SUMMARY OF MASTER'S DISSERTATION

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Title

Estimating the Environmental, Social, and Economic Impacts
of Ride-Hailing Services in Metro Manila

Abstract

The poor quality and insufficient transport infrastructure in Metro Manila gives rise to billions' worth of daily economic losses for the nation, as well as lower quality of life for the residents. The purpose of this study is to mitigate road congestion in Metro Manila. While this can be done through methods such as adding mass transit infrastructure or implementing policy changes, these two methods are difficult to rely on due to shortcomings on the side of the government.

In the past decade, ride-hailing services have been entering transport sectors around the world and is thought to be worth considering as a way to reduce the number of vehicles on the road. In this study, the logit model is used to estimate the modal share of ride-hailing services, both solo and shared, in the transport sector of Metro Manila. First, data was gathered from various sources such as government data, published studies, and surveys. Then, calculations of this logit model is done iteratively in order to see how the shifts in modal shares affect traffic conditions. After the iterations stop showing changes in modal shares and number of vehicles on the road, a quantitative assessment is conducted on the environmental, social, and economic impacts of the shifts in modal shares.

Results show a final modal share of around 9% for shared ride-hailing services. There is indeed a decrease in CO_2 and HC emissions, due to the shift of car users to ride-hailing services. However, there is also an increase in PM, SOx, and NOx emissions, due to the increase in modal shares of the bus and jeepney. Furthermore, almost 2 million hours' worth of daily commuting time is also saved due to the shift in modal shares. It is estimated that this entails a 13% decrease in daily economic losses caused by congestion, worth 460 million Philippine Pesos.

Key Word(5 words)

Ride-hailing, logit model, Metro Manila, Utility Theory, road congestion