



## Unravelling the Path to Pro-Environmental Behaviour of Using Shared Micro-Mobility Services

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### Introduction

The rise of micro-mobility over these couple of years has been fuelled by the decarbonisation efforts across the globe. As these transportation tools are green in nature, because they do not release dirty gas emissions to the atmosphere, it is growing steadily as a popular mobility tool in big cities like Oslo and Stockholm. However, in this ever-growing industry, the behaviour of users, and potential behaviour of non-users must be studied and defined as precise as possible, so that the stakeholders involved can collaborate and grow the industry sustainably over long term. In this study, we apply the Knowledge-Attitude-Behaviour (KAB) model as the main study framework. Environmental knowledge is expected to have a significant impact on pro-environmental behaviour, which is to use shared micro-mobility services. It is also crucial to understand the motivation of users using such services, and what can be done to entice non-users to join the users, and together, more people can engage in selecting a more sustainable transportation mode. Lastly, as an added layer of complexity, the study will also introduce the weather construct to act as a moderator, and to see if various weather conditions will deter or will not deter people from choosing to use shared micro-mobility users. The aim of this study is to investigate the importance of environmental knowledge on pro-environmental behaviour among users and non-users of shared micro-mobility users. This is vital as having sufficient knowledge is essential to spur attitudinal changes towards a subject, which will ultimately lead towards positive behaviour. After that, there are some objectives that the study intends to achieve. First, the study intends to explore the correlation between environmental knowledge and pro-environmental behaviour. Secondly, the study incorporates an extra mediator, in the form of intrinsic motivation, on top of the original attitude construct from the KAB model and tries to examine the significance on intrinsic motivation. The third and final objective is to understand if weather will be a suitable moderator between both intrinsic motivation and attitude towards pro-environmental behaviour.

### Research methodology

The study will follow a quantitative research approach, by using a survey for data collection. The targeted group of people will be both users and non-users of shared micro-mobility services in Norway. For context, the most common shared micro-mobility services available are shared e-scooter services, such as *Voi* and *Lime*, and shared bike services, such as *Trondheim Bysykkel* and *Oslo Bysykkel*. The questionnaire will mainly consist of a few sections, with the main body



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comprising of the antecedent (environmental knowledge), the mediators (environmental attitude and intrinsic motivation) and a moderator (weather). These variables will be measured based on previously existing scales. Next, the constructed survey forms will be distributed online, and participants will fill them up online. Once the data collection is completed, the data will be analysed using SPSS software.

### Results (Expected)

Currently, the data collection phase is ongoing, and it will be finalized by the end of summer using the gathered survey data. After that, the collected raw data can be analysed, and the produced results will be available for interpretation. Based on the constructed hypotheses, there are some initial expected outcomes that the research is hoped to bring. First, it is expected that environmental knowledge will be a significant antecedent that will have positive impact on pro-environmental behaviour. Second, the incorporation of intrinsic motivation, which is the purest form of motivation according to the Self-Determination Theory (SDT), into the study intends to find out if people's pure motivation can significantly impact their pro-environmental behaviour. Also, the incorporation of weather construct that will act as a moderating construct, will also highlight how various weather conditions that are situated in Norway, such as snowy and icy conditions, will impact users' attitude and motivation towards pro-environmental behaviour of using shared micro-mobility services.

### Discussions and conclusions

With the expected result outcomes, future micro-mobility related studies that intends to understand users and non-users' behaviour may apply this conceptualized model to their research studies. Also, if weather proves to be a significant moderator, it will provide an insight for the various stakeholders, such as the road/transport regulator, shared micro-mobility users, shared micro-mobility providers and others. From here, these various stakeholders can work together to provide solutions moving forward to address the potential shortfall. Since weather is such a highly influential variable in Norway, in terms of transportation, by incorporating it will provide a future discussion and implication on how it may enhance the overall road safety level, now with the added actors of shared micro-mobility services on the road. Not only that, but the discussion on the significance of weather conditions towards vulnerable road users, specifically on micro-mobility users, are being emphasized and it can also serve as a guideline for further studies on it. As an overall summary, it is important to conduct this research in such a manner that, while the big cities in Norway are getting greener with the introduction of such services, it is also clear to balance it out with inclusive road safety policy and all-round infrastructure to support the growth of the services, whilst ensuring shared micro-mobility services can be integrated to the overall existing transport system seamlessly.