Accessibility planning for sustainable regions: implications for employment development within the Munich Metropolitan Region

Problem statement
Metropolitan areas all over the world are facing transport-related problems like congestion and pollution (Bertolini, 2017). Further growth brings up the question of where to create additional housing or where to develop workplaces. The spatial distribution of employment acts as a catalyst for transport activities and population growth. Due to this crucial role, planners need scientifically sound tools that help them develop sustainable employment-related land use and transport strategies.

Accessibility
Accessibility is a concept that combines characteristics of land use and transport. It describes the ease to reach destinations by certain transport modes (Geurs & van Wee, 2004). Some accessibility tools already exist that are able to support decision-making in spatial planning processes (Büttner et al., 2018). These instruments and concepts will be adapted and expanded in order to shed light on sustainable options for future employment development (see figure 1).

Fig. 1: Potential for public transport accessibility improvements (red) and job densification (green) in the Munich Metropolitan Region.
Objectives
1. Identify the influencing factors on employees’ mobility behaviour and explain magnitude and direction of impacts.

2. Develop an accessibility model, which enables sustainable workplace development from a mobility perspective.

3. Enhance the understanding of accessibility analysis for planning processes and facilitate the selection of suitable accessibility indicators.

Expected outcome
The main outcome will be a methodology for workplace development, implemented in a GIS-based accessibility model. The expected results are as follows:

1. Workplace location has a significant influence on the mobility behaviour of employees.

2. The accessibility model will highlight specific development options based on different social, economic, and ecological planning goals.

3. The implications differ depending on the planning goals, highlighting the need of a clear definition and suitable conceptualization of goals.

Work program
The dissertation project consists of six work packages:

1. Preparation of the methodological framework

2. Determination of the role of accessibility-related parameters for the mobility behaviour of employees

3. Development of an accessibility model in order to assess spatial units based on their land use and transport characteristics

4. Exemplary model application in the Munich Metropolitan Region

5. Reflection of findings

6. International exchange and publication

References
