

Analysis of the Introduction of Carsharing in the Context of Developing Countries: A Case Study Based on On-Board Carsharing Survey in Kabul, Afghanistan

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Abstract : Cars have a strong integration with the human being since its introduction, and this interaction is more evident in the urban context. Therefore, shifting city residents from driving private vehicles to public transits has been a big challenge. Accordingly, carsharing as an innovative, environmentally friendly transport alternative had a significant contribution to this transition so far. It helped to reduce the numbers of household car ownership, declining demand for on-street parking, dropping the numbers of kilometers traveled by car, and affects the future of mobility by decreasing the Green House Gases (GHS) emissions' and the numbers of new cars to be purchased otherwise. However, majorities of carsharing researches were conducted in highly developed cities, and less attention has been paid to the cities of developing countries. This study is conducted in the Capital of Afghanistan, Kabul to investigate the current transport pattern, user behavior, and to examine the possibility of introducing the carsharing system. This study established a new survey method called Onboard Carsharing Survey OCS. In this survey, the carpooling passengers aboard are interviewed following the Onboard Transit Survey OTS guideline with a few refinements. The survey focuses on respondents' daily travel behavior and hypothetical stated choice of carsharing opportunities. Moreover, it followed by an aggregate analysis at the end. The survey results indicate the following: two-thirds of the respondents 62% have been carpooling every day since 5 years or more, more than half of the respondents are not satisfied with current modes, besides other attributes the Traffic Congestion, Environment and Insufficient Public Transport were ranked the most critical in daily transportation by survey participants. Moreover, 68.24% of the respondent chose Carsharing over carpooling under different choice game scenarios. Overall, the findings in this research show that Kabul City is a potential underground for the introduction of Carsharing in the future. Taken together, insufficient public transit, dissatisfaction with current modes, and their stated interest will affect the future of carsharing positively in Kabul City. The modal choice in this study is limited to carpooling and carsharing; more choice sets, including bus, cycling, and walking, will have to be added to evaluate further.

Keywords : carsharing, developing countries, Kabul Afghanistan, onboard carsharing survey, transportation, urban planning

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