

A Conceptual Model for Internet Based Carpooling Systems via a Visibility Assessment to Match the Requirements of Sri Lankan Community

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Increasing traveling needs of the country has created a gigantic increase in a number of vehicles used. This has created negative effects on many aspects such as trade deficit increase, the increase in oil consumption, environmental pollution and heavy traffic congestion. Even though carpooling is considered as a well-known alternative to reduce congestion and pollution on roads its popularity is comparatively low. This research focusses on identifying a communication model that allow carpoolers to interact resolving failures in current systems with a proper incentive distribution. A questionnaire was conducted to clarify the social concerns involved in carpooling. The results were used to analyze the factors that limit users from using carpooling and to specifically identify the features that need to be inserted to the system. An integration of site's review system and peer-to-peer marketplaces which are widely used in sharing economies was used as the new model for internet based carpooling systems. Each signed up user has their own profile and the system provides many options to edit and maintain the profile these include basic information, photos, preferences, interests etc. All the users can enter vehicles to the system and it allow users to maintain vehicle profiles by inserting photos descriptions etc. Passengers looking for rides search for tours scheduled and vehicles looking for passengers can add the tour to the system. Each request passes through four stages. They are requesting, replying and pre-approving or pre-approving and confirming. After each agreed transaction, all parties can review and rate each other. This methodology for carpooling systems is more sophisticated and realistic than earlier research on carpooling modeling. It introduces internet based carpooling and interacting platform to eliminate identified limitations of current systems such as social concerns and strict schedules by inheriting methodologies used in successful sharing economy companies such as "Airbnb" and site review systems to provide better understanding between interacting parties.

Keywords: Sharing economy, Site's reviewing system, Carpooling, Peer to peer marketplaces