

(Thema)

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Acceptance Factors for Ridepooling Services - A Quantitative Examination

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## Masterarbeit

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# 1 Introduction

The technical advancement in all industries and areas of society is a much-discussed topic and continues to be topical. In addition to rapid changes, the dynamic growth of the population can also be observed. This interaction creates many challenges for society and each individual's daily routine (Anser et al., 2020). The field of automobility and transport plays a significant role in this context. On the one hand, this is a sector where new technologies are the first to be implemented and researched. On the other hand, we are burdening the environment and the roads with a large volume of traffic, which continues to grow due to an increasing population (Haucap, 2021). These interdependencies in the field of transport make the research in this direction relevant.

In addition to the strong growth of the population, there is also a high concentration in urban areas. Thus, the traffic concentrates in a small area. That means there is also less space on the roads and a scarcity of parking facilities. The consequences are congestion and gridlocked traffic at particular times, such as the start or end of work (Andor et al., 2021). The outbreak of Covid-19 reinforced these trends. The people demanded a higher distance from people and tried to avoid public transportation. People who could do so increasingly used their cars, and sales of bicycles and other alternatives increased (Leidgeb, 2021).

The pandemic had many adverse effects on the population and presented you with some challenges. It mercilessly exposed weaknesses and omissions. The health sector shows the most significant example. The large staffing deficits and the backlogs in the technical area are some of the findings (Mulfinger et al., 2020). However, these weaknesses also allow identifying alternative courses of action for other sectors and doing better there. Technical understanding, for example, has been raised to a better level in the general population to make it possible to see each other without contact.

The transport sector should use this understanding and the return to normality as a chance to improve. While industries such as energy, manufacturing, and other sectors are reducing their emissions, the transport sector is at a constant level (Umweltbundesamt, 2022). The energy consumption of individual transport has increased sharply from 1950 to 2019 and accounts for half of the total consumption in transport in 2019 (Haucap, 2021). Furthermore, the annual Co2 emissions in Germany for the transport sector are the strongest after the energy sector for the year 2016.

Unlike other alternatives in urban areas, ridepooling services have faced significant limitations due to the crisis. Due to the minimum distance to strangers, they were not practical and had to be discontinued at times (MOIA, 2022). These services can play a crucial part in solving the problems of transportation. In many regions, the fleet of ridepooling services converted completely to electronic mobility. On the one hand, this already reduces Co2 emissions, and on the other hand, the concept behind it offers further advantages. Passengers fill their start and end destination in an app, and an algorithm calculates the route for passengers. This calculation uses the data to combine the existing ways. The goal is to minimize the detour for each individual and thus make it possible to share a vehicle. Users will be able to reduce the cost of their trip and, at the same time, reduce the environmental impact and traffic volume. This concept creates an alternative to the car.

This opportunity to actively promote environmental protection and, at the same time, benefit from mobility services in everyday life represents a solid motivation to use them. These reasons also motivated me to work on and investigate the following research question:

***RQ: " What aspects influence the acceptance of use ridepooling services?"***

To investigate this question, I structured my master's thesis as follows. There is an explanation for the essential terminology in the mobility and transport sectors at the start. In addition, there is a presentation of the theoretical background of the methodology used and previous research. Afterward, a methodology section is conducted of a survey on the acceptance of ridepooling services. The results and a critical discussion round of the treatment of the research question. Finally, the limitation is shown, and a conclusion is drawn.

## 6 Conclusion

For the investigation and elaboration of the acceptance research in the ridepooling area, essential preliminary knowledge was first created in this thesis. Ridepooling covers an extensive range of topics. Therefore, on the one hand, the high importance of the transport sector and its influence on nature were presented. On the other hand, essential factors such as road safety were also analyzed. In addition to these content-related aspects, the methodology used was also explained. In doing so, this work examines the research question posed at the beginning :

"What aspects influence the acceptance of use ridepooling services?"

To investigate these influences, suitable constructs from the literature were analyzed. From this, different hypotheses were derived at the beginning of the research. Some effects between the constructs have already been tested in similar contexts like autonomous mobility. From the various constructs and hypotheses, a hypothesis model was developed.

The selected constructs are primarily oriented to aspects in the safety domain. For the study, data was collected through an online survey. A variety of significant effects were discovered. On the one hand, some solid positive influences between the security constructs were detected, such as Reliability on Confidence, Transparency on Trust, or Technical Enthusiasm on Benefits. On the other hand, the results also show strong positive significant effects, such as from Confidence and Benefits on Behavioral Intention to Use. In addition to these strong positive influences, weak negative significant effects of the constructs Neuroticism and Need for Safety on Behavioral Intention to Use can also be identified.

Based on the results, new insights into the influence of ridepooling services emerge. The influences of the aspects from the safety domain become clear. Directly and indirectly, the mentioned aspects around Confidence, Benefits, and Transparency can play a decisive role in the use of ridepooling services.

Compared to the existing literature, it is clear that knowledge and use continue to increase. The topic area is still relatively unexplored and growing as well. As vendors, such as MOIA, continue to drive development steadily, research should also continue. With the introduction of an autonomous ridepooling fleet, the need for safety could have an even more significant impact on usage. Therefore, further interesting studies

should investigate the acceptance research in ridepooling. So that ridepooling service will protect the environment and make the roads safer in the future.