Networks of world cities: an empirical analysis of global air travel connections in 2008

Ben Derudder, Elien Van De Vijver, David Bassens, and Frank Witlox

Department of Geography, Ghent University
Krijgslaan 281 (S8)
9000 Ghent – Belgium

ben.derudder@ugent.be;   elien.vandevijver@ugent.be;   david.bassens@ugent.be;
frank.witlox@ugent.be

In this paper, we analyze world city networks (WCNs) through a systematic examination of the relations and connections of 523 cities in global air travel connections for the year 2008. The data used in this paper is drawn from a detailed dataset summarizing different features of commercial air passenger travel. We extract the information needed and/or of interest for our analysis (e.g. magnitude of flows between airport and booking class) and reassemble this into a series of datasets usable for WCN analyses (e.g. aggregating flows at the city level for different booking classes). The end-result is a set of city-by-city matrices describing the connectivity (and its spatiality) of cities in transnational networks. These datasets are then formally analyzed with standard social network analysis techniques, thus contributing to the ongoing empirical research on the shape of world city-system as evidenced by airline networks (see Smith & Timberlake, 2001, 2002; Derudder & Witlox, 2005, 2008; Pirie, 2010). Finally, we put our analysis in a broader context by comparing our results with other WCN analyses for the year 2008 (i.e. those by Derudder et al., 2010; Alderson et al., 2010)