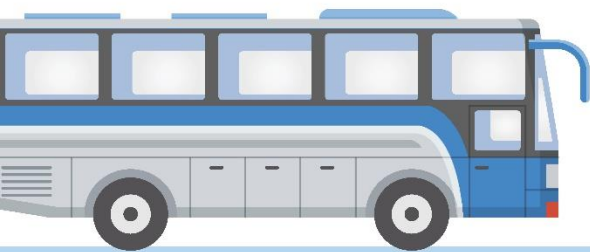


# Newcomers' experiences of transportation in Metro Vancouver



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## Disclaimer

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# Introduction

Immigration and resettlement is a central story throughout Canadian history. This phenomenon, which has appeared in many forms and for many purposes, has led to diversity and multiculturalism in Canada (Troper, 2013). As a vibrant, diverse country, Canada attracts a considerable number of immigrants every year, recording the highest rate of immigration in G7 countries (governments of the world's largest economies). Among all provinces, British Columbia ranks second in the recent immigrant population, with Vancouver being the largest recipient of these recent immigrants (NewToBC, 2023).

The high immigration rate necessitates a robust infrastructure to accommodate the basic needs of all immigrants and facilitate their integration into society, thereby preventing social exclusion. The transportation system is one of the basic infrastructures that directly impact newcomers' quality of life. Effective transportation is essential for accessing employment, education, healthcare, and social services, all of which are vital for successful integration within the host community. Understanding the newcomer's experience in moving around and responding to their needs through an inclusive transportation system is crucial for ensuring that newcomers can fully participate in the destination community's economic, social, and cultural life. Even though of great importance, this topic has not been the center of attention in recent years.

While most studies identify distinctions in travel behavior among newcomers compared to the native-born, only a few studies have explored their first-hand experience with transportation systems in Canada and around the world (Delbosc & Shafi, 2023).

The objective of this research project is to explore the experiences of newcomers with the transportation system across Metro Vancouver, with a specific focus on multimodality. It aims to explore how newcomers navigate Vancouver's transportation system, and what facilitators and barriers they experience in accessing various modes of transportation such as public transit, walking, cycling, and ride-sharing services. By examining the mobility patterns of newcomers, the report seeks to understand how they integrate different modes of transportation to fulfill their daily needs, including commuting to work, accessing essential services, and participating in community activities. Furthermore, the project aims to identify key issues and disparities in transportation access and utilization among newcomers, taking into account factors such as socioeconomic status and cultural background. Through this exploration, the project aims to highlight opportunities for improving the accessibility, affordability, and inclusivity of transportation services for newcomers in Vancouver.

The ultimate objective of this project is to advocate for inclusive transportation that supports the integration and social inclusion of newcomers into Vancouver's diverse community. To reach this objective, the project seeks to answer the following questions:

1. What is globally known about newcomers' use of multimodal transportation based on the existing literature?
2. What are newcomers lived experiences with multimodal transportation in Metro Vancouver?
3. What solutions are suggested to develop a more equitable, inclusive multimodal transportation system within Metro Vancouver?

The upcoming sections will start with a review of relevant literature to address the first question by studying newcomers' travel behavior and its influencing factors. This review will also highlight the barriers and difficulties faced by recent immigrants when utilizing transportation systems.

Once the full scope of these challenges is thoroughly understood, a series of semi-structured interviews will be conducted, followed by a coding process and qualitative analysis to specifically address the second question within the context of Metro Vancouver.

## Literature review

Transportation networks are vital components of urban settings, facilitating the movement of people and goods, driving economic development, and strengthening social connections. Efficient transport systems mitigate congestion, support sustainable development, and enhance the quality of life by providing access to essential services and recreational activities. Overall, robust transportation infrastructure is crucial for the prosperity and livability of cities.

From an equity perspective, access to efficient and inclusive transportation is imperative for all individuals. To prevent social exclusion and a phenomenon called Transport Poverty, all individuals, including the equity-seeking populations, such as individuals with disabilities, older adults, and low-income populations, must have equal access to different modes of transportation; however, it does not happen often.

Transportation is also an important factor for recent immigrants to explore, blend in, and improve their social connections within the destination. An attractive and appropriate transportation network can contribute to integrating recent immigrants into society and

their sociocultural adoption (Mahali, 2020). Although access to transportation services is of significant importance, the few existing studies indicate that recent immigrants lack access to a consistent and reliable transportation system (Farber et al. 2018).

Studies argue that transportation can affect newcomers' physical and mental well-being and prevent social exclusion. Physical well-being is reflected in the ability of newcomers to access regular healthcare within a reasonable distance and time. At the same time, their mental health is affected by their ability to move around and form social interactions in the destination country (Mahali & Ray-Yol, 2020).

Before reviewing the existing studies on newcomers and immigrants' transportation-related experiences, it is essential to understand and reach a common definition of the keywords to this study, including "Multimodality," "Newcomer," and a key concept of "Transport Poverty" to study transportation inequalities in the immigration discourses.

## Terminologies

### **Multimodality**

Starting in the late 20th century, following the shortcomings of auto-centric urban planning, the concept of "multimodal" gained currency in transportation planning. It denotes any system of transportation that incorporates more than one mode, serving as a counterpoint to "automobile-oriented". This notion mainly emphasizes the need for transportation plans to prioritize accommodating bicyclists, pedestrians, and public transit, often at the expense of automobiles (Virginia Department of Rail and Public Transportation, 2020).

### **Newcomer**

Various definitions of this term have been utilized according to different situations and for different purposes. The most relevant definitions to this report are presented below:

- According to The Canada Revenue Agency (CRA), one is considered a newcomer to Canada for the first year they are a resident of Canada. This includes temporary and permanent residents and refugees (Government of Canada, 1999)
- "New Youth," an immigration organization funded by the "Immigration, refugees, citizenship Canada" defines newcomers as immigrants or refugees who have been in Canada for a short time, usually less than five years (*What Are Different Statuses of Newcomers?* | New Youth, n.d.).
- Some of the reviewed studies defined recent immigrants as those who arrived in Canada during the 10 years before the census (Heisz & Schellenberg, 2004)

In this project, newcomers in Canada are defined as recent immigrants who immigrated less than 5 years ago and have moved to the Metro Vancouver area, which is the geographical scope of this study. Throughout this report, the terms "Newcomer" and "Recent Immigrant" have been used interchangeably.



## Transport Poverty

Transport Poverty is a complex concept utilized by various studies to address inequality and distributional issues in transportation. Even though of great importance, there is no consistent definition to specify the scope and extent of Transport Poverty as an academic term (Lucas et al., 2016).

In simple terms, Transport poverty is an individual's inability to fully participate in social life due to limited means of transportation services and facilities (Verhorst et al., 2023). This notion explains the transportation-related disadvantages on an individual basis; thus, it is a helpful framework for conceptualizing the collected transportation-related narratives of newcomers around this concept. This broad notion consists of four subsets as follows:

Table 1 Transport Poverty Subsets definition (Lucas et al., 2016)

<b>Notion</b>	<b>Definition</b>
<i>Mobility poverty</i>	A systemic lack of (usually motorized) transport that generates difficulties in moving, often (but not always) connected to a lack of services or infrastructures
<i>Accessibility poverty</i>	The difficulty of reaching certain key activities – such as employment, education, healthcare services, shops, and so on – at reasonable time, ease and cost
<i>Transport affordability</i>	The lack of individual/household resources to afford transportation options, typically concerning the car (in developed countries) and/or public transport
<i>Exposure to transport externalities</i>	The outcomes of disproportionate exposures to the negative effects of the transport system, such as road traffic casualties and chronic diseases and deaths from traffic-related pollution. Often considered within the U.S. literature from an environmental justice perspective.

As shown in Table 1, Transport Poverty not only refers to the lack of available transport options but also involves the affordability and availability of alternative options (Lunke 2022). This study uses the transport poverty concept and its well-established subsets as the conceptual framework of qualitative analysis to spot the deficits of the transportation system from the perspective of newcomers in Metro Vancouver.

## Travel Behavior

Studies show that immigrants have different travel behaviors compared to non-immigrants in each context. This difference will shrink over time, as the recent immigrants will turn to settled immigrants and start to use travel modes similar to the general population. This phenomenon, referred to as travel assimilation, is a part of assimilation



theory, often used to explain the process of settling down and being unified with the context (Delbosc & Shafi, 2023; Shafi et al., 2023).

Several underlying factors explain why travel behavior among recent immigrant groups, settled immigrants and native-borns are different. Some of these underlying factors are rooted in the country of origin and are reflected in social norms, cultural background, attitudes, and personal attributes. Some of these factors will fade over time as immigrants adapt to the destination context, while others persist (Marcén & Morales, 2021; Shafi et al., 2023).

Firstly, and as many studies have mentioned, travel behavior is highly affected by sociodemographic characteristics such as economic status and cultural background. Evidence shows that in all countries, the lower classes are often less mobile due to a lack of efficient and reliable transportation services (Lucas et al., 2016). Even in developed countries with good transport infrastructures, such as the United Kingdom, there is much inequality in transport between people of different incomes, as they lack accompanying policies to guarantee equal access to the existing infrastructures by the whole population. Studies have mentioned that, on average, lower economic classes travel to more unsafe places, have longer commute times (sometimes 2 h), deal with more violent situations, and face overcrowding on their journeys. However, people on high incomes have higher levels of transport access. This difference generates spatial and social inequality based on income and economic resources (Pérez-Peña et al., 2021).

On the other hand, statistics show that immigrant settlements, specifically in Canada, Australia, and America, are likely to have less income and financial resources compared to non-immigrants, and consequently, their travel behavior is much affected by their economic class (Allen et al., 2021; Delbosc & Shafi, 2023). In contrast, some studies found that income level and household income are not always significant factors in explaining the different travel behaviors (Delbosc & Shafi, 2023).

Immigrants tend to have a lower rate of car ownership due to income, transportation expenditure, hard driver's license process, and their residential locations (Lee et al., 2021). Instead, they rely more on alternative modes such as public transit, carpooling, and car sharing than non-immigrants. The same trend was observed during a study in the city of Toronto (Lo, Shalaby, and Alshalalfah, 2011). Additionally, active modes of transportation such as walking and cycling have a high mode share among this population (Farber et al. 2018).

Most existing studies focus on the high transit dependency of recent immigrants. A study examining several cities across Canada confirmed that public transit ridership declines as more time is spent in Canada. These ridership rates are roughly similar for longer-term

immigrants (for more than 20 years) and Canadian-born (Heisz & Schellenberg, 2004). Table 2 shows the percentage of the population who use public transit for work trips, confirming the high rate of public transit ridership among immigrants. Also, another study targeting recent immigrants from South Asia and Latin America to the U.S. found that recent immigrants initially have lower auto use compared to US-born citizens, but this pattern changes as they spend more time in the country (Chatman, 2014).

Table 2 Percent of public transit riders for work trips - (Heisz & Schellenberg, 2004)

	<b>Canadian-born</b>	<b>Immigrated (within the past 10 years)</b>	<b>Immigrated (11 to 20 years earlier)</b>	<b>Immigrated (more than 20 years ago)</b>	<b>Total</b>
<i>Montréal</i>	20.9	48.6	35.5	24.5	23.6
<i>Toronto</i>	20.7	36.3	26.8	19.9	24.0
<i>Ottawa-Hull</i>	18.5	33.8	26.5	18.9	19.9
<i>Calgary</i>	13.6	25.8	17.0	13.5	14.8
<i>Winnipeg</i>	14.1	24.5	16.4	12.7	14.5
<i>Vancouver</i>	11.4	21.1	14.7	11.0	13.1

While the high reliance on public transit is a persistent trend among newcomers, studies have spotted a significant income rise among immigrant cohorts over time, which is associated with more frequent use of automobile modes, and single occupancy vehicles (SOV). This is interpreted as lower public transit ridership for long-term and settled immigrants (Blumenberg & Smart, 2010).

Additionally, the emergence of new transportation modes, such as car-sharing, ride-sharing, and bike-sharing, has changed the travel behavior of immigrants and the observed patterns (Lee et al., 2021). Carpooling and car-sharing are found to be a popular mode of transportation among immigrants. The National Household Travel Survey (2001) revealed that immigrants are more inclined to carpool compared to native-born individuals, and recent immigrants are more likely to use this mode of transportation compared to settled immigrants. The tendency to use carpools is highly associated with immigration status in the early years, and a stronger effect has been found for household-based carpools than for external carpools. Counterintuitively, this study found that although there are many studies on the reliance of recent immigrants on public transit, they are more likely to travel by carpool than by public transportation—roughly twelve times. As an assumption, the higher tendencies toward carpooling among immigrants can be explained through the stronger familial bonds and kinship (Blumenberg & Smart, 2010).

The origin country, cultural background, and visa status of immigrants also impact the mode choice among the non-driving modes. A study in Canada found that Southeast Asian, South American, or African immigrants are more likely to use public transit, compared to Europeans, who are the least likely to use this mode (Delbosc & Shafi, 2023). In a Portuguese study, temporary migrants living in either Lisbon or Porto were not interested in purchasing a car because of the uncertainty in their residency status and little knowledge of navigating around the city (Preston et al., 2022).

Gender and age also affect travel behavior among newcomers. According to the studies, immigrant women are more reliant on public transit than immigrant men (Preston et al., 2022). A study confirmed that the gender difference in public transit mode share is much larger among recent immigrants compared to settled immigrants and Canadian-borns. Age is another variable associated with travel behavior, as younger individuals are more likely to use public transit than older individuals (Heisz & Schellenberg, 2004).

Residential choice and settlement patterns are also crucial in studying travel behavior and mode share as they both affect each other. Several features affect individuals' choice of where to settle and transport-related benefits, including reduced fares, proximity and reduced travel time are among them. In this sense, individuals prioritize locations that provide them with their preferred modes of transportation (Monteiro et al., 2021). Many theories indicate that, reversely, residential location also affects how individuals travel. In other words, denser and better-connected networks promote the use of more active travel modes (public transport, walking, and cycling), whereas environments characterized by loose suburban sprawl encourage car dependence (De Vos et al., 2018)

Consequently, immigrant's settlement patterns influence their mode choice. According to studies, this sensitivity increases in peripheral and suburban areas, increasing the risk of transport poverty and social exclusion due to poor transportation services (Allen et al., 2021).

Immigration status also affects the commute distance. A study in two American cities shows that recent immigrants have a lower commute distance compared to US-born citizens (City of Vancouver, n.d.). This has been confirmed by another study in the Canadian context, which found that immigrants start their careers by commuting shorter distances than Canadian-born workers, and average commuting distances converge over two decades (Bruce Newbold et al., 2017).

It has been said that the likelihood of using public transit increases as the distance to work increases and then tapers off as the distance to work exceeds about 10 kilometers. However, in the Canadian context, recent immigrants in Toronto, Montreal, and

Vancouver are far more likely to commute to work using public transit than Canadian-born persons, regardless of the distance to work (Heisz & Schellenberg, 2004).

To summarize the studied literature on travel behavior, recent immigrants exhibit distinct travel behaviors compared to non-immigrants. This distinction, such as high reliance on public transit, gradually fades as immigrants assimilate into their new environment—a process known as travel assimilation. Among the underlying factors affecting travel behavior mentioned in this section, Sociodemographic characteristics, such as economic status and cultural background, play a significant role, with lower-income immigrants often relying more on public transit and alternative modes like carpooling due to financial constraints and limited resources. In terms of residential patterns and settlement areas, recent immigrants have been found to settle in suburban regions where limited transport options may exacerbate their transport poverty. Personal attributes such as gender, age, and immigration status also shape recent immigrants' travel behaviors, with younger individuals more likely to use public transit and women more affected by the adverse effects of transportation inequalities. While recent immigrants have different travel patterns to fulfill their mobility needs, these behaviors will change over time as they blend into the destination community. Figure 1 shows how different underlying factors interact and lead to Travel Assimilation.

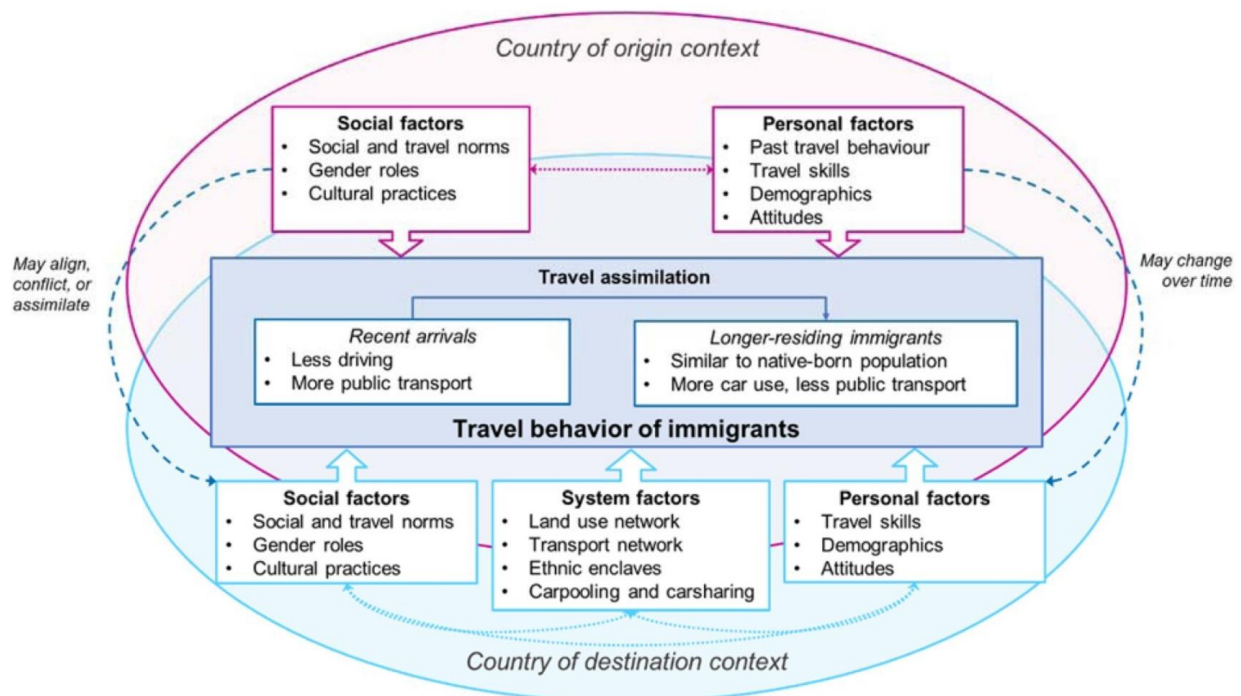


Figure 1 Underlying factors influencing newcomers' travel behavior in origin and destination context (Delbosc & Shafi, 2023)2

## Barriers and Challenges

Recent immigrants have had difficulties accessing their daily needs, such as grocery shopping, health care, and visiting friends and family. These barriers are not solely related to transportation; they also affect the geographic orientation, land use planning, and housing system of the destination community, which affect newcomers' access to the essential resources of everyday life (Allen et al., 2021).

Table 3 Challenges and barriers faced by recent immigrants in the transportation system.

<i>Transportation mode</i>	<i>challenges</i>	<i>Reference</i>
<i>Private car</i>	<ul style="list-style-type: none"> <li>- high costs of owning a vehicle</li> <li>- The costs of driving lessons and the application fee as primary barriers to getting a driver's license.</li> <li>- lengthy process of driving license</li> <li>- Eligibility criteria for driving license</li> </ul>	(Mahali & Ray-Yol, 2020) (Kaur, 2013)
<i>Public transit</i>	<ul style="list-style-type: none"> <li>- high costs of public transit</li> <li>-high dependence on public transit as the only choice</li> <li>- restricted Para transit options only for permanent disabilities</li> <li>- Restricted access to the night bus</li> <li>- Long waiting times and several transfers to the destination</li> <li>- Drivers' discriminatory behavior based on passenger's race</li> <li>- Understanding the maps to navigate</li> <li>- Insufficient provision of bus shelters</li> </ul>	(Kaur, 2013) (Farber et al., 2018)
<i>Walking/ Cycling</i>	<ul style="list-style-type: none"> <li>- lengthy distances between bus stops and destinations</li> <li>- poor design, layout, and urban form of the built Environment</li> <li>- poor sidewalk quality</li> </ul>	(Kaur, 2013)
<i>General</i>	<ul style="list-style-type: none"> <li>- limited access to "employment, events, services, and amenities" in both rural and urban areas</li> <li>- Limited access to ethnic food in the areas where they lived</li> </ul>	(Kaur, 2013)

In the following, the most important challenges mentioned for each mode of transportation are highlighted:

## 1- Private car ownership

As mentioned before, most newcomers do not have available resources to afford private vehicles, but this is not the only reason for the low ridership of private vehicles among immigrants and, more specifically, newcomers. According to a 2018 study, 36% of the participants in a survey on newcomers' transportation barriers mentioned that obtaining a driving license was their major barrier to driving. Also, 22% of them stated that having never driven before was a significant barrier to becoming a driver now. That survey showed that very few participants were concerned by road safety, learning the rules of the road, weather, or navigation challenges for using cars as their primary mode of transportation (Farber et al., 2018).

Obtaining a driving license also puts mental pressure on newcomers, especially the younger ones. Studies show that they believe their Canadian-born peers had better opportunities to get their licenses in high schools while they are still adapting to the new situation after immigration. In the same context, some participants faced a lack of consent to drive from their families when they were younger, as there was only one car in the immigrant household (Kaur, 2013).

## 2- Public transit

Even though new immigrants have high public transit ridership, this mode is not completely satisfactory for them, and some areas need improvement. Some studies mention the high cost of public transit as a barrier, while it is the only choice for many immigrants who cannot afford a private vehicle (Kaur, 2013). According to studies collecting transportation-related narratives, the existing shortcomings in public transit, the most accessible and primary mode of transportation among immigrants, caused them social isolation and affected their well-being (Mahali & Ray-Yol, 2020).

Long commute time is the most common issue with public transit. According to the 2016 census, the average commute time in Canadian cities by car was 24 minutes, but for transit, it was 44 minutes (Canada, 2021). Poor timing and unavailability of transit services have also been mentioned as a challenge in Toronto (Farber et al., 2018).

Overcrowding during rush hours has become a concern in densely populated urban areas, particularly in Metro Vancouver. Transit ridership in places like Surrey and Langley has doubled in recent years and is expected to continue rising due to Canadian immigration policies. This surge in demand has resulted in a shortage of transit vehicles, leading to overcrowding and long queues of passengers waiting for buses, as it is their only mode of transportation. (Hamilton, 2023)



### 3- Walking and Cycling

The built environment's design and the quality of the existing facilities significantly influence people's experience of walking and cycling, not only for immigrants. Studies show that dissatisfaction among immigrants often stems from poor sidewalk conditions, long walking distances, and car-centric design, with women and seniors being particularly affected(Kaur, 2013).

In addition, weather conditions have been cited as a major obstacle to using active modes of transportation such as cycling and walking. Extreme temperatures, precipitation, and strong winds can make these activities uncomfortable and unsafe, discouraging people from choosing these environmentally friendly options (Farber et al., 2018; Mahali & Ray-Yol, 2020).

Barriers exclusively mentioned for cycling are high traffic speed, long-distance destinations, traffic density, and not knowing how to ride based on the destination country's legal framework(Mahali & Ray-Yol, 2020).

### 4- General Barriers

General barriers indicate negative experiences that might exist across all or multiple modes of transportation. For instance, the intersection of gender and immigration can exacerbate the transportation experience and cause discrimination (Mahali & Ray-Yol, 2020). Gendered activities such as grocery shopping or traveling with children make women more sensitive to the transportation system and its shortcomings(Kaur, 2013). Additionally, transportation is mentioned as a mechanism of controlling immigrant women by affecting their independence from other family members, partners, or husbands(Nahar & Cronley, 2021).

Another adverse effect of a poor transportation system is reflected in newcomers' employment. Some new immigrants even have to decline their job offers due to commute hardships(Kaur, 2013, p. 20)

## Proposed Solutions

the existing studies have made some recommendations to tackle the aforementioned issues and barriers faced by newcomers while getting around. These proposed solutions are a combination of what participants in the surveys mentioned and what researchers believe would be helpful. The recommendations extracted in this section are categorized into two groups:

1. Policy implications
2. Service-related



A need assessment of the newcomers' community is suggested to understand the existing shortcomings in each context fully. Such assessments, for instance, conducting focus groups involving the newcomers, help to ensure that their specific needs are understood and addressed effectively, increasing the efficacy of designed programs. (Mahali & Ray-Yol, 2020)

### **Policy implications:**

These recommendations focus on helpful policies that can facilitate the inclusion of newcomers into the transportation system. They mainly focus on the role of transportation agencies and authorities in achieving equitable transportation in their decision-making process.

1- A survey in Vancouver found that a feasible solution to facilitate immigrant transportation would be subsidized transit passes for newcomers and young refugees (Hennig, 2018). This measure can be decided by TransLink as the regional transportation authority, to help new immigrants save on their transit fares.

2- The next policy recommendation was to consider a program providing better access to medical services. Such a program would largely benefit senior newcomers by encouraging them to visit healthcare centers regularly. This could also include incentives such as partial transport-related expense reimbursements (Mahali & Ray-Yol, 2020)

3- Another recommendation of existing literature is to manage investments and align them with the growing demand. As local transit agencies mentioned, their main criteria for route designs and revisions are stakeholders' feedback, available funding and resources, Land use change, and consistency with existing legal documents. In this process, public engagement is neglected, and agencies solely rely on their expert judgments (McLaren, 2023).

4- Additionally, there are policy recommendations to address the issues with language barriers faced by recent immigrants; for instance, transit agencies should offer services and transit information tailored for immigrants and refugees with limited English proficiency (LEP). This has been the case in the U.S. since 2000, when transit agencies were mandated to prepare materials for individuals with LEP to inform them of the Transit system (Blumenberg, 2008).

### **Service-related:**

These recommendations focus on improving transportation services' availability, reliability, and user-friendliness. They aim to enhance the actual transit services provided, making them more suited to the needs of newcomers.

1- The proximity of transit lines is a reflection of transit availability and determines the ease of access to public transit service. Usually, transit networks cover denser central areas such as city cores, and routes have higher ridership. In contrast, the transit network in the suburbs is usually segmented and sparse, with low ridership transit routes(Lo et al., 2011).However, the suburban routes have their specific function of providing coverage for transit systems and regardless of their low ridership, they are crucial from an equity perspective. Consequently, increasing service in peripheral suburban settlements and along coverage transit routes would help immigrants navigate smoothly. That's because most newcomers settle in suburban areas and outside the core areas, which lack frequent and proper transit service in peak times (Hennig, 2018).

2- Another aspect that needs improvement is late-night transportation. Studies indicate that late-night transportation services will dramatically help immigrants working night shifts to commute. Consequently, increasing the late-night transportation options (especially night public transit) along the high-demand corridors has been recommended (Mahali & Ray-Yol, 2020)

3- Introducing shared systems such as accessible bike-sharing programs and integrating them into the transportation system as an extension not only encourages individuals to use sustainable modes of transportation but also helps them to easily navigate around using multiple modes (Mahali & Ray-Yol, 2020).

To conclude, the reviewed literature deepens our understanding of the newcomers' use of multimodal transportation and lays a solid foundation to answer the first question of this study regarding their transport-related experience. In the first section, several underlying factors were introduced to explain newcomers' distinct travel behavior, backed up by several academic studies. The next section offered a collection of narratives from newcomers, mentioning their barriers and challenges in both academic and gym literature.

After all, and despite the significant role of transportation in the integration and daily lives of immigrants, there is a noticeable gap in research focused on the experiences of newcomers with transportation networks in the host countries. This shortcoming is due to a lack of detailed travel data on immigrants, and the few existing literature have mainly focused on descriptive statistics, repeating the same trend of using public transit over and over(Blumenberg & Smart, 2010).

The same issue applies to Vancouver, where very few recent studies focus on newcomers' and immigrants' travel behavior or transportation barriers. Most existing studies and discussions on immigrant transportation experiences in Canada have predominantly concentrated on Toronto. As Canada's largest city and a major immigrant

hub, Toronto naturally attracts much attention in research and policy discussions. This focus has led to better insights into how immigrants navigate Toronto's extensive public transit system, their challenges, and the strategies they employ to overcome these barriers.

The lack of focused studies on Vancouver means there is limited understanding of how newcomers navigate the city, the specific transportation facilitators and barriers they face, and how these experiences impact their overall integration into the community. Addressing this research gap is crucial for developing targeted policies and interventions that can enhance the transportation experiences of immigrants in Vancouver.

## **Study scope**

The following section provides insight into the current status of newcomers in Metro Vancouver and how they interact with the transportation system. The descriptive statistical facts provided designate the study scope and lay a solid foundation to assess the experiences of newcomers navigating across Metro Vancouver.

Canada has a rich history of welcoming immigrants, from the first European colonizers of the 16th century to the present day. Today, the country boasts one of the highest rates of annual immigration per population in the world (Statista Research Department, 2024).

According to the census in 2021, immigrants made up 23% of Canada's total population; among these immigrants, 1,328,240 came between 2016 and 2021 and are referred to as new immigrants. These recent immigrants comprised 16% of the total immigrant population (Government of Canada, 2022).

Among the provinces, British Columbia (B.C.) stands out as a particularly attractive destination for immigrants. The number of immigrants choosing B.C. almost doubled between the two consecutive censuses, with 38,085 arriving in 2016 and 69,470 in 2021, which marked the second-highest level of international immigration to B.C. on records (NewToBC, 2023).

As the historical heart of Metro Vancouver, Vancouver has attracted the most new arrivals in British Columbia. In 2021, the city was the largest recipient of recent immigrants in B.C., with 11,595 people arriving from 2016 to 2021 (NewToBC, 2023).

Table 4 Immigration counts and ratios from 2016-2021-(NewToBC, 2023)

	Total Pop 2021	Total Pop Growth 2016- 2021	Immigrant Pop 2021	Immigrant Total Pop 2021	Recent Immigrant Pop 2021	Recent Immigrant Total 2021	Immigrant Pop Growth 2016-2021	Immigrant Pop Growth 2016-2021
Geography	#	%	#	%	#	%	#	%
British Columbia	4,915,945	7.8%	1,425,715	29.0%	197,425	4.0%	133,040	10.3%
Greater Vancouver	2,607,010	7.5%	1,089,185	41.8%	154,815	5.9%	99,645	10.1%
Vancouver	650,380	5.2%	274,365	42.2%	41,360	6.4%	11,595	4.4%

The top three places of birth among recent immigrants living in Canada in 2021 were India, the Philippines, and China, which are the same for recent immigrants to the city of Vancouver but in reverse order (Canada, 2022). The next top origin countries of recent immigration to the city of Vancouver were the United States, the United Kingdom, and Brazil (NewToBC, 2023).

Regarding the age profile, in 2021, the core working-age group (25-54 years) constituted 79% of recent immigrants to Vancouver, which seems a good economic opportunity for Canada’s aging population (NewToBC, 2023).

Chinese (including Mandarin and Cantonese) remains the most common home language (after English) for recent immigrants, comprising 10% Mandarin and 3% Cantonese among recent immigrants. Filipino, Spanish, Portuguese, and Iranian (Persian) are other commonly spoken languages (NewToBC, 2023).

In 2021, Vancouver exhibited a remarkably high proportion of highly educated recent immigrants, with 71.3% holding a bachelor’s degree or higher. This was a significant increase in the proportion of the educated immigrant population compared to the previous census period. Regarding their occupation, 20% of recent immigrants worked in the professional, scientific, and technical services sectors, which was a 6% increase compared to the 2016 census (NewToBC, 2023).

The 2021 Census revealed a remarkable rise in income across all groups of immigrants in Vancouver, reflecting significant economic progress within the immigrant community

with a huge rise in recent immigrants' income. From 2015 to 2020, recent immigrants saw their median incomes grow by an impressive 78%, rising from \$25,208 to \$44,800 (NewToBC, 2023). This could be due to the recent policies that attract highly skilled and highly educated foreign nationals. According to the 2021 Canada Census, most racialized groups generally have higher levels of education than the total population in Canada, probably resulting in higher compensations on average. However, this increase and improving economic circumstances of newcomers to Vancouver have been widely affected by the COVID pandemic, and since then, the labor force market has been widely affected by high inflation (NewToBC, 2023).

Despite the upward trend of immigrants' median wage in the early years of their immigration, Census 2021 data reveals that they continue to face slightly higher rates of low income. In 2020, 12.7% of recent immigrants and 14.4% of all immigrants aged 15 years and over were in the low-income bracket, versus 10% for the Canadian-born.

*Table 5 Number and percentage of immigrant population and recent immigrants in census divisions, Vancouver (CMA), 2021. (Government of Canada, 2022)*

<b>Geography</b>	<b>Immigrant population - Number</b>	<b>Immigrant population - %</b>	<b>Recent immigrants (2016 to 2021) - Number</b>	<b>Recent immigrants (2016 to 2021) - %</b>
<i>Metro Vancouver A (Regional district electoral area)</i>	7860	46	1740	22.1
<i>Langley (City)</i>	6530	23.3	1310	20.1
<i>New Westminster (City)</i>	29265	37.5	5050	17.3
<i>North Vancouver (City)</i>	22015	38.3	3590	16.3
<i>Surrey (City)</i>	250870	44.6	39905	15.9
<i>Burnaby (City)</i>	123800	50.4	18920	15.3
<i>Vancouver (City)</i>	274365	42.2	41360	15.1
<i>Burrard Inlet 3 (Indian reserve)</i>	590	24.9	85	14.4
<i>Capilano 5 (Indian reserve)</i>	1085	37.4	155	14.3
<i>Vancouver (CMA)</i>	1089180	41.8	154815	14.2
<i>Coquitlam (City)</i>	67540	45.8	8600	12.7
<i>Langley (District municipality)</i>	29890	22.8	3805	12.7
<i>Delta (City)</i>	35555	33.1	4325	12.2
<i>North Vancouver (District municipality)</i>	28200	32.3	3340	11.8
<i>Lions Bay (Village)</i>	475	34.2	55	11.6
<i>Richmond (City)</i>	125600	60.3	13705	10.9
<i>Port Moody (City)</i>	11100	33.2	1185	10.7

Maple Ridge (City)	20235	22.5	2155	10.6
West Vancouver (District municipality)	19815	45.7	2080	10.5
Port Coquitlam (City)	20765	34.4	2135	10.3
White Rock (City)	6005	29	580	9.7
Pitt Meadows (City)	4845	25.5	430	8.9
Anmore (Village)	660	27.5	45	6.8
Bowen Island (Island municipality)	950	22.5	65	6.8
Belcarra (Village)	135	20.9	0	0
Matsqui 4 (Indian reserve)	60	13.6	0	0

As the census presents, the most popular geographic census divisions for recent immigrants from 2016-2021 are Langley, New Westminster, North Vancouver, Surrey, and Burnaby.

According to the 2016 census data, the distribution of immigrants within the city of Vancouver is not balanced and equal. As shown in Figure 2, the southern parts of Vancouver have the highest ratio of immigrants to non-immigrants (Figueiredo, 2021).

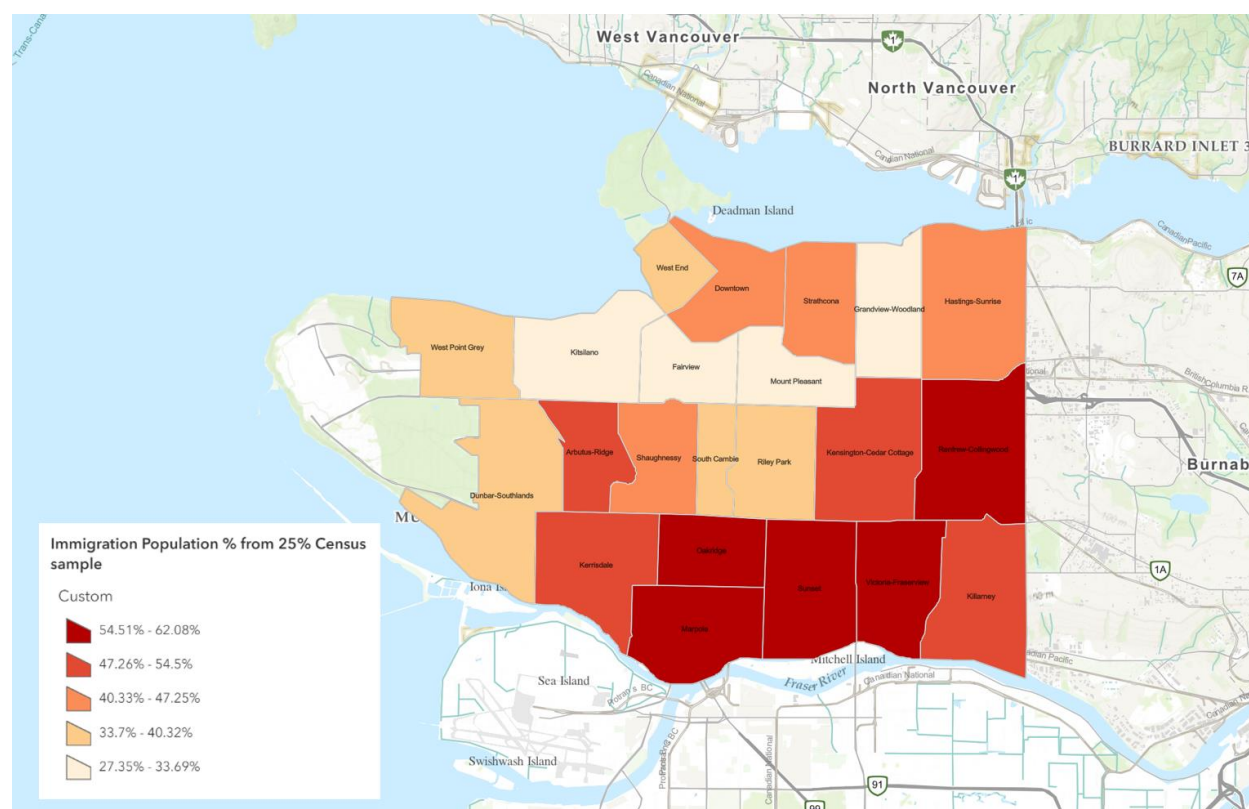


Figure 2 Immigrant population and ratio according to 2016 census- (Figueiredo, 2021)



## Transportation modes

TransLink is the transportation regional authority in the Lower Mainland and is responsible for public transportation networks, major roads, and bridges. Available public transportation modes under TransLink supervision include:

- Skytrain: An automated driverless system using elevated tracks.
- Extensive bus network (City of Vancouver, n.d.)
- Sea bus
- Westcoast expresses (Life, 2023)

Considering the extensive public transportation network, shown in Figure 3, and the variety of available modes, and as the literature review has suggested, recent immigrants have a significantly higher transit ridership, with more than 25% of recent immigrants in 74 census tracts commuting in this way (Heisz & Schellenberg, 2004)



Figure 3 City of Vancouver Public Transit Network - TransLink

Also, it was found that proximity to transit hubs is an important residential choice criterion for immigrants across metro Vancouver. According to a survey in Metro Vancouver regarding youth immigrants, the average commute time of respondents is 28 minutes



which is roughly similar to the general population's commute time of 30 minutes. However, this time increases to 42 minutes in commute time to get to work for the respondents (Fresh voice, 2022)

According to a survey presented to the city's regional planning committee, some of the popular destinations for recent immigrants to settle are Burnaby's Metrotown, Surrey's Newton, and Richmond's City Centre (R. Singer, 2024). These areas are known as public transit hubs, with easy access to other parts of Metro Vancouver. On the other hand, settled immigrants prefer lower densities such as Delta, Coquitlam, Langley, Maple Ridge, and White Rock (Lee-Young, 2024)

Specifically, within the city of Vancouver, East Vancouver neighborhoods have the highest share of work trips using public transit among recent immigrants (Heisz & Schellenberg, 2004). This can be due to more transit route coverage and, specifically extensive SkyTrain services in the area (Figure 3). These neighborhoods also have a good connection to downtown Vancouver, which is an important destination for work and recreation.



Figure 4 Share of recent immigrants taking public transit to work – 2001 (Heisz & Schellenberg, 2004).

According to a 2004 study, recent immigrants in Vancouver are 1.64 times more likely to use public transit to commute, and medium-term immigrants are 1.14 times more likely. The difference between long-term and Canadian-born immigrants is insignificant (Heisz & Schellenberg, 2004). Earlier it was shown that in Montreal, commuters are less likely to use public transit when they must travel longer distances to work. Meanwhile, In

Toronto and Vancouver, the opposite is true, as the likelihood of commuting via public transit is positively correlated with the distance to work.

## Methodology

This study employs semi-structured interviews as the primary method for data collection. Semi-structured interviews involve asking questions within a predefined thematic framework but do not adhere strictly to a set order or specific wordings. In other words, further questions may emerge from the conversation between interviewee and interviewer. The flexibility in the semi-structured interviews facilitates the identification of patterns while still enabling comparison between respondents (Dicicco-Bloom & Crabtree, 2006; George, 2022).

This approach combines a mix of closed- and open-ended questions with follow-up questions such as “why” or “how” to explore responses in greater depth(Adams, 2015). In this approach:

- 1- Unlike unstructured interviews, the interviewer comes prepared with a general idea of the questions to be asked.
- 2- However, unlike structured interviews, the phrasing and sequence of the questions remain flexible (George, 2022).

These interviews are conducted in a relaxed and engaging manner. In this study, the researcher conducted in-person interviews with 5 participants, all of whom were newcomers to Vancouver. A set of predetermined questions based on the literature and study objectives were prepared to guide the conversation (see Appendix). On average, the interviews lasted about 30 minutes and were audio-recorded to facilitate the analysis stage.

As the first step in analyzing the collected data, the interviews were transcribed verbatim using the online transcription service [Otter](#). A.I. As a verbatim transcription, an exact word-by-word reproduction of verbal data was extracted from the audio recordings to capture the exact spoken word, including pauses, for increased accuracy (Chazen, n.d.; Poland, 1995).

A hybrid coding approach, which is a combination of deductive and inductive coding, was used to analyze the interviews. The inductive approach involves working exclusively from the participant experiences that drive the analysis entirely. The inductive analysis refers to “approaches that primarily use detailed readings of raw data to derive concepts and themes. This method helps researchers to condense raw textual data into a summary

and establish clear links between research objectives and the findings derived from the raw data(Thomas, 2006)

On the other hand, the deductive approach uses an organizing framework comprising themes for the coding process. The framework, called tart list will be applied to the raw data as it is assumed the data can be explained through the core concepts of the framework (Azungah, 2018).

The interviews were coded and categorized using the hybrid approach, and in this study, the “Transport Poverty” theory was used as the key framework. As discussed in the literature review, this theory and its principles are well-established and comprehensive and, therefore, shape the key themes and sub-themes to analyze and summarize the experiences and perceptions of participants. However, the primary focus of this framework is on public transportation, not multimodality, and is not designed to capture the experiences of newcomers, in particular. Therefore, the researcher remains open to any emerging codes from data to capture the true experiences of participants and contribute to the knowledge in this particular field.

## Analysis and Results

This section outlines the findings of the interviews with participants regarding their experiences with the transportation network around Metro Vancouver. In this study, five individuals who came to Vancouver in less than 5 years were selected due to limited time and resources. Two identified themselves as male, while the rest identified as female. Participants were 20-40 years old, and except for one, the rest of them were currently studying at the universities of Vancouver, including UBC, SFU, and Langara College. Participants were from different ethnic groups, including 2 Persians, 1 Nigerian, 1 Chinese, and 1 Malaysian.

The analysis was conducted using a hybrid approach that combined deductive and inductive qualitative methods, grounded in the theory of transport poverty as the key framework. Initially, sub-themes were identified during the first round of coding, and the relevant ones were then grouped under the main themes of the framework, such as “Mobility,” “Accessibility,” “Affordability,” and “Externalities.” However, some sub-themes did not fit within the original transport poverty framework. As a result, three additional themes were created and named “Comfort & Utility,” “Social and environmental values,” and “Prior Experiences.” The following framework, shown in Figure 5, summarizes the study’s findings and identifies themes and subthemes.

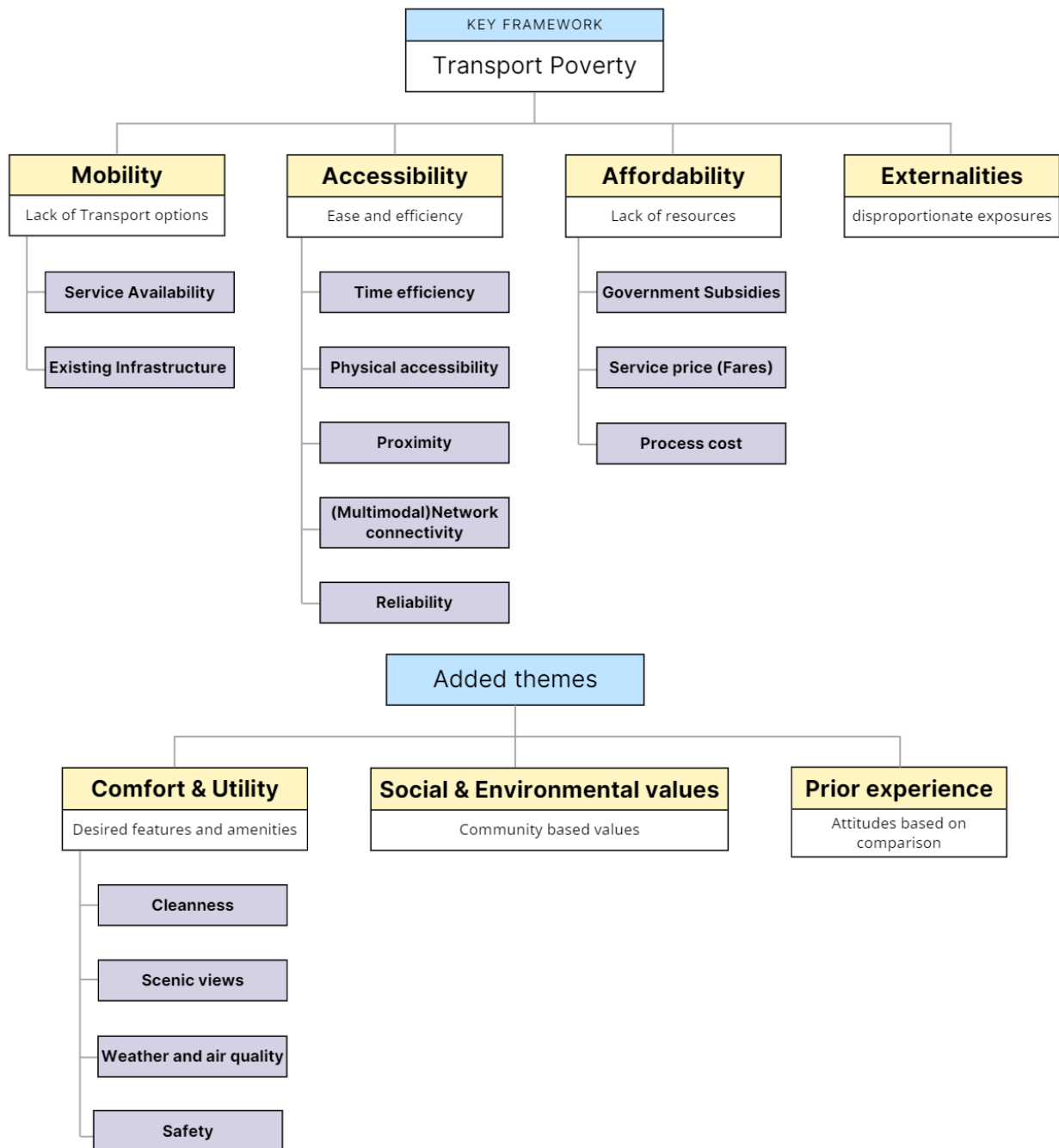


Figure 5 Themes and sub-themes extracted from interviews

## 1. Mobility

Mobility is the most generic theme, defined as the lack of transport options. Two sub-themes identified from the data, including “service availability” and “existing infrastructure,” fall under this theme.

## 1.1. Service Availability

This subtheme refers to the availability of transportation services and how they affect participants' mobility. In this regard, participants were positive about sky trains' frequency and were satisfied with the short gaps between each service. For example, they mentioned, *"...First of all, it's like, the frequency is good. I can, I don't need to check the schedule. So, I always know that there will be a SkyTrain in the next like, five, four minutes. So that's super convenient."*

In contrast, they mentioned the lack of reliable and frequent transport options across other modes, and more specifically, they were not satisfied with the bus schedule as they mentioned: *"...I have to wait at the bus stop that's nearest to my house for 15 minutes, especially on the weekends and stuff, when there's such a big gap between the bus services."*

For the shared systems, including car sharing and bike sharing, the unbalanced distribution of cars and bikes seems to be a bold issue, as they mentioned, *"They just aren't accessible, let's say one area has a lot of cars. But the thing is, I mainly just don't find them in my area. Every single time that I want to get a car. Can't find it... In Coquitlam, I don't think EVO exists. So in downtown, Burnaby, Vancouver, I just can't find it for some reason..."*

Regarding the shared bikes, they mentioned, *"... If you don't have your own bike, then you need to go downtown to find some shared bike like Mobi. They're just in downtown..."*

## 1.2. Existing Infrastructure

This subtheme encompasses the physical infrastructure supporting mobility, such as roads, bike lanes, and sidewalks. Active modes and Skytrain are the main focus, as the bus system can normally function using the basic road facility. Participants noted several challenges, such as a lack of sidewalks and inadequate bike lanes, which hindered their ability to move around efficiently. A participant stated, *"... I've been to certain places that, let's say, for the first two blocks there is a sidewalk, and for the next two blocks there isn't, so you have to walk in the front yard of someone's house, or we have those areas which are too tight for the number of people coming and going."*

Also, the lack of a consistent transportation network outside the urban core area was mentioned as a barrier. A participant mentioned, *"... now more and more people are being priced out of Metro Vancouver, they're having to live farther and farther away because it's so expensive, more and more people have to rely on this (grid) connectivity, especially newcomers ... I find that it really limits me only to Vancouver like I have not been able to flexibly see as many places or as many things outside of Vancouver, because it is not accessible with transit."*

## 2. Accessibility

Accessibility refers to the ease and efficiency of accessing daily needs. The subthemes identified within this theme include time efficiency, physical accessibility, proximity, multimodal network connectivity, and reliability.

### 2.1. Time Efficiency

Travel time and its efficiency were important elements in the transport-related experience of participants. This subtheme captures the frustration of long commutes, delays, and inefficient transit routes, as well as prioritizing the use of faster facilities to save time. In this sense, the sky train is preferred due to its speed and fewer stops along the way. One interviewee remarked, *“My preference is definitely SkyTrain. And also, I always prefer the rapid busses, like R4, as they are more rapid than other kinds of transportation, especially (with) Canada Line, it is like 15 minutes from my home to downtown... and the other reason that I prefer taking SkyTrain is that the time is more efficient. Like, there are no delays, and stops are less than busses.”*

Time efficiency is a multifaceted concept that extends beyond the time individuals spend reaching their destination. However, it also encompasses access time, waiting time, and every delay that is interpreted as wasted time of transportation.

*“...if I had the option of being able to figure out my driving here, I would do that over transit, just because it takes so much time here. If I want to go just two kilometers from my house, it's like a four-minute drive. And if I take the bus, I have to dedicate half an hour. It's just so disproportionate... It's inefficient because it takes so long to get from point A to point B, also, then you have to add a buffer time, to make sure you are not late.”*

### 2.2. Physical Accessibility

This subtheme refers to the ease of access to transportation options, especially for those with disabilities or other physical challenges. In other words, it refers to the all-ages and ability (AAA) design guidelines of the transportation network. For instance, “bumpy and un-even sidewalks” was mentioned by a participant as a challenge for the elderly and people using mobility aid devices such as wheelchairs. *“...The sidewalks are death traps; people fall off those because the surface is not well done ... so it's a big issue among older adults... It's not smooth, full of highs and lows. I can imagine people using wheelchairs are going to force their way, but it's supposed to be pedestrian friendly.”*

Additionally, biking seems to be a demanding physical activity, especially in steep grades, discouraging some individuals from considering biking as a mode of transportation. *“I do not prefer biking because it's hard for me as a physical activity and my breathing. Also, some streets have a steep slope, and it's hard to bike there.”*

### 2.3. Proximity

Proximity to transit stations and essential services was another critical element in determining how participants made transportation-related decisions, including mode choice. This sub-theme focuses on the distance people must travel to reach public transportation or important destinations. A participant commented, “...*The station is very close to my home, so it’s like one minute or two minutes by walk*” highlighting that proximity, along with other factors, affect their preference for taking Skytrain as their primary mode.

Some participants discussed proximity to a specific mode of transportation as a limiting factor, forcing them to plan their trips around the single easy and accessible option they have, as mentioned by a participant.

*“I think the public transit system is quite limiting here ... So, if you’re like on the Expo Line, then your entire life is along the Expo Line. If you’re along the Canada line, you end up commuting around the Canada line.”*

### 2.4. Multimodal Network Connectivity

This subtheme involves the integration of different modes of transport, such as buses, trains, and bikes, to provide more direct access from origin to destination. Some participants appreciated the availability of multimodal options but pointed out issues with connectivity, such as inconsistencies between buses and sky trains’ schedules. An interviewee stated, “... *I’m not sure how, but at least drivers have to try to be on schedule, not to go too fast, too slow, because the other transports, like the sky train, is automatic, they’re based in a way that they could like, be coordinated with the bus stations as well. So, if the bus stations are not well coordinated with the sky train, it just causes a lot of mess and overcrowding.*”

The other aspect of network connectivity goes back to the lack of many intersecting points between transit corridors; as a participant remarked, “*The grid system makes it more problematic, Vancouver itself is quite diamond-shaped, and it’s frustrating that you have to go all the way to, like to the widest part, and then kind of go all the way right or left, and there is no better diagonal connectivity... I think there should be more points along each route where you can swap between lines.*”

### 2.5. Reliability

Participants discussed the reliability of the transportation network as an important aspect of the transportation system that impacts their ability to plan daily activities based on a predictable schedule. The main focus of this sub-theme is on public transit services, encompassing their consistency and predictability according to a publicly accessible



schedule. *“When it comes to the buses, their schedules are not that good. It says it’s coming in five minutes. It might be 20 minutes. It might already have left. ...”*

Another reliability aspect is the cancelations of public transit services and frequent detours. In case of emergency and special occasions, these service disruptions are acceptable, but it would be annoying if it became a repetitive incident.

*“Sometimes (there are) some disruptions, as I’ve experienced twice, and I think I’ve heard people telling me more about it like someone enters a rail, and then the sky train has to start, or some kind of emergency happens... So it’s a bit annoying.”*

### 3. Affordability

As a well-established term in social studies, transport affordability investigates the implications of not being able to meet transport costs. This notion is closely related to car ownership, auto dependency, and the lack of resources to meet mobility costs. The subthemes include service price, Government Subsidies, and process cost.

#### 3.1. Service Price

Service price reflects the interviewees’ perceptions of the actual costs of using transportation options, like financing a private car or paying public transit fares. Several participants highlighted the high cost of car-sharing systems as a barrier.

*“Evo is like, maybe, I think, \$20 at an hour. So it’s, I think, the most important reason that I do not prefer Evo is the cost.”*

Also, participants emphasized the financial strain of private car ownership on newcomers, which justifies why they see less expensive modes as their only options. *“...And cars are also expensive here. So that’s one of the reasons I end up walking so much.”*

Regarding public transit, even though most interviewees benefitted from U-PASS, they were also concerned about the transit costs after their graduation. Also, a participant mentioned, *“The increasing prices of fares are not acceptable as no improvements are made in public transit.”*

Affordability and lack of resources don’t always go back to the monetary costs of services, as it depends on individuals’ perceptions of cost-benefit analysis. For instance, even though a private car might be more expensive upfront, it could be seen as a more economical option when considering its latent benefits, such as safety, convenience, and comfort, especially for families, as a participant had indicated.

*“In all sincerity, (driving) is more economical for a family with children than using public transport in B.C... this is an economic principle, you look at the cost of your comfort, the*

*cost of being safe. (When you have a family) transportation is just beyond comfort at this point; it's about kids being safe."*

## 3.2. Government Subsidies

There are several Transport-related financial programs and subsidies for vulnerable groups such as low-income groups, seniors, and individuals with disabilities in B.C. and Metro Vancouver (BCtransit, n.d.; Ministry of Social Development and Poverty, n.d.). A popular subsidy is the U-PASS, designed for students, offering them unlimited transit access at a discounted upfront price included in their student fees. Even though U-PASS is not specifically planned to meet the newcomer's mobility needs, a wide range of international students benefit from the reduced prices of public transit by linking their compass cards to their student accounts.

*"I think I'm biased about the cost situation because we have the U-PASS thing. So, I honestly don't think about it that much, and I appreciate that. I don't have to stress so much about the cost of transit. But I think once you graduate and I don't have the U-PASS subsidy anymore, it's going to be a real factor."*

## 3.3. Process Cost

The process of obtaining and maintaining transportation options, including vehicle ownership, was also discussed. This sub-theme mainly focuses on the process of driving licenses, which some participants found to be resource-consuming and expensive.

*"It's also expensive if I want to, like, get my license from scratch here again, so then I have to save up for that. And because there's a relatively working transit system, (obtaining a driver's license) has been lower on my priority list compared to everything else here."* said one participant, reflecting on the economic burden of obtaining a driving license.

## 4. Externalities

Externalities refer to the disproportionate impacts and opportunities that arise from transportation systems. According to the literature, this theme refers to a form of inequality where certain areas are disproportionately affected by environmental and social externalities. In this study, the data analysis indicated that easy access to information on available transportation options and assistance navigating the system disproportionately impacted participants' mobility (or transportation choices or travel behaviors).

The difficulty in obtaining relevant information about transportation options was identified in the driving field, where most participants, as newcomers, hold a driving license from their country of origin but are unfamiliar with Vancouver traffic rules. A participant mentioned, *"Another thing about Canadian society is that Correct information is right there*

*but hard to find. It is available but you need to do a lot of asking the right people. If you don't ask the right people, you won't find them and use them to your benefit."*

Another side of externalities refers to how policies and procedures in the destination community create complexities and difficulties for newcomers in navigating the transportation system. For instance, inconsistencies between the legal framework of their origin and host countries/communities are a source of dissatisfaction.

Some Participants found it difficult to deal with the bureaucratic processes involved in accessing transportation options. For example, *"Getting a driver's license here is confusing,"* was a common sentiment among interviewees. *"I feel like it's very difficult to find straightforward answers about what is required, like, what are the requirements (for driving license), how we need to figure it out. it's very time-consuming, and a lot of the resource consuming to get the paperwork done to be legally and comfortably driving"*

## 5. Comfort & Utility

This theme focuses on the pleasantness and convenience of using transportation services and is tightly bound to the perceived comfort while getting around with different transportation modes. The sub-themes are cleanness, scenic view and aesthetics, weather and air quality, and safety.

### 5.1. Cleanness

The cleanliness of public transportation was a mixed experience for participants. In the public transit case, this sub-theme is not only about the cleanliness of fleets but also the attitude of individuals toward homeless people and even the texture of seats, which gives them a sense of dirtiness. One participant compared SkyTrain to buses, stating, *"I feel like SkyTrain is somehow cleaner than the bus... For the bus, I don't like the texture of the chair, it makes me feel pretty dirty."*

### 5.2. Scenic View & Aesthetics

The aesthetic value of certain routes, including scenic views, contributed to a positive transportation experience. A participant mentioned they like using the bus as they find the views interesting. *"Interesting for me when I go by bus ... you can see everywhere. You can see the streets. You can see the people, and also buildings, maybe the view is important for me."*

### 5.3. Weather & Air Quality

Weather conditions and air quality were also discussed as significant elements affecting participants' convenience and overall experience. While weather mainly affects individuals' willingness to use active transportation, air quality is discussed concerning

the pleasantness of public transit and the air conditioning system. *“I’m not saying this to be disrespectful or insensitive. But we have a lot of Indians in Surrey, and they have a dietary pattern with the use of garlic and submarines and all of those things, right? And so, when you enter a train, it just sucks!”* one interviewee pointed out, illustrating the impact of weather on the comfort of using public transportation.

Participants also mentioned walking and cycling are “Tiring activities, especially during hot days of summer”, resulting in not choosing these modes as a means to transportation.

#### 5.4. Safety

Safety was brought up as an influential element when discussing perceptions of a certain experience. It was also a major concern for participants, especially on public transit. These perceptions vary among individuals, particularly for those known as vulnerable groups such as women and people with disabilities who are more affected.

The respondents’ main reason for feeling unsafe was the presence of homeless people, which frightened and shocked them in the early stages of immigration and settling. *“Feeling unsafe is more challenging. Especially in buses I have seen, homeless individuals in there started, like, talking loudly, or maybe swearing.”*

Another participant added that no effective treatments were done to deal with this safety issue. *“There are a lot of junkies in the area, and no one cares about them. They come into the sky train and busses, and they cause a lot of problems. Sometimes, they’re just hostile. Sometimes, they just make a mess... And when you call the staff to come and do something. They don’t usually do anything. They just try to calm the situation if it’s escalated, or just try to take them out of the sky train.”*

Another relevant finding of safety in this study concerns unsafe road conditions and traffic safety issues, which highlight the risks associated with active transportation.

*“So, in some streets, there’s no lanes for bikes. So, it’s it is one of the challenges of biking here...(Sometimes) I try to bike across Cambi Street, and In some segments of this street, there is no bike lane. Then I start to feel unsafe, so I do not prefer biking.”*

#### 6. Social and environmental values

This theme captures the sustainability attitude toward transportation among the study’s newcomer participants, elaborating on how their mode choice and transportation-related decisions are based on large-scale values. Although these benefits are not tangible and even rewarding in the short term, some newcomers are committed to aligning their travel behavior with such values.

As one of the interviewees mentioned, *“It’s (Public transit) more social. I think cars can be very lonely and isolating. I love driving long distances, but I think public transit is*

*holistically better. It's better for the environment, It's better for just seeing other people, and even though you don't have to talk to anyone, just not being in your little bubble all the time, literally and metaphorically, I think it's just better all the way around for human beings to be, like in shared kind of transit situations."*

## 7. Prior Experiences

This theme compares newcomers' expectations of the transportation system in Metro Vancouver with what they experienced elsewhere. As an interview question, interviewees were asked to evaluate the Metro Vancouver transportation system to those in their home countries or previous cities. The importance of this theme lies in how unmet expectations can influence the newcomer's satisfaction.

For instance, a participant from Iran remarked that *"...bicycling was technically unavailable in the city back home,"* while another participant from Beijing reflected their dissatisfaction with the system by saying, *"Biking here is expensive and inconvenient, while there's a good biking system in Beijing, where you can always find bikes, (use it) and return it to a designated place, you can just return them to a safe place on the road, and on the pedestrian facility, and then other people will pick it up and continue biking. So, it's very convenient. Also, it's cheap."*

Also, in another case, when comparing Vancouver's public transit to other cities worldwide, there were contrasting evaluations between interviewees from different backgrounds and cities. A participant used the words "Top-notch and first ranked<sup>1</sup>" for Vancouver's transportation network, while another interviewee called it "Frustrating and inefficient<sup>2</sup>" compared to European countries they have been to before.

Additionally, participants mentioned struggling with unfamiliarity with the rules and regulations in the new environment, which is different from what they are used to. The procedural challenges, for instance, adapting to new traffic rules, were a source of confusion. As a participant who has previously lived in London described, *"switching from one side of the road to another and driving a new set of rules" is confusing and needs*

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<sup>1</sup> The actual participant's comment was: *"I mean, compared to Nigeria, and other countries I've been to, it's (public transit) top-notch. In Europe transportation is, of course very cheap as well. But the networks are not as solid as we have in Metro Vancouver"*

<sup>2</sup> *"I've lived in the UK, London, and Finland. And both countries have really fantastic public transport systems. So, I was a little bit spoiled in both places, in the sense that, like, you could go very far on transit, and it was very well connected and well planned. So, for me, moving to Vancouver was a bit frustrating, because I was surprised to hear that this is one of the best public transit networks in North America. I was like, but it's so inefficient!"*

*more practice.” Another participant compared the inconvenient driving regulations in Vancouver with their past experiences in other places “I’ve been to other parts of the world. I’ve not seen a place where you’d have to get out of your car to press the light ... and then you find a lot of places with signs of restricted turns between 7 am and 7 pm. It’s more like the norm in Vancouver, almost every two stops!”*

## Recommendations

This section reflects the top priority improvements in the transportation system mentioned by the interviewees. As shown in the Appendix, interviewees were asked to rank their top three recommended interventions to improve the transportation system based on their needs. What they mentioned shows that their desired improvements are mostly from a service provision perspective rather than policy implications.

The most frequent improvements were in three major themes of Mobility, Accessibility, and Affordability. In mobility, participants mentioned increasing service in all transportation modes, from a widespread bike-sharing system to more frequent buses, from an increased number of cars in a sharing system to better facilities for driving, such as wider roads. In terms of accessibility, participants wanted to provide direct and smooth access to downtown and other trip-generating destinations via transit. This is also the case when connecting Vancouver to its adjacent settlements and cities like Burnaby and Surrey. Also, a more reliable bus schedule to match the Skytrain automated schedule was proposed for easier transfers. This aligns with the desired multimodality goals. As a participant mentioned, *“With the busses, I would suggest more busses, even if there are smaller ones, but just more frequent ones. And in a way that they try to be on schedule... because the other transports, like, let’s say the sky train, which is automatic, are based in a way that they could coordinate with the bus stations. So, if buses are not well coordinated with the sky train, it just causes a lot of mess and overcrowding...”* Finally, lowering the price of both public transit and car-sharing systems was recommended.

For the sake of this study, 5 recent immigrants participated in a semi-structured interview. The key framework to this qualitative analysis was the “Transport Poverty” framework with 4 main subsets of “Mobility,” “Accessibility,” “Affordability,” and “Externalities”. This framework covered the main ideas leading the interviews but did not cover some challenges the participant has faced as a recent immigrant. Consequently, in the coding process, other themes and sub-themes emerged as well, pointing more towards the quality and comfort of using different modes. Eventually, seven themes were developed in total to include all the aspects that interviewees mentioned, which was also used to categorize their top recommendations to improve the current situation in a way that meets their needs.



## Conclusion

This study aimed to explore the transportation barriers and challenges faced by newcomers in Metro Vancouver and the shortcomings of the transportation system towards multimodality, drawing from a combination of literature review, qualitative interviews, and thematic analysis. This issue is of great importance both from equity and sustainability perspectives and is a critical topic for Metro Vancouver as one of the top immigrant-receiving regions in Canada and worldwide.

Reviewing the existing literature resulted in the first question of this study regarding the existing knowledge on newcomers' experience with transportation systems in the destination community. The literature highlights that recent immigrants often exhibit different travel behaviors compared to settled immigrants and non-immigrants, influenced by various factors such as economic status, cultural background, and settlement patterns. These differences tend to fade over time through a process known as travel assimilation, where recent immigrants gradually adopt travel behaviors similar to those of the native-born population. However, according to the patterns spotted by the existing literature, in the initial years of settlement, recent immigrants are more likely to rely on public transit, carpooling, and other non-driving modes due to lower car ownership rates.

Interviews were conducted to answer the second and third questions concerning the interaction of newcomers with the transportation system, specifically in Vancouver, and the potential solutions they mention. Analysing interviews and identifying emerging themes and sub-themes through thematic analysis will form the questions in the context of Metro Vancouver as the study scope. In this analysis, the "Transport Poverty" theory guided the coding process, and eventually, the analysis identified several key themes—Mobility, Accessibility, Affordability, Externalities, Comfort & Utility, Social and Environmental Values, and Prior Experiences—which collectively provide a comprehensive understanding of the complexities newcomers encounter in getting around Metro Vancouver. The findings can be summarized as follows:

- Mobility emerged as a significant challenge, particularly concerning service availability and the adequacy of existing infrastructure. While the SkyTrain system was generally praised for its frequency and reliability, other modes of transport, especially buses and shared systems like car-sharing and bike-sharing, were criticized for their inconsistency and limited availability in certain areas.
- Accessibility was a critical theme, encompassing several sub-themes such as time efficiency, physical accessibility, proximity to transportation options, network connectivity, and reliability. The efficiency of travel time was highlighted, with participants preferring the rapid transit options with no delays and cancellations. Physical accessibility was



mentioned as a barrier to active modes, particularly for individuals with disabilities. Proximity to transit stations and the connectivity of the multimodal network were also recurrent concerns in this theme, with participants showing their dissatisfaction with the lack of an integrated, multimodal transportation system.

- Affordability issues affect lower-income groups, including a majority of newcomers. The high cost of private car ownership and the expense of car-sharing services like Evo discourage recent immigrants from considering driving as an option. Although many participants benefited from the U-PASS as a subsidized transit for students, there was concern about the affordability of public transit and the fare increases. The process cost, for example, obtaining a driver's license, was also seen as a resource-consuming challenge.

- Externalities highlighted the disproportionate impacts of the transportation system on newcomers, particularly in terms of proceeding with the bureaucratic procedures such as driving skills in a new legal context and accessing accurate information.

- Comfort & Utility was a theme reflecting on the everyday experiences of newcomers, from the cleanliness of public transport to the aesthetic and safety aspects of their journeys. While some participants appreciated the scenic views from buses, safety concerns, particularly due to homeless individuals and drug use, were prevalent. Additionally, traffic safety, such as the lack of dedicated bike lanes and unsafe road conditions, was a barrier to using active transportation modes.

- The study also revealed that Social and Environmental Values shape newcomers' transportation choices. Their presence might not be as strong as accessibility and affordability. However, as some participants expressed, there is a preference for public transit due to its perceived social and environmental benefits.

- Finally, Prior Experiences influenced newcomers' expectations and satisfaction with the transportation system. Comparisons with transportation systems in their home countries or previous cities are inevitable and can highlight gaps in Metro Vancouver's system.

In conclusion, this study sheds light on the multi-dimensional nature of transportation challenges faced by newcomers in Metro Vancouver, highlighting the importance of comprehensive studies in all aspects. While the region offers certain advantages, such as a reliable SkyTrain system, a relatively extensive transportation network, and subsidies for transit for some groups (U-PASS for students, HANDYDART for individuals with disabilities, etc.), significant barriers remain, particularly in terms of service availability, affordability, and accessibility.

This study is subject to several limitations. Due to time and resource constraints, the research lacks the depth and comprehensive detail that could have been achieved with more extensive investigation. Additionally, the interview sample size was relatively small, and all participants shared similar profiles. This sample homogeneity may impact the findings' generalizability and needs to be tested for validity and reliability.

Given these limitations, there is a need for further research specifically focused on Metro Vancouver as a notable recipient of recent immigrants. Future studies should involve a larger and more diverse interview sample to capture a broader range of experiences and perspectives. Additionally, a more comprehensive background review and data collection should be conducted to better connect the narratives of newcomers with their lifestyles, cultural backgrounds, and specific needs in Vancouver. Such research would establish a solid understanding of the challenges and opportunities recent immigrants face in this region.

Such studies would highlight and identify areas in need of improvement, as well as gaps and shortcomings in the transportation system based on the newcomers' lived experience. Addressing the barriers newcomers face requires a concerted effort and will from the authorities to enhance infrastructure, connectivity, and services. The realization of these improvements will depend on effective communication and collaboration between stakeholders such as TransLink and transportation agencies. By understanding and addressing the specific transportation challenges faced by immigrants, the region can evolve and move towards a more inclusive and accessible environment for all residents.

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# Appendix

## Interview Questions

### Introduction and key Considerations

Thank you for participating in this interview. The goal of this study is to gather information on the newcomer's and immigrants' experience of using transportation services around Metro Vancouver, identify the strengths and weaknesses of the system, and get insight into any barriers, challenges, or facilitators that they might face while getting around.

Before we begin, let's go over a few guidelines. This interview is voluntary, and you are free to skip any questions or stop the interview at any time. Your responses will be kept confidential and used solely for research purposes. There are no right or wrong answers; we are interested in your honest opinions and experiences. please share as many details as you feel comfortable, and thanks for making your answers comprehensive and extensive to help us get a better insight into your experience.

Please be informed that this session will be audio recorded and the recordings will only be used for internal reporting purposes. Rest assured that everything you disclose will be kept confidential.

If you're ready, we can start with the questions.

\*\*Do you consent to participate in this interview? Do you have any questions before we begin?

### Questions

1. Can you tell me a bit about yourself?

Where are you originally from? When did you move to Canada? How long have you been living in Metro Vancouver? Do you live here individually or with your family?

2. What mode of transportation do you often use to get around? Why did you choose this/these option(s)?

2.1. What do you like the best about this/these mode(s) (reliability, frequency, convenience, cost, accessibility, physical activity)?

2.2. What challenges have you experienced using this/these mode(s) (cost, overcrowding, safety issues, inaccessibility) ?

3. Aside from your selected mode(s) of travel, how often do you use other modes such as .... (list the ones the participant didn't mention)?

3.1. What discourages you from using these other modes frequently (examples are low access, inaccessibility, and costs)? How do you think these systems could be improved, so you feel motivated to use them?

4. How does the public transportation system in Metro Vancouver compare to where you previously lived (home country)? In your opinion, what are the advantages and disadvantages of each system?

5. Have you ever heard of shared mobility systems such as bike-sharing ( for example Mobi), or car-sharing (examples are Evo and Modo)?

5.1. If so, what was your experience with this/these option(s)? What did you like and dislike about this/these services (examples are access, cost, unfamiliarity, language barrier)?

6- What is your overall experience with the transportation services and getting around in Metro Vancouver?

7- (If not answered previously)Have you ever faced any challenge, barrier, or unpleasant experience, while using different modes of transportation? This could be because of language barriers, accessibility, costs, ...

8- If you were given a magic wand to improve three things about the transportation system in Metro Vancouver to better suit your needs, which aspects would you consider? Please prioritize them in order of importance...

9. May I know your age, gender identity, and employment status?

This concludes our interview today, please let me know if you wanna add anything further. Otherwise, thank you for participating in this study. If you are interested in learning more about sustainable transportation options in the City of Vancouver, we encourage you to attend one of our workshops. You can contact our project coordinator for more information (provide Silvana's email).