Socio-historical context & Impact Report

Socio-Historical Context

Our project examining the relationship between weather conditions and bike and taxi rides is situated within a socio-historical context that encompasses various societal factors. One crucial factor is the increasing awareness and concern for climate change and its implications for transportation systems. With the global efforts to reduce carbon emissions and promote sustainable mobility, understanding the influence of weather conditions on transportation choices becomes pertinent. Research has shown that weather variables, such as rain or temperature, can significantly impact travel behavior and mode choice. By investigating these relationships, our project contributes to the broader discourse on sustainable transportation and aids in the development of climate-resilient urban mobility strategies (World Meteorological Organization. "Weather and Climate Change: Implications for Surface Transportation in the USA." World Meteorological Organization, n.d., https://public.wmo.int/en/bulletin/weather-and-climate-change-implications-surface-transportation-usa.).

The major stakeholders in our project include commuters, urban planners, and policymakers. Commuters are directly affected by weather conditions and can benefit from insights that inform their travel decisions. Urban planners and policymakers can utilize our findings to design more efficient and weather-responsive transportation networks, allocate resources effectively, and improve overall mobility experiences. However, it is crucial to consider potential harms and ethical implications. For example, the findings should not exacerbate existing transportation inequalities or disproportionately affect vulnerable communities. By addressing these concerns and adopting an inclusive approach, our project aims to contribute to equitable and sustainable transportation systems (Peterson, T., M. McGuirk et al., 2008: Climate Variability and Change with Implications for Transportation. Transportation Research Board, Washington DC, USA. onlinepubs.trb.org/onlinepubs/sr/sr290Many.pdf).

Ethical Considerations

Ethical considerations play a significant role in this project, particularly in relation to the presence of underlying historical or societal biases in the data. The transportation datasets, such as the taxi and bike data, may inadvertently reflect historical disparities and lack of access to transportation, potentially impacting certain communities more than others. To mitigate these biases, it is essential to ensure the inclusion of a diverse range of data sources in the future, taking into account factors such as geographic locations, socioeconomic backgrounds, and demographic characteristics during data collection and selection. By actively addressing and mitigating these biases, the analysis can strive for fairness, accuracy, and inclusivity, avoiding the perpetuation of historical inequities (Zhao, Fang, and Thomas Gustafson. "Transportation Needs of Disadvantaged Populations: Where, When, and How?" FTA Report No. 0030. Federal Transit Administration, February 2013, https://www.transit.dot.gov/sites/fta.dot.gov/files/FTA_Report_No._0030.pdf).

Another important ethical consideration is the potential for misinterpretations or misuses of the project results. To prevent these issues, it is crucial to communicate the findings clearly and accurately. Providing sufficient context, acknowledging the limitations and uncertainties of the analysis, and being transparent about the potential for misinterpretation can help avoid misunderstandings. Open and responsible dialogue with stakeholders, sharing the results transparently, and promoting the responsible use of the findings can contribute to preventing unintended consequences and misuse. Establishing guidelines and protocols for the utilization of the results ensures that they are used in ways that align with their intended purpose and have positive societal impacts. In this project, the data used includes aggregated information related to weather conditions, bike trips, and taxi trips. While the provided data does not contain personally identifiable information, there is still a need to ensure the privacy and confidentiality of individuals or communities involved. Aggregation and anonymization techniques can be employed to protect

privacy by removing or minimizing the risk of re-identification of individuals. By aggregating data at a higher level (e.g., by date) and applying anonymization methods, the risk of privacy breaches can be mitigated.

Works Cited

Peterson, T., M. McGuirk et al., 2008: Climate Variability and Change with Implications for Transportation. Transportation Research Board, Washington DC, USA.
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