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Challenges of integrating Dolmus, the paratransit mode In Turkey, into the existing public transport network: the cases of Ankara and Istanbul

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In the last 20 years, Turkey experienced major changes in urban transportation in terms of quality and technology; new metro lines introduced, smart card ticketing applications became widespread, the quality of service vehicles improved etc. For the sustainable transportation management, Ministry of Transport, Maritime Affairs and Communications launched a smart transport project on the national level proposed to be completed in 2023. Within this project, decision makers are planning an integrated transport system in city scale. Nevertheless, the transit system would never be fully integrated without addressing the paratransit services and finding mechanisms to integrate them with the public transport network namely bus and metro services. According to the latest statistics, the share of paratransit in the total public transport trips in Ankara is 31.1 % and in highway traffic in Istanbul is 22.8 %. That is why, Turkish paratransit services which are called “dolmus” are needed to be coordinated with the conventional buses and metro services for the efficiency of the system. However, it should not be forgotten that the formalization process is quite important to create a successful operation. With the help of land use analyses, Intelligent Transportation Systems (ITS) applications and case specific negotiations, decision makers have to introduce integration projects. Users, operators and decision makers are the three stakeholders of public transport operations. From three different perspectives of these three groups, advantages and challenges of the paratransit should be analyzed.

The necessity for case studies in two most crowded cities are the result of either their great need for an integrated transit system or different approaches of decision makers in these two cities about integration. There are major innovations in terms of transportation in Ankara and Istanbul which are being introduced in the recent years. In Ankara, the metro network is expanding rapidly and as the second crowded city in Turkey, there is a great transportation demand on main arteries which are not met by conventional transit services. Moreover, integration projects of the municipality are insufficient. While Ankara users are suffering lack of integration, as one of the most populous cities in the World, Istanbul's urban rail projects and transport system integration operations are being introduced parallel to each other. It would not be wrong to say that, decision makers in Istanbul are aware of the difficulties to control the diversity of transport operations in the city. It is important to control different transportation options like bus, metro, ferry, paratransit and tram because without a "fully integrated system", it is quite difficult to reduce time losses during peak hours and to increase public transport usage. Besides, a recent upsurge in the development of medium-capacity modes -including BRT, LRT and AGT -has clearly demonstrated the need for a "family of modes" instead of two extremes only (Vuchic, 2007).

In the context of Turkish dolmus case, paratransit serves as the main transit provider in most of the cities. Therefore, understanding the challenges for integration is quite important. Grava (2002) explains the difficulty of analyzing paratransit modes with the following; it is not only a question of trying to hit a moving target, it is also a target extremely fuzzy around the edges. For the analysis stage there will be three phases. Firstly, for the users' perspective in Ankara, survey data will be used. A survey study was conducted in Middle East Technical University Campus during 2014-2015 academic years. Within the survey, 623 students are interviewed and they answered questions about their mode choices and their thoughts about integration of dolmus to the existing transportation network. Depending on the results, the expectancies of the users will be evaluated. Secondly, for the operators' point of view, a semi-structured interview will be held. To analyze the existing situation between the expectancies of the users and operators will be compared. Thirdly, for the public authorities' point of view, on-going integration operations and their statistical results will be evaluated. As

it is stated in the previous part, there are different approaches of the decision makers in Ankara and Istanbul cases. For example, in Istanbul, a pilot project continues to link some of the paratransit vehicles to their Istanbul-Kart smart card system. For the planning of integration projects, Istanbul example is the most appropriate choice. The third analysis will focus on the perceptions and actions of local decision makers.

In this study, the main aim is to make a comprehensive analysis of dolmus, the paratransit mode in Turkey and in the light of this analysis, to make policy proposals for possible integration methods. Without any doubt, by the emergence of paratransit services, transportation network unintentionally sophisticated itself. Moreover, public authority has nothing to do to support the operations of the paratransit vehicles. Almost without exception, paratransit is operated by individual private owners or small enterprises, is highly competitive, and is run at a profit in developed world. As a result, paratransit places very little burden on city finances (Wright, 1986). Today, most of the countries are starting open market approach for transportation services. Many First World cities would profit from introducing competitive transportation marketplace, allowing profit-seeking entrepreneurs to seek out new market niches and, in so doing, fill service gaps left by the public sector (Cervero, 1998). That is why, for the transportation planners especially, instead of complaining about the negative outcomes of paratransit services, investigating possible integration methods to increase the efficiency of public transport network is necessary.

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