Examining Transportation Accessibility of Recent Immigrants

in Winnipeg, Manitoba

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INTRODUCTION

An urban transportation system is a crucial infrastructure the successful resettlement of recent immigrants (immigrated between 2013 and 2016). Research suggests recent immigration status as a social indicator to identify socioeconomically disadvantaged groups because:
- Many recent immigrants are more likely to work in low-wage jobs (Firth et al., 2013).
- Have higher rates of unemployment (Firth et al., 2013).

Many recent immigrants largely rely on public transit services to access key destinations (e.g., destinations for working, shopping, health care, food shops, etc.) (Blumenberg & Smart, 2014). Recent immigrants who do not have access to adequate transportation services are at risk of “transport poverty.” Transport poverty may occur when socioeconomic disadvantages (e.g., low-income, language barrier, disability) are combined with transportation disadvantages (e.g., inadequate access to transit services or no access to a car) (Lucas, 2012). Transport poverty leads to inaccessibility to key destinations. It can potentially prevent recent immigrants from participating in social activities and programs and is linked to various emotional well-being (Farber et al., 2018).

In Winnipeg, Manitoba, recent immigrants are nearly 7% of Winnipeg’s total population and represent a significant group (Statistics Canada, 2017). However, there is limited research on the transportation experiences of recent immigrants in Winnipeg, Manitoba. This study seeks to fill this gap by analyzing the possible levels of transit accessibility of recent immigrants to employment (i.e., low-wage jobs) and comparing it with their car accessibility.

METHODOLOGY

This study uses:
- The geographic information system (GIS) to measure gravity-based accessibility by transit and private automobiles to low-wage jobs (jobs paying $9.00 or less) in the Winnipeg census subdivision.
- The 2016 census dissemination areas (DA) and the 2006 census tracts (CT) as the geographical bases to model the home locations and low-wage job locations, respectively (Statistics Canada, 2017). The accessibility is measured as follows:

\[ A_i = \sum_j \frac{f(t)}{t} \]

where \( A_i \) is the accessibility to the number of low-wage jobs for zone \( i \), \( f(t) \) is the number of low-wage job opportunities at zone \( i \), and \( t \) is the travel time from zone \( i \) to \( j \). The function that weights nearby low-wage job opportunities higher than those further away. The function is calculated as follows:

\[ f(t) = 140 \left( \frac{t}{40} \right)^{-1} - 1 \]

This function returns a weight of 0.5 for a 25-minute trip (i.e., the median travel time for commuting in Winnipeg) (Statistics Canada, 2017), ranging from a weight of 0 at \( t = 0 \), and a weight of 0 at \( t = 70 \).

LIMITATIONS

The methodology of this study has limitations. For example, the job data acquired from the 2006 census which may not perfectly reflect the current geography of low-wage jobs in Winnipeg. The measured travel times would not accurately represent the travel time to the actual location of low-wage jobs; and the inherent temporal variations in travel schedules for public transit was not considered.

REFERENCES


CONCLUSION

This capstone project concludes that transport policies should be focused on improving transit services in poor-access areas, with particular focus towards those areas high on recent immigrants, low-income population, and other socioeconomically disadvantaged groups at risk of transport poverty (e.g., unemployment). Investment in public transit and improved accessibility not only help alleviate the risk of transport poverty, but also increase transit mode share (Allen, 2018). Planners and decision-makers should allocate the resources to projects that will be most cost-effective and have the substantial potential for alleviating transport poverty.