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Transferability of urban freight transport measures: A case study of Cariacica (Brazil)

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ABSTRACT

This paper presents a case study describing a *transferability case study* in Cariacica (Brazil), identifying various urban freight planning measures from other parts of the world that might be implemented in Cariacica. The case study developed a *light* transferability approach, which uses a low level of expert input and data requirements, and is thus appropriate for cities with highly limited financial resources. The case study focussed upon regulatory measures that are under the control of the local authority, and also identified possible barriers and facilitators for their implementation. It was generally considered that the 'light' transferability approach had been successful and could be used in many other 'smaller' cities. The paper provides insights both for research and transport planning practice (on identifying barriers, and hence solutions, for the successful implementation of urban freight transport measures). Furthermore, the paper provides a number of reflections about the transfer process, paying particular attention to the precise objectives of such exercises and the roles of *transfer agents*. Finally, conclusions are given which make a further justification of using a 'light' approach for policy transfer exercises in the context of the complexity of the urban freight transport system (further 'complexified' by transferability issues).

1. Introduction

This paper describes a *transferability case study* carried out by the EU-funded project TURBLOG_WW[1] for the city of Cariacica, Brazil. Essentially, this case study examined the potential for transfer to Cariacica of good practices in urban freight transport planning from a variety of cities throughout the world. Unlike the other more *comprehensive* transferability case studies conducted by the project (in Lima (Peru), Belo Horizonte (Brazil) and Lisbon (Portugal)), all described in TURBLOG (2011), the Cariacica case study was designed intentionally to be a *light transferability case study*. Such a study can be defined as one that uses a lower level of expert input (timewise) and has less data requirements than a comprehensive study, and thus does not go into the same level of detail. The motivation for this approach was that Cariacica (as a relatively small city with a low level of financial resources and a small transport planning department) would find it difficult to carry out a comprehensive transferability case study, especially if it were not guaranteed in advance that such a case study would be of value. In this respect it is likely to be very similar to a large number of other (small) cities in Latin America and worldwide (arguably representing a majority of the world's urban population). However, even though it might not be feasible to carry out comprehensive studies, such (small) cities can still benefit from considering transferability issues when devising their transport strategies. The Cariacica case study provides an example as to how transferability studies might be carried out by such cities.

The paper is structured as follows. Section 2 provides a short overview of transferability theory and practice in the transport sector. Section 3 summarises the logic underpinning the TURBLOG_WW transferability case studies, whilst Section 4 provides an overview of the Cariacica case study, providing information about Cariacica in terms of its location, its problems and current initiatives concerning urban freight transport. Section 5 describes the transport measures, from a number of *source cities*, which were presented at a transferability workshop in the city, and describes how these measures were assessed in the workshop as being relevant to Cariacica. Section 6 provides a number of reflections about the process, paying particular attention to the objectives of such exercises and the roles of *transfer agents*. Conclusions are given in Section 7.

2. Transferability theory and practice

Much recent academic interest has been shown in the theory and practice concerning the transfer of transport policies (Attard & Enoch, 2011; Bray, Taylor, & Scrafton, 2011; Lucas & Currie, 2012; Marsden,

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Frick, May, & Deakin, 2012; Stead, de Jong, & Reinholde, 2008; Timms, 2011). A review of the concepts of this issue is provided by Marsden and Stead (2011), which puts particular emphasis upon a framework developed by Dolowitz and Marsh (1996, 2000) who list seven questions concerning policy transfer: (1) What is transferred?; (2) Why do actors engage in policy transfer?; (3) Who are the key actors involved in the policy transfer process?; (4) From where are lessons drawn?; (5) What are the different degrees of transfer?; (6) What restricts or facilitates the policy transfer process?; and (7) How is the process of policy transfer related to policy "success" or policy "failure"?

Whilst it can be argued that transport policy transfer has occurred throughout human history, insofar as various cities have copied or at least learnt lessons from other cities, a large impetus to this phenomenon has recently occurred as a result of the increased availability of information via the internet. EU research projects in particular have exploited this situation to a high degree, with many projects successfully categorising and presenting on-line information in a user-friendly format. To accompany this information, many projects have also examined how it might be used by cities when formulating their transport policies, by developing guidelines for transferability. TURBLOG (2011) makes a comparison of the transport-related transferability approaches used in a number of EU projects and programmes, including: CIVITAS,[2] BESTUFS,[3] NICHES +,[4] SUGAR,[5] ELTIS[6] and ALTER-MOTIVE.[7]

As yet, little research has been published in international journals about policy transfer to Brazilian cities (either from outside or inside the country). With respect to the type of EU projects mentioned above, this lack can be explained by the fact that EU-funded urban transport research has historically tended to focus upon transport in EU cities. However, as shown in the case of TURBLOG_WW (which focussed upon both the EU and Latin America), there are exceptions. On the other hand, there has been a large amount of interest (implying the possibility for policy transfer) shown in the international literature about the transport and land use system in one particular Brazilian city, Curitiba, as described by Khayesi and Amekudzi (2011), Duarte and Ultramari (2012), and Miranda and Rodrigues da Silva (2012), with mentions being made by many authors, including Vasconcellos (2005), Marsden and Stead (2011), and Marsden et al. (2012).

3. Logical method used in the TURBLOG_WW transferability case studies

As stated above, the TURBLOG_WW project carried out transferability case studies which examined the potential for transfer of good practices in urban freight transport planning, from a variety of cities throughout the world, to Lima (Peru), Belo Horizonte (Brazil), Cariacica (Brazil) and Lisbon (Portugal). As described in TURBLOG (2011), the formal transferability approach adopted was previously developed by CIVITAS,[8] though this was concerned primarily with intra-EU transferability and was not applied in an EU/Latin American transferability context. This approach is fully described by Macário and Marques (2008); at its heart is a *ten-step transferability process*, illustrated in Fig. 1. This ten-step process has essentially four phases, as shown in Table 1.

In general, none of the TURBLOG_WW transferability case studies included the final implementation phase (Phase IV in Table 1) and, as with Cariacica, the other case studies focussed mainly on Phase III and the assessment of measures from source cities (TURBLOG, 2011). In making this assessment, all case studies attached importance to identifying potential barriers and facilitators for policy transfer; to make such an analysis, a classification of barrier-types was constructed as shown in Box 1 (loosely based upon the barrier-types described by May, 2005). Since the four transferability studies were carried out in parallel there was little opportunity for using the 'lessons learnt' in any of the case studies to help improve the approach taken in the other case studies.

4. Cariacica case study

4.1. Overview

Cariacica was chosen as a case study city due to having many characteristics of particular relevance to freight transport, as described below. The case study involved three visits by the TURBLOG_WW researcher to Cariacica. An initial visit was made on 26th January, 2011. Meetings were held with the *Chefe de Gabinete* (chief executive) of Cariacica *prefeitura* (local authority) and with the *subsecretário municipal de Trânsito* (subsecretary of transport, where transport is a sub-division of the *Secretário de Serviços e Trânsito*). These meetings explained the purpose of the case study, discussed problems concerning urban freight in the city (Phase I in Table 1), and discussed which types of measures could be considered for application in Cariacica (Phase II). The visit included a lengthy tour of the city in order to observe problems firsthand. As a result of these activities, an agreement was reached that the transferability analysis should focus upon the regulation of freight traffic. Two particular reasons were given for this. Firstly, it was clear from the city visit that lack of regulation is a large problem. Secondly, regulatory measures are under the control of the Cariacica city authority, as opposed to logistical planning (for example involving consolidation centres) which is under the control of higher level government bodies (state and federal). More information about both these issues is given below. The main event in the case study was a workshop held in Cariacica on 9th February 2011 to make an assessment of the transferability of a number of 'TURBLOG_WW measures' (Phase III in Table 1). This workshop was attended by approximately 20 people, made up of personnel from various (Cariacica) local authority departments and stakeholders. A final seminar, requested by the local authority and attended by a similar number of people, was held in Cariacica on 18th October 2011; the seminar summarised the results of the workshop and involved a further discussion about the possible future implementation of measures in Cariacica. Whilst members of the media did not participate in this seminar, the local authority made contact with local newspapers which led to interviews and photos associated with the event being published.

It should be stressed at the outset that the Cariacica case study had a different aim to various types of participative planning processes that have the goal of formulating or influencing a definite plan or vision (as classified by Shipley & Utz, 2012, with examples of differing types of experience described by Chen & Mehndiratta, 2007; Deakin, 2012; Gil, Calado, & Bentz, 2011; Kallis, Hatzilacou, Mexa, Coccossis, & Svoronou, 2009; Sagaris, 2010; Shipley, Feick, Hall, & Earley, 2004; Souza, 2001). Rather, the case study had the less ambitious aim of raising the possibility of introducing 'policies adopted elsewhere' in the city; decisions about whether to adopt such policies were beyond its scope.

4.2. Location/population of Cariacica and governmental context

As shown in Fig. 2, Cariacica is one of seven cities making up the Greater Vitória Metropolitan Region (GVMR), which lies within the state of Espírito Santo, Brazil. Cariacica has an area of approximately 280 km^2, and a population of approximately 350,000. As also shown in Fig. 2, the eastern part of Cariacica is predominantly urban (coloured in dark orange) whilst the western part is rural, or 'peri-urban' (coloured in light orange).

According to Brazilian law, three levels of (elected) government exist in Brazil (federal, state and city); metropolitan regions (such as GVMR) have been established by various states (such as Espírito

[2] Source: http://www.civitas-initiative.org.
[3] Source: http://www.bestufs.net.
[4] Source: http://www.niches-transport.org.
[5] Source: http://www.sugarlogistics.eu.
[6] Source: http://www.eltis.org.
[7] Source: http://www.alter-motive.org.
[8] Source: http://www.civitas-initiative.org.