

Title	外出目的に基づいたライドシェアマッチングによる外出機会向上に関する研究
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Research on improving opportunities to go out through purpose-based ride-sharing matching method

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As the declining birthrate and aging population are progressing, it is difficult to manage public transportation in depopulated areas. Meanwhile, declining choices of going out has also been progressing and it is difficult to solve this daily-related problem for local people in depopulated areas. In response to current inconvenient situation to go out in low-density residential areas, one solution named ride-sharing (share the ride with others) is introduced.

The existing ride-sharing matching method is that the destination of the driver and the passenger needs to be matched. If the destination of the driver and the passenger are different, the ride-sharing cannot be established. I think the mismatch situation is even more worse due to the low population in depopulated areas. The purpose of going out for drivers and passengers is to move to a certain destination and complete the purpose from the beginning rather than just move to a certain destination. I think that there are many different purposes of going out according to different people, several objectives can be achieved in only one destination. Another feature in depopulated area is: shops, government institutes and hospitals are gathering in one small area. Based on this fact, even though the driver and passenger have different purposes, it can be considered that there is a possibility that it can be achieved in one place. With this idea, for ride-sharing matching, a matching rule based on "purpose of going out" can be considered and it is possible to increase the number of establishment of ride-sharing.

Based on this background, this research is aiming to introduce the element "purpose of going out" into ride-sharing matching. By using JAIST students who lives in depopulated area as subjects, the number of usage times of ride-sharing service is investigated to explore the possibility of improving convenience to the residents in depopulated area. I think that there are various ride sharing services now. As the character of "ride-sharing matching based on purpose of going out" method, the number of established pairs is increased by avoiding the limitation of the destination match. The ride-sharing service in this research is the matching service which from

the ride-sharing company that can let the individual (driver) who wants to reduce the outing cost by providing the available seat of the private car and the individual (passenger) who wants to go out by taking other's car are able to communicate with each other to achieve their achievement. Besides, communication is restricted even if you live in one area because voluntary exchange opportunities are quite few. It is based on riding in other people's car for private use. It is also expected to increase the opportunities to promote "familiarization" in depopulated communities as a secondary effect.

In this research, we conducted a questionnaire survey to discuss the relationship between JAIST students' purposes and destinations of daily outing. As a result, it was very clear that it would be easier to establish a ride-sharing based on purposes of going out when going out because multiple places can correspond to purposes such as "shopping for consumable goods" or "to eat". Then, we conducted a survey on the user's willingness degree of attitude towards sex and "purpose-based ride-sharing matching". We found that it was easier for men to convince the new method than women. Regardless of gender, both males and females showed that there was a willingness to use "purpose-based ride-sharing matching method". Finally, after conducting a simulation experiment and introducing the "purpose-based ride-sharing matching method", it was concluded that there was a high ratio of selecting proposals and it was worthwhile to use in real-life.