLeod, Maynard, Hickford, and Browne, 2012). The DSP strategy is centred on the receiver within the supply chain, as opposed to traditional urban freight intervention strategies that have focused on the transport operator. While the European funded TRAILBLAZER project (Wagdahl, 2010) promotes DSP as a soft urban freight transportation policy, still little is known of its effective deployment and use. Many unanswered questions remain about DSP as an urban freight strategy: how does it work; what advantage and or disadvantage does the strategy bring; what is the impact on the organisation's stakeholders; and, finally, what are the key drivers behind freight activity around a large organisation?

In this paper, we report on our investigations into the relative suitability of data and methodologies to assess the potential efficacy of interventions on urban freight activity in the typical city centre campus of Newcastle University, located in a medium sized British city in the North East of England. We present: problems identified locally; a review of the literature; the local context and available data; the gaps in that data; potential research approaches; the developed research strategy; and conclusions. The paper follows this structure and is written using sustained argumentation.

2. Problem Definition

We adopted an inductive approach to local problem definition, based on a critical realist approach to human systems, in that we accept the reality of vehicles, logistics systems, purchasing policies and sustainability targets, but also that these 'real' objects are not always spontaneously apparent; that behaviour has meaning to the participants that can be different to rules, regulations, organograms and procedures. We accept that, whilst an organisation such as a University appears an objective reality, with hierarchies and rules, it is in fact a construct, mixing both apparent and hidden processes. To that end, we work in both the mathematics and economics of quantitative data, whilst also employing interpretivist techniques to understand why behaviour occurs, and to develop a systems approach that models (however imperfectly) the interaction of stakeholders (Bhaskar, 1989; Bryman, 2012; Reynolds and Holwell, 2010).

This approach is consistent with the view that city logistics is particular to a location; that the combination of 'why' (the goals), 'who' (the actors), 'with what' (the techniques), 'where' (the environment) and 'when' allows a systems approach that can localise the available intervention strategies to the unique nature of each urban case (Zunder and Dellinger, 2005). This is consistent with the fact that logistics networks in the Single European Market operate in multiple cities and nation states, sometimes on the same day, e.g. in France-Benelux-Germany (City Freight Project, 2002).

2.1. Local Problems

Newcastle University launched a Coherent Campus initiative in July 2008 following a 'Think Tank' workshop hosted by the Vice-Chancellor. Its aim is to improve the spaces between buildings to create a sense of place that is welcoming, with well designed, well linked social spaces. The campus aims to be: permeable; pedestrian and cyclist friendly; safe; clean and tidy; visually recognisable; clearly defined; and environmentally sustainable. This has led to: road closure on campus; parking space reduction; new buildings; new-build living accommodation; and pedestrianisation. There was no brief to address freight, nor did the advising consultants address freight issues. The first transport focus was on sustainable travel planning, part of the 'Smarter Choices' programme introduced by the UK Department for Transport as soft policy measures, largely well known for promoting a reduction in carbon based travel to school and workplace via a personalised travel plan (DfT, 2004). This work was carried out working closely with the local city council.

Within the University, the presence of freight vehicles generates a steady flow of complaints from senior management, generating pressure on the Estates Service and the Purchasing function. Traffic and purchasing data analysis shows that the proportion of freight on campus is high, at around 20% of all traffic entering University Campus sites, above the norm for standard urban freight flows, and unstructured observation of the campus shows