Micromobility Adoption: The Key to Sustainability and Active Transportation In British Columbia

Authors: Rufaro Mundangepfupfu, Dr. Zubair Raja & Dr. Afia Raja
Institution: Thompson Rivers University

Introduction

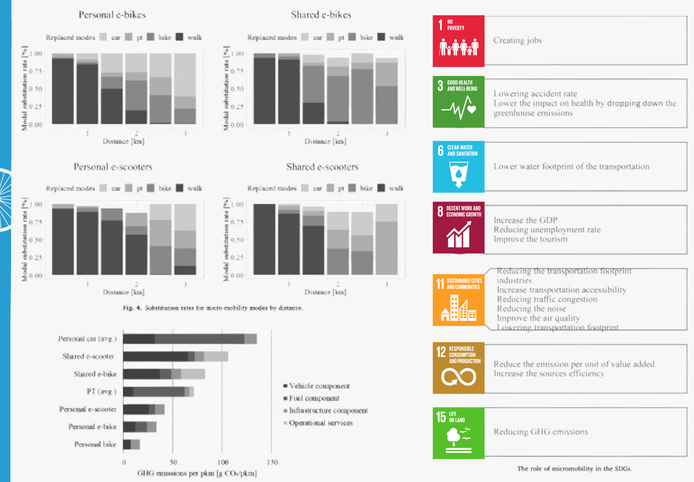
Micromobility is a term referring to lightweight, compact vehicles that are driven personally by road users at speed lower than 30km/h. (Olabi, et al., 2023). The term is generally used to describe systems that incorporate shared mobility services i.e., the provision of bicycles, e-bikes, and e-scooters for short-term rentals.

Objective

With the goal of creating a framework specific to British Columbia, for the introduction and adoption of micromobility systems in urban cities, we are exploring the following questions:

- How can the adoption of micromobility impact sustainable development goals in Canadian urban centres?
- What are the regulatory challenges and successes experienced by different Canadian municipalities in managing micromobility?

Existing Literature findings



Extracted from (Reck, Martin, & Axhausen, 2022)

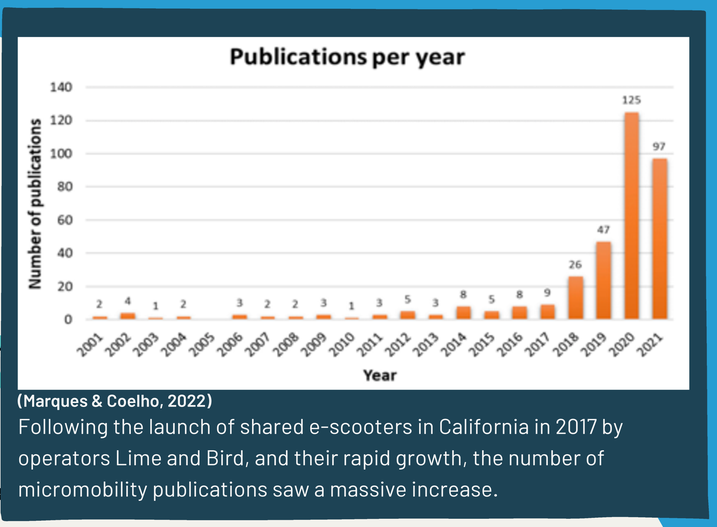
Extracted from (Olabi, et al., 2023)

Micromobility Regulations

- E-bicycles are accepted for use in all 10 provinces in Canada.
  - Classified as Motor Assisted Cycles in BC
  - Same rights and duties as bicycle riders under BC Motor Vehicle Act.
  - Power output rating no greater than 500W, maximum speed of 32km/h on level ground, and operational pedals or hand cranks.
  - Must be at least 16 years old to use, no license required.
  - E-bikes with higher power ratings or higher maximum speed are classified as Limited Speed Motorcycles.
- E-scooter use on roadways, cycle lanes, paths & sidewalks, etc., is illegal across most of BC and Canada.
  - Permitted in E-Kick Scooter Pilot Program communities (currently 13 in BC).
  - Maximum power rating of 500W, maximum weight of 45kg, and maximum speed of 24km/h.

Methodology

- Interviews with key stakeholders such as:
  - City of Kamloops Office of Sustainability
  - City of Kamloops Transportaion Engineers
  - Ministry of Transportation & Infrastructure Planning Committee
  - Interest groups like the Kamloops Cycling Coalition
  - School District 73
- Micromobility survey data from both local users & non-users.
- Literature review of recent publications



(Marques & Coelho, 2022)

Following the launch of shared e-scooters in California in 2017 by operators Lime and Bird, and their rapid growth, the number of micromobility publications saw a massive increase.

Sustainability Planning

The province of British Columbia and its municipalities are taking steps to achieve sustainable transport options in communities through the encouragement of active transportation methods.

- In 2019 CleanBC released an Active Transportation Design Guide with the goal of providing a useful reference for all communities and consistent design in all contexts.
- The Transportation Master Plan by the City of Kamloops consolidates various prior development plans including its Bicycle & Pedestrian Master Plans, and its Transit Future Plan.
- Kamloops has also developed a Electric Vehicle and E-Bike Strategy to support the transition to these modes of transport, and is currently in the process of developing an Active Transportation Plan through public engagement.
- The province provides an Active Transportation Infrastructure Grant, cost-sharing projects up to $500,000.
- The Federal government provides an Active Transportation Fund up to 60% of the project for infrastructure development.

Discussion

In British Columbia and across Canada as a whole, the adoption of micromobility suffers from a lack of infrastructure and policy regulations to support its safe implementation. With this year's renewal on the E-Kick Scooter Pilot, it is clear the government is keen on gathering more data on this subject and encouraging alternative transportation modes. Therefore, we must better communicate the benefit of these systems to the public and encourage more cities to develop active transportation within their communities.

References

British Columbia Ministry of Transportation & Infrastructure. (2019). *Active transpiration design guide*. Retrieved from the British Columbia Government website. https://www2.gov.bc.ca/assets/gov/driving-and-transportation/funding-engagement-permits/grants-funding/cycling-infrastructure-funding/active-transportation-guide/2019-06-14_bcatdg_compiled_digital.pdf

Government of British Columbia. (2021). *About CleanBC*. Retrieved from the CleanBC website: https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf

Government of British Columbia. (2023). *Low-powered vehicles*. Retrieved from the Insurance Corporation of British Columbia website: https://www.icbc.com/vehicle-registration/specialty-vehicles/Low-powered-vehicles/Electric-bikes

Marques, D. L., & Coelho, M. C. (2022). A Literature Review of Emerging Research Needs for Micromobility—Integration through a Life Cycle Thinking Approach. *MDPI Future Transportation*, *135-164*.

Olabi, A., Wilberforce, T., Obaideen, K., Sayed, E. T., Shehata, N., Alamia, A. H., & Abdelkareema, M. A. (2023). Micromobility: Progress, benefits, challenges, policy and regulations, energy sources and storage, and its role in achieving sustainable development goals. *International Journal of Thermofluids*.

Quietkat. (2023). Canada eBike Regulations Guide. Retrieved from Quietkat: https://www.quietkat.ca/pages/electric-bike-regulations-in-canada

Reck, D. J., Martin, H., & Axhausen, K. W. (2022). Mode choice, substitution patterns and environmental impacts of shared and personal micro-mobility. *Elsevier Transportation Research Part D*.