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BigData4ATM: Passenger-centric Big Data Sources for Socio-economic and Behavioural Research in Air Transport Management (ATM).

A sound understanding of the behavioral and societal factors that influence transport demand and supply — including economic, social, demographic and cultural issues — is essential for shaping European transport policies according to the values, needs and expectations of the European society (European Commission, 2013). However, research on the relationship between passengers' behavior and ATM performance is relatively scarce. There is a lack of understanding of the impact of passengers' behavior on ATM, as well as of the impact of ATM on individual passengers and society at large. Research in these areas has so far been constrained by the limited availability of behavioral data, typically obtained from cross-sectional (static) demographic and economic datasets, often consisting of very small samples, and usually complemented with assumptions about the permanence of behavioral traits over time. The pervasive penetration of modern information and communication technologies (ICT) and the emergence of big data analytics open new opportunities to overcome this situation: for the first time, thanks to the proliferation of smart personal devices and interconnected services, we have large-scale, detailed longitudinal (dynamic) data allowing us to test hypotheses about travelers' behavior. The overall goal of BigData4ATM is to investigate how different passenger-centric geolocated data can be analyzed and combined with more traditional demographic, economic and air transport databases to extract relevant information about passengers' behavior, and to study how this information can be used to inform ATM decision making processes.