

European Transport Conference 2015 – from Sept-28 to Sept-30, 2015

Exploring the sustainability challenges of long-distance passenger trends in Europe

Angel Aparicio*

Universidad Politécnica de Madrid, Escuela de ingenieros de camiones, 28040 Madrid, Spain

Abstract

This paper reviews current drivers of long-distance passenger transport demand in Europe, and elaborates about their environmental impacts and the suitability of current EU policies to address them. The paper focuses on car and air travel, as they concentrate the bulk of environmental impacts, at least in terms of GHG emissions. Furthermore, car travel keeps the highest share of total travel, and air travel is the fastest growing mode in Europe, justifying a closer look to both modes. The prospects of a peaking or "plateau" value for long-distance car travel are discussed, concluding that there is robust evidence of peaking in many European countries, although at unacceptable high levels from a sustainability perspective. In the case of air travel, the main sustainability challenge is the sustained growth in demand, spurred by the strategy of many airports and airlines to induce further demand with low fares. Both trends would need action from governments. The need for action is further justified by two socioeconomic trends: population, with growth concentrated precisely in those countries with higher long-distance mobility patterns, and disposable income, with median values stagnated for many years. The former would suggest a need for demand management action focusing on those countries with higher demand; the latter would challenge the traditional understanding, which associates long-distance transport demand to increasing income and to economic prosperity.

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Peer-review under responsibility of Association for European Transport

Keywords: passenger transport; long distance; Europe; environmental impacts

* Corresponding author. Tel.: +34-913365235; fax: +34-913366656.
E-mail address: angel.aparicio@upm.es

1. Introduction

From an environmental perspective, two main reasons can be highlighted to analyse the relevance of long-distance transport. The first one refers to the local impact of transport activities in the vicinity of busy transport infrastructure, such as main terminals (airports and rail stations) or rail and motorway sections. The second one is related to the greenhouse gas (GHG) emissions of long-distance travel. Whereas the former requires detailed information about the physical and socioeconomic characteristics of the surroundings of major long-distance transport infrastructure, the latter can be associated roughly to available statistics on total traffic volumes. Any evidence of reaching a peak or "plateau" in travel demand in industrialised countries would probably justify a substantial revision of current mitigation strategies, as stated in the European Union's (EU) roadmap towards a low-carbon economy (EC, 2011a) and in the Transport White Paper (EC, 2011b), making it feasible to undertake more ambitious reduction targets, and also putting mobility behaviour and lifestyles at the front of the scene for future policy action.

Car and air travel are the key contributors to GHG emissions from transport. It is well known that car trips remain the bulk of intra-EU passenger transport, even if only long-distance trips are considered. As a reference, these trips constitute 29% of total passenger-km travelled, in accordance with the estimate of Dargay & Clark (2010) for the UK. Whereas car transport figures have remained stable since 2004, intra-EU air transport was severely affected by the economic crisis since 2008, and has stabilized now at pre-crisis levels, becoming the second mode of choice after car travel; it is worth noticing that this mode has by far the highest specific emissions (g CO₂ per passenger-km travelled, PKT) compared to any other mode. In spite of high-speed expansion and liberalization of bus services in some countries, both modes keep a lower share of total long-distance transport, and at any rate their impacts in terms of GHG emissions remain low.

Justifications about a possible reduction of travel growth in industrialised countries include increasing socio-economic uncertainty, and new lifestyles. One of the aspects that have received more attention, related to lifestyles, refers to the expanded use of information and communication technologies (ICT). ICTs can be considered not only as a source providing activities that makes travel less attractive, but as a new accessibility tool on its own, which would constitute a virtual, new "transport mode" (van Wee, 2015). However, the validity of arguments sustaining that ICT can act in both directions, either inducing further demand or replacing trips, has not been challenged by the evidence collected yet (Mokhtarian, 2009).

The purpose of this paper is to explore the prospects in long-distance transport demand by car and plane, and their consequences for the EU's objective to reduce GHG emissions. As stated in the Transport White Paper, the European policy explicitly disregards any active demand management actions (EC, 2011b, §18) and, although positive, a stabilisation of long-distance travel demand at the currently high levels could be incompatible with substantial GHG reductions. There are four main research questions to explore: first, whether total demand for long-distance trips by car and plane is expected to keep growing in the future, in accordance with the population and income trends. Second, whether the evidence for a peaking in per capita long-distance travel by car is consistent enough, and if so whether this would be enough to curb GHG emissions. Third, whether air travel growth is due to the traditional socioeconomic drivers (population and income growth) or rather by supply-side strategies. Four, whether changes in lifestyles and technological developments are playing a significant role today or could do so in the near future.

The paper will make use of transport statistics compiled by Eurostat, and the indicators based on these statistics, as presented in the European Commission's statistical pocketbook (EC, 2015) and the EEA TERM report (EEA, 2014). Information will be analysed at the EU and national level and, for air transport, also at the regional (NUTS2) level. These sources include performance (PKT) figures for car travel, although without any split by distance, and passenger figures for air travel. The paper is organized as follows. Section 2 analyses the trends in air and car passenger transport in the EU; section 3 discusses the potential changes in key transport demand drivers suggested by the previous analysis; section 4 discusses the policy implications summarizes the paper's findings and conclusions.

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