

Master Thesis

The Potential of Decentralization

Development of a spacial demand model for rural access in Sub-Saharan Africa

The aCar Mobility Project

Half of the world's population lives in rural areas. Most of them live on the African continent and in agricultural communities. Insufficient infrastructure, unsuitable vehicles and high transport prices increase isolation and limit human development. To enhance access to markets and services, our institute has developed an electric, multipurpose vehicle specially designed for these regions. Starting in September 2021, we will operate two vehicles in Bekoji, Ethiopia and two in Yamoussoukro, Côte d'Ivoire to research & develop new service models based on electric vehicles.

The potential of decentralization

Transportation is not a purpose, it is a mean to get the job done. A farmer in Bekoji does not need transportation to the market, she needs her goods being sold for a good price. With centralized institutions, the burden of transportation stays with the individual. Based on this understanding, we imagine the aCar as a technological platform that can deliver a broad range of services to remote areas to decentralize access points and therefore increase accessibility.

Your contribution

To understand the potential of decentralized, vehicle-based services (VbS) in the African context, you will develop a dynamic model of specially distributed demand and apply this on our two project sites. Your results will be a good indicator on where decentralized services can enhance rural livelihood.

- Literature review of spacial demand modeling
- Identification of system parameters
- Development of a dynamic, mathematical model for special demand based on the project's requirements
- Application of the model on the project sites in Ethiopia and Côte d'Ivoire

The team and project perks

Master thesis and teamwork? Yes, you will be working in a team of 20+ students. We have weekly stand-ups, mid-term presentations and team events. You also have the possibility to travel with the team to Ethiopia or Côte d'Ivoire for validating your findings on November 2021.

Drop us a mail with CV, grades and short motivation. We promise an answer in two working days.

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