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Investigating the preferences of students towards the creation of a carpooling system serving the academic bodies of Thessaloniki city

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Abstract

Carpooling is regarded as an alternative, affordable, socially acceptable and environmentally friendly mean of transport, which corresponds to the modern socio-economic challenges and the travel behavioural changes. It is providing to the drivers and the passengers the opportunity to travel together using the same vehicle. Since it comprises a promising mobility solution, its promotion to the younger generations that are establishing their travel habits would be more efficient. Thessaloniki is a Greek medium sized city, which hosts many young people coming from areas all over the country to study at academic or technical/professional level. This paper investigates the introduction of a carpooling system serving the interurban trips of the students of Thessaloniki to their nearby home cities and vice versa. At present, the absence of many alternative mobility options, the increased cost of car driving and maintenance and the low level of service provided by the current interurban bus system of Thessaloniki constrain the mobility. Based on the findings derived from the review of University carpooling schemes, an on-line questionnaire was designed and an extensive questionnaire survey was conducted, being addressed to the university students of the city of Thessaloniki (namely, students of Aristotle University of Thessaloniki (AUTH), University of Macedonia and Technical Institution of Thessaloniki) in order to explore their preferences regarding the creation of a carpooling system, being managed by and provided exclusively to the members of the academic community. The analysis of the survey highlighted the positive stance of the respondents. Based on the survey's findings the carpooling's business model and the platform's structure were proposed to serve the students and the academic and administrative staff of the aforementioned Universities.

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1. Introduction

There are several definitions for carpooling, the broadest of which defines it as: “*the act where two or more travelers share the same car for a common trip regardless of their relationship while the main purpose of sharing a vehicle is the reduction of the trip's cost*” (Seyedabrishami et al., 2012; Abrahamse et al., 2012; Vanoutrive et al., 2012). Carpooling's first appearance can be detected during World War I, when the US government had to conserve resources, especially fuel. Regarding the Energy and Oil Crisis of that period, the government took initiatives in order to save gas and energy. In parallel, the creation of the High Occupancy Lanes (HOV) in Northern Virginia Highway,

in which only vehicles with two or more passengers were allowed to drive and the appearance of the first affordable automobile Ford Model at the same period, were the most important facts that strongly promoted the carpooling as a concept of commuting (MIT-DCEE, 2016).

It is commonly known that carpooling is making its appearance continuously in many Universities in the world – an expected evolution, since carpooling is a widely exploited way of commuting. The main benefits from the creation of a University carpooling system are the reduction of road congestion in urban areas, the sharing of expenses and the reduction of pollutants which are released from the vehicles. Many Universities in U.S.A., Europe and Australia offer to their students and staff carpooling services. The students and the staff of those Universities have the opportunity, after becoming members of the carpooling system, to share a ride to and from the University.

In order to gain a deeper understanding of the functionality of carpooling, a detailed study and analysis has been conducted on eighteen (18) Universities worldwide. Some of them support programmes which aim to promote environmentally friendly ways of commuting, such as the University of Ottawa at Canada, which encourages its students to adopt a sustainable mobility behaviour (University of Ottawa, 2016). In order to register as members of the carpooling system, the students and the staff of all Universities complete and submit a registration form with their personal details. After being registered, they are able to arrange and share the commute trip with a fellow co-worker or student. Regarding limitations related to the profile of co-passengers, it is worth mentioning that in the case of the University of Miami, students are not allowed to share a ride with the University staff members and the government of Miami has access to the personal information of the subscribers (University of Miami, 2016). On the other hand, at the University of Deakin in Melbourne, women are advised to travel only with women (University of Deakin, 2016). Furthermore, 13 Universities such as Monash University, University of Nebraska-Lincoln, University of Iowa etc. are cooperating with services like “ZimRide” in order to offer vehicles to their members to share a ride (University of Virginia, 2016), while in some Universities the carpooling members can share their own vehicle.

The majority of the Universities that have been studied are providing to their carpooling members specific forms that the members can fill in, in order to calculate the cost of the route based on kilometers travelled, the cost of the gas or the frequency of route sharing by each user. The University of Monash at Australia comprises an exception as its members can share the cost according to their criteria. In addition, all Universities offer to their members many privileges, such as reserved carpooling spaces throughout the campus on weekdays in specific hours, reduced permit fees and “UT share pass” as well (University of Austin, 2016). Moreover, most of the Universities, such as the University of Austin, have defined a maximum number of carpoolers in a vehicle, in specific 4 (University of Austin, 2016), while others, such as the University of Nebraska, have defined a minimum number of carpoolers as 3 (University of Nebraska, 2016). In parallel, all Universities ensure that they will cover the cost of a transit, a taxi or rental vehicle in case of emergency situations.

It is worth mentioning that contrary to the rest of the world, carpooling concept in Greece was introduced during the last decade. At present, there are some carpooling services whose aim is to offer to their members an affordable and sustainable way of commuting. Meanwhile, the increasing cost of car driving nowadays, the lack of parking spaces and the traffic congestion were the main reasons that led two Universities in Greece (namely the National Technical University of Athens and the University of Thessaly) to design a carpooling system for their students. Regarding the acceptance of the aforementioned carpooling systems, the system implemented by the National Technical University of Athens is still in operation. On the other hand, the lack of dissemination activities for system developed by the University of Thessaly led to its short-term operation, which was only of two months duration (National Technical University of Athens, 2016; University of Thessaly, 2016).

Recognizing the existence of similar mobility problems for the university students of Thessaloniki (who comprise a rather large population group), especially concerning their interurban trips to their home areas of origin, a widespread investigation was conducted in the form of a questionnaire survey in order to explore and record the students’ preferences regarding a future carpooling web-platform provided by their University. Based on the survey results and the students’ preferences, the “architecture” of the future on-line university carpooling platform is proposed and described.

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