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The way to sustainable mobility. A comparative analysis of sustainable mobility plans in Spain

Miguel Ángel Mozos-Blanco[a], Elisa Pozo-Menéndez[a], Rosa Arce-Ruiz[b], Neus Baucells-Aletà[b,*]

[a] Universidad Politécnica de Madrid, 28040 Madrid, Spain
[b] TRANSyT, Universidad Politécnica de Madrid, 28040 Madrid, Spain[1]

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ABSTRACT

After the approval and implementation of Sustainable Urban Mobility Plans (SUMP) in different cities of Spain, the evolution and the level of development of each one are still unknown. In fact, as many of them were approved before 2010, they didn't include a precise methodology for the further analysis of the proposed and/or implemented mobility measures. So, this evaluation of the mobility plans, their results and the comparison between cities and their evolution towards a more sustainable mobility represents nowadays a challenge in many cases.

In 2011, the Spanish Law for a Sustainable Economy (Law 2/2011) was approved, which encouraged local administrations to create a SUMP. The approval of a SUMP was compulsory to local authorities to get any public funding for public transport projects. The main objectives of these plans were not only the reduction of the urban congestion and pollution, but also to encourage the citizens to change their habits so they are less car-dependent and more active in their daily trips. However, it is still necessary an evaluation to confirm that these SUMPs have represented a substantial change in terms of logistics and management of the transports and vehicles, both private and public, as well as of behaviour and habits of the citizens.

The main objective of this paper is to show the results of a research conducted on 38 Sustainable Urban Mobility Plans. The cities are all members of the Spanish Network of Smart Cities (Red Española de Ciudades Inteligentes -RECI-).

The SUMPs are analysed, addressing the identification and evaluation of the different specifically proposed mobility measures included in plans, the degree of definition of them, the costs, the implementation programs, etc. Also, follow-up programs were discussed.

First, an analysis was made of the diagnosis of the mobility situation in each location according to the diagnosis document included in many of the SUMPs. The second stage consisted on the analysis of the measures in the plan, considering sixteen indicators, such as accessibility, intermodality, pedestrians or design of public space. Finally, it was also determined whether the document included a monitoring plan, a budget and a timeline.

Through the comparison of the results, we obtain a brief overview about the evolution of efforts to get a more sustainable mobility in Spain. With these results, we finish our study proposing some guidelines for further analysis as well as for the new SUMPs that will be approved on the following years.

1. Introduction

Cities are today the predominant place of residence of the world's population, 54% of the world's population reside in urban areas (United Nations, 2014). Cities also concentrate a significant proportion of economic activities and business opportunities and generate more than 80% of global GDP (Dobbs et al., 2011). Currently, 64% of all travel undertaken is within urban environments and the total number of urban kilometres travelled is expected to triple by 2050 (Van Audenhove, Korniichuk, Dauby and Pourbaix, 2013). Although cities may have a different history, culture and geography, they all share a series of similar problems that have both a local impact and a global

* Corresponding author.
E-mail addresses: madelosmozos@gmail.com (M.Á. Mozos-Blanco), e.pozo@upm.es (E. Pozo-Menéndez), rosa.arce.ruiz@upm.es (R. Arce-Ruiz), neus.baucells@upm.es (N. Baucells-Aletà).
[1] Transport Research Centre.

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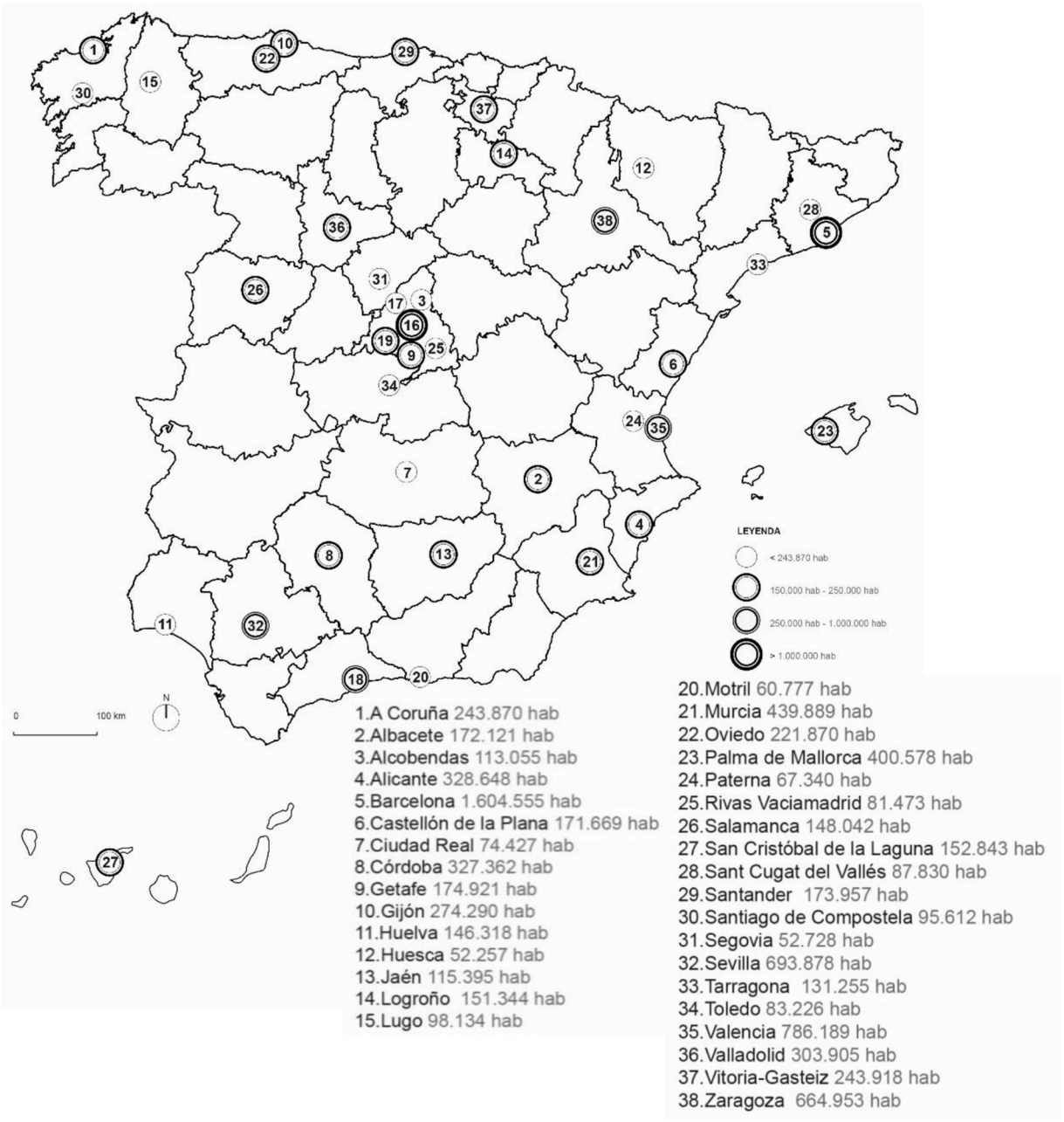

Fig. 1. Location of the cities analysed and inhabitants (National Statistics Institute, 2015).

scale; one such problem is their negative impact on the environment due to pollution, as 40% of CO2 emissions come from urban traffic (Mataix González, 2010). Air pollution and traffic noise cause discomfort and undermine the quality of life in cities, in addition to representing a cost in time and energy which –quite apart from the impact on the health of the population– also leads to a loss of economic productivity and efficiency. The European economy loses about 100,000 million euros annually due to traffic congestion in cities, a source of pollution, accidents, and productivity and efficiency in enterprises (European Commission, 2007). Though, rapid growth of urban mobility systems presented a big challenge to city authorities around the world. Therefore, the crucial target in cities nowadays is to enhance mobility and at the same time reducing congestion, accidents, and pollution (Camagni et al., 2002; Mihyeon Jeon and Amekudzi, 2005). The livability of the metropolitan surroundings need to be assured by a sustainable mobility.

The idea of a paradigm shift in urban transport is gaining acceptance in many parts of the world, related with decouple transport from fuel supply and with to open the way to more sustainable cities of the future, less polluted, economically viable, and socially just (Cervero, 2013; Shen and Hermans, 2016).

Urban mobility of the future faces many changes that are taking place: new vehicles, changes in vehicle ownership and use models; mobile technologies that equip and empower individuals, etc. (Lyons, 2016). The sustainable mobility approach requires actions to reduce the need to travel (less trips), to encourage modal shift, to reduce trip lengths and to encourage greater efficiency in the transport system (Banister, 2008). Although it is debatable, even some author thinks that some European cities have shown that it is possible to decouple urban traffic growth from economic growth (Jones, 2014).

To tackle this issue in Europe, several actions have been adopted (EC, 2001, 2006, 2007, 2009, 2011, 2013, 2016), as May (2015), May et al. (2017) Arsenio et al. (2016), Diez et al. (2018), Decker et al. (2012) and others comment.