

Project 2: E-Bike Innovation - Analyzing the Technological Innovation System of Electric Bikes in the Stockholm Region

One of the most significant innovation challenges of our time is how to transform the transportation system to become climate-neutral and sustainable. This master thesis project focuses on the mode of transport known as electric bicycles - a mode of transportation that has shown significant innovation potential in recent decades.

Lately, the European Parliament adopted a resolution aiming to double the kilometers cycled within the EU by 2030. This resolution also includes proposals for increased focus on the bicycle industry, encompassing battery manufacturing for electric bicycles and investments in bicycle-friendly infrastructure tailored to electric bicycles. Hence, there are strong driving forces to alter the hitherto low proportion of electric bicycles in our transportation system.

The overarching purpose of this master thesis is to investigate the TIS (Technological Innovation System) for electric bicycles in the Stockholm region. The aim is to define the TIS for e-bikes, describe the innovation system's functions (innovation processes), and thereby propose how the system can be strengthened and over time increase the speed of change toward a more sustainable urban transportation system.

The research could therefore address questions such as:

- How could the TIS for e-bikes be adapted and defined in order to support the strengthening of the systems functions
- What are the strength and limitations of the TIS functions (innovation processes)
- What are the system weaknesses and what policy recommendations could be given based on such an analysis

By studying the electric bicycle as an emerging technology in the Stockholm region, this master thesis project is intended to contribute new knowledge linked to the innovation system of electric bicycles. We argue that there are several practical and academic gains from adopting the TIS approach. Firstly, there is a lack of systematic studies that can assist stakeholders and policymakers in better understanding the innovation system around electric bicycles. Secondly, the well-established analytical approach of TIS allows for linking the results to a global context as well as enabling the comparison of the geographical focus in a specific study with that in other studies. Third, from an academic point of view, the analysis aims to generate new research ideas related to the phenomena of electric bicycles and its implications on the sustainable transition of the transportation system.

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